

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE
POWER TRANSMISSION AND DISTRIBUTION SYSTEM STRENGTHENING PROJECT
LALITPUR-BHAKTAPUR DISTRIBUTION SYSTEM REINFORCEMENT PROJECT

PMD/PTDSSP/LBDSRP-076/77-01: Design, Supply, Installation and Commissioning of Underground Distribution Network under Lagankhel, Pulchowk, Bhaktapur and Thimi Distribution Center including Reinforcement and Automation.

BIDDER'S CLARIFICATION NO. - II

S.No.	Section	Reference to Tender Clause	Description	Bidder's Queries	Employer's Response
1	6	Section 6.3, Project Specific requirement	1599125276_Clarification-I Replies No. 69	With refre nec to 1599125276_Clarification-I :Please note that water tight construction for conductor of HT Cable is neither mentioned in NEA Specification nor in applicable IEC Standard. Hence, we understand that Water Tight construction for Conductor of HT cables is not required. Please clarify whether our understanding on this matter is correct or not.	Bidder's understanding is in order. However, Moisture Barrier shall be provided as per Vol.-II, Chapter 6.3, C1: 11kV XLPE Cable, Sub-Clause 1.14 of the Bid Document.
2	6	Section 6.3, Project Specific requirement	1599125276_Clarification-I	With refre nec to 1599125276_Clarification-I : We understand that the required earth fault shall be 2.14 kA for 1 Sec. Now, as the required cables are 3 core cable. Hence, we request you to kindly clarify whether the required earth fault of 2.14 kA for 1 Sec is to be provided on each individual core or is this to be provided by combination for all 3 cores.	Short Circuit Rating of Mettalic Screen shall be minimum of 2.14 kA Per Core for 1 Second.
3	6	Section 6.3, Technical Specification	Clause No. 10	Service Cable shall be laid in the flexible PVC Pipe / PVC pipe with necessary bends / accessories of double diameter (minimum) of overall service cables We request you to please provide the Technical Specification and Size of the PVC pipe that is used in Service Connection.	As the pipes are to be installed underground, please read flexible PVC pipe as rigid PVC pipe. The diameter of the rigid PVC pipe shall be at least double the diameter of the service cables. The technical specification of rigid PVC pipe is attached in APPENDIX-G

APPENDIX – G

TECHNICAL REQUIREMENTS FOR PVC PIPE

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PVC pipe shall be maintenance-free performance in underground, encased and exposed applications in accordance with the National Electrical Code. PVC Pipes shall be

- Corrosion Resistant
- Non-Magnetic and non-galvanic
- Self-Extinguishing
- Impact Resistant

Corrosion Proof

Resistant to most chemicals, PVC is typically not affected by corrosive soils or salts.

Non-Magnetic and Non-Galvanic

Properties of Allied PVC Pipes provide good insulation and no power loss or conductor heating.

Self-Extinguishing

Properties make PVC fire resistant.

Impact Resistant

Tough, durable, with high tensile strength, yet easy to handle and install right on the jobsite.

Schedule 40 & 80 rigid PVC pipes systems are sunlight resistant and are used exposed, encased in concrete, concealed in walls and in direct burial applications including systems for:

- Utilities
- Cable, data and communication lines
- Institutional, commercial, industrial buildings
- Residential applications, & service entrances

Codes and Standards Compliance

Schedule 40 and Schedule 80 rigid PVC pipes shall be used with 90° C conductors, in accordance with the National Electrical Code. They are manufactured in accordance with NEMA TC2.

PVC fittings are manufactured in accordance with NEMA TC3.

Specification

All wiring shall be installed in rigid PVC pipes and secured by means of proper fittings.

Exposed pipes shall be securely attached and supported by means of straps. The straps shall be installed at the recommended spacing as specified in the National Electrical Code (NEC). The straps must allow for linear expansion and contraction of the pipes due to temperature change. If the variance in temperature exceeds 15°C expansion joints shall be installed according to the manufacturer's recommendations.

If rigid PVC pipes is embedded in concrete or direct buried, Schedule-80 PVC Rigid Pipes shall be used and support straps are not required.

Schedule-40 PVC Rigid Pipes Rated for 90° C Wiring

Size(in)	Average O.D. (in)	Minimum Average I.D. (in)	Minimum Wall (in)	Weight Per Foot (lbs.)
1/2	0.84	0.578	0.109	0.166
3/4	1.05	0.78	0.113	0.22
1	1.315	1.004	0.133	0.327
1-1/4	1.66	1.335	0.14	0.444
1-1/2	1.9	1.564	0.145	0.53
2	2.375	2.021	0.154	0.749
2-1/2	2.875	2.414	0.203	1.187
3	3.5	3.008	0.216	1.613
3-1/2	4	3.486	0.226	1.952
4	4.5	3.961	0.237	2.312
5	5.563	4.975	0.258	3.133
6	6.625	5.986	0.28	4.068

Schedule-80 PVC Rigid Pipes Rated for 90° C Wiring

Size(in)	Average O.D. (in)	Minimum Average I.D. (in)	Minimum Wall (in)	Weight Per Foot (lbs.)
1/2	0.84	0.502	0.147	0.205
3/4	1.05	0.698	0.154	0.278
1	1.315	0.91	0.179	0.406
1-1/4	1.66	1.227	0.191	0.577
1-1/2	1.9	1.446	0.2	0.726
2	2.375	1.881	0.218	0.986
2-1/2	2.875	2.25	0.276	1.504
3	3.5	2.82	0.3	2.013
3-1/2	4	3.28	0.318	2.456
4	4.5	3.737	0.377	3.022
5	5.563	4.713	0.375	4.33
6	6.625	5.646	0.432	5.954