المواصفات الفنية الخاصة بالمناقصة العامة

رقم المناقصة : (٢٠١١/١٢)

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المؤسسة العامة للاتصالات السلكية واللاسلكية

الإدارة العامة للمشتريات والمخازن

إدارة المشتريات - قسم العقود والمناقصات

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1. GENERAL

This specification details the dimensions, properties etc of PVC ducts and pipes and acessories.

2. ASSOCIATED DOCUMENTS

2.1 The latest issues of the undermentioned standards shall apply and be deemed to be integral parts of this specification.

PVC

ASTM D2564-73A	Solvent
ASTM 792	Density
ISO R 174-E	Modulus of viscosity
ASTM D1708	Modulus elasticity
ASTM D2240	Hardness
ASTM D2855	Jointing Procedure
BS 102 C	Softening Point
DIN 8061	Water absorption
	Thermal conductivity
ASTM-D-256-56	Impact strength
	Specific heat
AST D 257-54T	Volume resistivity
ASTM D790	Flexural strength

3. MATERIALS

3.1 Composition

3.1.1 The compound shall be rigid PVC without plasticizer. Lubricants, stabilizers, antioxidants and pigments may be added.

3.1.2 No constituent material shall be used which will adversely effect the long-term mechanical strength of the PVC. All constituents shall be uniformly and fully dispersed.

3.1.3 The Tenderer shall state in his proposal the name of the Manufacturer of the PVC compound and also its name or code number.

3.2 Colour

The colour shall be grey. The pigments shall be titanium oxide and carbon black.

3.3 Requirements of Ducts & Couplings

Ducts and coupling shall be homogeneous throughout. All surfaces shall be clean, smooth and without any visible cracks, grooves, blisters, wrinkles, dents, heat marks or foreign inclusions. Ends shall be smooth and free from sharp edges including sockets.

4. DIMENSIONS

4. Diameter of Ducts

4.1 Ducts shall be provided for a minimum nominal inside diameter of 100 mm, allowing a tolerance of 1%.

4.2 The wall thickness shall not be less than 3.2 mm.

4.3 Tolerance for out of roundness (maximum and minimum diameter) shall not be more than + 1.0 mm.

4.4 The Tenderer shall furnish the dimensions and tolerance of the wall thickness and diameter.

MECHANICAL & THERMAL PROPERTIES

5.1 Density (without filler) ASTM D792	-	approx. 1.4 g/cm^3
5.2 Coefficient of viscosity(without filler) ISO/R174-1961 E 57-70.	-	70
5.3 Modulus of elasticity ASTM D1708 27	-	32,000 KP/cm^2
5.4 Hardness ASTM D2240 Shore D 80	-	85
5.5 Tensile strength (3 minutes)50	-	60 N/mm^2
5.6 Tensile strength extrpolated 50 years	-	min. 25 N/mm^2
5.7 Long-term tensile stress	-	min. 10 N/mm^2
5.8 Softening point BS 102 C 81	-	83 °C
5.9 Compressive strength	-	75 N/mm^2
5.10 Maxmimum total pigment and filler content	-	5%

5.11 The coefficient of linear expansion should be as low as possible so that the pipe does not break or bend due to expansion.

5.12 Water absorption	- DIN 8061	>4 mg/cm^2
5.13 Thermal conductivity	-	.11 - .14 Kcal/m.h.°C
5.14 Impact strength	- ASTM-D-256-56	5.0 kg/cm/cm^2
5.15 Specific heat	-	.2 - .5 cal/g.°C

5.16 Volume resistivity	- AST D 257-54T	105 ohm/cm
5.17 Flexural strength	- ASTM D790	960 – 950 kg/cm^3

6. SAMPLES

Tenderers shall submit along with their offers, a sample of the duct. Tenderers without sample are liable to be rejected.

7. MARKING

7.1 Marking shall be clearly and indelibly made with the following information:

(a) The letters MOC/PTC
(b) Duct diameter
(c) Manufacturer's code or Trademark

7.2 Coupling and spacers may be code marked.

7.3 The process of marking shall not produce any notches.

8. COMPLIANCE

The Tenderers shall give parawise compliance statement with this specification.

9. INSPECTION

Inspection shall be performed as per P.T.C. standards.

10. PACKING & MARKING

Packing and marking shall be performed according to P.T.C. standards.

Packing and unpacking instructions must be supplied with each consignment.

* * * END OF SPECIFICATION * * *

Queries to be answered positively
by the Tenderers regarding PVC Duct

SlNo.	Items	PTC Spec.	Reply from Tenderer
1	Type of PVC material used		
2	Name of manufacturer of PVC material		
3	Colour of PVC	Grey	
4	Lengths of PVC	6 meters	
5	Wall thickness	3.2 mm	
6	Tolerance of roundness of duct pipe		
7	Diameter of PVC duct with its tolerance	100 mm ~ 1%	
8	Mechanical and thermal properties		
8.1	Density (without filler) ASTM D792	Approx. 1.4 g/cm^3	
8.2	Co-efficient of viscosity (without filler)	70	
8.3	Modulus of elasticity ASTM D1708-27	32,000 KP/cm^2	
8.4	Hardness ASTM D2240 shore D-80	85	
8.5	Tensile strength (3 minutes) in N/mm2	60 N/mm^2	
8.6	Long-term tensile stress minimum in N/mm2	Min. 10 N/mm^2	
8.7	Softening point BS 102C81	83°C	
8.8	Compressive strength in N/mm2	75 N/mm^2	
8.9	Tensile strength extrapolated 50 years in N/mm2	Min. 25 N/mm^2	
8.10	Co-efficient of linear expansion		
8.11	Water absorption	>4 mg/cm^2	
8.12	Thermal conductivity	.11 - .14 Kcal/m.h.°C	
8.13	5.14 Impact strength	5.0 kg/cm/cm^2	
8.14	5.15 Specific heat	.2 - .5 cal/g.°C	
8.15	5.16 Volume resistivity	105 ohm/cm	
8.16	5.17 Flexural strength	960 – 950 kg/cm^3	
9	Markings on PVC pipe		
10	Markings on couplers and spacers		
11	Standards adopted for:-		
	- solvent	ASTM D2564-73A	
	- density	ASTM 792	
	- modulus of viscosity	ISO R 174-E	
	- modulus of elasticity	ASTM D1708	
	- hardness	ASTM D2240	
	- jointing procedure	ASTM D2855	
	- softening point	BS 102 C	
	- water absorption	DIN 8061	
	- impact strength	ASTM-D-256-56	
	- volume resistivity	AST D 257-54T	
	- flexural strength	ASTM D790	
	- any other items		
12	Number of PVC duct per pack		

(Signature & Seal of Tenderer)

المعايير الأساسية عند فحص المواسير البلاستيك :

يجب أن تطابق المواسير الأتي :-

Sino	Items	PTC SPEC
1	Lengths of PVC	6 Meters +
2	Wall thickness	3.2mm
3	Diameter of PVC Duct With Its Tolerance	100mm ~ 1%
4	Density (Without Filler) ASTM D792	Approx-.1.4 g/cm
5	Compressive strength in N/mm2	75n/mm2

١	الطول	(٦متر+)
٢	القطر الداخلي	١٠٠ملم ± ١٪
٣	السماكة	٣,٢٠ملم
٤	الكثافة	١,٤ جرام / سم
٥	التحمل الضغط	٧٥نيوتن/ملم٢

Schedule to tender no. 12/2011 for the supply of

Plastic pipes (PVC)

No	Item Descriptions	Qty	Unit price	Total price
1	Plastic Pipes (PVC)	52,000		