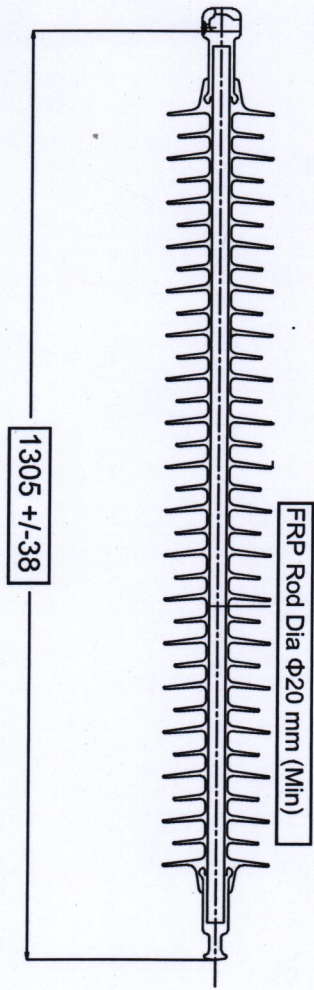


ALL DIMENSIONS ARE IN mm & WEIGHTS IN kg UNLESS OTHERWISE SPECIFIED.



Electrical Characteristics

Nominal System Voltage (kV)	:132
Highest System Voltage (kV)	:145
Wet Power Frequency Withstand Voltage (kV rms)	:275
Dry Lighting Impulse Withstand Voltage	
a) Positive (kV Peak)	:650
b) Negative (kV Peak)	:650
RIV at 1 MHz when energized at (rms) under dry condition Micro volt	:<1000 at 92kv
Creepage Distance (Min.) mm	:4495
Ball & Socket designation mm	: 16 B Type (as per IS:2486 Part II-1989)

Standard according to which the Insulators manufactured and tested : IEC :61109  
 Recommended practice for Hot dip galvanization for iron and steel : IS:2629-1990

\* Shed Profile & Diameters shall be as type tested

Thickness of sheath (mm) :3(min)

Material used in Manufacturing of the Insulators with Class/Grade : Silicon Rubber

Material of Core (FRP rod)

- i) E-Glass or ECR Glass : ECR Glass
- ii) Boron Content : Boron free

Material of housing Silicon Content by weight : Silicon (30% by weight)

FRP rod Dia (Minimum) (mm) : Φ 20

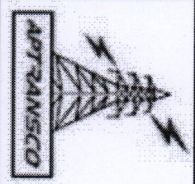
Material of End Fittings : Forged Hot Dipped Galvanized

Mechanical Characteristics

Specified Mechanical Load : 70 KN

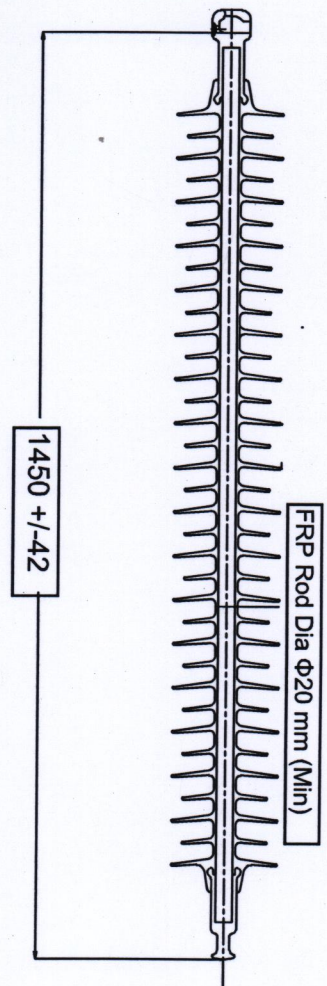
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Standardised Drawing For  
 132KV, 70KN SRC Insulator

ALL DIMENSIONS ARE IN mm & WEIGHTS IN kg UNLESS OTHERWISE SPECIFIED.



Electrical Characteristics

Nominal System Voltage (kV) :132

Highest System Voltage (kV) :145

Wet Power Frequency Withstand Voltage (kV rms) :275

Dry Lighting Impulse Withstand Voltage

a) Positive (kV Peak) :650

b) Negative (kV Peak) :650

RIV at 1 MHz when energized at (rms) under dry condition Micro volt : <1000 at 92kV

Creepage Distance (Min.) mm :4495

Ball & Socket designation mm : 20 (as per IS:2486 Part II-1989)

Standard according to which the Insulators manufactured and tested : IEC :61109

Recommended practice for Hot dip galvanization for iron and steel.: IS:2629-1990

\* Shed Profile & Diameters shall be as type tested

Thickness of sheath (mm) :3(min)

Material used in Manufacturing of the Insulators with Class/Grade : Silicon Rubber

Material of Core (FRP rod)

i) E-Glass or ECR Glass : ECR Glass

ii) Boron Content : Boron free

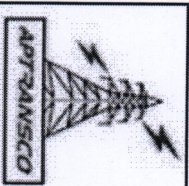
Material of housing Silicon Content by weight : Silicon (30% by weight)

FRP rod Dia (Minimum) (mm) :Φ 20

Material of End Fittings : Forged Hot Dipped Galvanized

Mechanical Characteristics

Specified Mechanical Load :120 KN



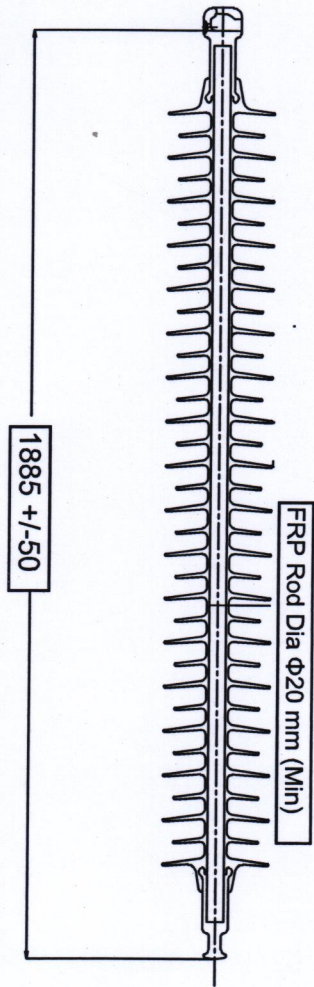
Standardised Drawing For  
132kV, 120kN SRC Insulator

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ALL DIMENSIONS ARE IN mm & WEIGHTS IN kg UNLESS OTHERWISE SPECIFIED.



Electrical Characteristics

Nominal System Voltage (kV) :220  
 Highest System Voltage (kV) :245  
 Wet Power Frequency Withstand Voltage (kV rms) :460  
 Dry Lighting Impulse Withstand Voltage

a) Positive (kV Peak) :1050  
 b) Negative (kV Peak) :1050

RIV at 1 MHz when energized at (rms) under dry condition Micro volt : <1000 at 156 kv

Creepage Distance (Min.) mm :7595

Ball & Socket designation mm : 16 B Type (as per IS:2486 Part II-1989)

Standard according to which the Insulators manufactured and tested : IEC :61109

Recommended practice for Hot dip galvanization for iron and steel.: IS:2629-1990

\* Shed Profile & Diameters shall be as type tested

Thickness of sheath (mm) :3(min)

Material used in Manufacturing of the Insulators with Class/Grade : Silicon Rubber

Material of Core (FRP rod)

i) E-Glass or ECR Glass : ECR Glass

ii) Boron Content : Boron free

Material of housing Silicon Content by weight : Silicon (30% by weight)

FRP rod Dia (Minimum) (mm) :Φ 20

Material of End Fittings : Forged Hot Dipped Galvanized

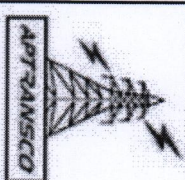
Mechanical Characteristics

Specified Mechanical Load :70 KN

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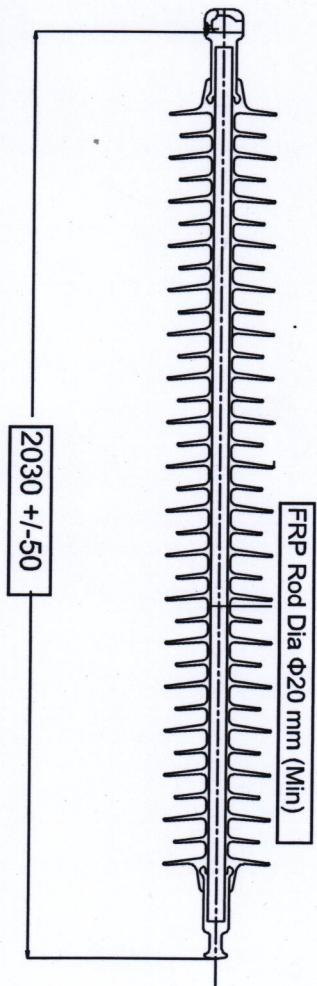
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 CHIEF ENGINEER  
 CONSTRUCTION  
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6/2



Standardised Drawing For  
 220kV, 70KN SRC Insulator

ALL DIMENSIONS ARE IN mm & WEIGHTS IN kg UNLESS OTHERWISE SPECIFIED.



Electrical Characteristics

Nominal System Voltage (kV) :220

Highest System Voltage (kV) :245

Wet Power Frequency Withstand Voltage (kV rms) :460

Dry Lighting Impulse Withstand Voltage

a) Positive (kV Peak) :1050

b) Negative (kV Peak) :1050

RIV at 1 MHz when energized at (rms) under dry condition Micro volt : <1000 at 156 kv

Creepage Distance (Min.) mm :7595

Ball & Socket designation mm : 20

Standard according to which the Insulators manufactured and tested : IEC :61109

Recommended practice for Hot dip galvanization for iron and steel.: IS:2629-1990

\* Shed Profile & Diameters shall be as type tested

Thickness of sheath (mm) :3(min)

Material used in Manufacturing of the Insulators with Class/Grade : Silicon Rubber

Material of Core (FRP rod)

i) E-Glass or ECR Glass : ECR Glass

ii) Boron Content : Boron free

Material of housing Silicon Content by weight : Silicon (30% by weight)

FRP rod Dia (Minimum) (mm) :  $\Phi$  20

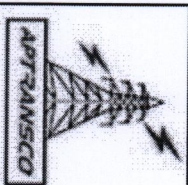
Material of End Fittings : Hot Dipped Galvanized / Forged

Mechanical Characteristics

Specified Mechanical Load :120 KN

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Standardised Drawing For  
220kV, 120KN SRC Insulator

**ANNEXURE - I**  
**STANDARDISED GUARANTEED TECHNICAL PARTICULARS FOR 132 kV & 220 kV**  
**SILICON RUBBER COMPOSITE INSULATORS**

S.NO	Description	Unit	132KV	132KV	220KV	220KV
			70KN	120KN	70KN	120KN
			<b>For Heavily-Polluted areas. For all zones of AP.</b>			
1	Type of the Insulator		Composite Polymer Insulator			
2	Standard according to which the Insulators manufactured and tested		IEC :61109			
	<b>The type tests should have been conducted not earlier than 5 Years in the standard third party laboratory. The Manufacturer shall produce the type test reports at the time of acceptance tests.</b>					
3	Name of the Material used in Manufacturing of the Insulators with Class/Grade		Silicon Rubber			
a)	Material of Core (FRP rod)					
	i) E-Glass or ECR Glass		ECR Glass			
	ii) Boron Content		Boron free			
b)	Material of housing Silicon Content by weight		Silicon Rubber (30% by weight) ,			
c)	Material of End Fittings		Forged Hot Dipped Galvanized			
4	Colour		Grey			
5	<b>Analysis of Material properties</b>		<b>Housing Material</b>			
			<b>Reference Specification</b>	<b>Specified Values</b>		
a)	Resistance to tracking & erosion		IEC :60587	Min 4.5 kV		
b)	Tear Strength	kN/m	ASTM D624-B	Min 12		
c)	Volume Resistivity		IEC : 60093	Min $1 \times 10^{13}$		
d)	Accelerated weathering test		IEC : 62217	No crack & No Surface degradation		
e)	Specific Gravity		ASTM D792	1.52 to 1.58		
f)	Dielectric Strength	kV/mm	ASTM D149/IEC : 60243	17.5		
g)	Hardness (Shore A)		ASTM D2204	$68 \pm 7$		

h)	Ultimate Elongation		ASTM D412		Min 100	
i)	Tensile Strength	kG/Sq.cm	ASTM D412		Min 40	
j)	Flammability		IEC : 62217		Test specimen belongs to category V0 required	
<b>Core Material</b>						
			<b>Reference Specification</b>		<b>Specified Values</b>	
a)	Verification of dimensions		As per approved drawing			
b)	Dye penetration test		IEC :61109		No dye penetration for minimum of 15 minutes	
c)	Percentage of glass content	%	ASTM D2584		Min 70%	
d)	Hardness test		ASTM D2583		Min 50	
e)	Water Absorption		ASTM D570		Max 0.1%	
f)	Specific Gravity		ASTM D792		1.9 to 2.3	
g)	Brittle fracture resistance test		As per Annexure of Tests		Shall withstand	
6	<b>Electrical Characteristics</b>					
a)	Nominal System Voltage	KV	132	132	220	220
b)	Highest System Voltage	KV	145	145	245	245
c)	Wet Power Frequency Withstand Voltage	KV (rms)	275	275	460	460
d)	Dry Lighting Impulse Withstand Voltage					
	a) Positive	kv (peak)	650	650	1050	1050
	b) Negative	kv (peak)	650	650	1050	1050
e)	RIV at 1 MHz when energized at (rms) under dry condition	Micro volt	<1000 at 92kv	<1000 at 92 kv	<1000 at 156kv	<1000 at 156kv
f)	Creepage Distance (Min.)	mm	4495	4495	7595	7595
7	<b>Mechanical Characteristics</b>					
a)	Specified Mechanical Load	KN	70	120	70	120
8	<b>Dimensions of Insulator</b>					
	i) Thickness of sheath	mm	3(min)	3(min)	3(min)	3(min)
9	Method of fixing of Sheds to Housing (specify)	Injection Moulding				
10	Type Sheds	Aerodynamic				

11	Sectional Length	mm	1305±38	1450±42	1885±50	2030±50
12	Ball & Socket designation	mm	16 B Type	20	16 B Type	20
13	Packing	Packing shall be done thick card board materials /wood. While designing the packing material, care shall be taken that the materials shall not be access to rats etc while stocking in the stores.				
14	Markings	"APTRANSCO" Letters to be indented or embossed on the cap/socket of the Insulator on the sheds.				
15	Quality of material & standard to which conform	IEC: 61109				

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26/10/18

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