Rate Contract for Supply of Insulator of various ratings at TPCODL, TPNODL, TPSODL & TPWODL (TP ODISHA DISCOMS) for 1 year.

Tender Ref: TPCODL/CCG/2026-27/ 1000009942

Sl. No.	Tender Reference (Document name/Page no./Clause no./Clause name)	Pre-Bid Query raised by Bidder	CEG RESPONSE
1	Technical Spec No. ENG-EHV-1036 R1, Page No. 7, Clause No. 7 (i) weight for 33KV 90KN Polymer Disc Insulator B&S type is required 1.6 kg. and for 33KV 120KN Polymer Disc Insulator B&S type is required 1.8 kg.	Please note that B&S fitting is casting item and weight tolerance should be applicable. Hence we recommend it should be mentioned Min. weight 1.5 kg. for 33KV 90KN Polymer Disc Insulator B&S type and 1.7 kg. for 33KV 120KN Polymer Disc Insulator B&S type	33 kV, 90 kN Disc Insulator: Minimum weight 1.5 kg 33 kV, 120 kN Disc Insulator : Minimum weight 1.7 kg Tolerance shall be as per IS
2	Technical Spec No. ENG-EHV-1036 R1, Page No. 7, Clause No. 7 (iii) FRP Rod length is mentioned 440mm for 33KV 90KN Polymer Disc Insulator B&S type and 33KV 120KN Polymer Disc Insulator B&S type	Please note that FRP Length for mechanical strength 90KN & 120KN is not possible to remain same. For mechanical strength of 90KN, the small length fitting is suitable instead of 120KN mechanical strength. Hence we recommend 430mm FRP Length for 90KN and 440mm FRP Length for 120KN Mechanical load for 33KV Polymer Disc Insulators.	Min. FRP length shall be as per technical specification. Bidder to submit the Type Test Reports for dimensions of Insulators including the FRP length.
3	Technical Spec No. ENG-EHV-1035 R1, Page No. 6, Clause No. 33, the weight for 33KV Polymer Pin Insulator is required 1.2 +/- 0.1 kg	The weight required for 33KV Polymer Pin Insulator is mentioned very lowest. Our recommendation to revise the weight of Insulator Min. 2.2 kg.	Min. weight of 33kV Pin Insulatior is 1.2 kg. Tolerance shall be as per IS
4	Technical Spec No. ENG-EHV-1035 R1, Page No. 6, Clause No. 19, FRP Rod dia for 33KV Polymer Pin Insulator is required 32mm	We recommend you to please mention Min. 32mm FRP Rod length for this requirement.	Minimum FRP dia. 32mm. However, bidder to share the Type test Reports for 32mm or more FRP dia. As per type tested design
5	Technical Spec No. ENG-EHV-2027 R1, Page No. 6, Clause No. 20, FRP Rod length for 11KV Polymer Pin Insulator is required 200mm	Length of FRP Rod depends upon the manufacturer's design while meeting all required electrical and mechanical parameters. Further, FRP rod length is not specified in any IS/IEC standard for polymeric insulators. Different manufacturers may adopt different designs while complying with the required type tests and performance criteria. Hence, this parameter may kindly be removed from the GTP or mentioned as "As per Supplier's Design".	Min. FRP length shall be as per technical specification. Bidder to submit the Type Test Reports for dimensions of Insulators including the FRP length.
6	Technical Spec No. ENG-EHV-2027 R1, Page No. 6, Clause No. 33, weight of 11KV Polymer Pin Insulator is required 0.8 +/- 0.1 kg.	The weight required for 11KV Polymer Pin Insulator is mentioned slightly lowest. Our recommendation to revise the weight of Insulator Min. 1 kg. +/- 0.1 kg.	Min. weight of 11kV Pin Insulatior is 0.8 kg. Tolerance shall be as per IS
7	Technical Spec No. ENG-HV-2028 R1, Page No. 7, Clause No. 7 (i), weight is required 1.2 kg. for 11KV 45KN Polymer Disc Insulator B&S type and 11KV 70KN Polymer Disc Insulator B&S type	Please note that B&S fitting is casting item and for different mechanical strength Insulators, the weight can not be same. Hence we recommend it should be mentioned Min. weight 0.8 kg. for 11KV 45KN Polymer Disc Insulator B&S type and 1 kg. for 11KV 70KN Polymer Disc Insulator B&S type	11 kV, 45 kN Disc Insulator: Minimum weight 0.8 kg 11 kV, 70 kN Disc Insulator: Minimum weight 1.0 kg. Tolerance shall be as per IS
8	High voltage grade Silicone rubber : Wacker-Germany, Dow Corning-USA	Silicon make equivalent manufacturer like Calibre	Material Make of Silicon Rubber shall be of High voltage grade Silicone rubber : Wacker-Germany, Dow Corning-USA

	ENG-EHV-1035 R1, CLAUSE NO. 5.4- HARDWARE FITTINGS-Bottom end fitting should be single unit without any joints	In the GTP CLAUSE NO. 4 (TECHNICAL PARTICULARS) SL. No. 5-Material of End Fittings is mentioned as SGCI /MCI/ FORGED STEEL whereas in CLAUSE NO. 5.4-HARDWARE FITTINGS-Bottom end fitting should be single unit without any joints-which refers to forged steel material. Confirmation required for the same that whether we can quote in SGCI or not for Bottom fitting.	Material of End Fittings shall be SGCI/MCI/Forged Steel. However, Bottom end fittings shall be of single unit for better mechnical strength
	ENG-EHV-1036 R1, CLAUSE NO. 4 (TECHNICAL PARTICULARS) SL. No. 7(ii) - Dia of FRP rod 20mm	The diameter of FRP Rod should be mentioned as min. 18 mm. 18 mm Dia is well enough to withstand a tensile load of 120 kN.	Min. FRP Dia. Shall be 20mm
	Misc Designation of ball & socket fittings is not mentioned in the Technical specification'	It is highy recommended and required that for 120KN load requirement the designation must be 20.	Designation of B&S Fitting:- 1. 70kN - 16 2. 90kN - 16 3. 120kN - 20
	ENG-EHV-1035 R1, CLAUSE NO. 5.4- HARDWARE FITTINGS-Bottom end fitting should be single unit without any joints	In the GTP CLAUSE NO. 4 (TECHNICAL PARTICULARS) SL. No. 5-Material of End Fittings is mentioned as SGCI /MCI/ FORGED STEEL whereas in CLAUSE NO. 5.4-HARDWARE FITTINGS-Bottom end fitting should be single unit without any joints-which refers to forged steel material. Confirmation required for the same that whether we can quote in SGCI or not for Bottom fitting.	Material of End Fittings shall be SGCI/MCI/Forged Steel. However, Bottom end fittings shall be of single unit for better mechnical strength
	11kV Polymeric Disc Insulator 70KN		
	ENG-HV-2028 R1, CLAUSE NO. 4 (TECHNICAL PARTICULARS) SL. No. 7(iv) - Dia of weather sheds-≥90mm	The diameter of weathershed may vary from one manufacturer to other. The creepage distance of insulators must be met as per requirements of system voltage. Our insulators are designed & tested as per requirements of IEC:60815 & IEC: 61109.	The creepage distance of insulators must be met as per requirements of system voltage and The diameter of weathershed shall be as per type test reports
	ENG-HV-2028 R1, CLAUSE NO. 4 (TECHNICAL PARTICULARS) SL. No. 7(vi) - Dry arc distance- 175 mm	IEC :61109 has not specified any value for Dry Arcing distance. The creepage distance of insulators is main parameter and must be met as per requirements of system voltage. Our insulators are designed & tested as per requirements of IEC:60815 & IEC: 61109.	Shall be as per type tested design
	FRP Type Test Reports of all items: Flexural Strength test is required	Please inform us the specific standard name for this test and names of Testing Laboratories to conduct this test.	Type Test on FRP Rod Flexural Strength - ASTM D349-13/ASTM D790

In addition to above we wish to inform about acceptance & type tests mentioned in specification for Pin & Disc Insulators:-			
1	**Tests for Pin Insuators ENG-EHV-1035 R1 & ENG-EHV-2027 R1 CLAUSE NO. 7**		
	7.1 ACCEPTANCE TESTS	As per IEC:61109-2008-05, following tests are required to be conducted on Composite Polymeric Insulators as acceptance test:- a) verification of dimensions b) verification of the locking system c) verification of the tightness of the interface between end fittings and insulator housing d) verification of the specified mechanical load, SML- which will be bend test for Pin Insulators e) galvanizing test You are therefore requested to please mention these test in the list of acceptance tests	Acceptance tests to be conducted at OEM factory as per technical specification. For Test No. (x) – Analysis of Housing Material Properties and Test No. (xi) – Analysis of Core Material, the RMTC must be submitted.
	i) Verification of dimensions		
	ii) End Sealing test (FRP rod and Silicone rubber housing)		
	iii) Visual examination (Free from voids, cavity, foreign particle and scratch/nick spot)		
	iv) Verification of the locking system or the tightness of the interface between end fitting and insulator housing		
	v) Galvanizing Test		
	vi) Verification of the specified mechanical load		
	vii) Bending Load Test		
	viii) Dry Power Frequency Withstand Voltage Test		
	ix) Wet Power Frequency Withstand Voltage Test		
	x) Analysis of material properties of housing material		
	xi) Analysis of material properties of Core material		
2	**Tests for Disc Insuators ENG-EHV-1036 R1 & ENG-EHV-2028 R1 CLAUSE NO. 7**	As per IEC:61109-2008-05, following tests are required to be conducted on Composite Polymeric Insulators as acceptance test:-	Acceptance tests to be conducted at OEM factory as per technical specification
	7.1 ACCEPTANCE TESTS	a) verification of dimensions b) verification of the locking system c) verification of the tightness of the interface between end fittings and insulator housing d) verification of the specified mechanical load, SML e) galvanizing test You are therefore requested to please mention these test in the list of acceptance tests	
	i) Verification of dimensions		
	ii) End Sealing test (FRP rod and Silicone rubber housing)		
	iii) Visual examination (Free from voids, cavity, foreign particle and scratch/nick spot)		
	iv) Mechanical performance Test		
	v) Galvanizing Test		
	vi) Mechanical Failing Load Test		
	vii) Dry Power Frequency Withstand Voltage Test		
	viii) Wet Power Frequency Withstand Voltage Test		
	ix) Verification of the locking system or the tightness of the interface between end fitting and insulator housing		
3	**We would also like to inform you that in your technical specification Design Tests are not mentioned. As per IEC:61109 following design tests are required to be conducted:**	All of these design tests are desired by all Indian Utilities, you are therefore also requested to incorporate these design tests in the technical specification of your tender and in PQR conditions. Only those supplier should be considered as qualified who have submitted these design tests. You are also requested to add that all Tests reports should have conducted from ERDA and CPRI Only with NABL Logo on the test reports.	Bidder to submit all type test reports of Insulators, FRP Rods & Silicon Rubber as per technical specification. These tests will be covered under above type test reports.
	1) Tests on interfaces & connections of End Fittings		
	2) Assembled core load time test		
	3) Tracking & Erosion Test for 1000 hours on silicion rubber		
	4) Accelerated weathering test for 1000 hours on silcion rubber		
	5) Hardness test on silicon rubber		
	6) Flammability Test on silicon rubber		
	7) Dye Penetration test on FRP Rod		
	8) Water Diffusion Test of FRP Rod		

SL No.	Description 11KV PIN	As per GTP	HOBB Comments / Requested Changes	CEG RESPONSE
1	Name of material used in manufacturing of the insulator with class/grade	High Voltage Grade Silicone Rubber – Wacker (Germany), Dow Corning (USA)	Or equivalent make like Siltex, Calibre which is a Powergrid approved.	Material Make of Silicon Rubber shall be of High voltage grade Silicone rubber : Wacker-Germany, Dow Corning-USA
2	Length of the FRP Rod	200 mm (Type Tested Design)	185 to 200 mm	Min. FRP length shall be as per technical specification. Bidder to submit the Type Test Reports for dimensions of Insulators including the FRP length.
3	Neck Diameter	To be furnished by bidder	26 mm ± 3 mm	As per Type Tested Design
4	Height of the Insulator	To be furnished by bidder	380 mm ± 10%	As per Type Tested Design
5	Weight of the Insulator	0.8 ± 0.1 kg (Type Tested Design)	1.0 kg ± 10%	Min. weight of 11kV Pin Insulatior is 0.8 kg. Tolerance shall be as per IS
SL No.	**Description 33KV PIN**	**As per GTP**	**Comments / Requested Changes**	**CEG RESPONSE**
1	Name of the material used in manufacturing of the insulator with Class/grade	High Voltage Grade Silicone Rubber – Wacker (Germany), Dow Corning (USA)	Or equivalent make like Siltex, Calibre which is a Powergrid approved.	Material Make of Silicon Rubber shall be of High voltage grade Silicone rubber : Wacker-Germany, Dow Corning-USA
2	Diameter of FRP Rod	32 mm	33.5 mm	Minimum FRP dia. 32mm. However, bidder to share the Type test Reports for 32mm or more FRP dia. As per type tested design
3	Length of the FRP Rod	300 mm (Type Tested Design)	300 mm (Minimum)	As per Type Tested Design
4	Neck Diameter	To be furnished by bidder	28 mm ± 3 mm	As per Type Tested Design

5	Height of the Insulator	To be furnished by bidder	520 ± 10% mm	As per Type Tested Design
6	Weight of the Insulator	1.2 ± 0.1 kg	2.5 kg ± 10%	Min. weight of 33kV Pin Insulatior is 1.2 kg. Tolerance shall be as per IS
SL No.	**Description**	**11KV 70 KN – As per GTP**	**70 KN – Comments / Requested Changes**	**CEG RESPONSE**
1	Name of material used in manufacturing of the insulator with class/grade	High Voltage Grade Silicone Rubber – Wacker (Germany), Dow Corning (USA)	Or equivalent make like Siltex, Calibre which is a Powergrid approved	Material Make of Silicon Rubber shall be of High voltage grade Silicone rubber : Wacker-Germany, Dow Corning-USA
2	Weight (Approx)	1.20 kg	1.20 kg	11 kV, 70 kN Disc Insulator: Minimum weight 1.0 kg. Tolerance shall be as per IS
3	Length of FRP Rod	240 mm/type tested design	240 mm	Min. FRP length shall be as per technical specification. Bidder to submit the Type Test Reports for dimensions of Insulators including the FRP length.
		11KV 45 KN – As per GTP	**45 KN – Comments / Requested Changes**	**CEG RESPONSE**
4	Name of material used in manufacturing of the insulator with class/grade	High Voltage Grade Silicone Rubber – Wacker (Germany), Dow Corning (USA)	Or equivalent make like Siltex, Calibre which is a Powergrid approved	Material Make of Silicon Rubber shall be of High voltage grade Silicone rubber : Wacker-Germany, Dow Corning-USA
5	Weight (Approx)	1.20 kg	0.85 kg	11 kV, 45 kN Disc Insulator: Minimum weight 0.8 kg Tolerance shall be as per IS
6	Length of FRP Rod	240 mm	200 mm	Min. FRP length shall be as per technical specification. Bidder to submit the Type Test Reports for dimensions of Insulators including the FRP length.

SL No.	Description	33KV 90 KN – As per GTP	90 KN – Comments / Requested Changes	CEG RESPONSE
1	Name of material used in manufacturing of the insulator with class/grade	High Voltage Grade Silicone Rubber – Wacker (Germany), Dow Corning (USA)	Or equivalent make like Siltex, Calibre which is a Powergrid approved	Material Make of Silicon Rubber shall be of High voltage grade Silicone rubber : Wacker-Germany, Dow Corning-USA
2	Weight (Approx)	1.60 kg	1.60 kg	33 kV, 90 kN Disc Insulator: Minimum weight 1.5 kg Tolerance shall be as per IS
3	Dia of FRP Rod	16 mm	16 mm	Minimum FRP dia. 16mm. However, bidder to share the Type test Reports for more FRP dia. As per type tested design
		33KV 120 KN – As per GTP	**120 KN – Comments / Requested Changes**	**CEG RESPONSE**
4	Name of material used in manufacturing of the insulator with class/grade	High Voltage Grade Silicone Rubber – Wacker (Germany), Dow Corning (USA)	Or equivalent make like Siltex, Calibre which is a Powergrid approved	Material Make of Silicon Rubber shall be of High voltage grade Silicone rubber : Wacker-Germany, Dow Corning-USA
5	Weight (Approx)	1.80 kg	2.25 kg	33 kV, 120 kN Disc Insulator : Minimum weight 1.7 kg Tolerance shall be as per IS
6	Dia of FRP Rod	20 mm	24 mm	Minimum FRP dia. 20mm. However, bidder to share the Type test Reports for 24mm or more FRP dia. As per type tested design