

TECHNICAL SPECIFICATION FOR 33KV 10 KN COMPOSITE SILICON RUBBER POLYMER PIN INSULATORS WITH GI PINS

1.0 SCOPE::

This specification covers design, manufacture, testing and supply of Composite Polymer Pin Insulators along with GI Pins for use in the 33KV overhead transmission lines. The Composite Pin Insulators shall be of the following type:-

Long rod type Pin Insulators intended to be mounted rigidly on a supporting structure to support for 33KV AAAC Dog:-

2.0 APPLICABLE STANDARDS::

2.1 Standards:-

Following Indian/International Standards, which shall mean latest revision, with amendments/changes adopted and published, unless specifically stated otherwise in the Specification, shall be referred while accessing conformity of Insulators with these specifications.

- 2.1.1 In the event of supply of Insulators conforming to standards other than specified, the Bidder shall confirm in his bid that these standards are equivalent or better to those specified. In case of award, salient features of comparison between the standards proposed by the Bidder and those specified in this document will be provided by the Supplier to establish equivalence.

Sr. No.	Indian Standard	Title	International Standard
1		Definition, test methods and acceptance criteria for composite Insulators for a. c. overhead lines above 1000V.	IEC:61109
2	IS: 731	Porcelain insulators for overhead power lines with a nominal voltage greater than 1000V.	IEC: 60383
3	IS:2071	Methods of High Voltage Testing.	IEC:60060-1
4	IS:2486	Specification for Insulator fittings for overhead power lines with a nominal voltage greater than 1000V General Requirements and Tests Dimensional Requirements locking devices.	IEC:60120 IEC:60372
5	-	Thermal Mechanical performance test and mechanical performance test on string Insulators units.	IEC:60575
6	IS: 13134	Guide for the selection of insulators in respect of polluted condition.	IEC: 60815
7	-	Characteristics of string insulator units of the long rod type.	IEC: 60433
8	-	Hydrophobicity Classification Guide.	STRI guide 1.92/1
9	-	Radio interference characteristics of overhead power lines and high voltage equipment.	CISPR 18.2 Part 2
10	IS:8263	Methods of RI Test of HV Insulators.	IEC:60437
11		Standard for Insulators- Composite- Distribution Dead-end Type.	ANSI C 29.13-2000
12	IS:4759	Hot dip zinc coatings on structural steel & other allied products.	ISO:1459
13	IS:2629	Recommended practice for Hot Dip galvanization for iron and steel	ISO:1461(E)
14	IS:6745	Determination of weight of zinc coating on zinc coated Iron and steel articles.	ISO:1460

Sr. No.	Indian Standard	Title	International Standard
15	IS:3203	Methods of testing of local thickness of electroplated coatings.	ISO:2178
16	IS:2633	Testing of Uniformity of coating of zinc coated articles.	
17	-	Standard specification for glass fiber standards.	ASTM D 578-05
18	-	Standard specification for compositional analysis by Thermo-gravimetry.	ASTM D 578-05
19	IS:4699	Specification for refined secondary zinc	

The addresses of organizations who offer the above standards are given at Annexure-A

3.0 TECHNICAL DESCRIPTION OF COMPOSITE INSULATORS::

3.1 Service condition:-

The polymer Insulators to be supplied shall be suitable for satisfactory continuous operation under conditions as specified below:

Maximum ambient temperature : 48°C
Minimum ambient temperature : -5°C
Relative humidity : 0 to 100%

3.2 Composite Insulators long rod type to support conductor on 33KV Over head Power Lines:-

- 3.2.1 The Insulators shall be suitable for 3Φ, 50 Hz, effectively earthed 33KV O/H distribution system in a moderately / heavily polluted atmosphere.
- 3.2.2 Bidder must be an indigenous manufacturer and supplier of composite Insulators of rating 33KV or above OR must have developed proven in house technology and manufacturing process for composite Insulators of above rating OR possess technical collaboration/ association with a manufacturer of composite Insulators of rating 33KV or above. The Bidder shall furnish necessary evidence in support of the above along with the bid, which can be in the form of certification from the utilities concerned, or any other documents to the satisfaction of the owner.
- 3.2.3 Insulators shall have sheds with good self-cleaning properties. Insulator shed profile, spacing, projection etc, and selection in respect of polluted conditions shall be generally in accordance with the recommendation of IEC-60815/IS: 13134.
- 3.2.4 The size of Composite insulator, minimum creepage distance and mechanical strength along with hardware fittings shall be as follows:

SN	Type of composite Insulator	Nominal system voltage KV (rms)	Highest system voltage KV (rms)	Visible discharge test voltage KV	Wet power frequency withstand voltage KV (rms)	Impulse withstand voltage KV (rms)	Weather shed diameter (mm)	Minimum creepage distance (mm)	Min. failing load KN	Pin rod shank diameter (mm)
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				(rms)						
i.	33KV Pin Insulator	33	36	27	75	170	100	900	10	33.5

Note: Creepage distances have been considered in line with IS-13134 (which specifies 20mm/KV for moderately polluted environment and 25mm/KV for heavily polluted area)

3.3 Dimensional Tolerance of Composite Insulators :-

The tolerances on all dimensions e.g. diameter, length and creepage distance shall be allowed as follows in line with IEC 61109:

$\pm \{0.04d+1.5\}$ mm when $d < 300$ mm,

$\pm \{0.025d+6J\}$ mm when $d > 300$ mm.

Where, d being the dimensions in millimeters for diameter, length or creepage distance as the case may be,

However, no negative tolerance shall be applicable to creepage distance.

3.4 Corona and RI Performance:-

All surfaces shall be clean, smooth, without cuts, abrasions or projections. No part shall be subjected to excessive localized pressure. The insulator and metal parts shall be so designed and manufactured that it shall avoid local corona formation and not generate any radio interference beyond specified limit under the operating conditions.

4.0 BASIC FEATURES::

4.1 Design and construction:-

The Composite Pin Insulator shall have a core, housing & weather shed of insulating material and steel/aluminum alloy hardware components for attaching it to the support/conductor.

4.1.1 Core:-

It shall be a glass-fiber reinforced epoxy resin rod of high strength (FRP rod). Glass fibers and resin shall be optimized in the FRP rod. Glass fibers shall be Boron free electrically corrosion resistant (ECR) glass fiber or Boron free E-Glass and shall exhibit both high electrical integrity and high resistance to acid corrosion. The matrix of the FRP rod shall be Hydrolysis resistant. The FRP rod shall be manufactured through Pultrusion process. The FRP rod shall be void free. The diameter of FRP rod should be 24 mm only

4.1.2 Housing (Sheath):-

The FRP rod shall be covered by a seamless sheath of a silicone electrometric compound or silicone alloy compound of a thickness of 3mm minimum uniformly measurable including on weather sheds. It shall be one-piece housing using Injection Molding Principle to cover the core. The elastomeric housing shall be designed to provide the necessary creepage distance and protection against environmental influences. Housing shall conform to the requirements of IEC 61109/92-93 with latest amendments.

4.1.3 Weather sheds:-

The composite polymer weather sheds made of a silicone elastomeric compound or silicone alloy compound shall be firmly bonded to the sheath, vulcanized to the sheath or molded as part of the sheath and shall be free from imperfections It should protect the FRP rod against environmental influences, external pollution and humidity. The weather sheds should have silicon content of minimum 30% by weight. The strength of the weather shed to sheath interface shall be greater than the tearing strength of the polymer. The interface, if any, between sheds and sheath (housing) shall be free from voids.

4.1.4 End Fittings:-

End fittings transmit the mechanical load to the core. They shall be made of spheroidal graphite cast Iron, malleable cast iron or forged steel or aluminum alloy. They shall be connected to the rod by means of a controlled compression technique. The material used in fittings shall be corrosion resistant. As the main duty of the end fittings is the transfer of mechanical loads to the core the fittings should be properly attached to the core by a coaxial or hexagonal compression process & should not damage the individual fibers or crack the core. The gap between fitting and sheath shall be sealed by a flexible silicone electrometric compound or silicone alloy compound sealant. System of attachment of end fitting to the rod shall provide superior sealing performance between housing, i.e. seamless sheath and metal connection. The sealing must be moisture proof.

The dimensions of end fittings of Insulators shall be in accordance with the standard dimensions stated in IS: 2486/IEC60120.

5.0 WORKMANSHIP::

- 5.1 All the materials shall be of latest design and conform to the best engineering practices adopted in the high voltage field. Bidders shall offer only such Insulators as are guaranteed by them to be satisfactory and suitable for continued good service in power transmission lines.
- 5.2 The design, manufacturing process and material control at various stages shall be such as to give maximum working load, highest mobility, best resistance to corrosion, good finish and elimination of sharp edges and corners.
- 5.3 The design of the Insulators shall be such that stresses due to expansion and contraction in any part of the insulator shall not lead to deterioration.
- 5.4 The core shall be sound and free of cracks and voids that may adversely affect the Insulators.
- 5.5 Weather sheds shall be uniform in quality. They shall be clean, sound, smooth and shall be free from defects and excessive flashing at parting lines.
- 5.6 End fittings shall be free from cracks, seams, shrinks, air holes and rough edges. End fittings should be effectively sealed to prevent moisture ingress; effectiveness of sealing system must be supported by test documents. All surfaces of the metal parts shall be perfectly smooth without projecting points or irregularities, which may cause corona. All load bearing surfaces shall be smooth and uniform so as to distribute the loading stresses uniformly.
- 5.7 All ferrous parts shall be hot dip galvanized to give a minimum average coating of zinc equivalent to 610 gm/Sq.m, or 87 μ m thickness and shall be in accordance with the requirement of IS: 4759, The zinc used for galvanizing shall be of purity 99.5% as per IS: 4699. The zinc coating shall be uniform, adherent, smooth, reasonably bright continuous and free from imperfections such as flux, ash rust stains, bulky white deposits and blisters. The galvanized metal parts shall be guaranteed to withstand at least four successive dips each lasting for one H) minute duration under the standard preece test. The galvanizing shall be carried out only after any machining.

6.0 EQUIPMENT MARKING:

- 6.1 Each insulator unit shall be legibly and indelibly marked with the following details as per IEC-61109:
 - (a) Month & Year of manufacture

- (b) Min. failing load/guaranteed mechanical strength in kilo Newton followed by the word 'KN' to facilitate easy identification.
- (c) Manufacturer's name/Trade mark
- (d) "APEPDCL" name shall be inscribed on the insulator similar to the supplier's name inscription on the insulator

7.0 BID DRAWINGS::

7.1 The Bidder shall furnish full description and illustration of the material offered.

7.2 The Bidder shall furnish along with the bid the outline drawing (3 copies) of each insulator unit including a cross sectional view of the long rod insulator unit. The drawing shall include but not be limited to the following information:

- (a) Long rod diameter with manufacturing tolerances
- (b) Minimum Creepage distance with positive tolerance
- (c) Protected creepage distance
- (d) Eccentricity of the long rod unit
 - (i) Axial run out
 - (ii) Radial run out
- (e) Unit mechanical and electrical characteristics
- (f) Weight of composite long rod unit.
- (g) Materials
 - (i) Identification mark
 - (ii) Manufacturer's catalogue number

7.3 After placement of award, the supplier shall submit full dimensioned manufacturing insulator drawing containing all the details in four (4) copies to Owner for approval. After getting approval from Owner and successful completion of all the types tests, the supplier shall submit 10 more copies of the drawing to the Owner for further distribution and field use.

7.4 After placement of award the Supplier shall also submit fully dimensioned insulator crate drawing for different type of Insulators for approval of the owner.

8.0 TESTS AND STANDARDS::

Insulators offered shall be manufactured with the same configuration & raw materials as used in the Insulators for which design & type test reports are submitted. The manufacturer shall submit a certificate for the same. The design & type test reports submitted shall not be more than 10 years old.

8.1 Design Tests:-

For polymeric insulators it is essential to carry out design test as per clause 4.1 of IEC 61109 / 92-93 with latest amendments. The design tests are intended to verify the suitability of the design, materials and method of manufacture (technology). When a composite insulator is subjected to the design tests, the result shall be considered valid for the whole class of insulators, which are represented by the one tested and having the following characteristics:

- Same materials for the core, and sheds and same manufacturing method;
- Same material of the fittings, the same design, the same method of attachment;
- Same or greater layer thickness of the shed material over the core (including a sheath where used);
- Same or smaller ratio of the highest system voltage to insulation length;
- Same or smaller ratio of all mechanical loads to the smallest core diameter between fittings
- Same or greater diameter of the core.

The tested composite insulators shall be identified by a drawing giving all the dimensions with the manufacturing tolerances.

Manufacturer should submit test reports for Design Tests as per IEC-61109 (clause- 5) along with the bid. Additionally following tests shall be carried out or reports for the tests shall be submitted after award of contract: UV test: the test shall be carried out in line with clause 7.2 of ANSI C29.13.

8.2 Type Tests:-

The tenderer shall furnish detailed type test reports of the offered composite Insulators as per clause 8.2 of the Technical Specifications at the NABL approved laboratories to prove that the composite Insulators offered meet the requirements of the specification. These Type Tests should have been carried out within ten years prior to the date of opening of this tender. The following type tests shall be conducted on a suitable number of individual insulator units, components & materials and the test report should invariably be submitted with the bid:-

SN	Description of type test	Ten procedure/standard
1.	Dry lightning impulse withstand voltage test	As per IEC 61109
2.	Wet power frequency test	As per IEC 61 109
3.	Mechanical failing load test	As per IS:731
4.	Radio interference test	As per IEC 61109
5.	Recovery of Hydrophobicity test	Annexure-B This test may be repeated every 3 yrs by the manufacturer
6.	Chemical composition test for silicon content	Annexure-B Or any other test method acceptable to the owner
7.	Brittle fracture resistance test	Annexure - B

Note:- The purchase may like to conduct any other test(s) in addition to above tests at bidder's cost to establish the performance of material as per system requirement.

8.2.2 It shall be the option of the owner to accept the Insulators based on type test reports submitted by the manufacturer. The owner shall be free to repeat the type test & may witness the same.

Note: The owner, for the purpose of facilitating the type tests, may ask the bidders to quote test charges separately

8.2.3 All the type test given in Clause No. 8.2 in addition to routine & acceptance test shall be carried out on Pin Insulators wherever required.

8.3 Acceptance (sample) Tests

a.	Verification of dimensions	IEC: 61109
b.	Verification of the locking system (if applicable)	IEC: 61 109
c.	Galvanizing test	IS:2633/IS:6745
c.	Verification of tightness of the interface between end fittings & Insulator housing	IEC:61109 amendment 1 of 1995
d.	Verification of the specified mechanical load	4 IEC: 611 09 / IS:731

The test samples after having withstood the routine test shall be subjected to the following acceptance tests:-

8.4 Routine Tests:-

SN	Description	Standard
1.	Identification of marking	As per IEC: 61109
2.	Visual Inspection	As per IEC 61109
3.	Mechanical routine test	As per IEC: 61109 / IS:731

8.5 Tests during Manufacture

Following tests shall also be carried out on all components as applicable:-

a)	Chemical analysis of zinc used for galvanizing
b)	Chemical analysis, mechanical, metallographic test and magnetic particle inspection for malleable castings.
c)	Chemical analysis, hardness tests and magnetic particle inspection for forgings

- a) Chemical analysis of zinc used for galvanizing
- b) Chemical analysis, mechanical, metallographic test and magnetic particle inspection for malleable castings.
- c) Chemical analysis, hardness tests and magnetic particle inspection for forgings.

8.6 Additional Tests:-

- 8.6.1 The Owner reserves the right at his own expenses, for carrying out any other test(s) of reasonable nature carried out at Supplier's premises, at site, or in any other place in addition to the aforesaid type, acceptance and routine tests to satisfy himself that the material comply with the Specifications.
- 8.6.2 The Owner also reserves the right to conduct all the tests mentioned in this specification at his own expense on the samples drawn from the site at Supplier's premises or at any other test center. In case of evidence of non compliance, it shall be binding on the part of the Supplier to prove the compliance of the items to the technical specifications by repeat tests or correction of deficiencies or replacement of defective items, all without any extra cost to the Owner,

9.0 Quality assurance plan:-

- 9.1 The successful bidder shall submit following information to the owner:
 - 9.1.1 Test certificates of the raw materials and bought out accessories.
 - 9.1.2 Statement giving list of important raw materials, their grades along with names of sub-suppliers for raw materials, list of standards according to which the raw materials are tested. List of tests normally carried out on raw materials in presence of bidder's representative.
 - 9.1.2 List of manufacturing facilities available.
 - 9.1.3 Level of automation achieved and lists of areas where manual processing exists.
 - 9.1.4 List of areas in manufacturing process, where stage inspections are normally carried out for quality control and details of such tests and inspections.
 - 9.1.5 List of testing equipments available with the bidder for final testing of equipment along with valid calibration reports.
 - 9.1.6 The manufacturer shall submit Manufacturing Quality Plan (MQP) for approval & the same shall be followed during manufacture and testing,

- 9.1.7 The successful bidder shall submit the routine test certificates of bought out raw materials / accessories and central excise passes for raw material at the time of inspection.

10.0 GUARANTEE:-

The Supplier of Insulators shall guarantee overall satisfactory performance of the Insulators for the period of 18 months from the date of supply.

11.0 INSPECTION::

- 11.1 The owner's representative shall at all times be entitled to have access to the works and all places of manufacture, where insulator, and its component parts shall be manufactured and the representatives shall have full facilities for unrestricted inspection of the Supplier's and sub-Supplier's works, raw materials, manufacture of the material and for conducting necessary test as detailed herein.
- 11.2. The material for final inspection shall be offered by the Supplier only under packed condition. The owner shall select samples at random from the packed lot for carrying out acceptance tests. The lot offered for inspection shall be homogeneous and shall contain Insulators manufactured in 3-4 consecutive weeks.
- 11.3 The Supplier shall keep the Owner informed in advance of the time of starting and the progress of manufacture of material in their various stages so that arrangements could be made for inspection.
- 11.4 No material shall be dispatched from its point of manufacture before it has been satisfactorily inspected and tested unless the inspection is waived off by the owner in writing. In the later case also the material shall be dispatched only after satisfactory testing specified herein has been completed.
- 11.5 The acceptance of any quantity of material shall in no way relieve the Supplier of his responsibility for meeting all the requirements of the specification and shall not prevent subsequent rejection, if such materials are later found to be defective.

12.0 PACKING:

- 12.1 All Insulators shall be packed in strong corrugated box of min, 7 ply duly palletted or wooden crates. The gross weight of the crates along with the material shall not normally exceed 100 Kg to avoid handling problem. The crates shall be suitable for outdoor storage under wet climate during rainy season.
- 12.2 The packing shall be of sufficient strength to withstand rough handling during transit, storage at site and subsequent handling in the field.
- 12.3 Suitable cushioning, protective padding, or dunnage or spacers shall be provided to prevent damage or deformation during transit and handling.
- 12.4 All packing cases shall be marked legibly and correctly so as to ensure safe arrival at their destination and to avoid the possibility of goods being lost or wrongly dispatched on account of faulty packing and faulty or illegible markings. Each wooden case/crate/corrugated box shall have all the markings stenciled on it in indelible ink.
- 12.5 The bidder shall provide instructions regarding handling and storage precautions to be taken at site.

13. Samples:

Two samples shall be submitted along with the tender

14. Performance security clause:

The successful bidder shall furnish 10% of contract value towards performance security which includes 5% delivery performance. In case there are delivery delays, from the available amount up to 5% shall be recovered for not adhering to the scheduled deliveries as per the purchase order obligations and the supplier should recoup the amount so deducted by DD or BG again up to extent of 10% till warranty period is applicable as part of performance guarantee .

Annexure – A

The standards mentioned in this specification are available from:

Reference abbreviation	Name and address
IEC/CISPR	International Electro technical commission, Bureau Central de la commission, electro technique international, 1 rue de Verembe, Geneva, SWITZERLAND
BIS/IS	Bureau of Indian Standards, Manak Bhavan, 9, Bahadur Shah Zafar Marg, New Delhi – 110 001, INDIA
ISO	International organization for standardization, Danish Board of Standardization Danish Standardizing Society, Artvejsvej-12 DK-2900, Hellerup, DENMARK
NEMA/ANSI	National Electric Manufacture Association, 155, East 44 th Street, New York, NY: 10017 U.S.A
ASTM	American Society for Testing and Materials, 1916 Race St. Philadelphia, PA 19103 U.S.A.
STRI guide	STRI, Sweden, Website : www.stri.se

ANNEXURE – B

Tests on Insulator units :

1. RIV Test (Dry) :

The insulator string along with complete hardware fittings shall have a radio interference voltage level below 100 micro volts at one MHz when subjected to 50 Hz A.C. voltage of 10KV for 11KV class insulators respectively under dry condition. The test procedure shall be in accordance with IS:8263/IEC : 437/CISPR 18-2.

2. Brittle Fracture Resistance Test

Brittle fracture test shall be carried out on naked rod along with end fittings by applying “In HNO₃ acid” (63 g. conc.HNO₃ added to 937 g water) to the rod. The rod should be held at 80% of SML for the duration of the test. The rod should not fail within the 96-hour test duration. Test arrangement should ensure continuous wetting of the rod with Nitric acid.

3. Recovery of Hydrophobicity & Corona test

The test shall be carried out on 4mm thick samples of 5cm X 7 cm.

- i) The surface of selected samples shall be cleaned with isopropyl alcohol. Allow the surface to dry and spray with water. Record the Hydrophobicity classification in line with STRI guide for Hydrophobicity classification (Extract enclosed at Annexure-D). Dry the samples surface.
- ii) The sample shall subjected to mechanical stress by bending the sample over a ground electrode. Corona is continuously generated by applying 12KV to a needle like electrode placed 1mm above the sample surface. Tentative arrangement shall be as shown in Annexure-E. The test shall be done for 100 hrs.
- iii) Immediately after the corona treatment, spray the surface with water and record the HC classification. Dry the surface and repeat the corona treatment as at clause 2 above. Note HC classification. Repeat the cycle for 1000 hrs. or until an HC of 6 or 7 is obtained. Dry the sample surface.
- iv) Allow the sample to recover and repeat hydrophobicity measurement at several time intervals. Silicone rubber should recover to HC1-HC2 within 24 to 48 hours, depending on the material and the intensity of the corona treatment.

3. Chemical composition test for silicon content

The content of silicon in the composite polymer shall be evaluated by EDX (Energy Dispersion X-ray) Analysis or Thermo-gravimetric analysis. The test may be carried out at CPRI or any other NABL accredited laboratory.

ANNEXURE – C
Guaranteed Technical Particulars of 33 KV-10KN composite
Silicon rubber polymer pin insulators along with GI Pins

Sl. No.	Description	Unit	33 KV 10 KN Pin
1.	Type of Insulators		
2.	Standard specification to which the Insulators manufactured and tested		
3.	Name of material used in manufacture of the Insulator (with class / grade)		
(a)	Material of core rod (FRP rod)		
(b)	Material of Housing & weather sheds (silicon content by weight)		> 30%
(c)	Sealing compound for end fitting		
4.	Colour Glaze of Insulator		
5.	Electrical Characteristics:		
(a)	Nominal system Voltage	KV rms	
(b)	Highest System Voltage	KV rms	
(c)	Dry power frequency withstand	KV rms	
(d)	Wet power frequency withstand	KV rms	
(e)	Dry flash over voltage	KV rms	
(f)	Wet flash over voltage	KV rms	
(g)	Dry lighting impulse withstand voltage		
	(a) Positive	kV(peak)	
	(b) Negative	kV(peak)	
(h)	Dry lighting impulse flashover voltage		
	(a) Positive (KV peak)	kV(peak)	
	(b) Negative (KV peak)	kV(peak)	
(i)	RIV at 1 MHz when energized at 10kV/30kV (rms) under dry condition	Microvolt	
(j)	Creepage distance (min)	Mm	900 mm
6.	Mechanical Characteristics:		
	Minimum failing load (KN)	KN	10KN
7.	Dimensions of Insulator:		
(a).	Weight (Approx)	Kg	2.5Kgs \pm 2%
(b).	Dia of FRP rod	Mm	33.5
(c)	Length of FRP rod	Mm	
(d).	Dia of weather sheds	Mm	
(e).	Thickness of housing	Mm	3
(f).	Dry arc distance (Approx)	Mm	
(g).	Dimensioned drawings of Insulator (including weight with tolerances in weight) enclosed.	Yes/no	
8.	Method of fixing of sheds to housing specify):- single mould or modular construction (injection moulding/compression moulding)		
9.	No. of weather sheds	Nos.	
10.	Sectional Length	Mm	
11.	Type of sheds		
	(i) Aerodynamic		
	(ii) With under ribs		

Sl. No.	Description	Unit	33 KV 10 KN Pin
12.	Packing details		
	(a) Type of packing.		
	(b) No. of Insulators in each pack		
	(c) Gross weight of package		
13.	Any other particulars which the bidder may like to give.		