



BIDDING DOCUMENT

for

The Procurement of

Supply, transportation, delivery and unloading of HDPE pipe (PE-100 PN SDR, NS:40:2079) for different water supply projects of Bhojpur district

Contract ID:

wssdobhojpur/208283/NCB1/Goods/HDPE/Lomakhola-Jarayotar

**National Competitive Bidding (NCB)
Single Stage Single Envelope (1S1E)**

***Water Supply & Sanitation Division Office, Bhojpur
Koshi Province Government***

Issued on: 21 November 2025 (5 Mangsir 2082)

Issued to: For all eligible bidders

Invitation for Bids No: wssdobhojpur/208283/NCB1

Contract ID No: wssdobhojpur/208283/NCB1/Goods/HDPE/Lomakhola-Jarayotar



Abbreviations

BDS.....	Bid Data Sheet
BD.....	Bidding Document
DCS.....	Delivery and Completion Schedule
DP.....	Development Partner
EQC.....	Evaluation and Qualification Criteria
GCC.....	General Conditions of Contract
GoN ¹	Government of Nepal
ICC.....	International Chamber of Commerce
IFB.....	Invitation for Bids
ITB.....	Instructions to Bidders
LGRS.....	List of Goods and Related Services
NCB.....	National Competitive Bidding
PAN.....	Permanent Account Number
PPMO.....	Public Procurement Monitoring Office
SBD.....	Standard Bidding Document
SBQ.....	Schedule of Bidder Qualifications
SCC.....	Special Conditions of Contract
SR.....	Schedule of Requirements
TS.....	Technical Specifications
VAT.....	Value Added Tax
NA.....	Not Applicable

¹ “GoN” word indicates all public entities according to Public Procurement Act, 2063



Table of Contents

Invitation for Bids

PART 1 – Bidding Procedures

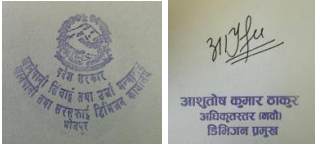
Section I. Instructions to Bidders	5
Section II. Bid Data Sheet	34
Section III. Evaluation and Qualification Criteria.....	39
Section IV. Bidding Forms.....	47

PART 2 – Supply Requirements

Section V. Schedule of Requirements	59
---	----

PART 3 – Conditions of Contract and Contract Forms

Section VI. General Conditions of Contract.....	66
Section VII. Special Conditions of Contract	86
Section VIII. Contract Forms	93



Invitation for Bids

प्रदेश सरकार

खानेपानी, सिंचाई तथा उर्जा मन्त्रालय

खानेपानी तथा सरसफाई डिभिजन कार्यालय, भोजपुर

कोशी प्रदेश, विराटनगर, नेपाल



Date of publication: 21 November 2025 (5 Mangsir 2082)
Invitation for Bids No: wssdobhojpur/NCB/Goods/1-2082/83

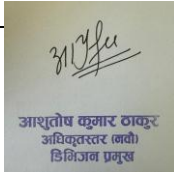
1. **Water Supply and Sanitation Division Office, Bhojpur (Ministry of Water Supply, Irrigation and Energy, Koshi Province)** has allocated funds towards the cost of **Supply, transportation, delivery and unloading of HDPE pipe (PE-100 PN SDR, NS:40:2079) for different water supply projects of Bhojpur district** and intends to apply part of the funds to cover eligible payments under the Contract for wssdobhojpur/208283/NCB1/Goods/HDPE/Lomakhola-Jarayotar. Bidding is open to all eligible Bidders
2. **Water Supply and Sanitation Division Office, Bhojpur** now invites **electronic bids** from eligible bidders for the procurement of **Supply, transportation, delivery and unloading of HDPE pipe (PE-100 PN SDR, NS:40:2079) for different water supply projects of Bhojpur district** under National competitive bidding – Single Stage Single Envelope procedures specified in Public Procurement Act and Regulations.
3. Eligible Bidders may visit PPMO egp system www.bolpatra.gov.np/egp.
4. A complete set of Bidding Documents may be purchased from the office of **Water Supply and Sanitation Division Office, Bhojpur** by eligible Bidders on the submission of a written application, along with the copy of company/firm registration certificate, and upon payment of a non-refundable fee of **NRs 3,000/- till 12:00 on 21 December 2025** during office hours.

Or

Bidder who chooses to submit their bid electronically may purchase the hard copy of the bidding documents as mentioned above or may download the bidding documents for e-submission from PPMO's e-GP system www.bolpatra.gov.np/egp. Bidders, submitting their bid electronically, should deposit the cost of bidding document in the following Rajaswa (Revenue) account as specified below .

Information to deposit the cost of bidding document in Bank:

Name of the Bank:	Rastriya Banijya Bank, Bhojpur
Name of the Office:	Water Supply and Sanitation Division Office, Bhojpur
Office Code no:	3130107011
Office Account no:	1000200010000 Rajaswa (Revenue)
Shirshak no:	14229



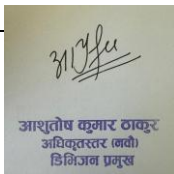
5. Pre-bid meeting shall be held at **NA**.
6. Electronic bids must be submitted to the office **Water Supply and Sanitation Division Office, Bhojpur** through PPMO's e-GP system www.bolpatra.gov.np/egp on or before **12:00 on 21 December 2025**. Bids received after this deadline will be rejected.
7. The bids will be opened in the presence of Bidders' representatives who choose to attend at **13:00 on 21 December 2025** at the office of office **Water Supply and Sanitation Division Office, Bhojpur**. Bids must be valid for a period of **90 days** from the date of bid opening and must be accompanied by a bid security or scanned copy of the bid security in pdf format in case of e-bid, amounting to a minimum of **NRs. 2,00,000/-** which shall be valid for 30 days beyond the validity period of the bid (i.e. **120 days from date of opening**)

Information to deposit bid security in Bank:

Name of the Bank: **Rastriya Banijya Bank, Bhojpur**

A/C No: **Kha 2-3 (PRA.LE.NI.KA) 2040100202030000 (Dharauti Khata)**

8. If the last date of purchasing and /or submission falls on a government holiday, then the next working day shall be considered as the last date. In such case the validity period of the bid and bid security shall remain the same as specified for the original last date of bid submission.

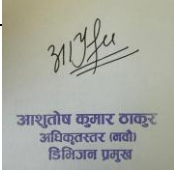


Section I. Instructions to Bidders

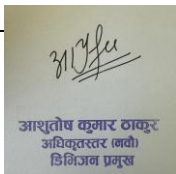
This section specifies the procedures to be followed by Bidders in the preparation and submission of their Bids. Information is also provided on the submission, opening, and evaluation of bids and on the award of contract.

Table of Contents

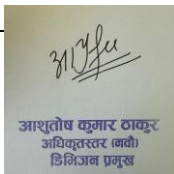
A. General	
1. Scope of Bid	5
2. Source of Funds	5
3. Fraud and Corruption	5
4. Eligible Bidders	8
5. Eligible Goods and Related Services	10
6. Site Visit	10
B. Contents of Bidding Document	10
7. Sections of the Bidding Document	11
8. Clarification of Bidding Document/Pre-bid meeting	11
9. Amendment of Bidding Document	11
C. Preparation of Bids	11
10. Cost of Bidding	11
11. Language of Bid	12
12. Documents Comprising the Bid	12
13. Letter of Bid and Price Schedules	12
14. Alternative Bids	13
15. Bid Prices and Discounts	13
16. Currencies of Bid	14
17. Documents Establishing the Eligibility of the Bidder	14
18. Documents Establishing the Conformity of the Goods and Related Services to the Bidding Document	14
19. Documents Establishing the Qualifications of the Bidder	15
20. Period of Validity of Bids	16
21. Bid Security	16
22. Format and Signing of Bid	18



D. Submission and Opening of Bids	19
23. Sealing and Marking of Bids	19
24. Deadline for Submission of Bids	22
25. Late Bids	22



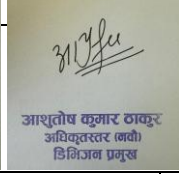
26. Withdrawal, or Modification of Bids	22
27. Bid Opening	24
E. Evaluation and Comparison of Bids	25
28. Confidentiality	25
29. Clarification of Bids	25
30. Deviations, Reservations, and Omissions	26
31. Examination of Bid	26
32. Determination of Responsiveness	26
33. Non-material Non-conformities	27
34. Correction of Arithmetical Errors	28
35. Goods manufactured in Nepal to be produced	28
36. Evaluation and Comparison of Bids	29
37. Post-qualification of the Bidder	30
38. Purchaser's Right to Accept Any Bid, and to Reject Any or All Bids	30
F. Award of Contract	30
39. Award Criteria	30
40. Purchaser's Right to Vary Quantities at Time of Award	30
41. Notification of Intention to Award	31
42. Performance Security	31
43. Signing of Contract	32
44. Complaint and Review	32



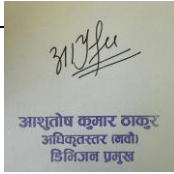
Section I. Instructions to Bidders

A. General

1. Scope of Bid	<p>1.1 In connection with the Invitation for Bids indicated in the Bid Data Sheet (BDS), the Purchaser as <i>indicated in the BDS</i> issues this Bidding Document for the supply of Goods and Related Services incidental thereto as specified in Section V, Schedule of Requirements. The name, identification, and number of contracts (packages/lots) are <i>indicated in BDS</i>.</p> <p>1.2 Throughout this Bidding Document :</p> <ul style="list-style-type: none">(a) the term “in writing” means communicated in written form with proof of receipt;(b) if the context so requires, singular means plural and vice versa; and(c) “day” means calendar day.
2. Source of Funds	<p>2.1 GoN Funded: In accordance with its annual program and budget, approved by the GoN, the Purchaser intends to apply a portion of the allocated budget to eligible payments under the contract(s) <i>indicated in the BDS</i> for which this Bidding Document is issued.</p> <p>Or</p> <p>DP Funded: The GoN has applied for or received financing (hereinafter called “funds”) from the Development Partner (hereinafter called “the DP”) <i>indicated in the BDS</i> toward the cost of the project <i>named in the BDS</i>. The GoN intends to apply a portion of the funds to eligible payments under the contract(s) for which this Bidding Document is issued.</p> <p>2.2 DP Funded: Payment by the DP will be made only at the request of the GoN and upon approval by the DP in accordance with the terms and conditions of the financing agreement between the GoN and the DP (hereinafter called the “Loan Agreement”), and will be subject in all respects to the terms and conditions of that Loan Agreement. No party other than the GoN shall derive any rights from the Loan Agreement or have any claim to the funds.</p>



3. Fraud and Corruption	3.1 Procuring Entities as well as Bidders, suppliers and contractors and their sub-contractors shall adhere to the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this.;
--------------------------------	--

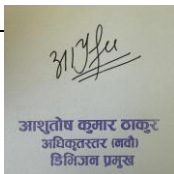


	<p>(a) the Purchaser adopts, for the purposes of this provision, the terms as defined below:</p> <ul style="list-style-type: none">(i) “corrupt practice” means the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party;(ii) “fraudulent practice” means any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;(iii) “coercive practice” means impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;(iv) “collusive practice” means an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party.(v) “obstructive practice” means (a) deliberately destroying, falsifying, altering, or concealing of evidence material to an investigation; (b) making false statements to investigators in order to materially impede an investigation; (c) failing to comply with requests to provide information, documents, or records in connection with an investigation; (d) threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or (e) materially impeding GoN/DP’s contractual rights of audit or access to information; and(vi) “integrity violation” is any act which violates Anticorruption Policy, including (i) to (v) above and the following: abuse, conflict of interest, violations of GoN/DP sanctions, retaliation against whistleblowers or witnesses, and other violations of Anticorruption Policy, including failure to adhere to the highest ethical standard. <p>(b) the Purchaser will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations in competing for the contract;</p>
--	---



आशुतोष कुमार ठाकुर
अधिवक्ता (नवी)
डिजिटल प्रमुख

	<p>(c) DP will cancel the portion of the financing allocated to a contract if it determines at any time that representative(s) of the GoN or of a beneficiary of DP-financing engaged in corrupt, fraudulent, collusive, or coercive practices or other integrity violations during the procurement or the execution of that contract, without the GoN having taken timely and appropriate action satisfactory to DP to remedy the situation.</p> <p>(d) DP will impose remedial actions on a firm or an individual, at any time, in accordance with DP's Anticorruption Policy and related Guidelines (as amended from time to time), including declaring ineligible, either</p>
--	---



	<p>indefinitely or for a stated period of time, to participate in DP-financed, -administered, or -supported activities or to benefit from an DP-financed, -administered, or -supported contract, financially or otherwise, if it at any time determines that the firm or individual has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations; and</p> <p>(e) The Supplier shall permit the GoN/DP to inspect the Supplier's accounts and records relating to the performance of the Supplier and to have them audited by auditors appointed by the GoN/DP, if so required by the GoN/DP.</p>
	<p>3.2 The Bidder shall not carry out or cause to carry out the following acts with an intention to influence the implementation of the procurement process or the procurement agreement :</p> <p>(a) give or propose improper inducement directly or indirectly,</p> <p>(b) distortion or misrepresentation of facts,</p> <p>(c) engaging in corrupt or fraudulent practice or involving in such act,</p> <p>(d) interference in participation of other competing bidders,</p> <p>(e) coercion or threatening directly or indirectly to cause harm to the person or the property of any person to be involved in the procurement proceedings,</p> <p>(f) collusive practice among bidders before or after submission of bids for distribution of works among bidders or fixing artificial/uncompetitive bid price with an intention to deprive the Purchaser the benefit of open competitive bid price,</p> <p>(g) Contacting the Purchaser with an intention to influence the Purchaser with regards to the bids or interference of any kind in examination and evaluation of the bids during the period from the time of opening of the bids until the notification of award of contract.</p>

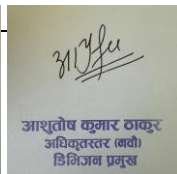


आशुतोष कुमार ठाकुर
अधिकृतस्तर (नवी)
डिभिजियन प्रमुख

	<p>3.3 PPMO, on the recommendation of the Procuring Entity may blacklist a Bidder for a period of one (1) to three (3) years for its conduct including on the following grounds and seriousness of the act committed by the bidder:</p> <ul style="list-style-type: none">(a) if convicted by a court of law in a criminal offence which disqualifies the Bidder from participating in the contract,(b) if it is established that the contract agreement signed by the Bidder was based on false or misrepresentation of Bidder's qualification information,(c) if it at any time determines that the firm has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for, or in executing, a GoN/DP-financed contract.(d) if the Successful Bidder fails to sign the Contract.
	<p>3.4 A bidder declared blacklisted and ineligible by the GoN, Public Procurement Monitoring Office (PPMO) and/or the DP in case of DP funded project, may be ineligible to bid for a contract during the period</p>



	<p>of time determined by the GoN, PPMO and/or the DP including credit information bureau of Nepal.</p> <p>3.5 In case of a natural person or firm/institution/company which is already declared blacklisted and ineligible by the GoN, any other new or existing firm/institution/company owned partially or fully by such Natural person or Owner or Board of director of blacklisted firm/institution/company; shall not be eligible bidder.</p>
	<p>3.6 Furthermore, Bidders shall be aware of the provisions of GCC 34.1(c).</p>



4. Eligible Bidders

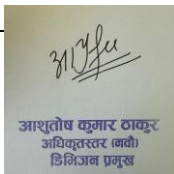
4.1 This Invitation for Bids is open to eligible Bidders from all countries, except for any ***specified in the BDS***.

4.2 A Bidder may be a natural person, private entity, government-owned entity (subject to ITB 4.5) or any combination of them with a formal intent to enter into an agreement or under an existing agreement in the form of a Joint Venture (JV). Maximum number of partners in JV shall be as ***specified in BDS***. In the case of a JV:

- (a) all parties to the JV shall be jointly and severally liable; and
- (b) a JV shall nominate a representative who shall have the authority to conduct all businesses for and on behalf of any and all the parties of the JV during the bidding process and, in the event the JV is awarded the Contract, during contract execution.

4.3 A Bidder shall not have a conflict of interest. Any Bidders found to have a conflict of interest shall be disqualified. A Bidder may be considered to be in a conflict of interest with one or more parties in this bidding process if, including but not limited to:

- (a) have controlling shareholders in common;
- (b) receive or have received any direct or indirect subsidy from any of them;
- (c) have the same legal representative for purposes of this Bid;
- (d) have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the Bid of another Bidder, or influence the decisions of the Purchaser regarding this bidding process;
- (e) a Bidder participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all Bids in which it is involved. However, this does not limit the inclusion of the same subcontractor, not otherwise participating as a Bidder, in more

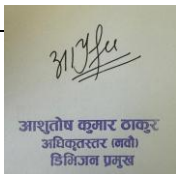


	<p>than one bid; or</p> <p>(f) a Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the goods and services that are the subject of the bid.</p> <p>(g) a Bidder that has a close business or family relationship with a professional staff of the Procuring Entity.</p> <p>4.4 A Bidder that is under a declaration of ineligibility by the GoN/DP in accordance with ITB 3.4, at the date of the deadline for bid submission or thereafter, shall be disqualified. The list of debarred firms is available at the electronic address specified in the BDS.</p> <p>4.5 A GoN-owned enterprise may also participate in the bid if it is legally and financially autonomous, it operates under commercial law, and it is not dependent agency of the Purchaser.</p> <p>4.6 Bidders shall provide such evidence of their continued eligibility satisfactory to the Purchaser, as the Purchaser shall reasonably request.</p> <p>4.7 Firms shall be excluded in any of the cases, if</p> <p>(a) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations prohibits any import of goods or Contracting of works or services from that country or any payments to persons or entities in that country.</p> <p>(b) DP Funded: as a matter of law or official regulation, GoN prohibits commercial relations with that country, provided that the DP is satisfied that such exclusion does not preclude effective competition for the supply of goods or related services required;</p> <p>(c) DP Funded: a firm has been determined to be ineligible by the DP in relation to their guidelines or appropriate provisions on preventing and combating fraud and corruption in projects financed by them.</p>
--	--



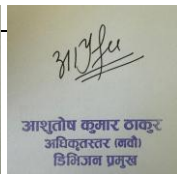
आशुतोष कुमार ठाकुर
अधिकृतस्तर (नवी)
डिभिज्जम प्रमुख

- 4.8 A bidder and all parties constituting the Bidder shall have the nationality of an eligible country as defined by the concerned DP for DP funded projects.
- 4.9 The domestic Bidder who has obtained Permanent Account Number (PAN) and Value Added Tax (VAT) registration certificate(s) and Tax clearance certificate or proof of submission of tax return from the Inland Revenue Office shall only be eligible. The foreign bidder submitting the documents ***indicated in the BDS*** at the time of bid submission and a declaration to submit the document(s) ***indicated in the BDS*** at the time of contract agreement shall only be eligible

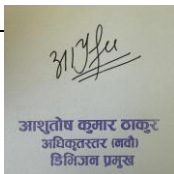


5. Eligible Goods and Related Services	<p>5.1 All goods and related services to be supplied under the contract are eligible, unless their origin is from a country <i>specified in the BDS</i>.</p> <p>5.2 For purposes of this clause, “origin” means the place where the goods are mined, grown, or produced, or the place from which the related services are supplied</p> <p>5.3 The nationality of the firm/Bidder that produces, assembles, distributes, or sells the goods shall not determine their origin.</p>
6. Site Visit	<p>6.1 For goods contracts requiring installation/ commissioning/ networking or similar services at site, the Bidder, at the Bidder’s own responsibility and risk, is encouraged to visit and examine the Site and obtain all information that may be necessary for preparing the Bid and entering into a contract for the supply of goods and related services.</p> <p>6.2 The Bidder should ensure that the Purchaser is informed of the visit in adequate time to allow it to make appropriate arrangements.</p> <p>6.3 The costs of visiting the Site shall be at the Bidder’s own expense.</p>

B. Contents of Bidding Document



7. Sections of the Bidding Document	<p>7.1 The Bidding Document consist of Parts 1, 2, and 3, which include all the Sections indicated below, and should be read and construed in conjunction with any Addenda issued in accordance with ITB 9.</p> <p>PART 1 Bidding Procedures</p> <ul style="list-style-type: none">• Section I. Instructions to Bidders (ITB)• Section II. Bid Data Sheet (BDS)• Section III. Evaluation and Qualification Criteria• Section IV. Bidding Forms <p>PART 2 Supply Requirements</p> <ul style="list-style-type: none">• Section V. Schedule of Requirements <p>PART 3 Conditions of Contract and Contract Forms</p> <ul style="list-style-type: none">• Section VI. General Conditions of Contract (GCC)• Section VII. Special Conditions of Contract (SCC) <p>Section VIII. Contract Forms</p> <p>7.2 The Purchaser will reject any Bid submission (in case of hard copy submission) if the Bidding Document was not purchased directly from</p>
--	--



	<p>the Purchaser, or through its assigned office as stated in the invitation for bids or has not deposited (in case of electronically submission) the cost of Bidding Document as stated in the invitation for bids.</p> <p>7.3 The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Document as well as in Amendments, if any. Failure to furnish all information or documentation required by the Bidding Document may result in the rejection of the Bid.</p> <p>7.4 The Invitation for Bids issued by the Purchaser is not part of the Bidding Document</p>
8. Clarification of Bidding Document/P re-bid meeting	<p>8.1 A prospective Bidder requiring any clarification of the Bidding Document shall contact the Purchaser in writing at the Purchaser's address <i>indicated in the BDS</i> or raise any question or curiosity during the pre-bid meeting if provided for in accordance with ITB 8.2. The Purchaser will respond in writing to any request for clarification, provided that such request is received within the time limit <i>specified in the BDS</i> prior to the deadline for submission of Bids. The Purchaser shall forward copies of its response to all Bidders who have acquired the Bidding Document directly from it, including a description of the inquiry but without identifying its source. Should the Purchaser deem it necessary to amend the Bidding Document as a result of a clarification, it shall do so following the procedure under ITB 9 and 24.2.</p> <p>8.2 The purchaser may organize a pre-bid meeting of Bidders at least ten (10) days before the deadline for submission of Bids at the place, date, and time as <i>specified in the BDS</i> to provide information relating to Bidding Documents, Technical specifications and the like matters. Should the purchaser deem it necessary to amend the Bidding Document as a result of a clarification, it shall do so following the procedure under ITB 9 and ITB 24.2.</p>
9. Amendment of Bidding Document	<p>9.1 At any time prior to the deadline for submission of the Bids, the Purchaser may amend the Bidding Document by issuing addenda.</p> <p>9.2 Any addendum issued shall be part of the Bidding Document and shall be communicated in writing to all who have obtained the Bidding Document directly from the Purchaser.</p> <p>9.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their Bids, the Purchaser may, at its discretion, extend the deadline for the submission of the Bids, pursuant to ITB 24.2.</p>



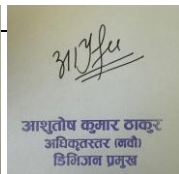
आशुतोष कुमार ठाकुर
अधिकृत (नवी)
डिभिज्म प्रमुख

C. Preparation of Bids

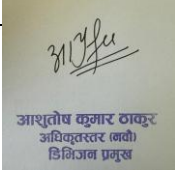
10. Cost of	10.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Purchaser shall not be responsible or
-------------	---



Bidding	liable for those costs, regardless of the conduct or outcome of the bidding process.
11. Language of Bid	11.1 The Bid, as well as all correspondence and documents relating to the Bid exchanged by the Bidder and the Purchaser, shall be written in the language <i>specified in the BDS</i> . Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language <i>specified in the BDS</i> , in which case, for purposes of interpretation of the Bid, such translation shall govern.
12. Documents Comprising the Bid	<p>12.1 The Bid shall comprise the following:</p> <ul style="list-style-type: none">(a) Letter of Bid and the applicable Price Schedules, in accordance with ITB Clauses 13, 15, and 16;(b) Bid Security in accordance with ITB 21;(c) alternative bids, at Bidder's option and if permissible, in accordance with ITB 14;(d) written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 22;(e) documentary evidence in accordance with ITB 17 establishing the Bidder's eligibility to bid;(f) documentary evidence in accordance with ITB Clauses 18 and 31, that the Goods and Related Services conform to the Bidding Document;(g) documentary evidence in accordance with ITB 19 establishing the Bidder's qualifications to perform the contract if its Bid is accepted; and(h) any other required documents, which is not against the provision of Procurement Act/Regulation/Directives and Standard Bidding Document issued by PPMO, <i>required in the BDS</i>. <p>12.2 The Bidder is solely responsible for the authenticity of the submitted documents.</p>

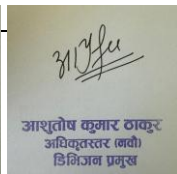


13. Letter of Bid and Price Schedules	<p>13.1 The Bidder shall submit the Letter of Bid using the form furnished in Section IV, Bidding Forms. This form must be completed without any alterations to its format, and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested.</p> <p>13.2 The Bidder shall submit the Price Schedules for Goods and Related Services, according to their origin as appropriate, using the forms furnished in Section IV, Bidding Forms</p>
--	--



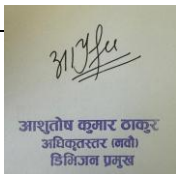
14. Alternative Bids

14.1 Unless otherwise *indicated in the BDS*, alternative bids shall not be considered.

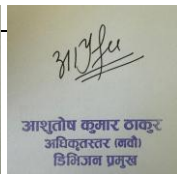


15. Bid Prices and Discounts

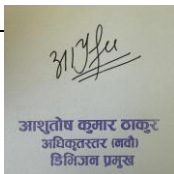
- 5.1 The prices and discounts quoted by the Bidder in the Letter of Bid and in the Price Schedules shall conform to the requirements specified below.
- 15.2 The Bidder shall complete the appropriate Price Schedule and the sources of Goods schedules included herein, stating the unit prices, total cost per item, the total Bid amount, and the expected countries of origin of the Goods to be supplied under the contract.
- 15.3 Prices quoted in the Price Schedules shall be included the cost of goods, other taxes already paid or payable on the components and raw material used in the manufacture or assembly of the item, the customs duties, transportation cost up to final delivery, insurance cost, unloading, and any other cost for (incidental) services, if any, related to the delivery of goods. All risks and responsibilities up to the final destination including installation and commissioning of Goods, if applicable, shall be borne by the Supplier. All items in the Schedule of Supply must be listed and priced separately in the Price Schedules. If a Price Schedule shows items listed but not priced, their prices shall be assumed to be included in the prices of other items. Items not listed in the Price Schedule shall be assumed not to be included in the Bid, and provided that the Bid is substantially responsive, the corresponding adjustment shall be applied in accordance with ITB 36.3. Unit rates and prices for all items in the Schedule of Supply shall be expressed in positive values. If unit rates and prices are expressed in negative values, the bid will be rejected.
- 15.4 Prices quoted by the Bidder shall be fixed during the Bidder's performance of the Contract and not subject to variation on any account, unless otherwise ***specified in the BDS***. A Bid submitted with an adjustable price quotation shall be treated as non responsive and shall be rejected, pursuant to ITB 32. However, if in ***accordance with the BDS***, prices quoted by the Bidder shall be subject to adjustment during the performance of the Contract, a Bid submitted with a fixed price quotation shall not be rejected, but the price adjustment shall be treated as zero.
- 15.5 The Bidder's separation of price components in accordance with ITB 15.2 above will be solely for the purpose facilitating the comparison of bids by the Purchaser and will not in any way limit the Purchaser's right to contract on any of the terms offered.
- 15.6 The price to be quoted in the Letter of Bid shall be the total price of the Bid excluding any discounts offered. Absence of the total bid price in the Letter of Price Bid may result in the rejection of the Bid.



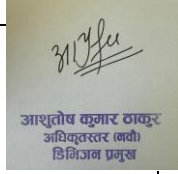
	<p>15.7 If the Bidder intends to offer any unconditional discount, it shall always be expressed in fixed percentage and that shall not vary as the quantity varies and be applicable to each unit rate. The discount and methodology for its application shall be quoted in Letter of Bid.</p> <p>15.8 If so indicated in ITB 1.1, Bids are being invited for individual contracts (lots) or for any combination of contracts (packages). Bidders wishing to offer any price discount for the award of more than one Contract shall specify in their Bids the price discount applicable to each package, or alternatively, to individual Contracts within the package. Price discounts shall be submitted in accordance with ITB 15.7, provided the Bids for all lots are submitted and opened at the same time.</p>
16. Currencies of Bid	<p>16.1 All Prices shall be quoted in Nepalese Rupees.</p>
17. Documents Establishing the Eligibility of the Bidder	<p>17.1 To establish their eligibility in accordance with ITB 4, Bidders shall:</p> <ul style="list-style-type: none">(a) complete the eligibility declarations in the Letter of Bid, included in Section IV, Bidding Forms; and(b) if the Bidder is an existing or intended JV in accordance with ITB 4.2, submit a copy of the JV Agreement, or a letter of intent to enter into such an Agreement. The respective document shall be signed by all legally authorized signatories of all the parties to the existing or intended JV, as appropriate.(c) submit the copy of the documents as <i>specified in Section III, Evaluation and Eligibility Criteria.</i>



18. Documents Establishing the Conformity of the Goods and Related Services to the Bidding Document	<p>18.1 To establish the conformity of the Goods and Related Services to the Bidding Document, the Bidder shall furnish as part of its Bid the documentary evidence that the Goods and Related Services conform to the requirements specified in Section V, Supply Requirements.</p> <p>18.2 The documentary evidence may be in the form of literature, drawings or data, and shall consist of a detailed item-by-item description of the essential technical and performance characteristics of the Goods and Related Services, demonstrating substantial responsiveness of the Goods and Related Services to those requirements, and if applicable, a statement of deviations and exceptions to the provisions of Section V, Schedule of Requirements.</p> <p>18.3 The Bidder shall also furnish a list giving full particulars, including available sources and current prices of spare parts, special tools, etc., necessary for the proper and continuing functioning of the Goods</p>
--	---

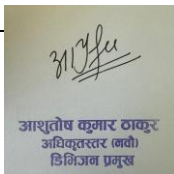


	<p>during the period specified in the BDS following commencement of the use of the goods by the Purchaser.</p> <p>18.4 Standards for workmanship, process, material, and equipment, as well as references to brand names or catalogue numbers specified by the Purchaser in the Section V, Schedule of Requirements, are intended to be descriptive only and not restrictive. The Bidder may offer other standards of quality, brand names, and/or catalogue numbers, provided that it demonstrates, to the Purchaser's satisfaction, that the substitutions ensure substantial equivalence or are superior to those specified in Section V, Schedule of Requirements.</p>
19. Documents Establishing the Eligibility of the Bidder	<p>19.1 The documentary evidence of the Bidder's eligibility to perform the contract, if its bid is accepted, shall establish to the Purchaser's satisfaction that the Bidder meets each of the Eligibility criterion specified in Section III, Evaluation and Eligibility Criteria.</p> <p>19.2 If so required in the BDS, a Bidder that does not manufacture or produce the Goods it offers to supply shall submit the Manufacturer's Authorization using the form included in Section IV, Bidding Forms to demonstrate that it has been duly authorized by the manufacturer or producer of the Goods to supply these Goods in Nepal and take care of the warranty provided.</p> <p>19.3 If so required in the BDS, a Bidder that does not conduct business within Nepal shall submit evidence that it will be represented by an Agent in Nepal equipped and able to carry out the Supplier's maintenance, repair and spare parts-stocking obligations prescribed in the Conditions of Contract and/or Technical Specifications.</p> <p>19.4 A foreign Bidder wishing to have or already having a local agent shall state the following:</p> <ol style="list-style-type: none">Name and address of the Agent/Representative,The Agent/Representative providing type of services,Amount of commission if the Agent/Representative is entitled to get such payment and if it participates in the procedure of payment,Other agreement with Agent/Representative, if any,Bidder shall certify in the Letter of Authorization as follows: <p>"We certify that the statement and disclosure made by us on the above are complete and true to the best of our knowledge and belief",</p>

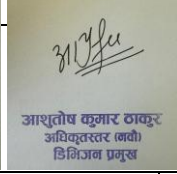


If the agent has not been appointed:

- a. Source of information about tender invitation,



	<p>b. The remuneration given to the individual or firm/company or organization to work on its behalf for submitting tender, representation in the bid opening and other required action in connection with the tender,</p> <p>c. Transfer or handover an evidence of foreign currency exchanged which required to be submitted with the tender,</p> <p>d. If the bank account of any Nepali citizen has been used for the exchange of foreign currency specify the name of the individual and his address. If the foreign currency has been exchanged by self then the certificate of currency exchange.</p> <p>19.5 If a foreign Bidder in its Bid, has not provided the information mentioned in ITB 19.4 or has submitted its bid stating that the Bidder does not have a local agent and later it is proved that the bidder has a local agent or it is proved that the commission mentioned in the Bid is less than the commission received by the local agent then the Purchaser shall initiate proceedings to blacklist such bidder in accordance with ITB 3.3.</p>
20. Period of Validity of Bids	<p>20.1 Bid shall remain valid for a period <i>specified in the BDS</i> after the bid submission deadline date prescribed by the purchaser. If the prescribed bid submission deadline date falls on a government holiday, then the next working day shall be considered as the bid submission deadline date. In such case the validity period of the bids shall be considered from the original bid submission deadline date. A bid valid for a shorter period shall be rejected by the purchaser as nonresponsive.</p> <p>20.2 In exceptional circumstances, prior to the expiration of the bid validity period, the Purchaser may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing. If a Bid Security is requested in accordance with ITB 21, it shall also be extended for a corresponding period. A Bidder may refuse the request without forfeiting its Bid Security. A Bidder granting the request shall not be required or permitted to modify its Bid and to include any additional conditions against the provisions specified in Bid Documents.</p>

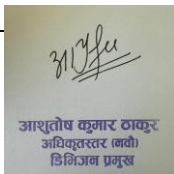


21. Bid Security

21.1 The Bidder shall furnish as part of its bid, in original form a Bid Security as ***specified in the BDS***. In case of e-submission of bid, the Bidder shall upload scanned copy of Bid security letter at the time of electronic submission of the bid. The Bidder accepts that the scanned copy of the Bid security shall, for all purposes, be equal to the original. The details of original Bid Security and the scanned copy submitted with e-bid should be the same otherwise the bid shall be non-responsive.



आशुतोष कुमार ठाकुर
अधिवक्ता (नवी)
डिजिटल प्रमुख



21.2 If a bid security is specified pursuant to ITB 21.1, the bid security shall be a demand guarantee in any of the following forms at the Bidder's option:

- (a) original copy of an unconditional bank guarantee from Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law or;
- (b) original copy of cash deposit voucher in the Purchaser 's Account as *specified in BDS*.

In case of a bank guarantee, the Bid Security shall be submitted either using the Bid Security Form included in Section IV, Bidding Forms or in another form acceptable to the purchaser. The form must include the complete name of the Bidder. The Bid Security shall be valid for minimum thirty (30) days beyond the end of the validity period of the bid, or beyond any period of extension if requested under ITB 20.2.

The bid security issued by any foreign Bank outside Nepal must be counter guaranteed by an Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law in Nepal.

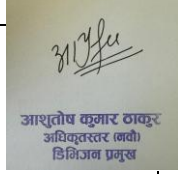
21.3 If a bid Security is required in accordance with ITB 21.1, any Bid not accompanied by an enforceable and substantially compliant Bid Security in accordance with ITB 21.2, shall be rejected by the Purchaser as nonresponsive. In case of e- Submission, if the scanned copy of an acceptable bid security letter is not uploaded with the electronic bid then bid shall be rejected.

21.4 If a Bid Security is specified pursuant to ITB 21.1, the Bid Security of unsuccessful Bidders shall be returned within three (3) days upon the successful Bidder's` furnishing of the required performance security and signing of the Contract Agreement pursuant to ITB 42.1 and 43.1.

21.5 If a Bid Security is specified pursuant to ITB 21.1, the Bid Security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the Contract Agreement and furnished the required Performance Security.

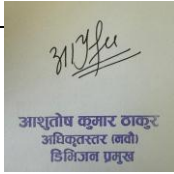
21.6 The Bid Security may be forfeited:

- (a) a Bidder requests for withdrawal or modification of its bid, except as provided in ITB 20.2
 - (i) during the period of bid validity specified by the Bidder on the Letter



of Bid, in case of electronic submission;

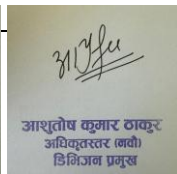
(ii) from the period twenty-four hours prior to bid submission deadline up



to the period of bid validity specified by the Bidder on the Letter of Bid, in case of hard copy submission.

- (b) a Bidder changes the prices or substance of the bid while providing information pursuant to clause 29.1;
- (c) a Bidder involves in fraud and corruption pursuant to clause 3.1;
- (d) the successful Bidder fails to:
 - (i) furnish a performance security in accordance with ITB 42.1;
 - (ii) sign the Contract in accordance with ITB 43.1; or
 - (iii) accept the correction of arithmetical errors pursuant to clause 34.

21.7 The Bid Security of a JV must be in the name of the JV that submits the bid. If the JV has not been legally constituted at the time of bidding, the Bid Security shall be in the names of all future partners as named in the letter of intent mentioned in ITB 17.1 (b).

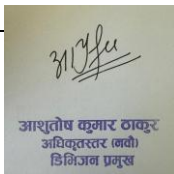


22. Format and Signing of Bid

22.1 The Bidder shall prepare one original set of the documents comprising the bid as described in ITB 12 and clearly mark it "ORIGINAL". Alternative bids, if permitted in accordance with ITB 14, shall be clearly marked "ALTERNATIVE". In addition, the Bidder shall submit copies of the bid, in the number specified in the BDS and clearly mark each of them "COPY NO... - BID". In the event of any discrepancy between the original and the copies, the original shall prevail.

In case of e-submission of bid, the Bidder shall submit his bid electronically in PDF or online forms files as specified in ITB Clause 23.1(b). If a Bidder submits both the electronic bid and a bid in hard copy within the bid submission deadline, then the submitted Bids shall be accepted for evaluation provided that the facts and figures in hard copy confirm to those in electronic bid. If there is any major discrepancy in fact and figures in the electronic bid and bid in hard copy, it shall be treated as two separate bids from one Bidder and both the Bids shall be disqualified, as per ITB Clause 4.3 (e).

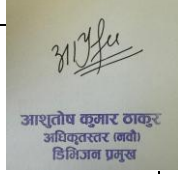
22.2 The original and all copies of the bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as ***specified in the BDS*** and shall be attached to the Bid. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the bid, except for unamended printed literature, shall be signed or initialed by the person signing the bid.



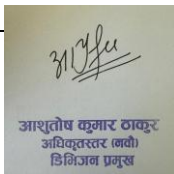
	22.3 Any amendments such as interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Bid.
--	--

D. Submission and Opening of Bids

23. Sealing and Marking of Bids	<p>23.1 Unless otherwise specified in BDS, Bidders shall submit their bids by electronic or by mail/ by hand/ by courier. Procedures for submission, sealing and marking are as follows:</p> <p>(a) Bidders submitting bids by mail, by hand or by Courier shall enclose the original and each copy of the Bid, including alternative bids, if permitted in accordance with ITB 14, in separate sealed envelopes, duly marking the envelopes as “ORIGINAL”, “ALTERNATIVE” and “COPY No.... –BID” as appropriate. These envelopes containing the original and the copies shall then be enclosed in one single envelope.</p> <p>(b) Bidders submitting Bids electronically shall follow the electronic bid submission procedure specified in this clause.</p> <p>i. The bidder is required to register in the e-GP system https://www.bolpatra.gov.np/egp following the procedure specified in e-GP guideline.</p> <p>ii. Interested bidders may either purchase the bidding document from the Employer's office as specified in the Invitation for Bid (IFB) or bidders may download the IFB and bidding document from e-GP system.</p> <p>iii. The registered bidders need to maintain their profile data required during preparation of bids.</p> <p>iv. In order to submit their bids the cost of the bidding document can be deposited as specified in IFB. In addition, electronic scanned copy (.pdf format) of the bank deposit voucher/cash receipt should also be submitted along with the technical bid.</p>
--	---



- v. The bidder can prepare their technical and price bids using data and documents maintained in bidder's profile and forms/format provided in bidding document by Employer. The bidder may submit bids as a single entity or as a joint venture. The bidder submitting bid in joint venture shall have to upload joint venture agreement along with partner(s) Bolpatra ID provided during bidder's registration.



vi. Bidders (all partners in case of JV) should update their profile data and documents required during preparation and submission of their technical bids.

vii. In case of bid submission in JV, the consent of the partners shall be obtained through the confirmation link sent to the registered email address and the partners shall have to acknowledge their confirmation.

The required documents and forms shall be prepared in PDF form and/or shall be filled in the web forms in the e-GP system as specified below.

No.	Document	Requirement	Remarks
1.	Letter of Bid	Mandatory	PDF
2.	Bid Security/Bank Guarantee	Mandatory	PDF
3.	Company Registration Certificate	Mandatory	PDF
4.	VAT Registration Certificate	Mandatory (for domestic bidders only)	PDF
5.	Business Registration Certificate	Mandatory	PDF
6.	Tax Clearance Certificate/Tax return submission evidence/evidence of time extension for FY 2081/82	Mandatory (for domestic bidders only)	PDF
7.	Power of Attorney of Bid signatory	Mandatory	PDF
8.	Bank Voucher for cost of bid document	Mandatory	PDF
9.	Joint venture agreement	Mandatory in case of JV Only	PDF
10.	Eligibility Documents	Mandatory	PDF



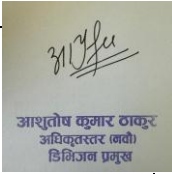
आशुतोष कुमार ठाकुर
अधिकृतस्तर (नवी)
डिजिटल प्रमुख

		11.	Completed Price Schedule	Mandatory	Online Forms
		12.	Technical Specification	Mandatory	PDF or Online Forms



आशुतोष कुमार ठाकुर
अधिकृतस्तर (नवी)
डिजिटल प्रमुख

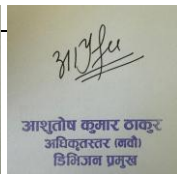
	13.	Delivery and Completion Schedule	Mandatory	PDF or Online Forms
	14.	Additional documents] specified in ITB 12.1 (h)	Mandatory (If any)	PDF



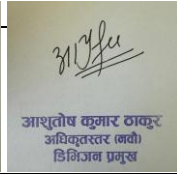
आशुतोष कुमार ठाकुर
अधिष्ठाता (नवी)
डिजिटल प्रमुख

Note:

- a) ***The documents specified as “Mandatory” should be included in e-submission and non-submission of the documents shall be considered as non-responsive bid.***
 - b) *Bidders (all partners in case of JV) should verify/update their profile documents as appropriate for the specific bid before submitting their bid electronically.*
- viii. After providing all the details and documents, two separate bid response documents i.e technical bids and price bids will be generated from the system. Bidders are advised to download and verify the response documents prior to bid submission.
- ix. For verifying the authentic user, the system will send one time password (OTP) in the registered e-mail address of the bidder. System will validate the OTP and allow bidder to submit their bid.
- x. Electronically submitted bids can be modified and/or withdrawn through system. The bidder may modify their bids multiple times online within bid submission date and time specified in e-GP system. Once a Bid is withdrawn, bidder won't be able to submit another bid response for the same bid.
- xi. The Bidder / Bid shall meet the following requirements and conditions for e-submission of bids;
- aa) The e-submitted bids must be readable through PDF reader.
 - bb) The facility for submission of bid electronically through e-submission is to promote transparency, non-discrimination, equality of access, and open competition in the bidding process. The Bidders are fully responsible to use the e- submission facility properly in e-GP system as per specified procedures and in no case the Employer shall be held liable for Bidder's inability to use this facility.



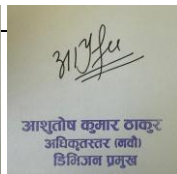
	<p>cc) When a bidder submits electronic bid through the PPMO e-GP portal, it is assumed that the bidder has prepared the bid by studying and examining the complete set of the Bidding documents including specifications, drawings and conditions of contract.</p> <p>23.2 The inner and outer envelopes shall:</p> <ul style="list-style-type: none">(a) bear the name and address of the Bidder;(b) be addressed to the Purchaser in accordance with ITB 24.1; and(c) bear a warning "NOT TO OPEN BEFORE THE TIME AND DATE FOR BID OPENING"(d) bear the specific identification of this bidding process indicated in BDS 1.1. <p>23.3 If all envelopes are not sealed and marked as required, the Purchaser will assume no responsibility for the misplacement or premature opening of the bid.</p>
24. Deadline for Submission of Bids	<p>24.1 Bids must be received by the Purchaser at the address and no later than the date and time <i>indicated in the BDS</i>. In case of e-submission, the standard time for e-submission is Nepal Standard Time as set out in the server. The e-procurement system will accept the e-submission of bid from the date of publishing of notice and will automatically not allow the e-submission of bid after the deadline for submission of bid.</p> <p>24.2 The Purchaser may, at its discretion, extend the deadline for the submission of Bids by amending the Bidding Document in accordance with ITB 9, in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended. However, the time available to submit bids shall not be less than five (5) days since amendment in bidding document.</p>
25. Late Bids	<p>25.1 The Purchaser shall not consider any Bid that arrives after the deadline for submission of Bids, in accordance with ITB 24. Any Bid received by the Purchaser after the deadline for submission of Bids shall be declared late, rejected, and returned unopened to the Bidder.</p>



26. Withdrawal, or Modification of Bids	<p>26.1 A bidder may withdraw, or modify its bid after it has been submitted either in hard copy or by e-Submission. Once a Bid is withdrawn, bidder shall not be able to submit another bid for this bidding process. Procedures for withdrawal or modification of submitted bids are as follows:</p> <p>GoN Funded:</p>
--	--



आशुतोष कुमार ठाकुर
अधिवक्ता (नवी)
डिजिटल प्रमुख



(i) Bids submitted in hard Copy

a) Bidders may withdraw or modify its bids by sending a written notice in a sealed envelope, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITB 22.2 before 24 hours prior to the last deadline of submission of bid. The corresponding modification of the bid must accompany the respective written notice. All notices must be:

- (aa) prepared and submitted in accordance with ITB 22 and ITB 23, and in addition, the respective envelopes shall be clearly marked "WITHDRAWAL", "MODIFICATION;" and
- (bb) received by the Purchaser 24 hours prior to the deadline prescribed for submission of bids, in accordance with ITB 24.

DP Funded:

Bidders may withdraw or modify its Bid – Technical or Price – after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITB 22.2. The corresponding modification of the Bid must accompany the respective written notice. All notices must be

- (aa) prepared and submitted in accordance with ITB 22 and ITB 23, and in addition, the respective envelopes shall be clearly marked "WITHDRAWAL," and "MODIFICATION;" and
- (bb) received by the Employer prior to the deadline prescribed for submission of Bids, in accordance with ITB 24.

ii) E-submitted bids.

a) Bidder may submit modification or withdrawal prior to the deadline prescribed for submission of bids through e-GP system by using the forms and instructions provided by the system. Once a Bid is withdrawn, bidder shall not able to submit another bid for the same bid.

26.2 Bids requested to be withdrawn in accordance with ITB 26.1 (i) shall be returned unopened to the Bidders after the end of bid opening process.

26.3 The following provisions apply for withdrawal or modification of the Bids:

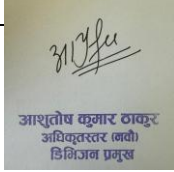
GoN Funded

- (i) In case of bids submitted in hard copy no bid shall be withdrawn or modified in the interval between 24 hours prior time of the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Letter of Bid or any extension thereof.

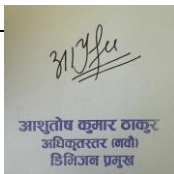


आशुतोष कुमार ठाकुर
अधिकृतस्तर (नवी)
डिजिटल प्रमुख

- (ii) In case of e-submitted bids no bids shall be withdrawn or modified in the interval between deadline for submission of



	<p>bids and the expiration of the period of bid validity specified by the Bidder on the bid submission form or any extension there of.</p> <p>DP Funded</p> <p>No Bid may be withdrawn or modified in the interval between the deadline for submission of Bids and the expiration of the period of bid validity specified by the Bidder on the Letters of Technical Bid and Price Bid or any extension thereof.</p> <p>26.4 Except in case of any modification or correction in bid document made by procuring entity, Bidder may submit request for withdrawal or modification only one time.</p> <p>26.5 In case of hard copy bid, no bid may be withdrawn if the bid has already been modified; except in case of any modification or correction in bid document by procuring entity.</p> <p>26.6 Request for withdrawal or modification must be made through the same medium of submission. Request for withdrawal or modifications through different medium shall not be considered.</p>
--	--



	<p>recorded with the corresponding Bid. No Bid shall be modified unless the corresponding Modification Notice contains a valid authorization to request the modification and is read out and recorded at bid opening. Only envelopes that are opened, read out, and recorded at bid opening shall be considered further.</p> <p>27.5 All other envelopes shall be opened one at a time, and the following read out and recorded: the name of the Bidder; the Bid Price(s) (per lot/package if applicable), including any discounts and alternative bids and indicating whether there is a modification;; the presence of a Bid Security, and any other details as the Purchaser may consider appropriate. Only discounts and alternative offers read out and recorded at bid opening shall be considered for evaluation. No Bid shall be rejected at bid opening except for late bids, in accordance with ITB 25.1.</p> <p>27.6 The opening committee shall prepare a record of the bid opening that shall include, as a minimum: the name of the Bidder and whether there is a withdrawal, or modification; the Bid Price, per lot if applicable, any discounts and alternative offers if they were permitted; and the presence or absence of a Bid Security. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders who submitted bids in time, and posted online when electronic bidding is permitted. The Bidders' representatives who are present shall also be requested to sign an attendance sheet.</p>
--	--

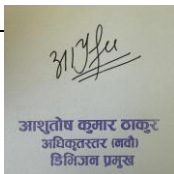
E. Evaluation and Comparison of Bids

28. Confidentiality	<p>28.1 Information relating to the examination, evaluation, comparison, and recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with such process until publication of the Contract award; thereafter, information will be disclosed in accordance with ITB 41.1.</p> <p>28.2 Any attempt by a Bidder to influence the Purchaser in the examination, evaluation, and comparison of the Bids or Contract award decisions may result in the rejection of its Bid.</p> <p>28.3 Notwithstanding ITB 28.2, from the time of bid opening to the time of Contract award, if any Bidder wishes to contact the Purchaser on any matter related to the bidding process, it should do so in writing.</p>
----------------------------	--

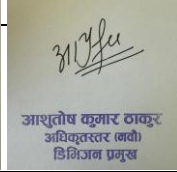


आशुतोष कुमार ठाकुर
अधिकृत (नवी)
डिभिज्म प्रमुख

29. Clarification of Bids	29.1 To assist in the examination, evaluation, and comparison of the Bids, the Purchaser may, at its discretion, ask any Bidder for a clarification of its Bid. Any clarification submitted by a Bidder with regard to its Bid and that is not in response to a request by the Purchaser shall not
--------------------------------------	--



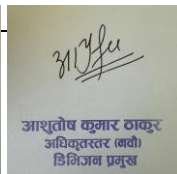
	<p>be considered. The Purchaser's request for clarification and the response shall be in writing. No change in the prices or substance of the Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Purchaser in the evaluation of the Bids, in accordance with ITB 34. In case of e-submission of bid, upon notification from the purchaser, the bidder shall also submit the original of documents comprising the Bid as per ITB 12.2 and ITB 12.3 for verification of submitted documents for acceptance of the e-submitted bid.</p> <p>29.2 If a Bidder does not provide clarifications of its Bid by the date and time set in the purchaser's request for clarification, its Bid may be rejected.</p>
30.Deviations, Reservations, and Omissions	<p>30.1 During the evaluation of bids, the following definitions apply:</p> <p>(a) "Deviation" is a departure from the requirements specified in the Bidding Document;</p> <p>(b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Document; and</p> <p>(c) "Omission" is the failure to submit part or all of the information or documentation required in the Bidding Document.</p>
31. Examination of Bid	<p>31.1 The purchaser shall examine the Bid to confirm that all documents and technical information requested in ITB 12.1 have been submitted. If any of these documents or information (except alternative Bid which is optional) is missing, the bid shall be rejected.</p> <p>31.2 In case of e-submission bids, the Employer shall confirm that all the documents and information requested in ITB 23.1 have been submitted. If any of these documents or information is missing, the bid shall be rejected.</p>



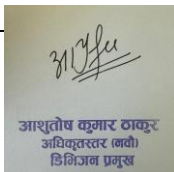
32. Determination of Responsiveness	<p>32.1 The Purchaser's determination of the responsiveness of a Bid is to be based on the contents of the Bid itself, as defined in ITB 12.1.</p> <p>32.2 A substantially responsive bid is one that meets the requirements of the Bidding Document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that,</p> <p>(a) if accepted, would:</p> <p>(i) affect in any substantial way the scope, quality, or performance of the Goods and Related Services specified in Section V, Schedule of Requirements; or</p> <p>(ii) limits in any substantial way, inconsistent with the Bidding</p>
--	---



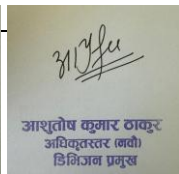
	<p>Document, the Purchaser's rights or the Bidder's obligations under the proposed Contract; or</p> <p>(b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive bids.</p> <p>32.3 The Purchaser shall examine the technical aspects of the bid in particular, to confirm that all requirements of Section V, Schedule of Requirements have been met without any material deviation or reservation.</p> <p>32.4 If a bid is not substantially responsive to the requirements of the Bidding Document, it shall be rejected by the Purchaser and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.</p> <p>32.5 In case of e-submission bids, the purchaser evaluates the bid on the basis of the information in the electronically submitted bid files. If the Bidder cannot substantiate or provide evidence to establish the information provided in e-submitted bid through documents/clarifications as per ITB Clause 29.1, the bid shall not be considered for further evaluation.</p> <p>32.6 In Case, a corruption case is being filed to Court against the Natural Person or Board of Director of the firm/institution /company or any partner of JV, such Natural Person or Board of Director of the firm/institution /company or any partner of JV such bidder's bid shall be excluded from the evaluation, if public entity receives instruction from Government of Nepal.</p>
--	---



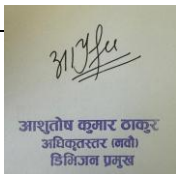
33. Non-material Non-conformities	<p>33.1 The Purchaser may regard a Bid as responsive even if it contains minor deviations that do not materially alter or depart from the characteristics, terms, conditions and other requirement set forth in the Bidding Document or if it contains errors or oversights that are capable of being corrected without affecting the substance of the Bid.</p> <p>33.2 Provided that a Bid is substantially responsive, the Purchaser may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify non-material non-conformities or omissions in the Bid related to documentation requirements. Requesting information or documentation on such non-conformities shall not be related to any aspect of the price of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.</p> <p>33.3 Provided that a Bid is substantially responsive, the Purchaser shall rectify non-material non-conformities or omissions. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of the missing or non-conforming item or component. The</p>
--	--



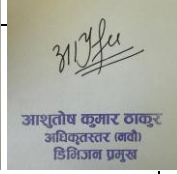
	<p>adjustment shall be made using the method indicated in Section III, Evaluation and Qualification Criteria.</p> <p>33.4 If small differences are found such as in technical specification, description, feature which does not make the bid to be rejected, then the cost, which is calculated to the extent possible due to such differences, shall be included while evaluating bid.</p> <p>33.5 If the value is found fifteen percent more than the quoted amount of the bidder on account of small differences pursuant to ITB 33.4, such bid shall be considered irresponsive in substance and shall not be considered for evaluation.</p>
34. Correction of Arithmetical Errors	<p>34.1 Provided that the Bid is substantially responsive, the Purchaser shall correct arithmetical errors on the following basis:</p> <ul style="list-style-type: none">a) if there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected;b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected;c) If there is a discrepancy between the bid price in the Summary of price schedule and the bid amount in item (c) of the Letter of Bid, the bid price in the Summary of price schedule will prevail and the bid amount in item (c) of the Letter of Bid will be corrected; andd) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above. <p>34.2 If the Bidder that submitted the lowest evaluated Bid does not accept the correction of errors, its Bid shall be rejected and the bid security shall be forfeited.</p>



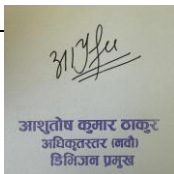
35. Goods manufactured in Nepal to be procured	<p>35.1 If the price of goods manufactured in Nepal, are higher up to fifteen percent than that of manufactured in foreign countries, the goods manufactured in Nepal shall be preferred in the evaluation of the Bids.</p> <p>35.2 For granting such preference pursuant to 35.1, the bidder must submit the country of origin issued by competent authority stating that the value added of the goods in Nepal is more than 30 percent.</p> <p>35.3 In case of granting preference, responsive bids shall be classified in one</p>
---	--



	<p>of the two groups; Group A (bids offering Goods manufactured in Nepal) and Group B (bids offering Goods manufactured outside Nepal). Lowest evaluated bids from each group shall be identified and compared. If as a result of the comparison, the lowest evaluated bid is a bid from group B, the lowest evaluated bid from group B shall be compared with the lowest evaluated bid from group A after adding to the evaluated price of goods offered in the bid from group B, for the purpose of this comparison only, an amount equal to fifteen (15%) percent of the bid price. The lowest evaluated bid determined from this last comparison shall be selected.</p> <p>35.4 In supply, delivery and installation contracts in which there are a number of items of Goods and Related Services, preference margin shall not be applied to the whole package but only to the eligible domestically produced Goods within the package. In the comparison of Bids, only the price in each Bid of the Goods offered from outside Nepal shall be increased by fifteen (15%) percent.</p>
36.Evaluation and Comparison of Bids	<p>36.1 The Purchaser shall evaluate and compare all substantially responsive Bids to determine the lowest evaluated bid.</p> <p>36.2 To evaluate a Bid, the Purchaser shall only use all the criteria and methodologies defined in this Clause and in Section III, Evaluation and Eligibility Criteria. No other criteria or methodology shall be permitted.</p> <p>36.3 To evaluate a Bid, the Purchaser shall consider the following:</p> <ul style="list-style-type: none">(a) the bid price as quoted in accordance with ITB 15 as specified in BDS;(b) adjustment for correction of arithmetic errors in accordance with ITB 34.1;(c) adjustment due to discounts offered in accordance with ITB 15.7;(d) adjustment for nonmaterial nonconformities in accordance with ITB 33.3 ; and



- (e) adjustment due to application of the evaluation criteria **specified in the BDS** from amongst those set out in Section III (Evaluation and Eligibility Criteria). These criteria may include factors related to the characteristics, performance, and terms and conditions of purchase of the Goods and Related Services which shall be expressed to the extent practicable in monetary terms to facilitate comparison of bids unless otherwise specified in Section III.
- (f) adjustment due to the application of a margin of preference in accordance with ITB clause 35.



	<p>36.4 Any allowance for price adjustment during the period of performance of the Contract, if provided in the Bid, shall not be taken into account in bid evaluation.</p> <p>36.5 If this Bidding Document allows Bidders to quote separate prices for different lots/packages, and to award multiple Contracts to a single Bidder, the methodology to determine the lowest evaluated price of the Contract combinations, including any discounts offered in the Letter of Bid, is specified in Section III (Evaluation and Eligibility Criteria).</p> <p>36.6 In Case, a corruption case is being filed to Court against the Natural Person or Board of Director of the firm/institution /company or any partner of JV, such Natural Person or Board of Director of the firm/institution /company or any partner of JV such bidder's bid shall be excluded from the evaluation, if public entity receives instruction from Government of Nepal.</p>
37. Post-qualification of the Bidder	<p>37.1 The Purchaser shall determine to its satisfaction whether the Bidder that is selected as having submitted the lowest evaluated and substantially responsive Bid is qualified to perform the Contract satisfactorily.</p> <p>37.2 The determination shall be based upon an examination of the documentary evidence of the Bidder's eligibility submitted by the Bidder, pursuant to ITB 19.</p> <p>37.3 An affirmative determination shall be a prerequisite for award of the Contract to the Bidder. A negative determination shall result in disqualification of the Bid, in which event the Purchaser shall proceed to the next lowest evaluated bid to make a similar determination.</p>
38. Purchaser's Right to Accept Any Bid, and to Reject Any or All Bids	<p>38.1 The Purchaser reserves the right to accept or reject any Bid, and to cancel the bidding process and reject all Bids at any time prior to Contract award, without thereby incurring any liability to the Bidders.</p>

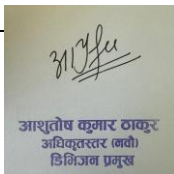
F. Award of Contract

39. Award Criteria	<p>39.1 The Purchaser shall select to award the Contract to the Bidder whose offer has been determined to be the lowest evaluated Bid and is substantially responsive to the Bidding Document, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily.</p>
---------------------------	---



आशुतोष कुमार ठाकुर
अधिकृतस्तर (नवी)
डिभिज्जम प्रमुख

40.Purchaser's Right to Vary Quantities at Time of Award	40.1 At the time the Contract is awarded, the Purchaser reserves the right to increase or decrease the quantity of Goods and Related Services originally specified in Section V, Schedule of Requirements, provided this does not exceed the percentages <i>indicated in the BDS</i> , and without any change in the unit prices or other terms and conditions of the Bid and the Bidding Document.
---	--

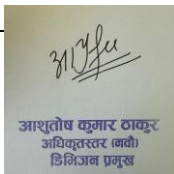


41. Notification of Intention to Award	<p>41.1 The Purchaser shall notify the concerned Bidder whose bid has been selected in accordance with ITB 39.1 within seven days of the selection of the bid, in writing that the Purchaser has intention to accept his/her bid and shall Inform via the Letter of Intention included in the Contract Forms and the information of name, address and amount of selected bidder shall be given to all other bidders who submitted the bid.</p> <p>41.2 If no bidder submits an application pursuant to ITB 44.1 within a period of seven days of providing the notice under ITB 41.1 the Purchaser shall accept the bid selected in accordance with ITB 39.1 prior to the expiry of bid validity period, and notification of award shall be communicated to the bidder to furnish the performance security and sign the contract within fifteen days.</p> <p>41.3 In Case, a corruption case is being filed to Court against the Natural Person or Board of Director of the firm/institution /company or any partner of JV, such Natural Person or Board of Director of the firm/institution /company or any partner of JV such bidder's bid shall be excluded from the evaluation, if public entity receives instruction from Government of Nepal.</p>
42. Performance Security	<p>42.1 Within fifteen (15) days of the receipt of notification of award from the Purchaser, the successful Bidder shall furnish the Performance Security in accordance with the GCC, as specified below from Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law in Nepal using Sample Form for the Performance Security included in Section VIII (Contract Forms) or another form acceptable to the Purchaser.</p> <p>i) If bid price of the bidder selected for acceptance is up to 15 (fifteen) percent less than the approved cost estimate, the performance security amount shall be 5 (five) percent of the bid price.</p> <p>ii) For the bid price of the bidder selected for acceptance is more than 15 (fifteen) percent below of the cost estimate, the performance security amount shall be determined as follows:</p> <p>Performance Security Amount = [(0.85 x Cost Estimate – Bid Price) x 0.5] + 5% of Bid Price.</p> <p>The Bid Price and Cost Estimate shall be exclusive of Value Added Tax.</p>

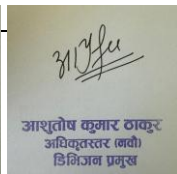


आशुतोष कुमार ठाकुर
अधिकृतस्तर (नवी)
डिजिटल प्रमुख

42.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or sign the Contract Agreement shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security and black listing. In that event the Purchaser shall award the Contract to the next lowest evaluated Bidder whose offer is substantially responsive and is determined by the Purchaser to be



	qualified to perform the Contract satisfactorily.
43. Signing of Contract	<p>43.1 The successful Bidder shall sign the contract in the form included in section VIII after the submission of performance security in accordance with ITB 42.</p> <p>43.2 At the same time, the Employer shall affix a public notice on the result of the award on its notice board and make arrangement for causing such notice to be affixed on the notice board also of the <i>District Coordination Committee, District Administration Office, Provincial Treasury and Controller Office and District Treasury and Controller Office</i>. The Employer may make arrangements to post the notice into its website, if it has; and if it does not have, into the website of the Public Procurement Monitoring Office, identifying the bid and lot/package numbers and the following information: (i) the result of evaluation of bid; (ii) date of publication of notice inviting bids; (iii) name of newspaper; (iv) reference number of notice; (v) item of procurement; (vi) name and address of bidder making contract and (viii) contract Price.</p> <p>43.3 The Purchaser shall promptly respond in writing to any unsuccessful Bidder who, within thirty days from the date of issuance of notification pursuant to ITB 41.1, requests in writing the grounds on which its bid was not selected.</p> <p>43.4 If the bidder whose bid has been accepted fails to sign the contract as stated ITB 43.1, the Public Procurement Monitoring Office shall blacklist the bidder on recommendation of the Public Entity.</p>



44.Complaint and Review

44.1 If a Bidder dissatisfies with the Procurement proceedings or the decision made by the Purchaser in the intention to award the Contract, it may file an application to the Chief of the concerning Public Entity of the Purchaser within seven (7) days of having, receipt of such notice or decision making, for review of the proceedings stating the factual and legal grounds.

44.2 An application filed after the deadline pursuant ITB 44.1 shall not be processed.

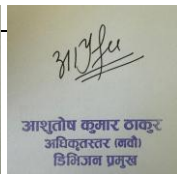
44.3 The chief of Public Entity of the Purchaser shall, within five (5) days after receiving the application, give its decision with reasons, in writing pursuant to ITB 44.1:

- (a) whether to suspend the procurement proceeding and the procedure for further proceedings to be adopted; or
- (b) whether or not to reject a application.

No application can be submitted before the Review Committee for review against the decision made by the chief of the Public Entity for

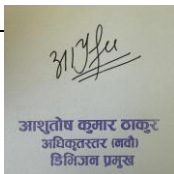


आशुतोष कुमार ठाकुर
अधिवक्ता (नवी)
डिजिटल प्रमुख



the Bid amount up to the value *as stated in BDS*.

- 44.4 If the Bidder is not satisfied with the decision of the Public Entity in accordance with ITB 44.3, or the decision by the Public Entity is not given within five (5) days of receipt of application pursuant to ITB 44.1, it can, within seven (7) days of receipt of such decision, file an application to the Review Committee of the GoN, stating the reason of its disagreement on the decision of the chief of Public Entity and furnishing the relevant documents, provided that its Bid amount is above the amount as stated in ITB 44.3. The application may be sent by hand, or by post, or by courier, or by electronic media at the risk of the Bidder itself.
- 44.5 Late application filed after the deadline pursuant to ITB 44.4 shall not be processed.
- 44.6 Within three (3) days of the receipt of application from the Bidder, pursuant to ITB 44.4, the Review Committee shall notify the concerning Public Entity of the Purchaser to furnish its procurement proceedings and comments on the issue, pursuant to ITB 44.3.
- 44.7 Within three (3) days of receipt of the notification pursuant to ITB 44.6, the Public Entity shall furnish the copy of the related documents along with its comment or reaction of complaint to the Review Committee.
- 44.8 The Review Committee, after inquiring from the Bidder and the Public Entity, if needed, shall give its decision within one (1) month after receiving the application filed by the Bidder, pursuant to ITB 44.4.
- 44.9 The Bidder, filing application pursuant to ITB 44.4, shall have to furnish a cash amount or Bank guarantee from Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law *as stated in BDS* with the validity period of at least ninety (90) days from the date of the filing of application pursuant to ITB 44.4. Application filed without furnishing the security deposit shall not be processed.
- 44.10 If the claim made by the Bidder pursuant to ITB 44.4 is justified, the Review Committee shall have to return the security deposit to the applicant, pursuant to ITB 44.9, within seven (7) days of such decision made.
- 44.11 If the claim made by the Bidder pursuant to ITB 44.4 is rejected by the Review Committee, the security deposit submitted by the Bidder pursuant to ITB 44.9 shall be forfeited.



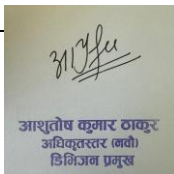
Section II. Bid Data Sheet

A. Introduction	
ITB 1.1	The number of the Invitation for Bids (IFB) is: wssdobhojpur/208283/NCB1
ITB 1.1	Name of the Purchaser: Water Supply and Sanitation Division Office, Bhojpur (Ministry of Water Supply, Irrigation and Energy, Koshi Province)
ITB 1.1	Name and Identification number of the Contract/s (Packages/Lots): wssdobhojpur/208283/NCB1/Goods/HDPE/Lomakhola-Jarayotar
ITB 2.1	Source of Fund: Koshi Province Government funded Name of contract/s: Supply, transportation, delivery and unloading of HDPE pipe (PE-100 PN SDR, NS:40:2079) for different water supply projects of Bhojpur district
ITB 4.1	Bidders from the following countries are not eligible: Not Applicable



आशुतोष कुमार ठाकुर
अधिवक्ता (नवी)
डिभिजन प्रमुख

ITB 4.2	For GoN Funded: Maximum number of partner in a joint venture shall be : 2 (two)
ITB 4.4	A list of debarred firms is available at http://www.ppmo.gov.np and

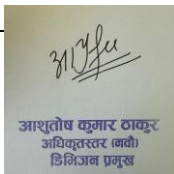


ITB 4.9	The foreign Bidder at the time of bid submission: Not Applicable
ITB 5.1	Goods and related services to be supplied from following countries are not eligible: Not Applicable
B. Bidding Document	
ITB 8.1	For clarification purposes only, the Purchaser's address is: Attention: Division Chief Name of the Purchaser: Water Supply and Sanitation Division Office, Bhojpur City/Town: Bhojpur Municipality-7 District: Bhojpur Country: Nepal Mobile: 9852088699 Facsimile Number: Electronic Mail Address: wssdo.bhojpur10@gmail.com
ITB 8.1	The purchaser will respond in writing to any request for clarification provided that such request is received no later than 10 days prior to the deadline date for submission of bid.
ITB 8.2	Pre-Bid meeting shall not be organized.
C. Preparation of Bids	
ITB 11.1	The language of the Bid is: Nepali or English

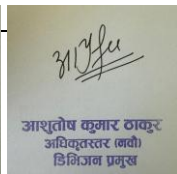


आशुतोष कुमार ठाकुर
अधिकृत (नवी)
डिभिज्म प्रमुख

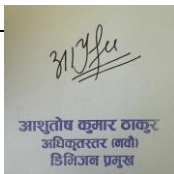
ITB 12.1 (h)	The Bidder shall submit the following additional documents with its Bid: NA
--------------	---



ITB 14.1	Alternative Bids <i>shall not be</i> permitted
ITB 15.3	The prices quoted by the Bidder shall: not be Adjustable
ITB 19.2	<i>[Select one among the following options]:</i> (b) For procurement that involves high-value and technically complex items <i>"A Manufacturer's Authorization letter is required for all the items listed in Section V Schedule of Requirements"</i>
ITB 19.3	The Bidder is not required to include with its bid, evidence that it will be represented by an Agent in Nepal.
ITB 20.1	The bid validity period shall be 90 days .
ITB 21.1	The bid must be accompanied by bid security, amounting to a minimum of NRs 2,00,000/- which shall be valid for minimum 30 days beyond the bid validity period
ITB 21.2	If the Bidder wishes to submit the Bid Security in the form of cash, the cash should be deposited in Deposit Account No.: KHA-2-3 (PRA.LE.NI.KA) 2040100202030000 (Dharauti Khata) Bank: Rastrya Banijya Bank, Bhojpur Branch and submit the receipt of the deposited amount of cash along with the bid.
ITB 22.2	The written confirmation of Authorization to sign on behalf of the Bidder shall consist of: Power of Attorney to sign the bid
D. Submission and Opening of Bids	
ITB 23.1	Bidders shall have the option of submitting their bids: by electronic mode only



ITB 24.1	For bid submission purposes only, the Purchaser's address is: Water Supply & Sanitation Division Office, Bhojpur Bhojpur Municipality 7
ITB 24.1	The deadline for bid submission is: Date: 21 December 2025 (6 Paush 2082) Time: 12:00
ITB 24.1	If the last date of purchasing, submission and opening of Bid falls on a government holiday then the next working day shall be considered as the

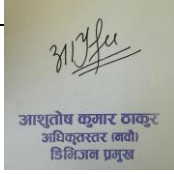


	last day without any change in the time and place as fixed.
ITB 27.1	<p>The bid opening shall take place at:</p> <p>Date: 21 December 2025 (6 Paush 2082)</p> <p>Time: 13:00 hrs</p> <p>Place: Water Supply and Sanitation Division Office, Bhojpur</p>
E. Evaluation and Comparison of Bids	
ITB 36.3 (a)	Bids will be evaluated lot by lot/package (may be multiple or single). If a Price Schedule shows items listed but not priced, their prices shall be assumed to be included in the prices of other items. An item not listed in the Price Schedule shall be assumed to be not included in the bid, and provided that the bid is substantially responsive, the average price of the item quoted by substantially responsive bidders will be added to the bid price and the equivalent total cost of the bid so determined will be used for price comparison.
ITB 36.3 (e)	<p>The adjustments shall be determined using the following criteria, from amongst those set out in Section III, Evaluation and Qualification Criteria: <i>[refer to Schedule III, Evaluation and Qualification Criteria; insert complementary details if necessary]</i></p> <p>(a) Deviation in Delivery schedule: No</p> <p>(b) Deviation in payment schedule: No</p> <p>(c) the cost of major replacement components, mandatory spare parts, and service: No</p> <p>(d) the availability of spare parts in Nepal and after-sales services for the equipment offered in the bid: No</p> <p>(e) the projected operating and maintenance costs during the life of the equipment: No</p> <p>(f) the performance and productivity of the equipment offered: No</p>
F. Award of Contract	

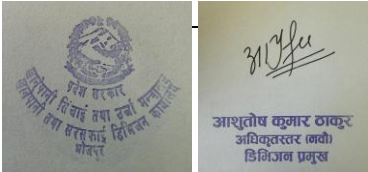


आशुतोष कुमार ठाकुर
अधिवक्ता (नवी)
डिभिज्म प्रमुख

ITB 40.1	<p>The maximum percentage by which quantities may be increased is: NA</p> <p>The maximum percentage by which quantities may be decreased is: NA</p>
-----------------	---



ITB 44.3	No application can be submitted before the Review Committee for review against the decision made by the chief of the Public Entity for the bid amount less than the value of Twenty Million (NRs. 20,000,000)
ITB 44.9	The bidder filling application pursuant to ITB 44.4, shall have to furnish a cash amount of Bank guarantee equal to 1 % of its bid price



Section III. Evaluation and Eligibility Criteria

The purpose of the Evaluation and Eligibility Criteria (EEC) is to specify the criteria that the Purchaser will use to evaluate the Bids to determine the lowest evaluated substantially responsive bid and the eligibility of the Bidder to perform the contract. The Purchaser must prepare the EEC and include it as a part of the Bidding Document. The EEC is not a Contract document and, therefore, it is not a part of the Contract.

Table of Criteria

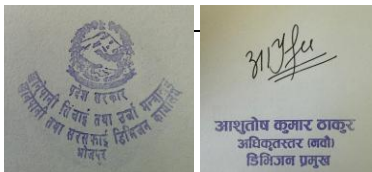
1. Evaluation Criteria

1.1 Technical Criteria

1.2 Economic Criteria

1.3 Multiple Contracts

2. Eligibility Criteria



1. Evaluation Criteria

Criteria for Bid evaluation are to be determined case by case basis. Select from following the appropriate criteria according to the provisions specified in ITB 36. Retain only the relevant parameters and evaluation methods to apply corresponding to the retained criteria.

1.1 Technical Criteria

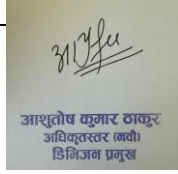
These criteria should specify the minimum technical level that the Goods and Related Services shall have in order to comply with the Section V. Schedule of Requirements. Whenever possible, these criteria should be evaluated on a pass-fail system, with a minimum acceptable level for each criteria enumerated.

However, a minor deficiency in technical compliance may not be cause for rejection of the Bid. The cost of making good any deficiency should likewise be added to the Bid Price concerned. The most frequently used methods assign to the non-conforming items or components, prices based on similar methods described above under Scope, with the price of the nonconforming items or components deducted.

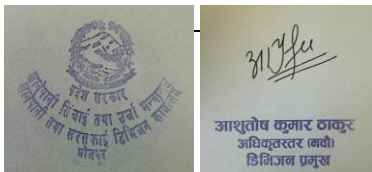
[Insert: "The cost of all quantifiable deviations or deficiencies from the technical requirements as specified in Section V. Schedule of Requirements shall be evaluated. The Procuring Entity will make its own assessment of the cost of these deviations or deficiencies for the purpose of ensuring fair comparison of Bids"]

1.2 Economic Criteria

The economic criteria are most important when evaluating a Bid. In most cases, they are the only criteria for evaluating Bids that have passed the technical evaluation. Price, however, may not be the only criterion, as there could be other criteria that may be expressed in monetary terms. For energy consuming equipment and facilities, adjustment for efficiency over and above the minimum functional guarantees specified in the specifications (e.g. generators, pumps), losses (e.g. transformers), and future operating costs of the equipment may be taken into account in the determination of the evaluated Bid Price. The financial cost for these adjustments (added to or deducted from the Bid Price as the case may be) shall be made only when it is specified in the Bidding Document that these functional guarantees and projected operating costs are factors in bid evaluation. The methods of calculation for these evaluation factors shall be clearly specified in the Bidding Document. Deviations from the specified manner of cost calculation shall not be introduced.



Examples of such criteria appear below:



1.2.1 Adjustment for Scope

1.2.1.1 Local Handling and Inland Transportation

If the Procuring Entity wishes to consider during bid evaluation the costs for inland transportation, insurance, and other services within Nepal incidental to delivery of the goods to their final destination, then the Procuring Entity must define these service items in Section V. Schedule of Requirements, List of Goods and Related Services; and

Bidders must be required to quote for these service items as part of their bid price in the PRICE SCHEDULE FOR RELATED SERVICES TO BE OFFERED FROM OUTSIDE AND WITHIN NEPAL provided in Section IV, Bidding Forms.

In such case, the following provision should be used:

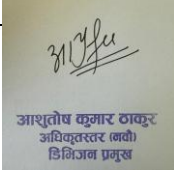
[Insert: “Costs for inland transportation, insurance, and other incidental costs for delivery of the goods from the EXW premises, or port of entry, or border point to Project Site as defined in Section V. Schedule of Requirements, shall be quoted in the PRICE SCHEDULE FOR RELATED SERVICES TO BE OFFERED FROM OUTSIDE AND WITHIN NEPAL provided in Section IV, Bidding Forms. These costs will be taken into account during bid evaluation. If a Bidder fails to include such costs in its Bid, then these costs will be estimated by the Procuring Entity on the basis of published tariffs by the rail or road transport agencies, insurance companies, or other appropriate sources, and added to EXW or DDP or CIP price.”]

1.2.1.2 Minor Omissions or Missing Items

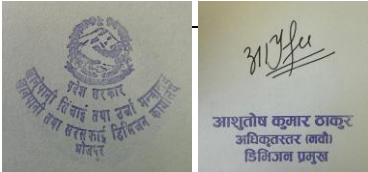
The cost of minor omissions or missing items in the scope of supply, services, etc. should be added to the Bid Price to allow for Bid comparison on an equal basis. The price adjustment should be based on a reasonable estimate of the cost by the executing agency, engineer, consultant or bid evaluation committee, taking into consideration the corresponding quoted prices from other conforming Bids. The price adjustment should be based on the fair price of the omitted item. The most frequently used methods assign to the missing item a price:

- (i) equal to the highest price quoted for the same item by the other Bidders; or
- (ii) equal to the average price quoted for the same item by the other Bidders; or
- (iii) estimated by the Procuring Entity.

Of these three methods the Procuring Entity should preferably use (i) or (ii), as Bidders frequently challenge (iii) because of its lack of transparency.



[Insert: “Pursuant to Sub-Clause 33.3 of the Instructions to Bidders, the cost of all quantifiable nonmaterial nonconformities or omissions from the contractual and commercial conditions shall be evaluated. The Procuring Entity will make its own assessment of the cost



of any nonmaterial nonconformities and omissions for the purpose of ensuring fair comparison of Bids.”]

1.2.2 Adjustment for Deviations from the Terms of Payment

The Procuring Entity must state here whether deviations from the terms of payment as specified in Special Conditions of Contract, Sub-Clause 15.1, are permitted or not. If permitted, the Procuring Entity shall evaluate deviations from the terms of payment in the following manner. The Procuring Entity shall first evaluate the Bids based on the terms of payment specified in the Special Conditions of Contract, Clause 15.1. The Procuring Entity shall then add an adjustment to the Bid Price to take into account the differences in cash flows. The adjustment shall be calculated as the discounted cash flow of the incremental payments of the alternative compared with those of the terms of payment specified by the Procuring Entity.

Alternative 1: [Insert: “Deviations from the Terms of Payment as specified in SCC 15.1 are not permitted.”]

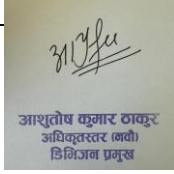
Alternative 2: [Insert: “Bids offering payment terms that differ from those specified in SCC 15.1 will be accepted but the Bids will be adjusted in the evaluation by adding the cost of the interest involved at the rate of (. . . specify commercial rate applicable).”]

1.2.3 Adjustment for Deviations in the Delivery and Completion Schedule

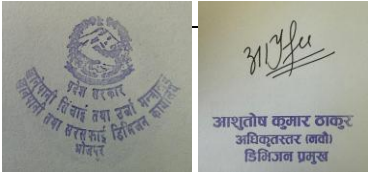
Bidders are required to base their prices on the Delivery and Completion Schedule specified in Section V. Schedule of Requirements. The Procuring Entity must state here whether deviations from the specified Delivery and Completion Schedule are permitted or not. If permitted, the Procuring Entity shall evaluate deliveries by adding the corresponding price adjustment in accordance with the procedure outlined below.

Alternative 1: [Insert: “Deviations from the Delivery and Completion Schedule specified in Section V (Schedule of Requirements) are not permitted.”]

Alternative 2: [Insert: “The Goods covered by this bidding process are required to be delivered in accordance with, and completed within, the Delivery and Completion Schedule specified in Section V (Schedule of Requirement). No credit will be given for earlier completion. Bids offering late contract performance schedules (beyond earliest delivery date specified in Schedule of Requirement) will be accepted but the Bids shall be adjusted



in the evaluation by adding to the Bid Price at the rate of 0.05 percent of the Bid Price for each day of delay. Bids offering delivery schedules beyond latest delivery date specified in Schedule of Requirement shall be rejected.”]



1.2.4 Operating and Maintenance Costs

The Operating and Maintenance costs (O&M) need to be taken into account for bid evaluation purposes when such costs over the life cycle of the Goods represent an important cost in relation to the capital or investment cost of the Goods. Different technologies may involve large variations in the capital costs of the Goods and the costs associated with their O&M. Normally, more elaborate technologies and materials used in the manufacturing of the Goods involve higher investment costs and lower O&M costs. O&M costs are evaluated at their present value over the life cycle of the Goods and then added to the price of the Goods.

Typical O&M cost factors for calculation are:

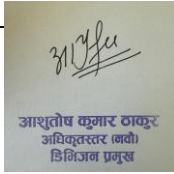
- (a) Number of years for initial period of operation. It is recommended that the initial period of operation does not exceed the usual period before a major overhaul of the Goods is required, usually between five and ten years. The load or working cycle (hourly, daily, monthly, seasonal) of the Goods shall be as specified by the Procuring Entity).
- (b) Operating costs such as fuel, electricity, spare parts, labour and/or other inputs required for the operation of the Goods.
- (c) Rate (normally prevailing commercial interest rate), in percent, to be used to discount to present value, all of the annual future costs calculated under (b) above for the period specified in (a).

[Insert procedures to be used]

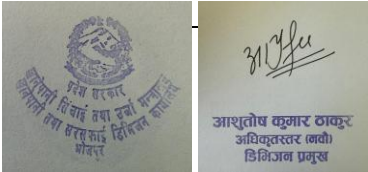
1.2.5 Spare Parts and after Sales Service Facilities

Only those spare parts and tools which are specified on an item-wise basis in the List of Goods and Related Services in Section V. Schedule of Requirements, shall be taken into account in the bid evaluation. Supplier-recommended spare parts for a specified operating requirement shall not be considered in bid evaluation.

[Insert: "The list of items and quantities of (... specify spare parts, tools, major assemblies, and selected components), likely to be required during the initial period (... specify period) of operation is indicated in Section V. Schedule of Requirements. The total cost of these items at the unit prices quoted in each Bid shall be added to the Bid Price."] and or ***[Insert: " Bid price will be loaded by a 1% amount of bid price, if the spare parts and after sales services facilities***



for the equipment are not available in[insert the name of place such as Kathmandu or Pokhara etc.]].



1.2.6 Performance and Productivity of the Goods

The adjustment factor for the performance or productivity of the Goods shall be calculated based on the difference between the reference value or norm (i.e. the efficiency) as specified in Section V. Schedule of Requirements, and the corresponding value guaranteed by the Bidder in its Bid. Choose and insert one of the following:

- (i) Performance and productivity of the equipment. An adjustment representing the capitalized cost of additional operating costs over the life of the plant will be added to the bid price, for evaluation purposes if specified in the BDS Sub-Clause 36.3 (e). The adjustment will be evaluated based on the drop in the guaranteed performance or efficiency offered in the bid below the norm of 100, using the methodology specified in BDS Sub-Clause 36.3(e).

or

- (ii) An adjustment to take into account the productivity of the goods offered in the bid will be added to the bid price, for evaluation purposes only, if specified in BDS Sub-Clause 36.3 (e). The adjustment will be evaluated based on the cost per unit of the actual productivity of goods offered in the bid with respect to minimum required values, using the methodology specified in BDS Sub-Clause 36.3 (e).

1.2.7 Specific additional Criteria

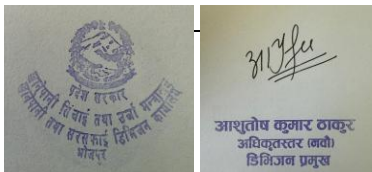
Other specific additional criteria to be considered in the evaluation, and the evaluation method shall be detailed in BDS sub clause 36.3(e)

1.3 Multiple Contracts

If Goods and Related Services are grouped in multiple lots/packages, the following provision must be used:

[Insert: “Goods are grouped in lots/packages. The Purchaser will evaluate and compare Bids on the basis of a lot/package, or a combination of lots/packages, or as a total of lots/packages to arrive at the least cost combination for the Purchaser by taking into account discounts offered by Bidders in case of award of multiple contracts.”]

If a Bidder submits successful Bids for multiple lots/packages (lowest evaluated substantially responsive Bids), the evaluation will also include an assessment of the Bidder’s capacity to meet the aggregated qualifying requirements relating to *[Purchaser to list here the qualifying requirements set for individual contracts/lots/packages, i.e., production capacity, size of operation]*.



2. Eligibility

Except Qualification Requirements mentioned as optional, which may be specified as per requirements, the Procuring Entity shall specify the following Qualification Requirements without any substantial deviation.

2.1 Eligibility

Criteria Requirement	Compliance Requirements				Documents
	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	

2.1.1 Conflict of Interest

No conflicts of interest in accordance with ITB 4.3.	Must meet requirement	Must meet requirement	Must meet requirement	Not applicable	Letter of Technical Bid
--	-----------------------	-----------------------	-----------------------	----------------	-------------------------

2.1.2 Government/DP Eligibility

Not having been declared ineligible by government /DP, as described in ITB Sub-Clause 4.4.	Must meet requirement	Must meet requirement	Must meet requirement	Not applicable	Letter of Technical Bid
--	-----------------------	-----------------------	-----------------------	----------------	-------------------------

2.1.3 Government-Owned Entity

Bidder required to meet conditions of ITB 4.5.	Must meet requirement	Must meet requirement	Must meet requirement	Not applicable	Letter of Technical Bid; Forms ELI – 1 and ELI - 2
--	-----------------------	-----------------------	-----------------------	----------------	--

2.1.4 UN Eligibility

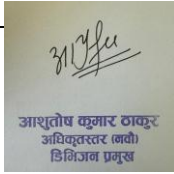
Not having been excluded by an act of compliance with a United Nations Security Council resolution in accordance with ITB 4.7.	Must meet requirement	Must meet requirement	Must meet requirement	Not applicable	Technical Bid Submission Sheet
--	-----------------------	-----------------------	-----------------------	----------------	--------------------------------

2.1.5 Nationality



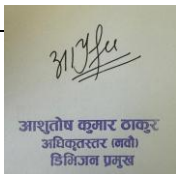
आशुतोष कुमार ठाकुर
अधिकृतस्तर (नवी)
डिभिज्म प्रमुख

Nationality in accordance with ITB 4.8.	Must meet requirement	Must meet requirement	Must meet requirement	Not applicable	Letter of Technical Bid; Forms ELI – 1 and ELI – 2 with attachments
---	-----------------------	-----------------------	-----------------------	----------------	---



2.1.6 Other Eligibility

Firm Registration Certificate	must meet requirement	not applicable	must meet requirement	not applicable	Document attachment
Business Registration Certificate	must meet requirement	not applicable	must meet requirement	not applicable	Document attachment
VAT and PAN Registration certificate	must meet requirement	not applicable	must meet requirement	not applicable	Document attachment
Tax Clearance Certificate/Tax return submission evidence/ evidence of time extension for the Fiscal Year 2081/82	must meet requirement	not applicable	must meet requirement	not applicable	Document attachment



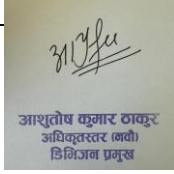
Section IV. Bidding Forms

Notes on Bidding Forms

The Purchaser shall include in the Bidding Documents all Bidding Forms that the Bidder shall fill out and include in its Bid. The forms contained in this section are to be completed by the Bidder and submitted as part of its Bid. As specified in this Section, these forms are the Letter of Technical Bid, Letter of Price Bid, the Bid Security, Price Schedules and the Bidder's Qualification Information Forms.

Table of Forms

Letter of Bid.....	48
Bidder's Information Form	51
Joint Venture Information Form.....	52
Bidder's proposed Specification Form	53
Bidder's proposed Delivery Date	54
Price Schedule For Goods.....	55
Bid Security.....	56
Manufacturer's Authorization Letter	58



Letter of Bid

(The Bidder shall accomplish the Letter of Bid in its Letter Head Clearly showing the Bidders Complete name and address)

Date:

Contract No.:

Invitation for Bid No.:

To: _____

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Document, including Addenda issued in accordance with Instructions to Bidders (ITB) Clause 9;
- (b) We offer to supply in conformity with the Bidding Document and in accordance with the delivery schedule specified in the Section V (Schedule of Requirements), the following Goods and Related Services: *[insert a brief description of the goods and related services]*;

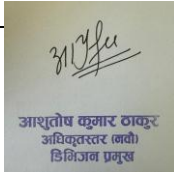
- (c) The total price of our Bid, excluding any discounts offered in item (d) below is:
[Incase of only one lot/package, insert the total Bid Price in words and figures];

[Incase of multiple lots/packages, insert the total price of each lot/package];

- (d) The discounts offered and the methodology for their application are:
The discounts offered are: ***[specify in detail each discount offered];***

The exact method of calculations to determine the net price after application of discounts is shown below: ***[specify in detail the method that shall be used to apply the discounts];***

- (e) Our Bid shall be valid for a period of ***[insert validity period as specified in ITB 20.1 of the BDS]*** days from the date fixed for the bid submission deadline in accordance with the Bidding Document, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (f) If our Bid is accepted, we commit to obtain a Performance Security in accordance with the Bidding Document;
- (g) Our firm, including any subcontractors or suppliers for any part of the Contract, have nationalities from eligible countries in accordance with ITB 4.8 and meet the requirements of ITB 3.4 & 3.5;

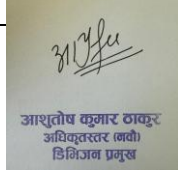


- (h) We are not participating, as a Bidder or as a subcontractor/supplier, in more than one Bid in this bidding process in accordance with ITB 4.3(e), other than alternative Bids in accordance with ITB 14;
- (i) Our firm, its affiliates or subsidiaries, including any Subcontractors or Suppliers for any part of the contract, has not been declared ineligible by DP, under the Purchaser's country laws or official regulations or by an act of compliance with a decision of the United Nations Security Council;
- (j) We are not a government owned entity/We are a government owned entity but meet the requirements of ITB 4.5;³
- (k) We declare that, we including any subcontractors or suppliers for any part of the contract do not have any conflict of interest in accordance with ITB 4.3 and we have not been punished for an offense relating to the concerned profession or business.
- (l) The following commissions, gratuities, or fees, if any, have been paid or are to be paid with respect to the bidding process or execution of the Contract:

Name of Recipient	Address	Reason	Amount
-------------------	---------	--------	--------

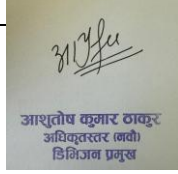
(If none has been paid or is to be paid, indicate "none.")

- (m) We declare that we are solely responsible for the authenticity of the documents submitted by us. The document and information submitted by us are true and correct. If any document/information given is found to be concealed at a later date, we shall accept any legal actions by the purchaser.
- (n) We understand that this Bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal Contract is prepared and executed.
- (o) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.
- (p) We agree to permit GoN/DP or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors



appointed by the GoN/DP.

³ Slect one of the options



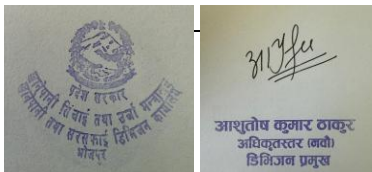
Name

In the capacity of

Signed

Duly authorized to sign the Bid for and on behalf of

Date



ELI-1: Bidder's Information Form

[The Bidder shall fill in this Form. No alterations to its format shall be permitted and no substitutions shall be accepted.]

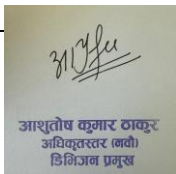
1.	Bidder's Legal Name:	<i>[insert full name]</i>
2.	In case of JV, legal name of the representative member and of each member:	<i>[insert full name of each member in the JV and specify the representative member]</i>
3.	Bidder's Country of Registration:	<i>[insert country of registration]</i>
4.	Bidder's Year of Registration:	<i>[insert year of incorporation]</i>
5.	Bidder's Legal Address in Country of Registration	<i>[insert street/number/town or city/country]</i>
6.	Bidder's trading address:	<i>[insert street/number/town or city/country]</i>
7.	Bidder's Telephone/Fax numbers:	<i>[insert telephone/fax numbers, including country and city codes]</i>
8.	Bidder's Email Address:	<i>[insert email address]</i>
9.	Bidder's Authorized Representative Information:	
	Name:	<i>[insert full name]</i>
	Address:	<i>[insert street/number/town or city/country]</i>
	Telephone/Fax numbers:	<i>[insert telephone/fax numbers, including country and city codes]</i>
	Email Address:	<i>[insert email address]</i>
<p>Attached are copies of the following documents:</p> <ol style="list-style-type: none"> 1. In case of a single entity, articles of incorporation or constitution and company incorporation/registration of the legal entity named above, in accordance with ITB 4.2 and ITB 4.8 2. Authorization to represent the firm or Joint Venture named above, in accordance with ITB 22.2 3. In case of a Joint Venture, a letter of intent to form a Joint Venture or Joint Venture agreement, in accordance with ITB 4.2 4. In case of a government-owned enterprise, any additional documents not covered under 1 above required to comply with ITB 4.5 		



ELI-2: Joint Venture Information Form

Each member of the Joint Venture must fill out this form separately to provide information relating to each JV member.

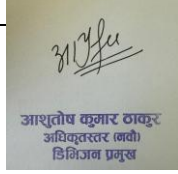
1.	Bidder's legal name:	<i>[insert full name]</i>
2.	Joint Venture Partner's legal name:	<i>[insert full name of Joint Venture Partner]</i>
3.	Joint Venture Partner's Country of Registration:	<i>[insert country of registration]</i>
4.	Joint Venture Partner's Legal Address in Country of Registration:	<i>[insert street/number/town or city/country]</i>
5.	Joint Venture Partner's Trading address	<i>[insert street/number/town or city/country]</i>
6.	Joint Venture Partner's Year of Registration:	<i>[insert year of registration]</i>
7.	Joint Venture Partner's Telephone/Fax numbers:	<i>[insert telephone/fax numbers, including country and city codes]</i>
8.	Joint Venture Partner's Email Address:	<i>[insert email address]</i>
9.	Joint Venture Partner's Authorized Representative Information:	
	Name:	<i>[insert full name]</i>
	Address:	<i>[insert street/number/town or city/country]</i>
	Telephone/Fax numbers:	<i>[insert telephone/fax numbers, including country and city codes]</i>
	Email Address:	<i>[insert email address]</i>
<p>1. Articles of incorporation or constitution and company incorporation/registration of the legal entity named above, in accordance with ITB 4.2 and ITB 4.8</p> <p>2. Authorization to represent the firm named above, in accordance with ITB 22.2</p> <p>3. In the case of a government-owned enterprise, documents establishing legal and financial autonomy and compliance with commercial law, in accordance with ITB 4.5</p>		



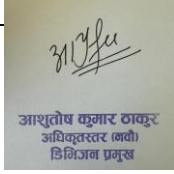
Form Spec-1: Bidder's proposed Specification Form

The bidder shall fill this form to provide the information on technical specifications and standards of offered goods. Bidder's Proposed Technical Specifications and Standards in column 4 shall comply with the Purchaser Requirement (Specifications and standards) specified by the Purchaser in the Schedule of Requirements.

Item No.	Name of Goods or Related Service	Country of Origin and Brand	Bidder's Proposed TS and Standards	Reference page / no./ Catalogue page/ no.	Status of compliance ⁴
1	2	3	4	5	6
[insert item No.]	[insert name]	[insert country of Origin and Brand name]	[insert TS and Standards]	[insert reference page or no. / catalogue page or no. if any]]	[insert status]



⁴ The bidder shall state as *Fully compliance or Partially compliance or Compliance*

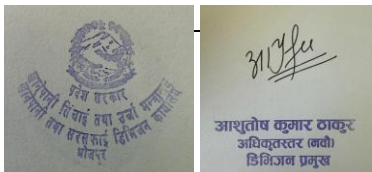


Form Del-1: Bidder's proposed Delivery Date

The bidder shall fill this form to provide the information on delivery date of offered goods. Bidder's offered delivery date in column 4 shall comply with the Purchaser Requirement (Delivery and Completion Schedule) specified by the Purchaser in the Schedule of Requirements.

Line Item No	Description of Goods	Quantity	Physical unit	Final Destination as specified in BDS	Bidder's offered Delivery date [to be provided by the bidder]
1	2	3	4	5	6
[insert item No]	[insert description of Goods]	[insert quantity of item to be supplied]	[insert physical unit for the quantity]	[insert place of delivery]	[insert the number of days following the date of effectiveness the Contract]

Note: The date of effectiveness of contract shall be as of signing the contract

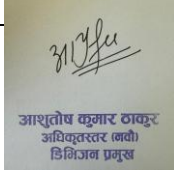


Price Schedule for Goods

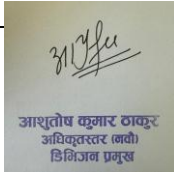
The Bidder shall fill in these Price Schedule Forms in accordance with the instructions indicated. The list of line items in column 1 of the Price Schedules shall coincide with the List of Goods and Related Services specified by the Purchaser in the Schedule of Requirements.

Name of Bidder _____ Invitation for Bid No.: _____

S.N.	Description	Unit	Quantity	Unit Rate including transportation cost (in NPR)		Total Amount in Figure (In NPR)
				In Figure	In Words	
A	PE-100 PN SDR HDPE pipes (NS:40:2079)					
1	20 mm dia PE100 PN16 HDPE pipe	mtr	13500			
2	25 mm dia PE100 PN16 HDPE pipe	mtr	6000			
3	32 mm dia PE100 PN10 HDPE pipe	mtr	8200			
4	32 mm dia PE100 PN16 HDPE pipe	mtr	2000			
5	40 mm dia PE100 PN10 HDPE pipe	mtr	6700			
6	40 mm dia PE100 PN16 HDPE pipe	mtr	2600			
7	50 mm dia PE100 PN10 HDPE pipe	mtr	8700			
8	50 mm dia PE100 PN16 HDPE pipe	mtr	1800			
9	63 mm dia PE100 PN10 HDPE pipe	mtr	2000			
10	63 mm dia PE100 PN16 HDPE pipe	mtr	1600			
11	75 mm dia PE100 PN10 HDPE pipe	mtr	2400			
12	75 mm dia PE100 PN16 SDR9 HDPE pipe	mtr	600			
13	90 mm dia PE100 PN10 SDR13.6 HDPE pipe	mtr	1900			
	Total		58000			
	VAT 13%					
	Grand Total					



-
- ⁵ The price shall include the cost of goods, other taxes already paid or payable on the components and raw material used in the manufacture or assembly of the item, the customs duties, transportation cost up to final delivery, insurance cost, unloading, and any other cost for (incidental) services, if any, related to the delivery of goods. All risks and responsibilities up to the final destination including installation and commissioning of Goods, if applicable, shall be borne by the Supplier.



[If there are more than one lot/package, prepare Price Schedule form for each lot/ package]

Name: _____

In the capacity of: _____

Signed: _____

Duly authorized to sign the Bid for and on behalf of: _____

Date: _____

Bid Security

Bank Guarantee

***Bank's Name, and Address of Issuing Branch or Office
(On Letter head of the Bank)***

[This is the format for the Bid Security to be issued on the letterhead by a Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law of Nepal]

insert Bank's Name, and Address of Issuing Branch or Office]

Date: *[insert date]*

Beneficiary: *[insert Name and Address of Purchaser]*

BID GUARANTEE No.: *[insert number]*

We have been informed that *[insert name of the Bidder]* (hereinafter called "the Bidder") intends to submit its bid to you (hereinafter called "the Bid") for the execution of *[insert name of contract]* under Invitation for Bids No. *[insert IFB number]* ("the IFB").

Furthermore, we understand that, according to your conditions, bids must be supported by a bid guarantee.

At the request of the Bidder, we *[insert name of Bank]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of *[insert amount in figures, (insert amount in words)]* upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

- (a) has withdrawn or modifies its Bid:
 - i) during the period of bid validity specified by the Bidder on the Letter of Bid, in case of electronic submission
 - (ii) from the period twenty-four hours prior to bid submission deadline up to the period of bid validity specified by the Bidder on the Letter of Bid, in case of hard copy submission; or
- (b) does not accept the correction of errors in accordance with the Instructions to Bidders (hereinafter "the ITB"); or
- (c) changes the prices or substance of the bid while providing information pursuant to clause 29.1 of ITB; or
- (d) having been notified of the acceptance of its Bid by the Purchaser during the period of bid validity, (i) fails or refuses to execute the Contract Agreement, or (ii) fails or refuses to furnish the performance security, in accordance with the ITB.
- (e) is involved in fraud and corruption in accordance with the ITB.

This guarantee will expire: (a) if the Bidder is the successful Bidder, upon our receipt of copies of the contract signed by the Bidder and the performance security issued to you upon the instruction of the Bidder; and (b) if the Bidder is not the successful Bidder, upon the earlier of (i) our receipt of a copy of your notification to the Bidder of the name of the successful Bidder; or (ii) thirty (30) days after the expiration of the Bidder's bid which comes to be *insert the date*.

Consequently, any demand for payment under this guarantee must be received by us at the office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 758⁶.

...Bank's seal and authorized signature(s)...

[Note: All italicized text is for use in preparing this form and shall be deleted from the final product.]

⁶ As the case may be, ICC Publication No. 758 (or subsequent ICC Publications) may be used. In such cases, modify the Publication number.

Manufacturer's Authorization Letter

[This letter of authorisation should be on the letterhead of the manufacturer and should be signed by the person with the proper authority to sign documents that are binding on the manufacturer]

Date: *[insert date of Bid Submission]*

IFB No.: *[insert number]*

To: *[insert complete name and address of Purchaser]*

WHEREAS *[insert complete name of Manufacturer or Manufacturer's authorized agent]* who are official manufacturers of *[insert type of goods manufactured]* having factories at *[insert full address of Manufacturer's factories]*, do hereby authorize *[insert complete name of Bidder]* exclusively to submit a Bid in relation to the Invitation for Bids indicated above, the purpose of which is to provide the following Goods, manufactured by us *[insert name and/or brief description of the goods]* and to subsequently sign the Contract.

We hereby extend our full guarantee and warranty in accordance with Clause 27 of the General Conditions of Contract, with respect to the Goods offered by the above firm.

Name: *[insert complete name of person signing the Authorization]*

In the capacity of: *[insert legal capacity of person signing the Authorization]*

Signed: *[insert signature of person whose name and capacity are shown above]*

Duly authorized to sign the Authorization for and on behalf of: *[insert complete name of Manufacture]*

Date: *[insert date of signing]*

Section V. Schedule of Requirements

The Schedule of Requirements shall be included in the Bidding Documents by the Purchaser, and shall cover, at a minimum, a description of the Goods and Related Services to be supplied and the Delivery Schedules.

The objective of the Schedule of Requirements is to provide sufficient information to enable Bidders to prepare their Bids efficiently and accurately, in particular, the Price Schedule, for which a form is provided in Section IV.

Contents

1. List of Goods and Related Services	60
2. Delivery and Completion Schedule.....	61
3. Technical Specifications.....	62
4. Purchaser Requirement.....	64
5. Drawings	65

List of Goods and Related Services

The purpose of the List of Goods and Related Services (LGRS) is to briefly describe and specify the quantities of each of the Goods and Related Services that the Purchaser requires the Bidder to include in its Bid. As a part of the SR, the LGRS constitutes a Contract document and, therefore, it is a part of the Contract. The Purchaser must prepare the LGRS and include it as a part of the SR.

If the Goods and Related Services are grouped in lots/packages, the Purchaser must state here whether Bidders are permitted to submit Bids for individual lots/packages or not. For example:

Procurement ID: wssdobhojpur/208283/NCB1/Goods/HDPE/Lomakhola-Jarayotar						
Name of work: Supply, transportation, delivery and unloading of HDPE pipe (PE-100 PN SDR, NS:40:2079)						
Specification and compliance requirements: Material Grade PE100, SDR Series, PN Rating / Compliance with NS:40:2079						
Delivery point: WSSDO Bhojpur Office Store (Address: Bhojpur Nagarpalika-7)						
Fiscal Year: 2082/83						
S.N.	Description	Unit	Quantity	Unit Rate including transportation cost (in NPR)		Total Amount in Figure (In NPR)
				In Figure	In Words	
A	PE-100 PN SDR HDPE pipes (NS:40:2079)					
1	20 mm dia PE100 PN16 HDPE pipe	mtr	13500			
2	25 mm dia PE100 PN16 HDPE pipe	mtr	6000			
3	32 mm dia PE100 PN10 HDPE pipe	mtr	8200			
4	32 mm dia PE100 PN16 HDPE pipe	mtr	2000			
5	40 mm dia PE100 PN10 HDPE pipe	mtr	6700			
6	40 mm dia PE100 PN16 HDPE pipe	mtr	2600			
7	50 mm dia PE100 PN10 HDPE pipe	mtr	8700			
8	50 mm dia PE100 PN16 HDPE pipe	mtr	1800			
9	63 mm dia PE100 PN10 HDPE pipe	mtr	2000			
10	63 mm dia PE100 PN16 HDPE pipe	mtr	1600			
11	75 mm dia PE100 PN10 HDPE pipe	mtr	2400			
12	75 mm dia PE100 PN16 SDR9 HDPE pipe	mtr	600			
13	90 mm dia PE100 PN10 SDR13.6 HDPE pipe	mtr	1900			
	Total		58000			
	VAT 13%					
	Grand Total					

⁷ Description of Goods or related services is to be inserted in this column

Delivery and Completion Schedule

Delivery shall take place in compliance with the dates, duration, and locations indicated below:

(I) in case of Delivery schedule is not determined as evaluation criteria

[The Purchaser shall fill in this table from column 1 to 6]

Line Item No	Description of Goods	Quantity	Physical unit	Final Destination	Delivery Date
1.	2	3	4	5	6
<i>[insert item No]</i>	<i>[insert description of Goods]</i>	<i>[insert quantity of item to be supplied]</i>	<i>[insert physical unit for the quantity]</i>	<i>[insert place of delivery]</i>	<i>[insert the number of days following the date of effectiveness the Contract]</i>
1	20 mm dia PE-100 PN 16 HDPE pipe	13500	m	Bhojpur Office Store, Water Supply and Sanitation Division Office, Bhojpur Municipality 7	Within 30 days of signing of Contract
2	25 mm dia PE-100 PN 16 HDPE pipe	6000	m		
3	32 mm dia PE-100 PN 10 HDPE pipe	8200	m		
4	32 mm dia PE-100 PN 16 HDPE pipe	2000	m		
5	40 mm dia PE-100 PN 10 HDPE pipe	6700	m		
6	40 mm dia PE-100 PN 16 HDPE pipe	2600	m		
7	50 mm dia PE-100 PN 10 HDPE pipe	8700	m		
8	50 mm dia PE-100 PN 16 HDPE pipe	1800	m		
9	63 mm dia PE-100 PN 10 HDPE pipe	2000	m		
10	63 mm dia PE-100 PN 16 HDPE pipe	1600	m		
11	75 mm dia PE-100 PN 10 HDPE pipe	2400	m		
12	75 mm dia PE-100 PN 16 HDPE pipe	600	m		
13	90 mm dia PE-100 PN 10 HDPE pipe	1900	m		

Technical Specification

Notes on Technical Specifications

The purpose of the Technical Specifications (TS) is to define the technical characteristics of the Goods and Related Services required by the Purchaser. The TS, as a part of the schedule of Requirements (SR), constitute a Contract document and are, therefore, a part of the Contract. The Purchaser must prepare the TS and include them as a part of the Procurement Document, as applicable to each Contract. The Purchaser shall prepare the detailed TS by taking into account that:

- The TS constitute the benchmarks against which the Purchaser will verify the technical responsiveness of Bids and subsequently evaluate the Bids. Therefore, well-defined TS will facilitate preparation of responsive Bids by Bidders, as well

as examination, evaluation, and comparison of the Bids by the Purchaser.

- The TS shall require that all Goods and materials to be incorporated in the Goods be new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided for otherwise in the contract.
- The TS shall make use of best practices. Samples of specifications from successful similar procurements in the same country or sector may provide a sound basis for drafting the TS.
- The use of metric units is encouraged.
- Standardizing technical specifications may be advantageous, depending on the complexity of the Goods and the repetitiveness of the type of procurement. The TS should be broad enough to avoid restrictions on workmanship, materials, and equipment commonly used in manufacturing similar kinds of goods.
- Standards for equipment, materials, and workmanship specified in the Bidding Documents shall not be restrictive. Recognized international standards should be specified as much as possible. Reference to brand names, catalogue numbers, or other details that limit any materials or items to a specific manufacturer should be avoided. Where unavoidable, such item description should always be followed by the words “or equivalent.” When other particular standards or codes of practice are referred to in the TS, a statement should follow other authoritative standards that ensure at least a substantially equal quality, then the standards mentioned in the TS will also be acceptable.
- The TS shall be fully descriptive of the requirements in respect of, but not limited to, the following:
 - (a) Standards of materials and workmanship required for the production and manufacturing of the Goods.
 - (b) Detailed tests required (type and number).
 - (c) Other additional work and/or Related Services required to achieve full delivery.
 - (d) Detailed activities to be performed by the Supplier, and participation of the Purchaser thereon.
 - (e) List of detailed functional guarantees covered by the Warranty and the specification of the penalties to be applied in the event that such guarantees are not met.
- The TS shall specify all essential technical and performance characteristics and

requirements, including guaranteed or acceptable maximum or minimum values, as appropriate. The Purchaser shall include an additional Bidding Form, Form Spec-1 (to be an Attachment to the Letter of Bid), where the Bidder shall provide detailed information on such technical performance characteristics in respect to the corresponding acceptable or guaranteed values.

When the Purchaser requests that the Bidder provides in its Bid a part or all of the TS, technical schedules, or other technical information, the Purchaser shall specify in detail the nature and extent of the required information and the manner in which it has to be presented by the Bidder in its Bid (Form Spec-1).

Purchaser Requirement

The Goods and Related Services shall comply with following Technical Specifications and Standards:

1. Summary of Technical Specifications.

Successful bidder must submit batch-wise verified test certificates from manufacturer for all 13 items specified in the price schedule during the delivery of goods that verify the material grade, pressure rating and other required specifications as per NS:40:2079, including but not limited to:

- i) Wall thickness (mm)
- ii) Outer diameter (mm)
- iii) Melt flow rate (gm/10 min)
- iv) Density (g/cm³)
- v) Visual inspection (inside/outside)
- vi) Hydraulic Creep Rupture tested for 48 hrs at 80 degree C Induced Pressure
- vii) Reversion (<3%)
- viii) Elongation at Break (>35%)
- ix) Carbon Black Content & Carbon Dispersion
- x) Oxidation Induction Time (>20 min)

Item No	Name of Goods or Related Service	Technical Specifications and Standards
1	20 mm dia PE-100 PN 16 HDPE pipe	Material Grade PE100, SDR Series, PN Rating / Compliance with NS:40:2079
2	25 mm dia PE-100 PN 16 HDPE pipe	Material Grade PE100, SDR Series, PN Rating / Compliance with NS:40:2079
3	32 mm dia PE-100 PN 10 HDPE pipe	Material Grade PE100, SDR Series, PN Rating / Compliance with NS:40:2079
4	32 mm dia PE-100 PN 16 HDPE pipe	Material Grade PE100, SDR Series, PN Rating / Compliance with NS:40:2079
5	40 mm dia PE-100 PN 10 HDPE pipe	Material Grade PE100, SDR Series, PN Rating / Compliance with NS:40:2079
6	40 mm dia PE-100 PN 16 HDPE pipe	Material Grade PE100, SDR Series, PN Rating / Compliance with NS:40:2079
7	50 mm dia PE-100 PN 10 HDPE pipe	Material Grade PE100, SDR Series, PN Rating / Compliance with NS:40:2079
8	50 mm dia PE-100 PN 16 HDPE pipe	Material Grade PE100, SDR Series, PN Rating / Compliance with NS:40:2079
9	63 mm dia PE-100 PN 10 HDPE pipe	Material Grade PE100, SDR Series, PN Rating / Compliance with NS:40:2079
10	63 mm dia PE-100 PN 16 HDPE pipe	Material Grade PE100, SDR Series, PN Rating / Compliance with NS:40:2079
11	75 mm dia PE-100 PN 10 HDPE pipe	Material Grade PE100, SDR Series, PN Rating / Compliance with NS:40:2079

12	75 mm dia PE-100 PN 16 HDPE pipe	Material Grade PE100, SDR Series, PN Rating / Compliance with NS:40:2079
13	90 mm dia PE-100 PN 10 HDPE pipe	Material Grade PE100, SDR Series, PN Rating / Compliance with NS:40:2079

2. Detailed Technical Specifications and Standards [whenever necessary].

ने.गुण. ४०:२०७९

NS 40:2022



नेपाल गुणस्तर
NEPAL STANDARD

Polyethylene Pipes for Water Supply - Specification



Government of Nepal
Ministry of Industry, Commerce and Supplies
Nepal Bureau of Standards and Metrology (NBSM)
Kathmandu, Nepal

www.nbsm.gov.np

© Nepal Council for Standards (NCS), 2020

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from NBSM at the address below.

Nepal Bureau of Standards and Metrology

Balaju, Kathmandu, Nepal

Phone: +977 1 4350445/4350818

Email: info@nbsm.gov.np

Website: www.nbsm.gov.np

Table of Contents

Table of Contents	II
Foreword.....	III
1. SCOPE.....	1
2. REFERENCES	1
3. TERMINOLOGY.....	2
4. GRADE OF RESIN.....	4
5. MATERIAL	4
6. PIPE DESCRIPTION	6
7. GEOMETRIC CHARACTERISTICS OF PIPE.....	7
8. PERFORMANCE REQUIREMENTS	9
9. SAMPLING, FREQUENCY OF TESTS AND CRITERIA FOR CONFORMITY	12
10. MARKING	15
ANNEX A	16
ANNEX B.....	17
ANNEX C	18
ANNEX D	20
ANNEX E.....	22
ANNEX F.....	23
ANNEX G	24
ANNEX H	27
ANNEX J	33

Foreword

NBSM (Nepal Bureau of Standards and Metrology) is the National Standard Body involved in the development of standards in the country. The standard development process involves committee consisting of multi-stakeholders both from public and private sectors.

This standard is developed by technical committee having multi-stakeholder participation and approved by Nepal Standard Council as per Nepal Standard (Certification) Act, 1980.

This standard is based on ISO 4427 -1:2007 'Plastic piping systems – Polyethylene (PE) pipes and fittings for water supply – Part1: General', ISO 4427 -2:2007 'Plastic piping systems – Polyethylene (PE) pipes and fittings for water supply – part 2 : Pipes' and IS 4984 :2016 – Polyethylene Pipes for Water Supply – Specification' with some deviations.

This standard replaces NS 40: 2042 (fourth revision) and includes new raw material, pipe sizes range expansion, added performance requirements and some test methods. The standard will benefit both the users and the producers to have product of appropriate design and dimension; and will provide assurance of quality of the products as well.

The standard covers materials, design and dimension, tests, and sampling requirements.

This standard contributes towards fulfilment of SDG goals.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. NBSM shall not be held responsible for identifying any or all such patent rights. Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.nbsm.gov.np.

Nepal Standard

Polyethylene Pipes for Water Supply – Specification

1. SCOPE

- 1.1 This standard lays down the requirements for polyethylene (PE) pipes (mains and service pipes) intended for the conveyance of water for human consumption including raw water prior to treatment and also water for general purpose.
- 1.2 This standard is applicable for the water supplies with a maximum operating pressure of 2.0 MPa.
- 1.3 An operating temperature of 27°C has been taken as the reference temperature.
- 1.4 The reference temperature of 20°C for 50 years of continuous stress is considered for the minimum required strength (MRS) of polyethylene base resin. To enable an operating water temperature of 27°C, the design stress has been accordingly corrected (see Table 1 and corresponding Notes). The standard also provides pressure reduction coefficients for water temperatures higher than 20°C and other than 27°C so as to calculate the maximum allowable operating pressure at those temperatures.
- 1.5 This standard does not purport to give guidelines for designing and dimensioning of pipe lines.

2. REFERENCES

- 2.1 The following standards contain provisions, which through reference in this text, constitute provisions of this standard. At the time of publication the editions indicated are valid. All standards are subject to revision and parties to agreement based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below :
 - NS... . Determination of water – Karl Fischer method (General method)
 - NS 97, Methods of test for polyethylene moulding materials and polyethylene compounds (melt flow rate)
 - NS 145, Methods of random sampling
 - NS 110, High Density polyethylene materials for moulding and extrusion — specification (first revision)
 - NS.... Method of analysis for the determination of specific and/or overall migration of constituents of plastics materials and articles intended to come in contact with foodstuffs
 - NS..... Positive list of constituents of polyethylene in contact with foodstuffs, pharmaceuticals and drinking water
 - NS..... Polyethylene for its safe use in contact with foodstuff, pharmaceuticals and drinking water)

3. TERMINOLOGY

For the purpose of this standard, the following definitions shall apply:

- 3.1 Nominal Size (DN) — Numerical designation of the size of a component, other than a component designated by a thread size, which is a convenient round number approximately equal to the manufacturing dimension in millimetres (mm).
- 3.2 Nominal Size (DN/OD) — Nominal size, related to the outside diameter.
- 3.3 Nominal Outside Diameter (d_n) — Specified outside diameter, in millimetres, assigned to a nominal size DN/OD.
- 3.4 Outside Diameter at any Point (d_e) — Value of the measurement of the outside diameter through its cross-section at any point of the pipe rounded to the next greater 0.1 mm.
- 3.5 Mean Outside Diameter (d_{em}) — Value of the measurement of the outer circumference of the pipe or spigot end of a fitting in any cross-section divided by π ($= 3.142$), rounded to the next greater 0.1 mm.
- 3.6 Minimum Mean Outside Diameter ($d_{em, Min}$) — Minimum value of the outside diameter as specified for a given nominal size.
- 3.7 Maximum Mean Outside Diameter ($d_{em, Max}$) — Maximum value of the outside diameter as specified for a given nominal size.
- 3.8 Out-of-roundness (Ovality) — Ovality shall be measured as the difference between maximum outside diameter and minimum outside diameter measured at the same cross-section of the pipe, at 300 mm away from the cut end, for the pipe to be coiled.
- 3.9 Nominal Wall Thickness (e_n) — Numerical designation of the wall thickness of a pipe, which is a convenient round number approximately equal to the manufacturing dimension in millimetres.
- 3.10 Standard Dimension Ratio (SDR) — The SDR value is the ratio of the nominal outside diameter, d_n , of a pipe to its nominal wall thickness.
- $$SDR = \frac{d_n}{e_n}$$
- 3.11 Wall Thickness at any Point (e) — Wall thickness at any point of the body of the pipe, around its circumference
- 3.11.1 Minimum Wall Thickness at any Point (e_{Min}) — Minimum value of the wall thickness at any point of the body of the pipe, around its circumference as specified.
- 3.11.2 Maximum Wall Thickness at any Point (e_{Max}) — Maximum value of the wall thickness at any point of the body of the pipe, around its circumference as specified.

- 3.12 Mean Wall Thickness (e_m) — The arithmetic mean of a number of measurements regularly spaced around the circumference of the pipe in the same cross-section of the pipe, including the measured minimum and the measured maximum values of the wall thickness.
- 3.13 Tolerance — Permissible variation of the specified value of a quantity expressed as the difference between the permissible maximum and permissible minimum values.
- 3.14 Minimum Required Strength (MRS) — Minimum value in megapascals (MPa), for long-term hydrostatic strength (LTHS) of the polyethylene resin which represents the 97.5 percent confidence limits of the predicted hydrostatic strength at 20°C for 50 years. This is considered as the property of the material.
- 3.15 Overall Service (Design) Coefficient (C) — An overall design co-efficient with a value greater than 1, which takes into consideration service conditions as well as properties of the components of a piping system other than those represented in the lower confidence limit. For water supply pipes, the minimum value of C is 1.25.
- 3.16 Design Stress (σ) — The maximum allowable stress, expressed in megapascals (MPa), for a given application derived by dividing MRS by the co-efficient C. This is the allowable stress at 20°C.
- 3.17 Nominal Pressure (PN) — Numerical designation used for reference purposes related to the mechanical characteristics of the component of piping system.

NOTE — For plastic piping systems conveying water, it corresponds to the maximum continuous operating pressure, expressed in bar which can be sustained with water at 27°C, based on the minimum design coefficient, C (1 MPa = 10 bar).

The relationship between MRS, PN and SDR is given in Annex A.

- 3.18 Maximum Allowable Operating Pressure (MAOP) — The maximum allowable continuous pressure, expressed in MPa. It is given by the equations,

$$P \text{ (MPa)} = \frac{2 \times \sigma}{(SDR-1)} \times f_1$$

$$P \text{ (MPa)} = \frac{2 \times \text{MRS}}{C (SDR-1)} \times f_1$$

Where

SDR = standard dimension ratio;

σ = design stress, in MPa;

MRS = minimum required strength, in MPa;

f_1 = pressure reduction co-efficient; and

C = overall service design co-efficient.

- 3.19 Pressure Reduction Co-efficient (f_T)** — A co-efficient which takes into account the reduction in maximum allowable operating pressure due to increase in operating temperature.
- 3.20 Melt Flow Rate (MFR)** — Value relating to the viscosity of the molten thermoplastic material at a specified temperature and rate of shear.
- 3.21 Virgin Material** — Thermoplastics material in a form such as granules which has not been previously processed other than for compounding and to which no reprocessed or recycled materials have been added.

4. GRADE OF RESIN

Pipes shall be classified according to the grade of the raw material (resin) as given in Table 1. The resin supplier shall give the raw material grade.

Table 1 Classification of Materials
(Clause 4)

Sl No.	Material Classification (Grade)	MRS (Minimum Required Strength) of PE Resin at 20°C for 50 Year Life MPa	Design Stress at 20°C MPa
(1)	(2)	(3)	(4)
i)	PE 63	6.3	5
ii)	PE 80	8.0	6.3
iii)	PE 100	10.0	8

NOTES

- 1 The maximum allowable operating pressure (MAOP) of a pipe is obtained by the equations given in 3.18.
- 2 Pressure reduction-coefficients for calculating maximum allowable operating pressure at temperatures higher than 20°C are given in Fig. 1.
- 3 As an operating water temperature of 27°C has been considered, a pressure reduction co-efficient, f_T , of 0.85 has been taken from Fig. 1 and used in the equation given at 3.18 for determining the maximum allowable operating pressure at 27°C (nominal pressure). This ensures that no further correction factor is required for over ground or underground water supply systems.
- 4 The wall thicknesses are calculated based on maximum allowable operating pressure at 27°C rounded up to nearest SDR series (PN values). The pressure class (pressure rating) is also rounded to standard series. Tolerances calculated from (0.1 mm to 0.1 mm) rounded up to the next 0.1 mm. considering operational production problems, maximum wall thickness of pipes are considered around 130 mm.
- 5 The pipes are recommended for maximum water temperature of +45°C.
- 6 The pipes may also be used up to the ambient temperature of -40°C without any correction factor as long as the water temperatures inside the pipe do not exceed the operating temperature of 27°C. Intermittent increase in the ambient or water temperatures because of weather changes would not have any deleterious effect on the pipe's long-term performance.

5. MATERIAL

5.1 General

The material used for the manufacture of pipes should not constitute toxic hazard, should not support microbial growth and should not give rise to unpleasant taste or odour, cloudiness or discoloration of water. Pipe manufacturers shall obtain a certificate to this effect from the manufacturer of raw material.

5.2 Polyethylene Resin

PE resin used for the manufacture of pipes shall conform to parameters mentioned in Table 2. In addition, the resin shall conform to requirement of NS 110.

The material classification and conformity to Table 2 shall be provided by the raw material (resin) manufacturer with documentation duly certified by resin manufacturer.

5.3 Carbon Black Master Batch

Carbon black master batch shall be manufactured from a mixture of the following:

- a) Polyethylene, which may include co-polymers of ethylene and higher olefin, in which the higher olefin constituent does not exceed 10 percent (mass/mass) and density of 910-950 kg/m³.
- b) The constituents used should be from the positive list of constituents of PE, in contact with food stuff, pharmaceutical and drinking water as per NS.... and should not constitute a toxic hazard, shall not support microbial growth and shall not give rise to an unpleasant taste or odour, cloudiness or discoloration of the water.
- c) Loading of carbon black should not exceed 50 percent (m/m).
- d) Ash content <0.1 percent.
- e) Carbon black used in carbon black master batch shall comply with the following requirements:

- 1) Density: 1.5 to 2.0 g/ml.
- 2) Toluene extract not more than 0.1 percent (m/m).
- 3) Maximum volatile matter 0.9 percent (m/m) (see Annex C).
- 4) Carbon black particle size should be less than 0.025 μ .

NOTE — A test report or confirmative certificate may be obtained from the carbon black master batch manufacturer.

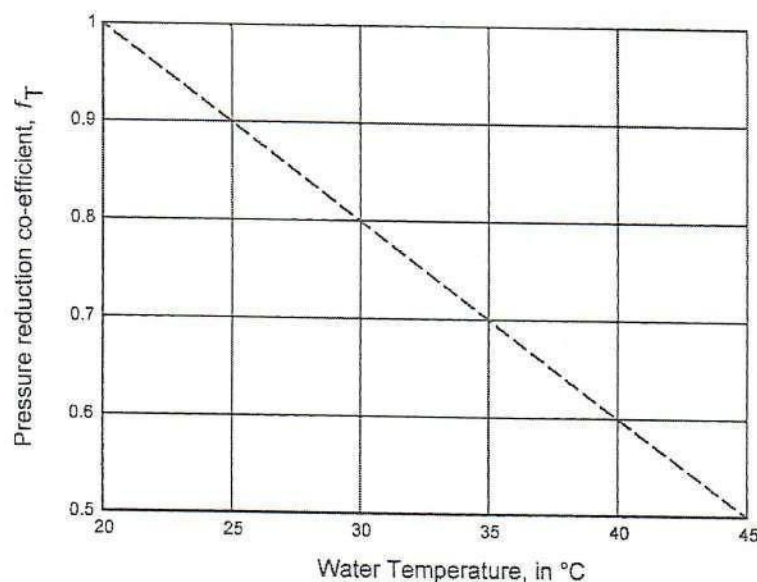


FIG. 1 PRESSURE REDUCTION CO-EFFICIENT FOR WATER TEMPERATURES ABOVE 20°C

Table 2 Characteristics of PE Resin as Granules
(Clauses 5.2 and 6.1.1)

Sl No. (1)	Characteristics (2)	Units (3)	Requirements (4)	Test Parameters (5)	Test Method (6)
i)	Base density	kg m ⁻³	930-965	27°C	NS 110
ii)	Melt flow rate	g /10 min	0.2 to 1.1 (both inclusive)	190°C using a 5 kg mass	NS 97
iii)	Thermal stability (oxidation induction time)	min	≥ 20	200°C, isothermal	Annex B
iv)	Volatile matter	mg/kg	≤ 350	Number of test pieces	01 Annex C
v)	Water content ¹⁾	mg/kg	≤ 300	Number of test pieces	01 Annex D

¹⁾ This requirement is only applicable if the measured volatile content is not in conformity with its specified requirement. In case of dispute, the requirement for water content shall apply. (If the water content exceeds the limit, drying to be done prior to use).

5.4 Anti-Oxidant

The percentage of anti-oxidant used shall not be more than 0.3 percent by mass of finished resin. The anti-oxidant used shall be physiologically harmless and shall be selected from the list given in NS... The raw material supplier shall provide test certificate containing the Anti-Oxidant percentage and the name of the Anti-Oxidant.

5.5 Rework Material

Clean, reprocessable material generated from a manufacturer's own production and works testing of products according to this standard may be used if it is derived from the same raw material as used for the relevant production however it shall not be more than 10%. Reprocessable material obtained from external sources and recycled material shall not be used.

6. PIPE DESCRIPTION

6.1 Pipes shall be designated according to the grade of material (see 6.1.1) followed by pressure rating (PN) (see 6.1.4), nominal outside diameter (see 6.1.3) and standard dimension ratio (SDR) (see 6.1.2). For example PE 80, PN 5, DN 200 SDR 26, indicates pipe pertaining to material grade PE 80, pressure rating 5, nominal outside diameter 200 mm & wall thickness corresponding to SDR 26.

6.1.1 The grade of material shall be as given in Table 1.

6.1.2 The standard dimension ratio of pipes covered in this standard are:

SDR 41, SDR 33, SDR 26, SDR 21, SDR 17, SDR 13.6, SDR 11, SDR 9, SDR 7.4 and SDR 6.

6.1.3 The nominal outside diameter of pipes covered in this standard are:

16, 20, 25, 32, 40, 50, 63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500, 560, 630, 710, 800, 900, 1000, 1200, 1400, 1600, 1800, 2000 mm.

- 6.1.4 The pipes shall be classified by pressure rating (PN) corresponding to the maximum allowable operating pressure at 27°C, as follows:

Pressure Rating of Pipe (1)	Maximum Allowable Operating Pressure at 27°C (2)
PN 2	0.20 MPa
PN 2.5	0.25 MPa
PN 3	0.30 MPa
PN 3.2	0.32 MPa
PN 4	0.40 MPa
PN 5	0.50 MPa
PN 6	0.60 MPa
PN 8	0.80 MPa
PN 10	1.00 MPa
PN 12.5	1.25 MPa
PN 16	1.60 MPa
PN 20	2.00 MPa

6.2 Colour

The colour of the pipe shall be black with blue identification stripes.

6.2.1 Identification Stripes

Each black pipe with identification stripes shall contain minimum of three longitudinal stripes of minimum width of 3 mm in blue colour, circumferentially distributed. These stripes shall be co-extruded during pipe manufacturing and shall not preferably be more than 0.2 mm in depth for wall thickness up to 10 mm and 0.5 mm beyond 10 mm. The material of the stripes shall be of the same type as used in the base compound for the pipe.

7. GEOMETRIC CHARACTERISTICS OF PIPE

7.1 Visual Appearance

The internal and external surface of the pipe shall be smooth, clean and free from grooving and other defects. The ends of the pipes shall be cleanly cut square with the axis of the pipe to within the tolerances given below and free from deformity. Slight shallow longitudinal grooves or irregularities in the wall thickness shall be permissible, provided that the wall thickness remains within the permissible limits.

Nominal diameter DN Mm (1)	Maximum Out of Square of Pipe End mm (2)
16 to 75	2
90 to 125	3
140 to 180	4
200 to 280	5
Above 280	7

7.2 Length

The length of straight pipe shall be 5 m to 20 m as agreed to between the manufacturer and purchaser. Short lengths of 3 m (minimum) up to the maximum of 10 percent of the total supply may be permitted.

7.3 Coiling

The pipes shall be coiled such that localized deformation, for example, buckling and kinking is prevented. The minimum internal diameter of the coil shall not be less than 18 d_n . The length of the coiled pipes shall be as agreed between the manufacturer and purchaser.

7.4 Dimensions

The mean outside diameters, d_{em} , and the out-of-roundness (ovality) of the pipes for different nominal diameters covered in the standard shall be in accordance with Table 3. The minimum and maximum wall thickness of pipes shall be as given in Table 4.

7.4.1 Methods of Measurement

- 7.4.1.1 Mean outside diameter of the pipe shall be the average of two measurements taken using a vernier at right angles for pipes up to 50 mm diameter. For higher sizes, the diameter shall be measured using a flexible Pi tape or a circumeter, having an accuracy of not less than 0.1 mm. The wall thickness shall be measured by a dial vernier or ball ended micrometer. The resulting dimension shall be expressed to the nearest 0.1 mm.

NOTES

- 1 The outside diameter shall be measured at a distance of at least 300 mm from the end of the pipe.
- 2 In the case of discrepancy, the dimension of pipes shall be measured after conditioning at room temperature ($27^{\circ}\text{C} \pm 2^{\circ}\text{C}$) for 4 h.

Table 3 Mean Outside Diameters and Out-of-roundness
(Clause 7.4)

All dimensions in millimetres.

Sl No.	Nominal Size DN×OD	Nominal Outside Diameter d_n	Mean Outside Diameter		Maximum Out-of- Roundness (Ovality)
			($d_{m, min}$)	($d_{m, max}$)	
(1)	(2)	(3)	(4)	(5)	(6)
i)	16	16	16.0	16.3	1.2
ii)	20	20	20.0	20.3	1.2
iii)	25	25	25.0	25.3	1.2
iv)	32	32	32.0	32.3	1.3
v)	40	40	40.0	40.4	1.4
vi)	50	50	50.0	50.4	1.4
vii)	63	63	63.0	63.4	1.5
viii)	75	75	75.0	75.5	1.6
ix)	90	90	90.0	90.6	1.8
x)	110	110	110.0	110.7	2.2
xi)	125	125	125.0	125.8	2.5
xii)	140	140	140.0	140.9	2.8
xiii)	160	160	160.0	161.0	3.2
xiv)	180	180	180.0	181.1	3.6
xv)	200	200	200.0	201.2	4.0
xvi)	225	225	225.0	226.4	4.5
xvii)	250	250	250.0	251.5	5.0
xviii)	280	280	280.0	281.7	5.8
xix)	315	315	315.0	316.9	6.8
xx)	355	355	355.0	357.2	8.0
xxi)	400	400	400.0	402.4	9.5
xxii)	450	450	450.0	452.7	11.0
xxiii)	500	500	500.0	503.0	12.5
xxiv)	560	560	560.0	563.4	14.0
xxv)	630	630	630.0	633.8	16.0
xxvi)	710	710	710.0	716.4	18.0
xxvii)	800	800	800.0	807.2	20.0
xxviii)	900	900	900.0	908.1	22.0
xxix)	1 000	1 000	1 000.0	1 009.0	24.0
xxx)	1 200	1 200	1 200.0	1 210.8	28.0
xxxi)	1 400	1 400	1 400.0	1 412.6	32.0
xxxii)	1 600	1 600	1 600.0	1 614.4	36.0
xxxiii)	1 800	1 800	1 800.0	1 816.2	40.0
xxxiv)	2 000	2 000	2 000.0	2 018.0	45.0

NOTE — For coiled pipes and for straight lengths with diameters ≥ 710 mm, the maximum out-of-roundness shall be as agreed to between the manufacturer and the purchaser.

7.4.1.2 Ovality

Ovality shall be measured at 300 mm away from cut end, using a scale having suitable graduations. For coiled pipes and pipes having $SDRs \geq 21$, re-rounding shall be permissible before the measurement of ovality. The ovality shall be measured during extrusion and prior to coiling.

8. PERFORMANCE REQUIREMENTS

8.1 Hydraulic Characteristics

8.1.1 Internal Pressure Creep Rupture Test of Pipe

When subjected to internal pressure creep rupture test in accordance with procedure given in Annex E and test parameters as specified in Table 5, the pipes under test shall show no signs of localized swelling, leakage or weeping and shall not burst during the prescribed test period.

Table 4 Standard Dimension Ratio (SDR) and Corresponding Wall Thicknesses (e) of Pipes
(Clauses 7.4 and E-4.3)

SDR	SDR 41	SDR 33	SDR 26	SDR 21	SDR 17	SDR 13.6	SDR 11	SDR 9	SDR 7.4	SDR 6
Nominal Pressure (PN) Bar										
PE 63	PN 2	PN 2.5	PN 3.2	PN 4	PN 5	PN 6	PN 8	PN 10	PN 12.5	PN 16
PE 80	PN 2	PN 2.5	PN 3.2	PN 4	PN 5	PN 6	PN 8	PN 10	PN 12.5	PN 16
PE 100	PN 2	PN 2.5	PN 3.2	PN 4	PN 5	PN 6	PN 8	PN 10	PN 12.5	PN 16
Wall Thicknesses										
Nominal OD d_n mm	e_{min} mm	e_{max} mm	e_{min} mm	e_{max} mm	e_{min} mm	e_{max} mm	e_{min} mm	e_{max} mm	e_{min} mm	e_{max} mm
16										
20										
25										
32										
40										
50										
63										
75										
90	1.9	2.2	2.3	2.6	2.8	2.9	3.0	3.4	3.7	4.2
110	2.2	2.5	2.8	3.2	3.6	4.0	4.3	4.8	5.4	6.0
125	2.7	3.1	3.4	3.8	4.3	4.8	5.3	5.9	6.7	7.5
140	3.1	3.6	3.9	4.3	4.8	5.4	6.0	6.7	7.5	8.4
160	3.6	4.0	4.3	4.8	5.4	6.0	6.7	7.5	8.4	9.3
180	4.1	4.6	4.9	5.4	6.0	6.7	7.5	8.4	9.3	10.5
200	4.6	5.1	5.4	6.0	6.7	7.5	8.4	9.3	10.5	11.7
225	5.2	5.7	6.0	6.7	7.5	8.4	9.3	10.5	11.7	12.9
250	5.8	6.3	6.6	7.3	8.1	9.0	10.0	11.1	12.3	13.6
280	6.5	7.1	7.4	8.1	9.0	10.0	11.1	12.3	13.6	14.9
315	7.3	8.0	8.3	9.0	10.0	11.1	12.3	13.6	14.9	16.4
355	8.2	8.9	9.2	10.0	11.1	12.3	13.6	14.9	16.4	18.0
400	9.1	9.8	10.1	11.0	12.1	13.3	14.6	15.9	17.3	19.0
450	10.1	10.8	11.1	12.0	13.1	14.3	15.6	17.0	18.4	20.3
500	11.2	11.9	12.2	13.1	14.2	15.4	16.7	18.1	19.5	21.5
560	12.4	13.1	13.4	14.3	15.4	16.6	17.9	19.3	20.7	22.8
630	13.7	14.4	14.7	15.6	16.7	17.9	19.3	20.7	22.1	24.3
710	15.1	15.8	16.1	17.0	18.1	19.3	20.7	22.1	23.5	25.8
800	16.6	17.3	17.6	18.5	19.6	20.8	22.2	23.6	25.0	27.4
900	18.2	18.9	19.2	20.1	21.2	22.4	23.8	25.2	26.6	29.1
1 000	20.0	20.7	21.0	21.9	23.0	24.2	25.6	27.0	28.4	31.0
1 100	21.8	22.5	22.8	23.7	24.8	26.0	27.4	28.8	30.2	32.8
1 200	23.7	24.4	24.7	25.6	26.7	27.9	29.3	30.7	32.1	34.7
1 400	26.7	27.4	27.7	28.6	29.7	30.9	32.3	33.7	35.1	37.8
1 600	29.8	30.5	30.8	31.7	32.8	34.0	35.4	36.8	38.2	41.0
1 800	33.0	33.7	34.0	34.9	36.0	37.2	38.6	40.0	41.4	44.3
2 000	36.3	37.0	37.3	38.2	39.3	40.5	41.9	43.3	44.7	47.7

NOTES

- 1 Tolerances calculated from $(0.1 e_{max} \pm 0.1)$ mm rounded up to the next 0.1 mm.
- 2 All pressure ratings are calculated at 27 °C and rounded up to nearest pressure class.
- 3 Considering operational problems, maximum wall thickness of pipes are considered around 130 mm.

Table 5 Hydraulic Characteristic Requirements of Pipes
(Clauses 8.1.1 and E-4.3)

Sl No.	Test Temp °C	Test Duration h	Induced Hoop Stress MPa		
			PE 63 (4)	PE 80 (5)	PE 100 (6)
(1)	(2)	(3)			
i)	27	100	6.9	8.6	10.7
ii)	80	48	3.8	4.9	5.7
iii)	80	165	3.5	4.5	5.4
iv)	80	1000	3.2	4.0	5.0

8.1.2 Internal Pressure Creep Rupture Test of Pipe Joints

The pipe joints shall also be tested for the hydraulic characteristic requirement by subjecting the butt fusion joint or electro fusion joint of a pipe to internal pressure creep rupture test at 80°C for 48 h as per Table 5 and in accordance with the method given in Annex E. The pipe joints under test shall show no signs of localized swelling, leakage or weeping and shall not burst during the prescribed test period.

8.2 Longitudinal Reversion Test

When tested in accordance with the method given in Annex F, the value of the longitudinal reversion shall not be greater than 3 percent.

8.3 Carbon Black Content and Dispersion

When tested from a composite sample of minimum three pipes, in accordance with NS 97 the carbon black content shall be within 2.5 ± 0.5 percent, and the dispersion of carbon black shall be satisfactory.

8.4 Melt Flow Rate

When tested from a composite sample of minimum three pipes as per NS 97 at 190°C with nominal load of 5 kgf, MFR shall not deviate from the MFR of the resin by more than 30 percent.

8.5 Oxidation Induction Time

The minimum oxidation induction time of the pipe when tested in accordance with the method given in Annex B shall be not less than 20 min.

8.6 Overall Migration

When tested from a sample of minimum 3 pipes as per NS..., the overall migration of constituents shall be within the limits stipulated in NS....

8.7 Density

When tested from a composite sample of minimum of 3 pipes as per NS 110, the base density of the pipe shall be between 930 to 965 kg/m³.

8.8 Tensile Strength for Butt-fusion

When tested according to Annex G, the test specimens prepared by punching /machining from pipe butt fusion sample preferably 110 mm Dia/SDR 11 shall show ductile failure. If the sample shows brittle fail the test may be considered as a failure.

NOTE — If 110 mm/SDR 11 pipes are not being manufactured, test shall be carried out on the nearest, preferably higher size/ SDR ratio being manufactured.

8.9 Elongation at Break

When tested according to Annex H, the test specimens punched/machined from pipe samples, shall meet requirement as per Table 6.

Table 6 Elongation at Break Requirements of Pipes
(Clause 8.9)

S. No. (1)	Characteristics (2)	Requirements (3)	Test Parameters Parameter (4)	Value (5)	Test Method Ref to (6)
i	Elongation at break for $e \leq 5$ mm	≥ 350 Percent	Test piece shape	Type 2	Annex H
			Test speed	100 mm/min	
ii	Elongation at break for 5 mm $< e \leq 12$ mm	≥ 350 Percent	Test piece shape	Type 1 ¹⁾	Annex H
			Test speed	50 mm/min	
iii	Elongation at break for $e > 12$ mm	≥ 350 Percent	Test piece shape	Type 1 ¹⁾	Annex H
			Test speed	25 mm/min	
			OR		
			Test piece shape	Type 3 ¹⁾	
			Test speed	10 mm/min	

¹⁾Where practical, machined type 2 test pieces may be used for pipe wall thickness ≤ 25 mm. The test may be terminated when the requirement is met, without continuing until the rupture of the test piece.

8.10 Slow Crack Growth Rate

When subjected to test parameters as given below and tested in accordance with the procedure given in Annex E, the notched test specimens prepared from pipe size of preferably 110 mm and SDR 11 in accordance with Annex J shall show no signs of localized swelling, leakage or weeping and shall not burst during the prescribed test period.

Test Temperature	Test Duration	Internal Test Pressure, MPa		
$^{\circ}\text{C}$	H	PE 63	PE 80	PE 100
80 ± 1	500 h	0.64	0.8	0.92

NOTE — If 110 mm / SDR 11 pipes are not being manufactured, test shall be carried out on the nearest, preferably higher size / SDR ratio being manufactured.

9. SAMPLING, FREQUENCY OF TESTS AND CRITERIA FOR CONFORMITY

9.1 Type Tests

- 9.1.1 Type tests are intended to prove the suitability and performance of a new composition, a new technique or a new size of a pipe. Such tests, therefore, need be applied only when a change is made in polymer composition or method of manufacture, or when a new size of pipe is to be introduced. Even if no change is envisaged, type test shall be done at least once in two years on each pressure rating and grade of pipe of the highest size manufactured during the period.
- 9.1.2 Three samples of the same grade, same size and same SDR selected at random shall be tested for compliance with the requirements of the type tests as given in Table 7.

- 9.1.3 If all the samples pass the requirements of the type test, the type of the pipe under consideration shall be considered eligible for type approval.
- 9.1.4 In case of any of the samples fails in the type test, the testing authority, at its discretion, may call for fresh samples not exceeding the original number and subject them to the type test again. If in repeat test, no single failure occurs, the type of pipe under consideration shall be considered eligible for type approval. If any of the samples fails in the repeat tests, the type of pipe shall not be approved. The manufacturer or the supplier may be asked to improve the design and resubmit the product for type approval.
- 9.1.5 At the end of the validity period (normally one year for internal pressure creep rupture test at 27°C for 100 h and internal pressure creep rupture test for joints at 80°C for 48 h and two years for all other type tests) or earlier as may be necessary, the testing authority may call for fresh samples for type-test for the purpose of type approval.

Table 7 Type Tests
(Clause 9.1.2)

Sl No. (1)	Description of Test (2)	Sample Requirement	
		Size (3)	Clause (4)
i)	Tensile strength for butt-fusion	3	8.8
ii)	Overall migration	3	8.6
iii)	Internal pressure creep rupture test (hydrostatic resistance test) at 27°C for 100 h	3	8.1.1
iv)	Internal pressure creep rupture test (hydrostatic resistance test) at 80°C for 165 h	3	8.1.1
v)	Internal pressure creep rupture test (hydrostatic resistance test) at 80°C for 1 000 h test	3	8.1.1
vi)	Slow crack growth rate test	3	8.10
vii)	Internal Pressure Creep Rupture Test (Hydrostatic Creep Rupture Test) for Joints at 80°C for 48 h	3	8.1.2

9.2 Acceptance Test

- 9.2.1 Acceptance tests are carried out on sample selected from a lot for the purpose of acceptance of the lot.

9.2.2 Lot

All pipes of the same grade, same size, same SDR and also manufactured essentially under similar conditions of manufacture shall constitute a lot. For ascertaining conformity of the lot to the requirements of this standard, samples for acceptance tests (see Table 8) shall be selected and prepared after conditioning at $27 \pm 2^\circ\text{C}$ and tested for compliance as per Table 8.

Table 8 Acceptance Tests
(Clause 9.2.2)

Sl No.	Description of Test	Sample Size	Requirement Clause
i)	Visual appearance and dimensions	Table 9	7.1 and 7.4
ii)	Melt flow rate	Table 10	8.4
iii)	Density	Table 10	8.7
iv)	Reversion test	Table 10	8.2
v)	Elongation at break	Table 10	8.9
vi)	Carbon black content	Table 10	8.3
vii)	Carbon black dispersion	Table 10	8.3
viii)	Oxidation Induction	Table 10	8.5
ix)	Internal pressure creep rupture test (hydrostatic resistance test) at 80 °C for 48 h	Table 10	8.1.1

9.2.3 Conformity to Dimensional and Visual Characteristics

9.2.3.1 The number of test samples shall be in accordance with Table 9.

9.2.3.2 These pipes shall be selected at random from the lot and in order to ensure the randomness of selection, a random number table shall be used. For guidance and use of random number tables, NS 145 may be referred. For the above purpose, each length of the coil of a given size, grade and SDR shall be considered as one pipe. In the absence of a random number table, the following procedure may be adopted.

Starting from any pipe in the lot, count them as 1, 2, 3, 4 etc, up to r and so on where r is the integral part of N/n , N being the number of pipes in the lot and n is the number of pipes in the samples. Every r^{th} pipe so counted shall be drawn so as to constitute the required sample size.

9.2.3.3 The number of pipes given for the first sample in col 4 of Table 9 shall be examined for visual and dimensional requirements as given in 7.1 and 7.4 respectively. A pipe failing to satisfy any of these requirements shall be considered as defective. The lot shall be deemed to have satisfied these requirements, if the number of defectives found in the first sample are less than or equal to the corresponding acceptance number given in col 6 of Table 9. The lot shall be deemed not to have met these requirements if the number of defectives found in the first sample is greater than or equal to the corresponding rejection numbers given in col 7 of Table 9. If, however, the number of defectives found in the first sample lies between the corresponding acceptance and rejection numbers given in col 6 and 7 of Table 9, the second sample of the size given in col 4 of Table 9 shall be taken and examined for these requirements. The lot shall be considered to have satisfied these, requirements, if the number of defectives found in the cumulative sample is less than or equal to the corresponding acceptance number given in col 6 of Table 9 otherwise not. In case, the sample size is equal to or less than the lot size, 100 percent inspection shall be done for these tests and all the samples from the lot which pass these tests shall be tested for other acceptance tests.

9.2.4 Conformity to Acceptance Tests Other Than Dimensional and Visual Characteristics

The lot having satisfied dimensional and visual requirements shall be tested for other acceptance tests as given in Table 8. The number of test samples selected from the lot for subjecting to these tests shall be in accordance with Table 10. For the above purpose, each length of the coil of a given size, grade and SDR shall be considered as one pipe. The lot shall be considered to have met the requirements of these tests, if none of samples tested fails.

Table 9 Scale of Sampling for Dimensional Requirements
(Clauses 9.2.3.1 and 9.2.3.3)

Sl No.	No. of Pipes in the Lot	Sample No.	Sample Size	Cumulative Sample Size	Acceptance No.	Rejection No.
i)	Up to 150	First	13	13	0	2
		Second	13	26	1	2
ii)	151 to 280	First	20	20	0	3
		Second	20	40	3	4
iii)	281 to 500	First	32	32	1	4
		Second	32	64	4	5
iv)	501 to 1200	First	50	50	2	5
		Second	50	100	6	7
v)	1201 to 3200	First	80	80	3	7
		Second	80	160	8	9
vi)	3201 to 10000	First	125	125	5	9
		Second	125	250	12	13
vii)	10001 to 35000	First	200	200	7	11
		Second	200	400	18	19

Table 10 Scale of Sampling for Acceptance Tests Other Than Dimensional Requirements
(Clauses 9.2.2 and 9.2.4)

Sl No.	No. of Pipes in the Lot	Sample Size
a) For Pipe Sizes Up to 500 mm		
i)	Up to 150	3
ii)	151 to 1200	5
iii)	1201 to 35000	8
b) For Pipe Sizes Above 500 mm		
iv)	Up to 500	3
v)	501 to 1 200	5
vi)	1201 to 35000	5

10. MARKING

10.1 Each straight length/coil of pipe shall be clearly and indelibly marked in white/yellow colour using ink/ paint or inkjet print or hot embossed on white base, at every 1 m throughout the length of pipe/coil with the information given in 10.1.1.

10.1.1 The marking on the pipe shall carry the following minimum information:

- Manufacturer's name/trade-mark;
- Material designation, PE... (see 6.1);
- Pressure rating;
- Standard dimension ratio (SDR);
- Nominal Size; and
- Lot Number/Batch Number, containing information of date of manufacture shall include the details of production in the following manner

Year	Month	Day	Machine No.	Shift
Xxxx	Xx	Xx	xx	xx

10.2 NS Certification Marking

Each pipe/coil may also be marked with the Standard Mark.

10.2.1 The use of the Standard Mark is governed by the provisions of the Nepal Standards (Certification Mark) Act, 2037 and the Rules and Regulations made there under. The details of conditions under which a license for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Nepal Bureau of Standards and Metrology.

ANNEX A

(Clause 3.17)

THE RELATIONSHIP BETWEEN MINIMUM REQUIRED STRENGTH, NOMINAL PRESSURE AND STANDARD DIMENSION RATIO

A-1 The relation between nominal pressure (at 27°C) (PN), design stress at 20°C (σ), and the standard dimension ratio (SDR) is given by the following equation:

$$PN = \frac{20\sigma}{SDR - 1} \times f_1$$

Where, $\sigma = MRS / C$

PN = nominal pressure at 27°C, in bar

MRS = minimum required strength of the material class (see Table 1).

C = overall service design co-efficient = 1.25,

f_1 = pressure reduction co-efficient = 0.85 for 27°C (from Fig. 1), and

SDR = standard dimension ratio.

The Nominal Pressure (PN) for various material class and different SDRs has been calculated using the above equation and is given in the informal Table below

However, if a higher value for C is required, the PN values will have to be recalculated using the above equation considering the calculated design stress, σ for each class. A higher value for C can also be obtained by choosing a higher PN class.

Sl. No.	SDR	Standard Dimension Ratio (SDR) Used in Wall Thickness Chart (Table 5) at 27°C.		
		Nominal Pressure for Material Class in Bar		
(1)	(2)	PE 63 (3)	PE 80 (4)	PE 100 (5)
i)	41	2.0	2.5	3.0
ii)	33	2.5	3.2	4.0
iii)	26	3.2	4.0	5.0
iv)	21	4.0	5.0	6.0
v)	17	5.0	6.0	8.0
vi)	13.6	6.0	8.0	10.0
vii)	11	8.0	10.0	12.5
viii)	9	—	12.5	16.0
ix)	7.4	—	16.0	20.0
x)	6	—	20.0	—

ANNEX B

[Table 2 SI No. (iii)]

METHOD FOR DETERMINATION OF OXIDATION INDUCTION TIME (THERMAL STABILITY)

B-1 APPARATUS AND EQUIPMENT

B-1.1 A differential thermal analyzer (DTA)/differential scanning calorimeter (DSC), calibrated using pure indium and pure tin to give values which lie within $156.6 \pm 0.5^\circ\text{C}$ and $231.9 \pm 0.5^\circ\text{C}$ respectively. The test cell shall allow the cell to be purged within 1 min by use of successive gases at the specified flow rate.

B-1.2 Aluminium pans, large enough to accommodate a test piece in solid or molten form.

B-2 TEST PIECES

A sample from the pipe shall be taken by use of a core drill directed radially through the pipe wall. The diameter of the core shall be just less than the inner diameter of the sample pan of the thermal analyzer, and care should be taken not to overheat the sample during the coring operation. Using a scalpel, cut the test pieces that weigh 15 ± 0.5 mg in the form of discs from the core sample, selecting the inner surface.

Outer surface and mid-wall as the minimum sample points which are to be tested individually.

B-3 PROCEDURE

Establish a nitrogen flow of $50\text{ cm}^3/\text{min} \pm 10$ percent through the differential thermal analyzer or differential scanning calorimeter cell. Check that when a switchover to oxygen is made the gas flow will continue at the rate of $50\text{ cm}^3/\text{min} \pm 10$ percent and then revert to a nitrogen flow of $50\text{ cm}^3/\text{min} \pm 10$ percent.

Place a $15\text{ mg} \pm 0.5\text{ mg}$ cylindrical polyethylene specimen in an open aluminium pan an empty aluminium reference pan into the cell. Set the instrument to run isothermally at $200^\circ\text{C} \pm 0.1^\circ\text{C}$ raising the temperature at a rate of $20^\circ\text{C}/\text{min}$ and allowing the temperature to stabilize. Make any corrections to the heater voltage to bring the specimen temperature to $200^\circ\text{C} \pm 0.1^\circ\text{C}$. Start to record the thermo graph.

When stable conditions exist under the nitrogen flow, which should be the case after 5 min switch over to oxygen and mark this point on the thermo graph. The cell should be purged within 1 min of atmosphere changeover. Continue to run the thermo graph until the oxidation exotherm has occurred, and has reached its maximum.

B-4 INTERPRETATION OF RESULTS

The thermal stability of the specimen is the time taken in minutes from the introduction of oxygen to the intercept of the extended baseline and the tangent drawn to the exotherm at the point of maximum slope.

ANNEX C

[Table 2 SI No. (iv)]

METHOD FOR DETERMINATION OF VOLATILE CONTENT IN POLYETHYLENE PIPING MATERIALS AND COMPONENTS

C-1 PRINCIPLE

The method consists of determining the loss of mass of a test piece which has been put in a drying oven at a given temperature. The method is used for determining the content of material which volatiles at 105°C in polyethylene (PE) piping materials. This method is also applicable to moulding and extrusion materials. It can be also applicable to components in PE piping systems.

C-2 APPARATUS

C-2.1 Drying Oven or Equivalent Device, capable of maintaining the temperature at $(105 \pm 2)^\circ\text{C}$ at the position for the cup(s) (see C-3.2 and C-5.4).

C-2.2 A Cylindrical Glass Weighing Cup, with a diameter of 35 mm capable of containing a test piece (see C-4.1), a minimum volume of 50 ml and a corresponding lid.

C-2.3 A Desiccators

C-2.4 An Analytical Balance or Equivalent, capable of weighing to the nearest 0.1 mg.

C-3 TEST PIECE

C-3.1 Each test piece shall comprise an approximately 25 g portion of a sample representative of the material before molding or extrusion, as applicable, or cut in accordance with the referring standard from a cross section of a pipe or fitting.

NOTE — If test sample utilize different sampling weights or are taken from different sources, for example raw material granulate or finished product, then there may be a difference in test results obtained. This may depend on, for example, the surface area/mass ratio or the maximum thickness of material. To demonstrate correlation with results for granulate sample determined in accordance with this method, the preparation of samples from finished products may have to be modified.

C-3.2 The number of test pieces shall be as specified in Table 2.

C-4 PROCEDURE

C-4.1 Clean and dry a weighing cup and its lid until constant weight is achieved and store them in the desiccators for at least 0.5 h at room temperature.

C-4.2 Take the weighing cup and its lid out of the desiccator and determine their combined mass, m_0 to the nearest 0.1 mg.

C-4.3 Fill the cup with about 25 g portion of the sample and determine the mass, m_1 , of the cup, lid and the test portion to the nearest 0.1 mg.

C-4.4 Put the weighing cup in the drying oven zone which is kept at $(105 \pm 2)^\circ\text{C}$ (see C-3.1).

C-4.5 After a period of 65 ± 5 min, take the weighing cup out of the drying oven and put the cup in the desiccator for at least 1 h at room temperature.

C-4.6 Cover the cup with the lid. Weigh the cup, lid and residual material to the nearest 0.1 mg, as mass m_2 .

C-5 CALCULATION

Calculate the volatile material content, m_v , of the test portion using the following equation:

$$m_v = \frac{m_1 - m_2}{m_1 - m_0} \times 10^6$$

Where:

m_v = volatile material content in milligrams per kilogram (mg/kg) at $(105 \pm 2)^\circ\text{C}$;

m_0 = mass in grams of the empty weighing cup and its lid;

m_1 = mass in grams of the weighing cup and its lid plus the test portion; and

m_2 = mass in grams of the weighing cup and its lid plus the residual material after 1 h at $(105 \pm 2)^\circ\text{C}$.

ANNEX D

[Table 2 SI No. (v)]

METHOD FOR DETERMINATION OF WATER CONTENT IN POLYETHYLENE PIPING MATERIALS AND COMPONENTS

D-1 PRINCIPLE

This method of determining water content of plastics

is an extraction method, in which a test portion is extracted with anhydrous methanol and the extracted water determined by titration using the Karl Fischer method. It can be used for all plastics and is applicable

to granules having a maximum size of 4 mm × 4 mm ×

3 mm. The method do not test for water absorption

(kinetics and equilibrium) of plastics. It is suitable for the determination of water content as low as of 0.1 percent or above.

D-2 REAGENT

During the analysis, reagents of recognized analytical grade should only be used.

a) Methanol, anhydrous, having water content less than 0.1 percent by mass.

b) Karl Fischer Reagent, with an equivalent factor of approximately 3 mg/ml to 5 mg/ml

of water, if the reagent is prepared; check its equivalent factor.

D-3 APPARATUS

Ordinary laboratory apparatus and the following:

a) Glass Flasks, 250 ml capacity provided with ground-glass or rubber stoppers.

b) Conical Titration Flasks, 150 ml capacity, with standard ground necks and provided with ground-glass stoppers.

c) Reflux Condensers, with ground neck capable of being fitted on to the flasks [D-3 (b)] and on to the tubes [D-3 (d)].

d) Water Absorption Tubes with ground joints, containing calcium chloride or other drying agent.

e) Electrical or Hot-air Heaters, for the flasks [D-3 (b)].

f) Pipettes, 50 ml capacity (automatic filling Pipettes are acceptable).

g) Woulfe Bottles, with two tubes.

h) Curved or U-shaped Water Absorption Tubes, filled with calcium chloride.

j) Rubber Pipette Filler

k) Pipette, 10 ml capacity

m) Desiccator, containing calcium chloride

n) Analytical Balance, accurate to 0.2 mg

p) Karl Fischer Apparatus, for determining water content.

D-4 PREPARATION OF TEST SAMPLE

D-4.1 Granules

Take a representative sample of approximately 100 g. Put the sample into a pre-dried glass flask

[see D-3 (a)] and immediately close it with a stopper.

NOTE — It is desirable pre-dry the container in an oven, and then cools it over a suitable water absorbent, for instance silica gel.

D-4.2 Finished Articles

Cut or saw the sample into pieces of approximate size,

that is, having a maximum size of 4 mm × 4 mm × 3 mm.

D-5 PROCEDURE

D-5.1 Precautions

Due to the low quantities of water measured, maximum care shall be taken exercised at all times to avoid contaminating the sample with water from the sample container, the atmosphere or transfer equipment. Hygroscopic resin samples shall be protected from the atmosphere.

D-5.2 Preparation of Test Portions

Conduct the test on two test portions from the same sample. Use test portions containing 10 mg to 20 mg of water based on the estimated water content of the sample.

D-5.3 Determination

- Carefully dry the apparatus.
- Weigh each test portion the nearest 1 mg into a conical titration flask [D-3 (b)] fitted with a ground-glass stopper. Pipette 50 ml [D-3 (f)] of anhydrous methanol [D-2 (a)] into the conical flask containing the test portion. At the same time, add 50 ml of anhydrous methanol to another conical flask for a blank test. Stopper the flask. Keep the stoppered flasks in the desiccator [D-3 (m)] pending continuation of the test.
- Unstopper the flask and quickly attach them to reflux condensers [D-3 (c)] fitted with calcium chloride tube [D-3 (d)]. Reflux the contents of the conical flasks for 3h, then leave them for 45 min to cool to room temperature.

Separate the flask from the condenser, quickly stopper them and place them in the desiccator.

- Use the Karl Fischer apparatus [D-3 (p)] to titrate the contents of each flask with Karl Fischer reagent [D-2 (b)].

D-6 EXPRESSION OF RESULTS

The water content w_1 expressed as a percentage by mass, for each of the two determinations is determined by the following formula:

$$w = \frac{(V_1 - V_2)T}{m \times 100}$$

where

V_1 is the volume, expressed in millilitres, of Karl Fischer reagent used for the determination;

V_2 is the volume, expressed in millilitres, of Karl Fischer reagent used for the blank test;

T is the water equivalent, expressed in the grams of water per millilitre of reagent, of Karl Fischer reagent, and

m is the mass, in gram of the test portion.

The two values for the water content shall not differ by more than 10 percent relative or 0.02 percent absolute, whichever is the greater. If the difference is greater, repeat the measurement until acceptable consecutive values are obtained and discard all unacceptable results.

The result is expressed as the average of these two determinations, rounded to the nearest 0.01 percent by mass.

ANNEX E

(Clauses 8.1.1, 8.1.2 and 8.10)

INTERNAL PRESSURE CREEP RUPTURE TEST

E-1 GENERAL

The test shall be carried out not earlier than 24 h after the pipes have been manufactured.

E-2 TEST SPECIMENS

A sample of pipe having free length between the end fittings equal to ten times the outside diameter but not less than 250 mm and not greater than 750 mm shall be taken for testing from each pipe to be tested.

E-3 APPRATUS

Equipment permitting the application of a controlled internal hydraulic pressure to the specimen which are immersed in a thermostatically controlled water-bath.

E-4 PROCEDURE

E-4.1 The pipes shall be fitted with the locking plugs at both ends in such a way that the axial force coming from the internal pressure are transmitted to the pipe. The pipe shall remain free to move in longitudinal direction.

E-4.2 Through a closable operating in one of the locking plugs, the pipe shall be filled with water at ambient temperature. It shall be put in a water bath at the applicable test temperature (permissible deviation of $\pm 1^\circ\text{C}$) and kept in the bath for minimum 1 h to adjust the temperature.

E-4.3 The pressure in the pipe shall then be increased to the test pressure (p) gradually and without shock, preferably within 10 to 30 s in the bath whose temperature has been adjusted in accordance with E-4.2. The pressure with a permissible deviation of ± 2.5 percent shall be maintained for the applicable test duration.

The test pressure (p) shall be calculated as follows from the minimum dimension given in Table 4 as the case may be and corresponding induced stress value given in Table 5.

$$p = \frac{2\sigma_s}{d - s}$$

Where

- p = test pressure, in MPa;
- S = minimum wall thickness, in mm;
- σ_i = induced stress, in MPa; and
- d = outside diameter of pipe, in mm.

E-5 The sample shall not show sign of localized swelling or leakage and shall not burst during the prescribed test duration. The test showing failure within a distance equivalent to the length of end cap from the end shall be disregarded and the test be repeated.

ANNEX F

(Clause 8.2)

LONGITUDINAL REVERSION TEST

F-1 APPARATUS

F-1.1 Air Oven — Thermostatically controlled at $110 \pm 2^\circ\text{C}$ and is capable of re-establishing this temperature within 15 minutes after the introduction of test specimen in the oven.

F-1.2 Thermometer — Graduated to 0.5°C .

F-1.3 Test Specimens — Either 3 complete sections of pipe, approximately 200 mm long shall be taken as test pieces, or where the pipe diameter is greater than 200 mm, pieces of pipe about 200 mm axial length and with an approximate circumferential arc length of 200 mm shall be prepared by cutting. In such cases, the entire circumference of approximately 200 mm long section of pipe shall be divided into pieces measuring approximately 200 mm square. The direction of the pipe axis shall be marked on the pieces. All pieces are required to be tested. A mark shall be scribed on the external surface approximately 50 mm for each end of the test pieces in the axial direction of pipe. (in the case of complete section of pipe, the mark shall be scribed around the whole circumference). The distance between the marks, l_0 (reference length), shall be approximately 100 mm and shall be measured to the nearest 0.25 mm at ambient temperature.

F-2 PROCEDURE

F-2.1 Place the test pieces concave side up on a glass plate previously dusted with talcum, to ensure that changes in length take unimpeded. The pieces shall not touch each other.

F-2.2 Set the oven temperature at $110 \pm 2^\circ\text{C}$. The glass plate with the test pieces shall then be placed in the oven heated to test temperature and capable of maintaining continuous forced air circulation. The test pieces shall be kept in the oven at the temperature and for the periods specified below:

Wall Thickness, e mm	Test Temperature $^\circ\text{C}$	Period of Stressing min
Up to 8	110 ± 2	60 ± 1
Over 8 and up to 16	110 ± 2	120 ± 2
Over 16	110 ± 2	240 ± 5

F-2.3 Remove the test pieces from the oven and allow to cool in air, without being moved, at the ambient temperature. Measure the minimum distance between the two marks.

F-3 EXPRESSION OF RESULTS

F-3.1 For each test pieces calculate the longitudinal reversion, T, as a percentage, as follows:

$$T = \frac{l_0 - l_1}{l_0} \times 100$$

Where

l_0 and l_1 are the distance (reference length) in mm before and after the test.

F-3.2 The average value (arithmetic mean) of all the test pieces shall be obtained and reported.

ANNEX G

(Clause 8.8)

DETERMINATION OF FAILURE MODE OF TEST PIECES FROM A BUTT-FUSED JOINT

G-1 PRINCIPLE OF THE METHOD

A test piece machined from a butt-fused PE pipe joint to give a waisted section is subjected to a tensile stress at constant speed. When loading the test piece in a tensile-testing machine, the stress is concentrated through the jointed region and ultimate failure is in the vicinity of the joint.

The failure mode is used as criteria for the evaluation of the butt-fused joint. The test is carried out at a temperature of $27 \pm 2^\circ\text{C}$.

G-2 APPARATUS

- Room, which can be controlled at a temperature of $27 \pm 2^\circ\text{C}$.
- Tensile-testing machine, capable of sustaining between its clamping jaws a constant speed of $5 \pm 1 \text{ mm/min}$, and equipped with means for recording the consequent applied force and a device to detect test piece failure.
- Clamping device, equipped with bars fitting into traction holes machined in the test piece.
- Measuring devices, capable of determining the width and thickness of the test piece to within 0.05 mm .
- Template with the geometry of the test piece (see Fig. 5 and Fig. 6), to mark the shape of the test piece to be machined.

G-3 TEST PIECES

G-3.1 Preparation

G-3.1.1 General

The butt-fused PE pipe joints shall be prepared in accordance with the manufacturer's instructions or the instructions specified in the IS 7634 (Part 2).

For each test piece required, a strip shall be machined out along the longitudinal direction of the pipe, across the joint. The strip shall be further machined to prepare a test piece with dimensions conforming to following using a template to ensure that the joint interface will be aligned with the cross-section of the centre of the waist of the test piece of type A or type B, as applicable:

- Table 11 and Fig. 2 for pipes with wall thickness $e < 25 \text{ mm}$ (Type A);
- Table 11 and Fig. 3 for pipes with wall thickness $e \geq 25 \text{ mm}$ (Type B);

The fusion beads may be removed.

G-3.1.2 Type A Test Piece

The dimension and shape of the Type A test piece shall conform to Fig. 2 and Table 11.

The "waist" of the test piece shall be formed by drilling or machining holes with their centres 35 mm

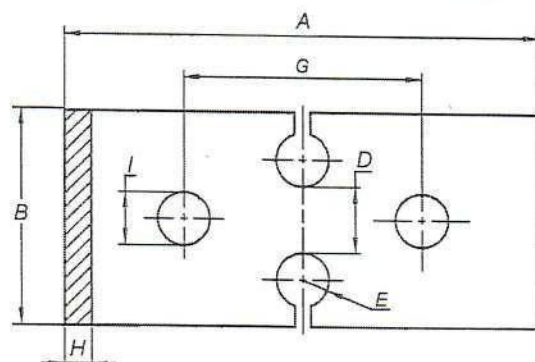


FIG. 2 MACHINED TYPE A TENSILE TEST PIECE
(FOR $E < 25 \text{ mm}$)

or 45 mm apart, as applicable, so that the centre lines of the holes lie in the same plane as the joint interface, and then cutting towards the holes from the corresponding edge of the strip. The faces of the test piece waist shall be smooth. The finish of the remaining edges is not critical.

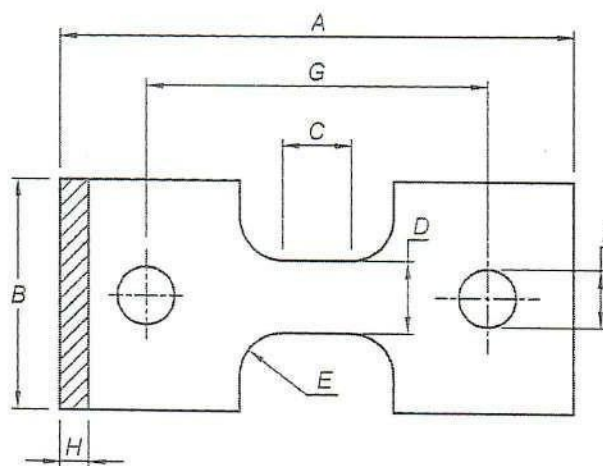


FIG. 3 MACHINE TYPE B TENSILE TEST PIECE (FOR $E \geq 25$ mm)

Table 11 Dimensions of Type A and B Test Pieces
(Clause G-3.1.2)

All dimensions in millimetres

SI No.	Symbol	Description	Dimension of Type A Test Piece		Dimensions of Type B Test Piece
			$d_n \leq 160$ mm (4)	$d_n > 160$ mm (5)	
(1)	(2)	(3)	(4)	(5)	(6)
i)	A	Overall length, Min	180	180	250
ii)	B	Width at ends	60 ± 3	80 ± 3	100 ± 3
iii)	C	Length of narrow parallel-sided portion	Not Applicable	Not Applicable	25 ± 1
iv)	D	Width of narrow portion	25 ± 1	25 ± 1	25 ± 1
v)	E	Radius	5 ± 0.5	10 ± 0.5	25 ± 0.5
vi)	G	Initial distance between grip	90 ± 5	90 ± 5	165 ± 5
vii)	H	Thickness	Full wall thickness	Full wall thickness	Full wall thickness
viii)	I	Diameter of traction holes	20 ± 5	20 ± 5	30 ± 5

G-3.1.3 Type B Test Piece

The dimension and shape of the Type B test piece shall conform to Fig. 3 and Table 11.

G-3.2 Number of Test Pieces

The number of test pieces shall depend upon the nominal outside diameter d_n of the pipe as given in Table 12.

Table 12 Number of Test Pieces
(Clause G-3.2)

SI No.	Nominal Outside Diameter, d_n mm	Number of Test Pieces
i)	$90 \leq d_n < 110$	2
ii)	$110 \leq d_n < 180$	4
iii)	$180 \leq d_n < 315$	6
iv)	$d_n \geq 315$	7

One test piece shall be taken at the position of maximum misalignment. The other test pieces shall be taken uniformly around the circumference of the joint.

G-4 CONDITIONING

Immediately prior to testing in accordance with G-5, condition each test piece in air for a minimum of 6 h at a temperature of $27 \pm 2^\circ\text{C}$, starting the period of conditioning at a time such that testing will not be carried out less than 24 h after the butt fusion of the joint.

G-5 PROCEDURE

- a) Measure the thickness of the test piece as the thickness of the pipe wall and the width of the test piece as the distance between the two holes drilled at the joint (D) for test pieces of type A (see Table 11 and Fig. 2) or as the width of the narrow portion (D) for test pieces of type B (see Table 11 and Fig. 3).
- b) Place the test piece in the clamping device of the tensile-testing machine, so that the direction of the force applied to the test piece is perpendicular to the butt-fusion joint.
- c) Apply tension to the test piece with a cross-head speed of 5 ± 1 mm/min.
- d) Record the force applied during extension until complete failure of the test piece.
- e) Record the type of failure as ductile or brittle. Only failures at the butt-fusion joint shall be taken into account.

G-6 EXPRESSION OF RESULTS

The sample shall not show brittle failure during the prescribed test. The results of all the test pieces shall be obtained and reported.

ANNEX H

(Clause 8.9 and Table 6)

DETERMINATION OF ELONGATION AT BREAK

H-1 APPARATUS

H-1.1 Tensile-testing machine meeting the specifications given in H-1.2 to H-1.4, as follows:

H-1.2 Grips, for holding the test piece and attached to the machine so that the major axis of the test piece coincides with the direction of pull through the centre line of the assembly. This can be achieved, for example, by using centring pins in the grips.

The test piece shall be held such that slip relative to the grips is prevented as far as possible and this shall be effected with the type of grip that maintains or increases pressure on the test piece as the force applied to the test piece increases.

The clamping system shall not cause premature fracture at the grips.

H-1.3 Load indicator, incorporating a mechanism capable of showing the total tensile load carried by the test piece when held by the grips. The mechanism shall be essentially free from inertia lag at the specified rate of testing, and shall indicate the load with an accuracy of within 1 percent of the actual value.

H-1.4 Extensometer, suitable for determining the gauge length of the test piece at any moment during the test.

The instrument shall be essentially free from inertia lag at the specified test speeds and shall be capable of measuring deformation to an accuracy of within 1 percent. Where a mechanical extensometer is used, this shall be fixed to the test piece in such a way that the test piece undergoes the minimum damage and distortion and no slip occurs between it and the extensometer.

The measurement of elongation of the test piece on the basis of the movement of the grips lacks accuracy and shall be avoided whenever possible.

NOTE — It is desirable, but not essential, for this instrument to record this length, or any variation in it, automatically as a function of the stress in the test piece.

H-1.5 Micrometer or equivalent, capable of reading to 0.01 mm or less and suitable for measuring the thickness and width of the test piece.

H-1.6 Cutting die, conforming to the relevant profile in this standard, as applicable.

H-1.7 Milling machine and cutter, capable of producing the test piece specified in this standard, as applicable.

H-2 TEST PIECES

H-2.1 Nature of Test Pieces

H-2.1.1 General

Where the thickness of the pipe is less than or equal to 12 mm, the test pieces shall be cut using a die or obtained by machining. Where the thickness of the pipes is greater than 12 mm the test pieces shall be machined.

H-2.1.2 Dimensions of Test Pieces

Test pieces shall be either of Type 1, the shape and dimensions of which are given in Fig. 4 and Table 13, Type 2, the shape and dimensions of which are given in Fig. 5 and Table 14 or Type 3, the shape and dimensions of which are given in Fig. 6 and Table 15. The choice of test piece is dependent on the wall thickness of the pipe from which it is taken (see H-2).

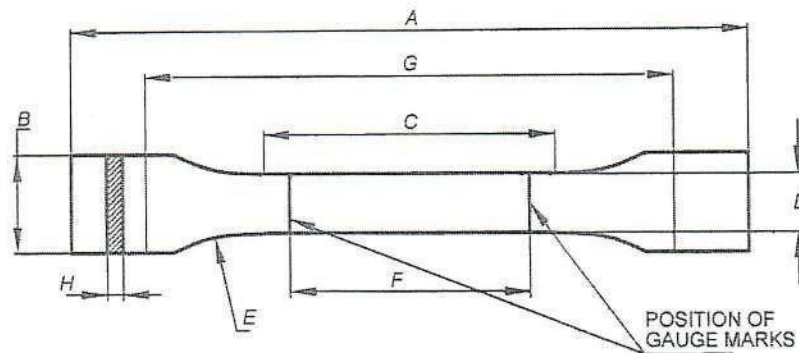


FIG. 4 TYPE 1 TEST PIECE

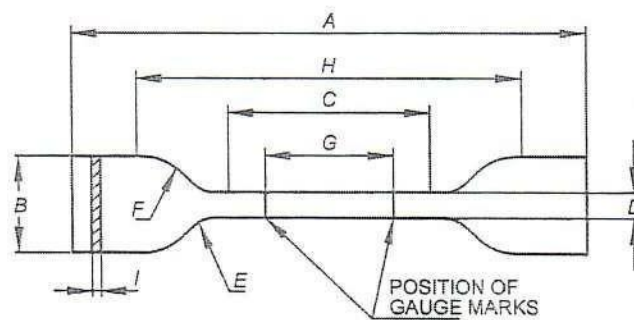


FIG. 5 TYPE 2 TEST PIECE

Table 13 Dimension of Type 1 Test Pieces
(Clause H-2.1.2)

SI No.	Symbol	Description	Dimension mm
(1)	(2)	(3)	(4)
i)	A	Overall length, Min.	150
ii)	B	Width of ends	20 ± 0.2
iii)	C	Length of narrow, parallel-sided portion	60 ± 0.5
iv)	D	Width of narrow, parallel-sided portion	10 ± 0.2
v)	E	Radius	60
vi)	F	Gauge length	50 ± 0.5
vii)	G	Initial distance between grips	115 ± 0.5
viii)	H	Thickness	That of the Pipe

Table 14 Dimension of Type 2 Test Pieces
(Clause H-2.1.2)

SI No.	Symbol	Description	Dimension mm
(1)	(2)	(3)	(4)
i)	A	Overall length, Min	115
ii)	B	Width of ends	25 ± 1
iii)	C	Length of narrow, parallel-sided portion	33 ± 2
iv)	D	Width of narrow, parallel-sided portion	$6 + 0.0.4$
v)	E	Small radius	14 ± 1
vi)	F	Large radius	25 ± 2
vii)	G	Gauge length	25 ± 1
viii)	H	Initial distance between grips	80 ± 5
ix)	I	Thickness	That of the Pipe

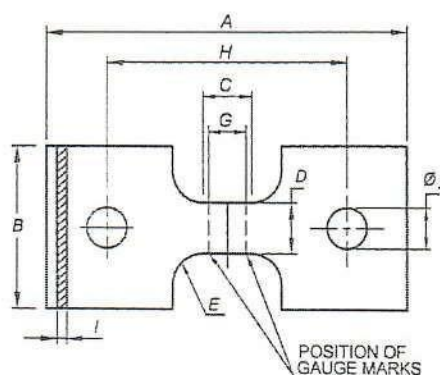


FIG. 6 TYPE 3 TEST PIECE

Table 15 Dimension of Type 3 Test Pieces
(Clause H-2.1.2)

Sl No.	Symbol	Description	Dimension
(1)	(2)	(3)	mm (4)
i)	A	Overall length (min.)	250
ii)	B	Width of ends	100±3
iii)	C	Length of narrow, parallel-sided portion	25±1
iv)	D	Width of narrow, parallel-sided portion	25±1
v)	E	Radius	25±1
vi)	G	Gauge length	20±1
vii)	H	Initial distance between centres of loading pins	165±5
viii)	I	Thickness	That of the pipe
ix)	J	Diameter of hole	30±5

H-2.2 Preparation of Test Pieces

Cut strips from the pipe as supplied, that is which has not been heated or flattened, so that their axis is parallel to the axis of the pipe and the positions from which the strips are taken conform to item (a) or item (b) below, as applicable:

- a) Pipes of nominal outside diameter less than or equal to 63 mm

Use lengths of pipe of approximately 150 mm

Cut strips from these various lengths, distributing them around the circumference from a generating line taken as the reference line

Unless otherwise specified, cut at least three strips from each sample so as to be able to take three test pieces (see Table 16).

Table 16 Recommended Number of Test Pieces [Clause H-2.2 (a)]

Sl No.	Nominal Outside Diameter, d_n	Number of Sectors or Strips
(1)	mm (2)	(3)
i)	$15 \leq d_n < 75$	3
ii)	$75 \leq d_n < 280$	5
iii)	$280 \leq d_n < 450$	5
iv)	$d_n \geq 450$	8

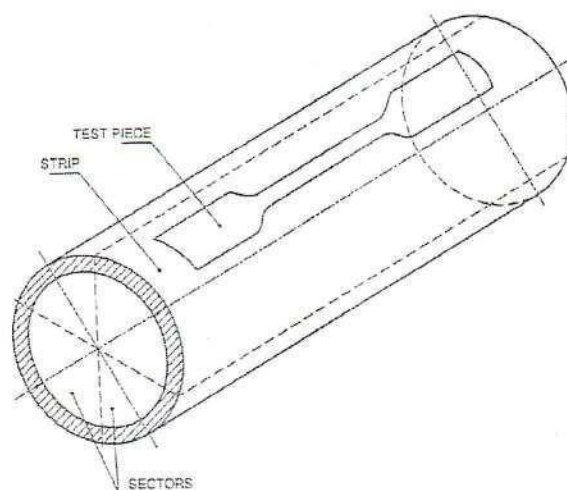


FIG. 7 PREPARATION OF TEST PIECES

- b) Pipes of nominal outside diameter greater than 63 mm

Use a length of pipe of approximately 150 mm.

Cut strips from the length in such a way that they are equally distributed around the circumference of the pipe as shown in Fig. 7.

Unless otherwise specified, divide the circumference of the pipe length into a number of sectors, depending on the diameter of the pipe as given in Table 16. Cut out one test piece per strip.

H-2.2.2 Selection of Test Pieces

The test pieces shall be taken from the centre of strips cut from the length of pipe in accordance with H-2.2.1 and with item (a) or item (b) below, as applicable.

- a) Pipes of wall thickness less than or equal to 12 mm

The test pieces shall be prepared by cutting with a die or machining to the following shape:

- type 1, for wall thicknesses less than or equal to 12 mm but greater than 5 mm;
- type 2, for wall thicknesses less than or equal to 5 mm.

- b) Pipes of wall thickness greater than 12 mm

Test pieces shall be prepared by machining. They shall be of type 1 or type 3.

H-2.3 Cutting Method

Use the cutting die (H-1.6) clean cutting edges, free from notches with a profile corresponding to that of the type 1 or type 2 test piece, depending on the thickness of the pipe.

Cut out the test piece at ambient temperature, applying the die cutter to the inner surface of the strip and exerting a continuous uniform pressure.

H-2.4 Machining Method

Produce the specimen by milling, where necessary using a milling jig.

The shape of the milling cutter and the machining conditions (speed of rotation and advance) are at the discretion of the operator. They shall however be chosen so as to avoid any heating of the test piece and deterioration of its surface such as cracks, scratches or other visible flaws.

H-3 CONDITIONING

Prior to testing, condition the test pieces at a temperature of $(27 \pm 2) ^\circ\text{C}$ for a period of not less than the time specified in Table 17, according to the thickness of the test piece.

Table 17 Conditioning Periods
(Clause H-3)

Sl No.	$e_{t, \text{min}}$ mm	Conditioning Period
(1)	(2)	(3)
i)	$e_{t, \text{min}} < 3$	1 h \pm 5 min
ii)	$3 \leq e_{t, \text{min}} < 8$	3 h \pm 15 min
iii)	$8 \leq e_{t, \text{min}} < 16$	6 h \pm 30 min
iv)	$16 \leq e_{t, \text{min}} < 32$	10 h \pm 1 h
v)	$32 \leq e_{t, \text{min}}$	16 h \pm 1 h 30 min

The test pieces shall not be tested within a period of 15 h after the production of the pipes, except for manufacturing checks, unless otherwise specified in the referring standard.

H-4 TEST SPEED

The test speed, that is the speed of separation of the grips, shall depend on the thickness of the pipes, as specified in Table 18.

Table 18 Test Speed
(Clause H-4)

Sl No.	Nominal Wall Thickness of Pipe, e_n mm	Method of Preparation of Test Piece	Type of Test Piece	Test Speed mm/min
(1)	(2)	(3)	(4)	(5)
i)	$e_n \leq 5$	Die cutting or machining	Type 2	100
ii)	$5 < e_n \leq 12$	Die cutting or machining	Type 1	50
iii)	$e_n > 12$	Machining	Type 1	25
iv)	$e_n > 12$	Machining	Type 3	10

H-5 PROCEDURE

Carry out the following procedure at a temperature of $(27 \pm 2) ^\circ\text{C}$.

- Measure, to within 0.01 mm, the width and minimum thickness of the central part of the test piece between the gauge marks. Calculate the minimum cross-sectional area.
- Place the test piece in the tensile-testing machine in such a way that the axis of the test piece coincides more or less with the direction of the tensile force. Clamp the grips uniformly and tightly to avoid any slippage of the test piece.
- Adjust the test speed to the value specified and set the machine in motion.
- Record the stress/strain curve up to the rupture of the test piece and record on this curve the gauge length at rupture, or note directly the value of the gauge length after rupture.

Discard any test pieces which slip in the grips, those which break at one of the shoulders and those which deform, thus changing the width of the shoulders, and retest an identical number of test pieces.

H-6 EXPRESSION OF RESULTS

Calculate, for each test piece, the elongation at break, using the following formula:

$$E = \frac{L_1 - L_0}{L_0} \times 100$$

Where

E = elongation at break expressed as a percentage;

L₀ = initial gauge length of the test piece, expressed in mm; and

L₁ = length at break, expressed in mm.

The above average value (arithmetic mean) of all the test pieces shall be obtained and reported.

ANNEX J

(Clause 8.10)

METHOD OF PREPARATION OF LONGITUDINALLY NOTCHED TEST PIECES FOR SLOW CRACK GROWTH RATE TEST

J-1 APPARATUS

The apparatus shall consist of a milling machine having a horizontal mandrel rigidly fixed to the bed to enable a pipe to be securely clamped to give a straight specimen. The mandrel shall support the pipe bore beneath and along the full length of the notch to be machined.

The milling cutter, mounted on a horizontal arbor, shall be a 60° included angle 'v' cutter, 12.5 mm wide having a cutting rate of 0.010 ± 0.002 mm/rev/tooth, for example a cutter with 20 teeth rotating at 700 rev/min traversed along at a speed of 150 mm/min has a cutting rate of $[150 / (20 \times 700)] = 0.011$ mm/rev/tooth. The milling cutter shall be carefully protected against damage. It shall not be used for any other material or purpose and shall be replaced after 100 m of notching.

J-2 TEST PIECE

A sample of pipe having free length between the end fittings equal to 10 times the outside diameter but neither less than 250 mm nor greater than 750 mm shall be taken for testing from each pipe to be tested.

J-3 PROCEDURE

J-3.1 The minimum pipe wall thickness shall be located and marked for machining an initial notch. The positions shall be marked for machining three additional notches equally spaced around the pipe circumference at the same position along the specimen as the initial notch.

J-3.2 The average minimum wall thickness shall be determined from measurements taken at either end of the specimen in line with a position of the initial notch.

J-3.3 For pipes having a wall thickness greater than 50 mm, the notch shall initially be machined with a slot drill of 15 mm to 20 mm diameter to leave approximately 10 mm to be removed by the 'v' cutter when machining in accordance with J-3.4 or J-3.5.

J-3.4 The initial notch (see J-3.1) shall be machined by climb milling to depth so as to produce a pipe wall ligament of thickness between 0.78 and 0.82 times the minimum specified wall thickness of the pipe (see Fig. 8).

NOTE — To achieve a remaining ligament within the required tolerance range, it is advisable to aim for a remaining ligament at the top of the tolerance range. This is because the pipe wall can move due to release of residual stresses, resulting in a deeper than anticipated notch. The length of the notch, at full depth, shall be equal to the pipe outside diameter ± 1 mm.

J-3.5 An additional notch shall be machined at each of the three positions marked in accordance with J-3.1 so that each notch has an identical ligament thickness to that of the initial notch and the ends of each notch are aligned circumferentially with those of the initial notch as shown in Fig. 8 and Fig. 9.

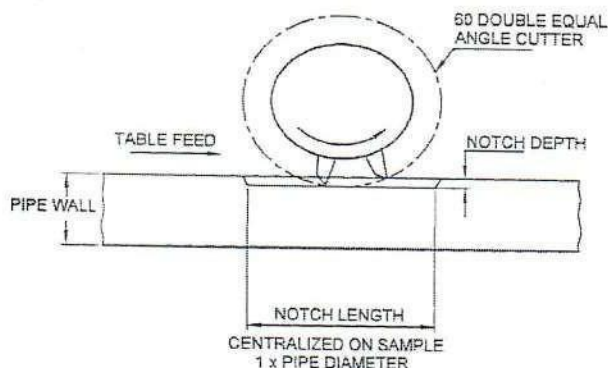


FIG. 8 NOTCH METHOD

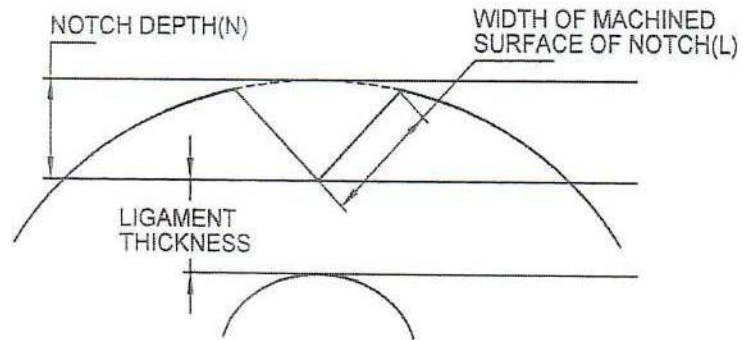


FIG. 9 MEASUREMENT TO CALCULATE NOTCH DEPTH

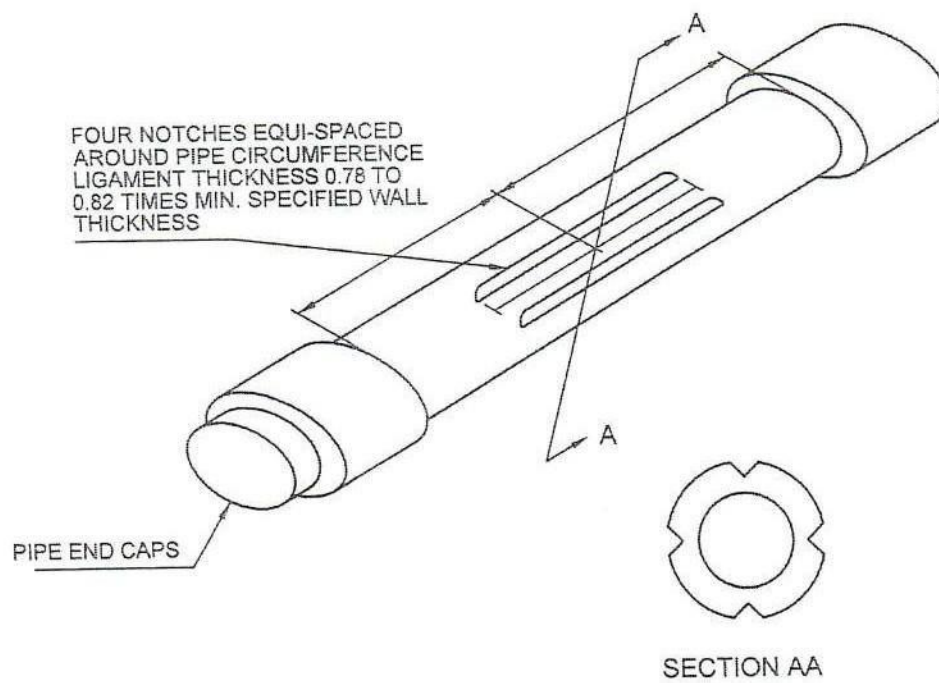


FIG. 10 PIPE TEST PIECE

J-4 MEASUREMENT OF NOTCH DEPTH

On completion of the pressure test, the test piece shall be removed from the water tank and allowed to cool to 27 ± 2 °C. A section of pipe shall be cut out from around the position of each notch.

The notch shall be opened up to give clear access to one of the machined surfaces of the notch. The width L

(mm) of the machined surface of the notch shall be measured to an accuracy of ± 0.1 mm with a microscope or other suitable means as shown in Fig. 10.

The notch depth N (mm) shall be calculated from the equation.

$$N = 0.5 [d_{em} - (d_{em}^2 - L^2)^{1/2}] + 0.86 L$$

Where

d_{em} = measured mean pipe outside diameter, in mm; and

L = width of machined surface of notch, in mm.

The ligament thickness shall be calculated from the notch depth. For acceptance, each notch shall be in accordance with J-3.4.

Nepal Council for Standardization (NCS)

ने.गुण.४०:२०७९, Polyethylene Pipes for Water Supply - Specification

अध्यक्ष : माननीय श्री दिलेन्द्रप्रसाद बडू, मन्त्री, उद्योग, वाणिज्य तथा आपूर्ति मन्त्रालय

उपाध्यक्ष : श्री अर्जुन प्रसाद पौखरेल, सचिव, उद्योग, वाणिज्य तथा आपूर्ति मन्त्रालय

सदस्यहरु

सि.नं.	नाम	पद	संस्था
१.	श्री चन्द्रकला पौडेल	सह सचिव	उद्योग, वाणिज्य तथा आपूर्ति मन्त्रालय
२.	डा. नागायण प्रसाद रेग्मी	सह सचिव	उद्योग, वाणिज्य तथा आपूर्ति मन्त्रालय
३.	श्री केशवकुमार शर्मा	सह सचिव	भौतिक पूर्वाधार तथा यातायात मन्त्रालय
४.	श्री शवनम सिवाकोटी अर्याल	सह सचिव	कृषि तथा पशुपन्छी विकास मन्त्रालय
५.	श्री कोशलचन्द्र सुवेदी	सह-प्राध्यापक	कानून, न्याय तथा संसदीय मामिला मन्त्रालय
६.	श्री इन्दु विक्रम जोशी	सह सचिव	शिक्षा विज्ञान तथा प्रविधि मन्त्रालय
७.	प्रा.डा. दीपक प्रसाद सुवेदी	प्राध्यापक	काठमाडौं विश्वविद्यालय
८.	डा. अजय कुमार झा	सह-प्राध्यापक	भौतिक शास्त्र, त्रिभुवन विश्वविद्यालय
९.	श्री भरत राज आचार्य	-	नेपाल उद्योग वाणिज्य महासंघ
१०.	श्री दीपक श्रेष्ठ	उपाध्यक्ष	नेपाल चेम्बर अफ कमर्स
११.	श्री ध्रुव बहादुर शाह	-	नेपाली उपभोक्ता संरक्षण महासंघ

सदस्य सचिव

श्री दीनानाथ मिश्र, महानिर्देशक, नेपाल गुणस्तर तथा नापतौल विभाग

ने.गुण. ४०: २०७९ Polyethylene Pipes for Water Supply - Specification विषयक प्राविधिक
समितिका सदस्यहरू

सि.नं.	नाम	पद	संस्था
१.	श्री विश्वबाबु पुडासैनी	महानिर्देशक	ने. गुण. तथा ना.तौ. विभाग
२.	श्री दीनानाथ मिश्र	उप-महानिर्देशक	ने. गुण. तथा ना.तौ. विभाग
३.	श्री कुमारी ज्योती जोशी	उप-महानिर्देशक	ने. गुण. तथा ना.तौ. विभाग
४.	श्री प्रभात कुमार सिंह	उप-महानिर्देशक	ने. गुण. तथा ना.तौ. विभाग
५.	डा.चण्डिका प्रसाद भट्ट	सि.डि.के.ई.	उद्योग वाणिज्य तथा आपूर्ति मन्त्रालय
६.	श्री आलोक कुमार मिश्र	निर्देशक	ने. गुण. तथा ना.तौ. विभाग
७.	श्री उदय कुमार गुप्ता	निर्देशक	ने. गुण. तथा ना.तौ. विभाग
८.	श्री किशु मानन्धर	निर्देशक	ने. गुण. तथा ना.तौ. विभाग
९.	श्री अनिल शाक्य	निर्देशक	ने. गुण. तथा ना.तौ. विभाग
१०.	श्री सुरत कुमार बंस	सि.डि.ई.	खानेपानी तथा ढल व्यवस्थापन विभाग
११.	श्री भरतराज आचार्य	सभापति	उ.समिति, नेपाल उद्योग वाणिज्य महासंघ
१२.	श्री शरद शर्मा	-	नेपाल प्लाष्टिक उत्पादक संघ
१३.	श्री ईश्वर प्रसाद	ए. मैनेजर	नेपाल वाटर सप्लाइ कोर्पोरेशन
१४.	श्री देवेन्द्र साहू	ए.जी.एम.	पन्चकन्या प्लाष्टिक एण्ड पाईप ई.प्रा.लि.
१५.	श्री रविन्द्र झा	निर्देशक	हिलटेक प्लाष्टिक एण्ड पाईप ई.प्रा.लि.
१६.	श्री माधव तिमिल्सिना	अध्यक्ष	उपभोक्ता अधिकार अनुसन्धान मंच
१७.	श्री शुक्रराज अधिकारी	केमिष्ट	ने. गुण. तथा ना.तौ. विभाग
१८.	श्री सुजित कुमार चौधरी	प्रा.स.	ने. गुण. तथा ना.तौ. विभाग

नेपाल गुणस्तर तथा नापतौल विभाग

बालाजु, काठमाडौं, नेपाल

फोन नं. ०१-४३५०४४५, ४३५०४४७, ४३५०७२९, ४३५०८१८, ४३८५७२३

फ्याक्स नं. +९७७-०१-४३५०६८९

Email: nbsm@nbsm.gov.np

पो.व.नं. ९,८५

सर्वाधिकार सुरक्षित

Drawings

The purpose of drawings is to specify locations, dimensions, materials to be used, stages of manufacturing, and other characteristics of the Goods and Related Services. The Purchaser should prepare such drawings, as needed, and include them in the Procurement Document. Such drawings, as part of the SR, are Contract documents and, therefore, shall be part of the Contract. Similarly, the Purchaser may request the Supplier to provide drawings either with its Bid or for approval during Contract execution.

It is essential that the Purchaser prepares a **List of Drawings** showing all drawings it supplied and issued as part of the Procurement Document.

Section VI. General Conditions of Contract

The GCC contain standard provisions that have been designed to remain unchanged and **to be used without modifying their text**. The GCC clearly identify the provisions that may normally need to be specified for a particular bidding process and require that such specification be introduced **through the SCC**.

The GCC are a Contract document and, therefore, are a part of the Contract.

Table of Clauses

1. Definitions	68
2. Contract Documents	69
3. Fraud and Corruption	69
4. Interpretation	71
5. Language	72
6. Joint Venture, Consortium or Association	72
7. Notices	72
8. Governing Law	72
9. Settlement of Disputes	72
10. Scope of Supply	73
11. Delivery	73
12. Supplier's Responsibilities	73
13. Purchaser's Responsibilities	73
14. Contract Price	73
15. Terms of Payment	74
16. Taxes and Duties	74
17. Performance Security	74
18. Copyright	75
19. Confidential Information	75
20. Subcontracting	76
21. Specifications and Standards	76
22. Packing and Documents	77
23. Insurance	77
24. Transportation	77
25. Inspections and Tests	77
26. Liquidated Damages	79
27. Warranty	79
28. Patent Indemnity	80



29. Limitation of Liability	81
30. Change in Laws and Regulations.....	81
31. Force Majeure.....	81
32. Change Orders and Contract Amendments	82
33. Extensions of Time	83
34. Termination.....	83
35. Assignment	85

Section VI. General Conditions of Contract

1. Definitions

1.1. The following words and expressions shall have the meanings hereby assigned to them:

- (a) “Contract” means the Agreement entered into between the Purchaser and the Supplier, together with the Contract Documents referred to therein, including all attachments, appendices, and all documents incorporated by reference therein.
- (b) “Contract Documents” means the documents listed in the Agreement, including any amendments thereto.
- (c) “Contract Price” means the price payable to the Supplier as specified in the Agreement, subject to such additions and adjustments thereto or deductions there from, as may be made pursuant to the Contract.
- (d) “Day” means calendar day.
- (e) “Delivery” means the transfer of the Goods from the Supplier to the Purchaser in accordance with the terms and conditions set forth in the Contract.
- (f) “Completion” means the fulfillment of the Related Services by the Supplier in accordance with the terms and conditions set forth in the Contract.
- (g) “GCC” means the General Conditions of Contract.
- (h) “Goods” means all of the commodities, raw material, machinery and equipment, and/or other materials that the Supplier is required to supply to the Purchaser under the Contract.
- (i) “Purchaser’s Country” is the country specified in the Special Conditions of Contract (SCC).
- (j) “Purchaser” means the entity purchasing the Goods and Related Services, as specified in the SCC.
- (k) “Related Services” means the services incidental to the supply of the goods, such as insurance, installation, training and initial maintenance and other similar obligations of the Supplier under the Contract.
- (l) “SCC” means the Special Conditions of Contract.
- (m) “Subcontractor” means any natural person, private, or

government entity, or a combination of the above, including its legal successors or permitted assigns, to whom any part of the Goods to be supplied or execution of any part of the Related Services is subcontracted by the Supplier.

- (n) “Supplier” means the natural person, private or government entity, or a combination of the above, whose bid to perform the Contract has been accepted by the Purchaser and is named as such in the Agreement, and includes the legal successors or permitted assigns of the Supplier.
- (o) “GoN” means the Government of Nepal.
- (p) “The Site,” where applicable, means the place named in the SCC.

2. Contract Documents

2.3 Subject to the order of precedence set forth in the Agreement, all documents forming the Contract (and all parts thereof) are intended to be correlative, complementary, and mutually explanatory.

3. Fraud and Corruption

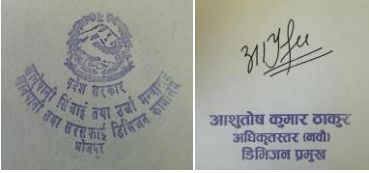
3.1 If the Purchaser determines that the Supplier has engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices, in competing for or in executing the Contract, then the Purchaser may, after giving 14 days notice to the Supplier, terminate the Supplier's employment under the Contract and the provisions of GCC Clause 34.1 shall apply.

For the purposes of this Sub-Clause:

- (i) “corrupt practice” is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
- (ii) “fraudulent practice”⁸ is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;
- (iii) “collusive practice”⁹ is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;

⁸ a “party” refers to a public official; the terms “benefit” and “obligation” relate to the procurement process or contract execution; and the “act or omission” is intended to influence the procurement process or contract execution.

⁹ “parties” refers to participants in the procurement process (including public officials) attempting to establish



bid prices at artificial, non competitive levels.

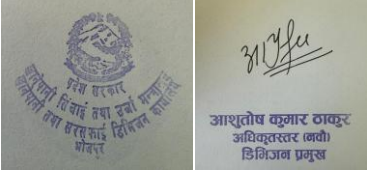
- (iv) “coercive practice”¹⁰ is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
- (v) “obstructive practice” is
 - (aa) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a GoN/DP investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
 - (bb) acts intended to materially impede the exercise of the GoN/DP’s inspection and audit rights provided for under ITB Clause 3.5 and GCC Clause 25.

3.2 Without prejudice to any other rights of the Purchaser under this Contract, on the recommendation of the Purchaser, Public Procurement Monitoring Office may **blacklist** a Bidder/Supplier for its conduct for a period of one (1) to three (3) years on the following grounds and seriousness of the act committed by the bidder:

- (a) if it is established that the Supplier committed acts specified in ITB 3.2,
- (b) if it is established later that the Bidder has committed substantial defect in implementation of the contract or has not substantially fulfilled its obligations under the contract or the completed work is not of the specified quality as per the contract.

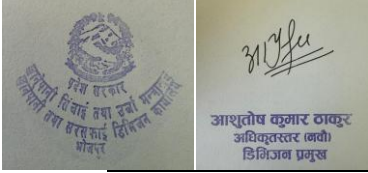
3.3 Incase of DP funded bid, DP:

- (a) will cancel the portion of the loan allocated to a contract if it determines at any time that representatives of the Borrower or of a beneficiary of the loan engaged in corrupt, fraudulent, collusive or coercive practices during the procurement or the execution of that contract, without the Borrower having taken timely and appropriate action satisfactory to the Bank to remedy the situation;

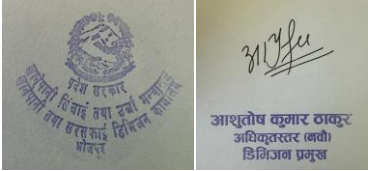


10

a “party” refers to a participant in the procurement process or contract execution.



- (b) will sanction a firm or individual, including declaring them ineligible, either indefinitely or for a stated period of time, to be awarded a Bank-financed contract if it at any time determines that they have, directly or through an agent, engaged, in corrupt, fraudulent, collusive or coercive practices in competing for, or in executing, a Bank-financed contract; and
- (c) will have the right to require that Suppliers to permit the Bank to inspect their accounts and records and other documents relating to the bid submission and contract performance and to have them audited by auditors appointed by the Bank.



4. Interpretation

4.1 If the context so requires it, singular means plural and vice versa.

4.2 Entire Agreement

The Contract constitutes the entire agreement between the Purchaser and the Supplier and supersedes all communications, negotiations and agreements (whether written or oral) of parties with respect thereto made prior to the date of Contract.

4.3 Amendment

No amendment or other variation of the Contract shall be valid unless it is in writing, is dated, expressly refers to the Contract, and is signed by a duly authorized representative of each party thereto.

4.4 Nonwaiver

- (a) Subject to GCC Sub-Clause 4.5(b) below, no relaxation, forbearance, delay, or indulgence by either party in enforcing any of the terms and conditions of the Contract or the granting of time by either party to the other shall prejudice, affect, or restrict the rights of that party under the Contract, neither shall any waiver by either party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract.
- (b) Any waiver of a party's rights, powers, or remedies under the Contract must be in writing, dated, and signed by an authorized representative of the party granting such waiver, and must specify the right and the extent to which it is being waived.

4.5 Severability

If any provision or condition of the Contract is prohibited or

rendered invalid or unenforceable, such prohibition, invalidity or unenforceability shall not affect the validity or enforceability of any other provisions and conditions of the Contract.

5. Language

- 5.1 The Contract as well as all correspondence and documents relating to the Contract exchanged by the Supplier and the Purchaser, shall be written in the language specified in the SCC. Supporting documents and printed literature that are part of the Contract may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language specified in the SCC, in which case, for purposes of interpretation of the Contract, this translation shall govern.
- 5.2 The Supplier shall bear all costs of translation to the governing language and all risks of the accuracy of such translation.

6. Joint Venture, Consortium or Association

- 6.1 If the Supplier is a joint venture, consortium, or association, all of the parties shall be jointly and severally liable to the Purchaser for the fulfillment of the provisions of the Contract and shall designate one party to act as a leader with authority to bind the joint venture, consortium, or association. A bidder can submit only one bid either as a partner of the joint venture or individually. The composition or the constitution of the joint venture, consortium, or association shall not be altered without the prior consent of the Purchaser.
- 6.2 The contractor shall not handover the responsibility of the contract to any one member or some members of Joint Venture or any other parties, not involved in the contract.

7. Notices

- 7.1 Any Notice given by one party to the other pursuant to the Contract shall be in writing to the address specified in the SCC. The term “in writing” means communicated in written form with proof of receipt.
- 7.2 A Notice shall be effective when delivered or on the Notice’s effective date, whichever is later.

8. Governing Law

- 8.1 The Contract shall be governed by and interpreted in accordance with the laws of Nepal.

9. Settlement of Disputes

- 9.1 The Purchaser and the Supplier shall make every effort to settle amicably by direct negotiation any disagreement or dispute arising between them under or in connection with the Contract.
- 9.2 Any dispute between the Parties as to matters arising

pursuant to this Contract which cannot be settled amicably within thirty (30) days after receipt by one Party of the other Party's request for such amicable settlement may be referred to Arbitration within 30 days after the expiration of amicable settlement period as specified in SCC.

10. Scope of Supply

- 10.1 Subject to the SCC, the Goods and Related Services to be supplied shall be as specified in Section V, Schedule of Requirements.
- 10.2 Unless otherwise stipulated in the Contract, the Scope of Supply shall include all such items not specifically mentioned in the Contract but that can be reasonably inferred from the Contract as being required for attaining Delivery and Completion of the Goods and Related Services as if such items were expressly mentioned in the Contract.

11. Delivery

- 11.1 Subject to GCC Sub-Clause 31.1, the Delivery of the Goods and Completion of the Related Services shall be in accordance with the Delivery and Completion Schedule specified in the Section V, Schedule of Requirements. The details of documents to be furnished by the Supplier are specified in the SCC.

12. Supplier's Responsibilities

- 12.1 The Supplier shall supply all the Goods and Related Services included in the Scope of Supply in accordance with GCC Clause 10, and the Delivery and Completion Schedule, as per GCC Clause 11.

13. Purchaser's Responsibilities

- 13.1 Whenever the supply of Goods and Related Services requires that the Supplier obtain permits, approvals, and import and other licenses from public authorities in Nepal, the Purchaser shall, if so required by the Supplier, make its best effort to assist the Supplier in complying with such requirements in a timely and expeditious manner.
- 13.2 The Purchaser shall pay all costs involved in the performance of its responsibilities, in accordance with GCC Sub-Clause 13.1.

14. Contract Price

- 14.1 The Contract Price shall be as specified in the Agreement subject to any additions and adjustments thereto, or deductions there from, as may be made pursuant to the Contract.
- 14.2 Prices charged by the Supplier for the Goods delivered and the Related Services performed under the Contract shall not vary from the prices quoted by the Supplier in its bid, with

the exception of any price adjustments authorized in the SCC.

15. Terms of Payment

- 15.1 The Contract Price shall be paid as specified in SCC.
- 15.2 The Supplier's request for payment shall be made to the Purchaser in writing, accompanied by invoices describing, as appropriate, the Goods delivered and Related Services performed, and by the documents submitted pursuant to GCC Clause 11 and upon fulfillment of all the obligations stipulated in the Contract.
- 15.3 Unless otherwise specified in the SCC, the Purchaser shall retain from each payment due to the Contractor the proportion stated in the SCC. Half of the total amount retained shall be repaid to the Supplier not later than thirty (30) days following the date of completion of the Supplier's performance obligations under the Contract, including any warranty obligations and half when the supplier has submitted the evidence of submission of tax return to the concerned Internal Revenue Office.
- 15.4 Payments shall be made promptly by the Purchaser, no later than thirty (30) days after submission of an invoice or request for payment by the Supplier, and the Purchaser has accepted it.
- 15.5 Payments shall be made to the Supplier under this Contract in Nepalese Currency.
- 15.6 In the event that the Purchaser fails to pay the Supplier any payment by its due date or within the period set forth in the GCC 15.4, the Purchaser shall pay to the Supplier interest on the amount of such delayed payment at the rate shown in the SCC, for the period of delay until due payment has been made.

16. Taxes and Duties

- 16.1 For goods supplied, the Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted Goods to the Purchaser

17. Performance Security

- 17.1 The Supplier shall, within fifteen (15) days of the receipt of notification of Contract award, provide a Performance Security for the due performance of the Contract in the amounts and currencies specified in the SCC.
- 17.2 The proceeds of the Performance Security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.

- 17.3 The Performance Security shall be denominated in the currency of the Contract, or in a freely convertible currency acceptable to the Purchaser, and shall be in one of the forms stipulated by the Purchaser in the SCC, or in another form acceptable to the Purchaser.
- 17.4 The Performance Security shall be discharged by the Purchaser and returned to the Supplier not later than thirty (30) days following the date of completion of the Supplier's performance obligations under the Contract, including any warranty obligations.

18. Copyright

- 18.1 The copyright in all drawings, documents, and other materials containing data and information furnished to the Purchaser by the Supplier herein shall remain vested in the Supplier, or, if they are furnished to the Purchaser directly or through the Supplier by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party.

19. Confidential Information

- 19.1 The Purchaser and the Supplier shall keep confidential and shall not, without the written consent of the other party hereto, divulge to any third party any documents, data, or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such information has been furnished prior to, during or following completion or termination of the Contract. Notwithstanding the above, the Supplier may furnish to its Subcontractor such documents, data, and other information it receives from the Purchaser to the extent required for the Subcontractor to perform its work under the Contract, in which event the Supplier shall obtain from such Subcontractor an undertaking of confidentiality similar to that imposed on the Supplier under GCC Clause 19.
- 19.2 The Purchaser shall not use such documents, data, and other information received from the Supplier for any purposes unrelated to the Contract. Similarly, the Supplier shall not use such documents, data, and other information received from the Purchaser for any purpose other than the design, procurement, or other work and services required for the performance of the Contract.
- 19.3 The obligation of a party under GCC Sub-Clauses 19.1 and 19.2 above, however, shall not apply to information that:

- (a) the Purchaser or Supplier need to share with the Donor

for Donor funded project or other institutions participating in the financing of the Contract;

- (b) now or hereafter enters the public domain through no fault of that party;
- (c) can be proven to have been possessed by that party at the time of disclosure and which was not previously obtained, directly or indirectly, from the other party; or
- (d) otherwise lawfully becomes available to that party from a third party that has no obligation of confidentiality.

19.4 The above provisions of GCC Clause 19 shall not in any way modify any undertaking of confidentiality given by either of the parties hereto prior to the date of the Contract in respect of the Supply or any part thereof.

19.5 The provisions of GCC Clause 19 shall survive completion or termination, for whatever reason, of the Contract.

20. Subcontracting

20.1 The Supplier shall notify the Purchaser in writing of all subcontracts awarded under the Contract if not already specified in the Bid. Subcontracting shall in no event relieve the Supplier from any of its obligations, duties, responsibilities, or liability under the Contract.

20.2 Subcontracts shall comply with the provisions of GCC Clauses 3.

21. Specifications and Standards

21.1 Technical Specifications and Drawings

- (a) The Supplier shall ensure that the Goods and Related Services comply with the technical specifications and other provisions of the Contract.
- (b) The Supplier shall be entitled to disclaim responsibility for any design, data, drawing, specification, or other document, or any modification thereof provided or designed by or on behalf of the Purchaser, by giving a notice of such disclaimer to the Purchaser.
- (c) The Goods and Related Services supplied under this Contract shall conform to the standards mentioned in Section V, Schedule of Requirements and, when no applicable standard is mentioned, the standard shall be equivalent or superior to the official standards whose application is appropriate to the country of origin of the

Goods.

21.2 Wherever references are made in the Contract to codes and standards in accordance with which it shall be executed, the edition or the revised version of such codes and standards shall be those specified in the Section V, Schedule of Requirements. During Contract execution, any changes in any such codes and standards shall be applied only after approval by the Purchaser and shall be treated in accordance with GCC Clause 32.

22. Packing and Documents

22.1 The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Contract. During transit, the packing shall be sufficient to withstand, without limitation, rough handling, and exposure to extreme temperatures, salt and precipitation, and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the final destination of the Goods and the absence of heavy handling facilities at all points in transit.

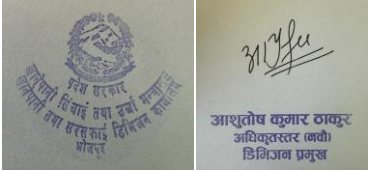
22.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, specified in the SCC, and in any other instructions ordered by the Purchaser.

23. Insurance

23.1 Unless otherwise specified in the SCC, the Goods supplied under the Contract shall be fully insured against loss or damage incidental to manufacture or acquisition, transportation, storage, and delivery, in the manner specified in the SCC.

24. Transportation

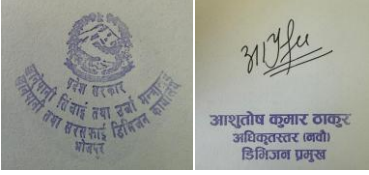
24.1 The supplier is required under the contract to transport the Goods to a specified place of final destination, defined as the project site, transport to such place of destination including insurance and storage, as shall be specified in the contract, shall be arranged by the supplier, and related costs shall be included in the contract price.



25. Inspections and Tests

- 25.1 The Supplier shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services as are specified in Sections V, Schedule of Requirements.
- 25.2 The inspections and tests may be conducted on the premises of the Supplier or its Subcontractor, at point of delivery, and/or at the final destination of the Goods, or in another place in Nepal as specified in the SCC. Subject to GCC Sub-

- Clause 25.3, if conducted on the premises of the Supplier or its Subcontractor, all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to the Purchaser.
- 25.3 The Purchaser or its designated representative shall be entitled to attend the tests and/or inspections referred to in GCC Sub-Clause 25.2, provided that the Purchaser bear all of its own costs and expenses incurred in connection with such attendance including, but not limited to, all traveling and board and lodging expenses.
- 25.4 Whenever the Supplier is ready to carry out any such test and inspection, it shall give a reasonable advance notice, including the place and time, to the Purchaser. The Supplier shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection.
- 25.5 The Purchaser may require the Supplier to carry out any test and/or inspection not required by the Contract but deemed necessary to verify that the characteristics and performance of the Goods comply with the technical specifications, codes and standards under the Contract, provided that the Supplier's reasonable costs and expenses incurred in the carrying out of such test and/or inspection shall be added to the Contract Price. Further, if such test and/or inspection impede the progress of manufacturing and/or the Supplier's performance of its other obligations under the Contract, due allowance will be made in respect of the Delivery Dates and Completion Dates and the other obligations so affected.
- 25.6 The Supplier shall provide the Purchaser with a report of the results of any such test and/or inspection.
- 25.7 The Purchaser may reject any Goods or any part thereof that fail to pass any test and/or inspection or do not conform to the specifications. The Supplier shall either rectify or replace such rejected Goods or parts thereof or make alterations necessary to meet the specifications at no cost to the Purchaser, and shall repeat the test and/or inspection, at no cost to the Purchaser, upon giving a notice pursuant to GCC Sub-Clause 25.4.
- 25.8 The Supplier agrees that neither the execution of a test and/or inspection of the Goods or any part thereof, nor the attendance by the Purchaser or its representative, nor the



issue of any report pursuant to GCC Sub-Clause 25.6, shall

release the Supplier from any warranties or other obligations under the Contract.

26. Liquidated Damages

- 26.1 Except as provided under GCC Clause 31, if the Supplier fails to deliver any or all of the Goods or perform the Related Services within the period specified in the Contract, the Purchaser may without prejudice to all its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage specified in the SCC of the Contract Price for each day of delay until actual delivery or performance, up to a maximum deduction of the percentage specified in the SCC. Once the maximum is reached, the Purchaser may terminate the Contract pursuant to GCC Clause 34.

27. Warranty

- 27.1 The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.
- 27.2 Subject to GCC Sub-Clause 21.1, the Supplier further warrants that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in Nepal.
- 27.3 Unless otherwise specified in the SCC, the warranty shall remain valid for twelve (12) months after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the SCC.
- 27.4 The Purchaser shall give Notice to the Supplier stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity for the Supplier to inspect such defects.
- 27.5 Upon receipt of such Notice, the Supplier shall, within the period specified in the SCC, expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser.
- 27.6 If having been notified, the Supplier fails to remedy the defect within the period specified in the SCC, the Purchaser may proceed to take within a reasonable period such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the

Contract.

28. Patent Indemnity

28.1 The Supplier shall, subject to the Purchaser's compliance with GCC Sub-Clause 28.2, indemnify and hold harmless the Purchaser and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Purchaser may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract by reason of:

- (a) the installation of the Goods by the Supplier or the use of the Goods in the country where the Site is located; and
- (b) the sale in any country of the products produced by the Goods.

Such indemnity shall not cover any use of the Goods or any part thereof other than for the purpose indicated by or to be reasonably inferred from the Contract, neither any infringement resulting from the use of the Goods or any part thereof, or any products produced thereby in association or combination with any other equipment, plant, or materials not supplied by the Supplier, pursuant to the Contract.

28.2 If any proceedings are brought or any claim is made against the Purchaser arising out of the matters referred to in GCC Sub-Clause 28.1, the Purchaser shall promptly give the Supplier a notice thereof, and the Supplier may at its own expense and in the Purchaser's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim.

28.3 If the Supplier fails to notify the Purchaser within thirty (30) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Purchaser shall be free to conduct the same on its own behalf.

28.4 The Purchaser shall, at the Supplier's request, afford all available assistance to the Supplier in conducting such proceedings or claim, and shall be reimbursed by the Supplier for all reasonable expenses incurred in so doing.

28.5 The Purchaser shall indemnify and hold harmless the

Supplier and its employees, officers, and Subcontractors from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Supplier may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract arising out of or in connection with any design, data, drawing, specification, or other documents or materials provided or designed by or on behalf of the Purchaser.

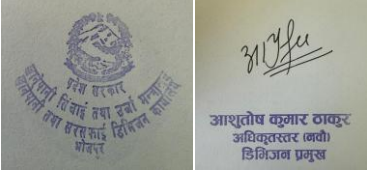
29. Limitation of Liability

29.1 Except in cases of gross negligence or willful misconduct :

- (a) neither party shall be liable to the other party for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Supplier to pay liquidated damages to the Purchaser; and
- (b) the aggregate liability of the Supplier to the Purchaser, whether under the Contract, in tort, or otherwise, shall not exceed the total Contract Price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment, or to any obligation of the Supplier to indemnify the Purchaser with respect to patent infringement.

30. Change in Laws and Regulations

30.1 Unless otherwise specified in the Contract, if after the date of the Invitation for Bids, any law, regulation, ordinance, order or bylaw having the force of law is enacted, promulgated, abrogated, or changed in Nepal where the Site is located (which shall be deemed to include any change in interpretation or application by the competent authorities) that subsequently affects the Delivery Date and/or the Contract Price, then such Delivery Date and/or Contract Price shall be correspondingly increased or decreased, to the extent that the Supplier has thereby been affected in the performance of any of its obligations under the Contract. Notwithstanding the foregoing, such additional or reduced cost shall not be separately paid or credited if the same has already been accounted for in the price adjustment provisions where applicable, in accordance with GCC Clause 14.

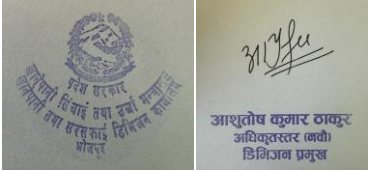


31. Force Majeure

31.1 The Supplier shall not be liable for forfeiture of its Performance Security, liquidated damages, or termination

for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

- 31.2 For purposes of this Clause, “Force Majeure” means an event or situation beyond the control of the Supplier that is not foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of the Supplier. Such events may include, but not be limited to, acts of the Purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.
- 31.3 If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.



32. Change Orders and Contract Amendments

- 32.1 The Purchaser may at any time order the Supplier through Notice in accordance GCC Clause 7, to make changes within the general scope of the Contract in any one or more of the following:
- (a) drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser;
 - (b) the method of shipment or packing;
 - (c) the place of delivery; and
 - (d) the Related Services to be provided by the Supplier.
- 32.2 If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier's performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or in the Delivery and Completion Schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this Clause must be asserted within thirty (30) days from the date of the Supplier's receipt of the Purchaser's change order.
- 32.3 Prices to be charged by the Supplier for any Related Services that might be needed but which were not included in the Contract shall be agreed upon in advance by the

parties and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services.

33. Extensions of Time

- 33.1 If at any time during performance of the Contract, the Supplier or its Subcontractors should encounter conditions impeding timely delivery of the Goods or completion of Related Services pursuant to GCC Clause 11, the Supplier shall promptly, and at least twenty one (21) days before the expiry of procurement contract, notify the Purchaser in writing of the delay, its likely duration, and its cause. As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may at its discretion extend the Supplier's time for performance, in which case the extension shall be ratified by the parties by amendment of the Contract.
- 33.2 Except in case of Force Majeure, as provided under GCC Clause 31, a delay by the Supplier in the performance of its Delivery and Completion obligations shall render the Supplier liable to the imposition of liquidated damages pursuant to GCC Clause 26, unless an extension of time is agreed upon, pursuant to GCC Sub-Clause 34.1.

34. Termination

34.1 Termination for Default

- (a) The Purchaser, without prejudice to any other remedy for breach of Contract, by Notice of default sent to the Supplier, may terminate the Contract in whole or in part:
- (i) if the Supplier fails to deliver any or all of the Goods within the period specified in the Contract, or within any extension thereof granted by the Purchaser pursuant to GCC Clause 33;
 - (ii) if the Supplier fails to perform any other obligation under the Contract.
 - (iii) The supplier uses the advance payment for matters other than the contractual obligations.
 - (iv) The purchaser may terminate the contract at any time in the following condition.
 - (a) does not commence the work as per the contract,
 - (b) abandons the contract without completing,
 - (c) fails to achieve progress as per the contract.

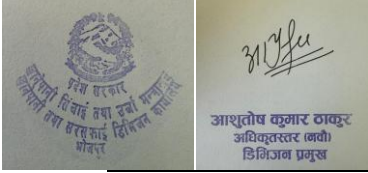
- (b) In the event the Purchaser terminates the Contract in whole or in part, pursuant to GCC Clause 34.1(a), the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods or Related Services similar to those undelivered or not performed, and the Supplier shall be liable to pay to the Purchaser for whole costs for such similar Goods or Related Services. However, the Supplier shall continue performance of the Contract to the extent not terminated.
- (c) if the Supplier, in the judgment of the Purchaser has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, as defined in GCC Clause 3, in competing for or in executing the Contract.

34.2 Termination for Insolvency

The Purchaser may at any time terminate the Contract by giving Notice to the Supplier if the Supplier becomes bankrupt or otherwise insolvent. In such event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to the Purchaser.

34.3 Termination for Convenience

- (a) The Purchaser, by written Notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The Notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.
- (b) The Goods that are complete and ready for shipment within seven (7) days after the Supplier's receipt of the Notice of termination shall be accepted by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect:
 - (i) To have any portion completed and delivered at the Contract terms and prices; and/or
 - (ii) To cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and Related Services and for materials and parts previously procured by the Supplier.



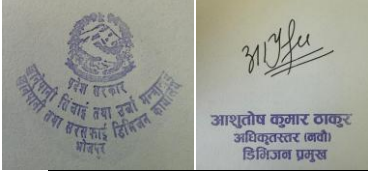
35. Assignment

35.1 Neither the Purchaser nor the Supplier shall assign, in whole or in part, their obligations under this Contract, except with prior written consent of the other party.

Section VII. Special Conditions of Contract

The following Special Conditions of Contract (SCC) shall supplement the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

GCC 1.1(i)	The Purchaser's country is: Nepal
GCC 1.1(j)	The Purchaser is: Water Supply and Sanitation Division Office, Bhojpur (Ministry of Water Supply, Irrigation and Energy, Koshi Province)
GCC 1.1 (p)	The Delivery Site is: Bhojpur Office Store Water Supply and Sanitation Division Office, Bhojpur Bhojpur Municipality 7
GCC 5.1	The language shall be: Nepali or English
GCC 7.1	For notices, the Purchaser's address shall be: Name and Address of the Purchaser: Water Supply and Sanitation Division Office, Bhojpur Bhojpur Municipality 7 Telephonenumber: 9852088699 E-mail address: wssdo.bhojpur10@gmail.com
	For notices, the Suppliers's address shall be: <i>[insert full name and address of Suppliers including telephone number, facsimile number and electronic mail address (if applicable)]</i> Name and Address of the Supplier: Telephone number: Facsimile number: e-mail Address:
GCC 9.2	In case of arbitration, the arbitration shall be conducted in accordance with the arbitration procedures in accordance with law of Nepal at NEPCA, Lalitpur.



GCC 10.1	The Scope of Supply shall be defined in: [<i>insert “Section V, Schedule of Requirements” or indicate where the Scope of Supply shall be defined. At the time of awarding the Contract, the Purchaser shall specify any change in the Scope of Supply with respect to Section V, Schedule of Requirements included in the Bidding Document. Such changes may be due, for instance, if the quantities of Goods and Related Services are increased or decreased at the time of award.</i>]
-----------------	--

GCC 11.1	<p>Upon delivery of the Goods to the transporter, the Supplier shall notify the Purchaser and send the following documents to the Purchaser:</p> <ul style="list-style-type: none"> a) Copies of the Supplier's invoice showing the description of the Goods, quantity, unit price, and total amount; b) Copy of packing list indentifying the contents of each package; c) Delivery note, railway receipt, or truck receipt; d) Manufacturer's or Supplier's warranty certificate; e) Certificate of origin; and f) Inspection certificate issued by the nominated inspection agency, and the Supplier's factory inspection report; <p>The Purchaser shall receive the above documents before the arrival of the Goods and, if not received, the Supplier will be responsible for any consequent expenses.</p> <p>[Note: The above requirements should be reviewed on a case-by-case basis, with amendments being made as necessary]</p>
GCC 14.2	<p>The prices charged for the Goods delivered and the Related Services to be performed shall be fixed for the duration of the contract. ¹¹</p> <p>or</p> <p>The prices charged for the Goods delivered and Related Services to be performed shall be subject to adjustment during performance of the Contract to reflect changes in the cost of labor and material components in accordance with the formula:</p> $\Delta P = P_0 \left(a + b \frac{L_1}{L_0} + c \frac{M_1}{M_0} \right) - P_0$ <p>in which:</p> <p>ΔP = adjustment amount payable to the Supplier.</p> <p>P_0 = Contract Price (base price).</p> <p>a = fixed element representing profits and overheads included in the Contract Price and generally in the range of five (5) to fifteen (15) percent.</p> <p>b = estimated percentage of labor component in the Contract Price.</p>



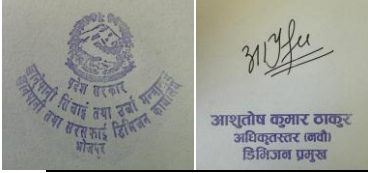
¹¹ If duration of contract is less than 12 months price adjustment shall not be applicable

	<p>c = estimated percentage of material component in the Contract Price.</p> <p>L0, L1 = labor indices applicable to the appropriate industry in the country of origin on the base date and date for adjustment, respectively.</p> <p>M0, M1 = material indices for the major raw material on the base date and date for adjustment, respectively, in the country of origin.</p> <p>The coefficients a, b, and c shall be specified by the Purchaser in the bidding document. The sum of the three coefficients should be one (1) in every application of the formula.</p> <p>The Bidder shall indicate in its Bid, the source of the indices and the base dates for such indices.</p> <p>Base date = thirty (30) days prior to the deadline for submission of the Bids.</p> <p>Date of adjustment =<i>[insert number of days or weeks]</i> prior to date of shipment (representing the mid-point of the period of manufacture).</p> <p>The maximum amount of price adjustment to be made pursuant to this clause shall not generally be more than twenty five (25) percent of the initial contract prices.</p>
GCC 15.1	<p>The terms of payment to be made to the Supplier under the contract shall be as follows:</p> <ol style="list-style-type: none"> The payment shall be made: <ol style="list-style-type: none"> through accounts division/unit of the Purchaser or Through the District Treasury Controller Office. <p><i>[Delete those not appropriate]</i></p>
GCC 15.1	<ol style="list-style-type: none"> Payments shall be made in Nepalese Rupees in the following manner: <ol style="list-style-type: none"> Advance Payment: No Final Payment: After final Delivery of all items

	<p>(d)</p> <p>(e)</p> <p><i>[Note: The milestones may be shipment, delivery, testing, installation, acceptance etc. or any appropriate combination as per necessity depending upon the nature of supply]</i></p>
GCC 15.3	<p>The proportion of payments retained is: Not applicable</p> <p>(Note: Mention not applicable only if supplier's performance and/or warranty obligations under the Contract do not remain after payment.)</p>
GCC 15.6	<p>The interest rate that shall be applied for payment delay is : 0 %</p>
GCC 17.1	<p>The Supplier shall provide a Performance Security as follows:</p> <ol style="list-style-type: none"> If bid price of the bidder selected for acceptance is up to 15 (fifteen) percent less than the approved cost estimate, the performance security amount shall be 5 (five) percent of the bid price. For the bid price of the bidder selected for acceptance is more than 15 (fifteen) percent below of the cost estimate, the performance security amount shall be determined as follows: $\text{Performance Security Amount} = [(0.85 \times \text{Cost Estimate} - \text{Bid Price}) \times 0.5] + 5\% \text{ of Bid Price.}$ <p>The Bid Price and Cost Estimate shall be exclusive of Value Added Tax.</p> <p>The Performance Security shall be valid for the period of 180 days</p> <p>The performance security shall be forfeited, in case the Supplier fails to complete the contractual obligation and rectify the defects within warranty period.</p>
GCC 17.3	<p>The types of acceptable Performance Securities are: A bank guarantee issued by Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law located in Nepal or commercial bank located abroad, acceptable to the Purchaser, in the format included in Section VIII, Contract Forms, Performance Security issued by foreign Bank must be counter – guaranteed by Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law in Nepal.</p>

GCC 22.2	<p>A complete packing list indicating the content of each package shall be enclosed in a water proof envelope and shall be secured to the outside of the packing case. In addition, each package shall be marked with indelible ink/paint in bold letters, as follows:</p> <ol style="list-style-type: none"> Contract number : Name and address of the Purchaser: Country of origin₂ Gross weight Net weight Package number of total number of packages Brief description of content [Insert any other additional marking] <p>Upright markings, where appropriate, shall be placed on all four vertical sides of the package.</p> <p>All materials used for packing shall be environmentally neutral.</p> <p>[Note: The above requirements should be reviewed on a case-by-case basis, with amendments being made as necessary]</p>
GCC 23.1	<p>The insurance coverage shall be in an amount equal to 110 percent of the contract price of the Goods on “All Risks” basis, including War Risks, riots and/or Strikes.</p>
GCC 25.2	<p>Tests and Inspections specified in Section V, Schedule of Requirements, shall be carried out at the following times or milestones, and places:</p> <p><i>Goods: Batch-wise test for all 13 items listed in the Price schedule</i></p> <p><i>Type of Test:</i></p> <ol style="list-style-type: none"> Wall thickness (mm) Outer diameter (mm) Melt flow rate (gm/10 min) Density (g/cm³) Visual inspection (inside/outside) Hydraulic Creep Rupture tested for 48 hrs at 80 degree C Induced Pressure Reversion (<3%) Elongation at Break (>35%) Carbon Black Content & Carbon Dispersion Oxidation Induction Time (>20 min)
GCC 26.1	<p>The applicable rate of liquidated damages shall be: <i>0.05 percent of the Contract Price per day.</i></p>

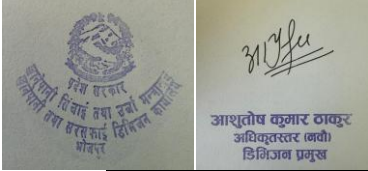
GCC 26.1	<p>The maximum amount of liquidated damages shall be: ten (10) percent of the Contract Price.</p> <p>The contract shall be terminated, if liquidated damages exceeds 10 percent of the Contract Price and blacklisting process shall be initiated for the Supplier's failure to complete the contractual obligations.</p>
GCC 27.3	<p>The period of validity of the Warranty shall be: 1 year</p> <p>For the purposes of the Warranty, the place of final destination shall be:</p> <p>Bhojpur Office Store Water Supply and Sanitation Division Office, Bhojpur Bhojpur Municipality 7</p>
GCC 27.5 & 27.6	<p>The Supplier shall correct any defects covered by the Warranty within: 15 days of being notified by the Purchaser of the occurrence of such defects.</p>



Section VIII. Contract Forms

Table of Forms

Letter of Intent	94
Letter of Acceptance	95
Agreement Form	96
Performance Security	97
Advance Payment Security	98



Letter of Intent

[on letterhead paper of the Purchaser]

..... date.

Notes on Letter of Intent

The issuance of Letter of Intent is the information of the selection of the bid of the successful bidder by the Purchaser and for providing information to other unsuccessful bidders who participated in the bid as regards to the outcome of the procurement process. This standard form of Letter of Intent to Award should be filled in and sent to the successful Bidder only after evaluation and selection of substantially responsible lowest evaluated bid.

To: name and address of the Supplier.

Subject: Issuance of letter of intent to award the contract

This is to notify you that, it is our intention to award the contract. for execution of the*name of the contract and identification number, as given in the Contract Data/SCC* to you as your bid price
...*amount in figures and words in Nepalese Rupees*.....as corrected and modified in accordance with the Instructions to Bidders is hereby selected as substantially responsive lowest evaluated bid.

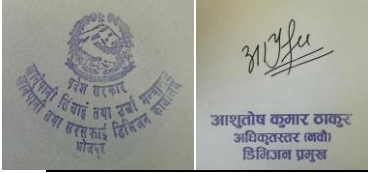
Authorized Signature:

Name:

Title:

CC:

[Insert name and address of all other Bidders, who submitted the bid]



Letter of Acceptance

[on letterhead paper of the Purchaser]

..... date.

To: name and address of the Supplier.

Subject: .Notification of Award

This is to notify that your Bid dated date for execution of the..... name of the contract and identification number, as given in the Contract Data/SCC..... for the Contract price of Nepalese Rupees [insert amount in figures and words in Nepalese Rupees], as corrected in accordance with the Instructions to Bidders is hereby accepted in accordance with the Instruction to Bidders.

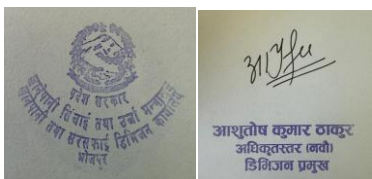
You are hereby instructed to contract this office to sign the formal contract agreement within 15 days. As per the Conditions of Contract, you are also required to submit Performance Security, as specified in SCC, consisting of a Bank Guarantee in the format included in Section VIII (Contract Forms) of the Bidding Document.

The amount of performance security shall be NRs[Insert amount] and validity period of performance security shall be.....[insert validity period].

The Purchaser shall forfeit the bid security, in case you fail to furnish the Performance Security and to sign the contract within specified period.

Authorized Signature:

Name and Title of Signatory:



Agreement Form

THIS AGREEMENT made on the *[insert number]* day of *[insert month]*, *[insert year]*, between *[insert complete name of Purchaser]* of *[insert complete address of Purchaser]* (hereinafter “the Purchaser”), of the one part, and *[insert complete name of Supplier]* of *[insert complete address of Supplier]* (hereinafter “the Supplier”), of the other part:

WHEREAS the Purchaser invited Bids for certain Goods and Related Services, viz., *[insert brief description of the Goods and Related Services]* and has accepted a Bid by the Supplier for the supply of those Goods and Related Services in the sum of NRs*[insert amount of contract price in words and figures including taxes]* (hereinafter “the Contract Price”).

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:
 - (a) the Purchaser’s Notification to the Supplier of Award of Contract;
 - (b) the Bid Submission Form and the Price Schedules submitted by the Supplier;
 - (c) the Special Conditions of Contract;
 - (d) the General Conditions of Contract;
 - (e) the Schedule of Requirements; and
 - (f) *[indicate any other documents required as appropriate]*

This Contract shall prevail over all other Contract documents. In the event of any discrepancy or inconsistency within the Contract documents, then the documents shall prevail in the order listed above.

3. In consideration of the payments to be made by the Purchaser to the Supplier as indicated in this Agreement, the Supplier hereby covenants with the Purchaser to provide the Goods and Related Services and to remedy defects therein in conformity in all respects with the provisions of the Contract.
4. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the Goods and Related Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of “Nepal” on the day, month, and year indicated above.

Signed by *[insert authorized signature for the Purchaser]* (for the Purchaser)

Signed by *[insert authorized signature for the Supplier]* (for the Supplier)



Performance Security

[insert complete name and number of Contract]

To: *[insert complete name of Purchaser]*

WHEREAS *[insert complete name of Supplier]* (hereinafter “the Supplier”) has received the notification of award for the execution of *[insert identification number and name of contract]* (hereinafter “the Contract”).

AND WHEREAS it has been stipulated by you in the aforementioned Contract that the Supplier shall furnish you with a security *[insert type of security]* issued by a reputable guarantor for the sum specified therein as security for compliance with the Supplier’s performance obligations in accordance with the Contract.

AND WHEREAS the undersigned *[insert complete name of Guarantor]*, legally domiciled in *[insert complete address of Guarantor]*, (hereinafter the “Guarantor”), have agreed to give the Supplier a security:

THEREFORE WE hereby affirm that we are Guarantors and responsible to you, on behalf of the Supplier, up to a total of *[insert currency and amount of guarantee in words and figures]* and we undertake to pay you, upon your first written demand declaring the Supplier to be in default under the Contract, without cavil or argument, any sum or sums within the limits of *[insert currency and amount of guarantee in words and figures]* as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This security is valid until the *[insert day, month, year]*.

Name: *[insert complete name of person signing the Security]*

In the capacity of: *[insert legal capacity of person signing the Security]*

Signed: *[insert signature of person whose name and capacity are shown above]*

Duly authorized to sign the security for and on behalf of: *[insert seal and complete name of Guarantor]*

Date: *[insert date of signing]*



Advance Payment Security

[insert complete name and number of Contract]

To: *[insert complete name of Purchaser]*

In accordance with the payment provision included in the Contract, in relation to advance payments, *[insert complete name of Supplier]* (hereinafter called “the Supplier”) shall deposit with the Purchaser a security consisting of *[indicate type of security]*, to guarantee its proper and faithful performance of the obligations imposed by said Clause of the Contract, in the amount of *[insert currency and amount of guarantee in words and figures]*.

We, the undersigned *[insert complete name of Guarantor]*, legally domiciled in *[insert full address of Guarantor]* (hereinafter “the Guarantor”), as instructed by the Supplier, agree unconditionally and irrevocably to guarantee as primary obligator and not as surety merely, the payment to the Purchaser on its first demand without whatsoever right of objection on our part and without its first claim to the Supplier, in the amount not exceeding *[insert currency and amount of guarantee in words and figures]*.

This security shall remain valid and in full effect from the date of the advance payment being received by the Supplier under the Contract until *[(insert day, month, year) Contract completion date may be a basis for this date]*.

Name: *[insert complete name of person signing the Security]*

In the capacity of: *[insert legal capacity of person signing the Security]*

Signed: *[insert signature of person whose name and capacity are shown above]*

Duly authorized to sign the security for and on behalf of: *[insert seal and complete name of Guarantor]*

Date: *[insert date of signing]*