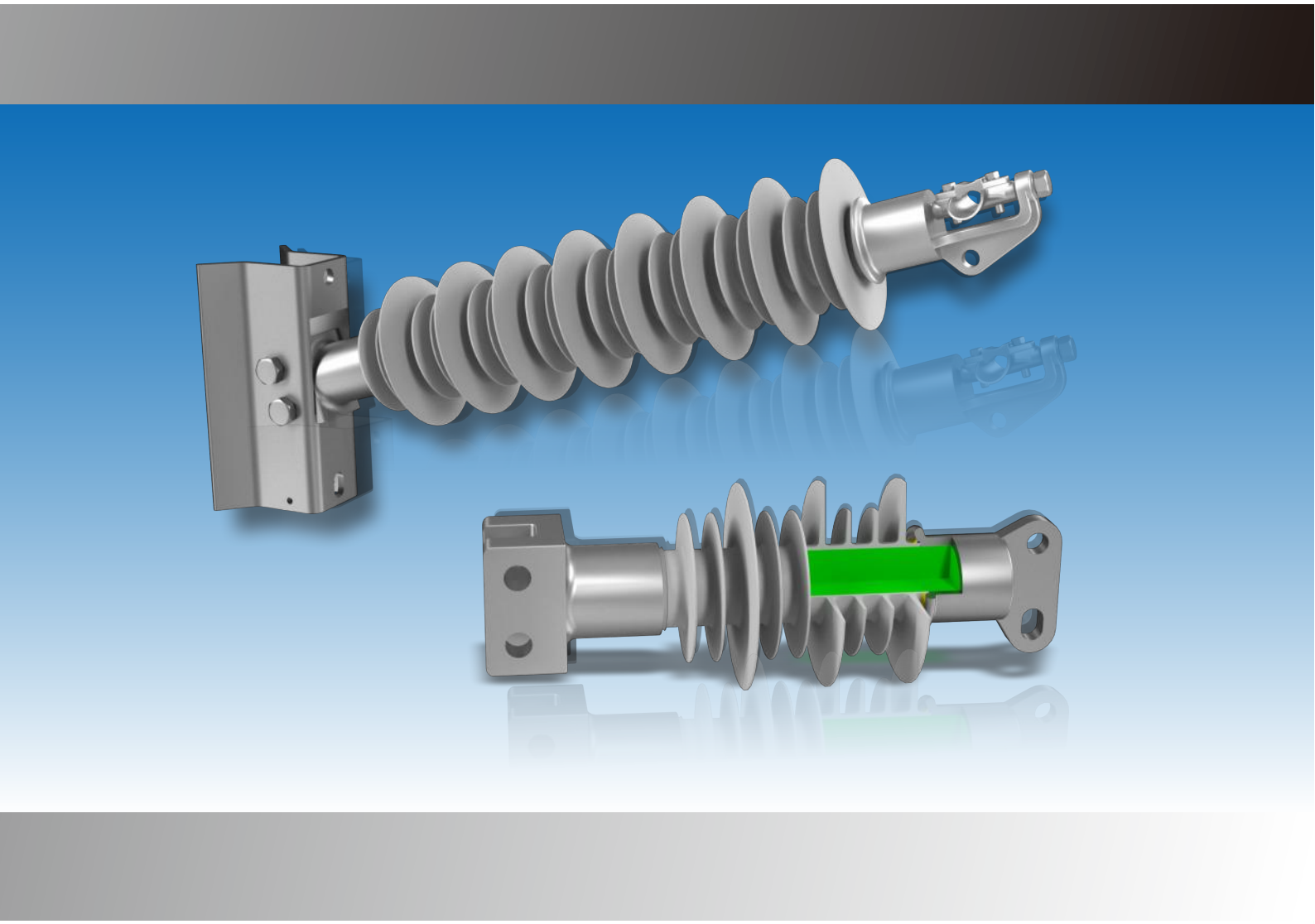
SHEMAR

T&D Solutions

Line Post Insulators Catalogue

69kV to 345kV



Leading Innovation in Composite Insulation Technology

CONTENT

SHEMAR Composite Insulators

Delivering Superior Ageing Resistance and Longevity in Reliability Performance

SHEMAR composite insulators embody the latest innovations in composite insulation technology combining world leading material science development, cutting edge design technology, state-of-the-art manufacturing and rigorously monitored quality control.

We understand the crucial impact that insulators can have on the long-term performance of transmission lines, which is why at SHEMAR we have prioritized creating composite insulator products and solutions that offer unparalleled, reliability, ageing resistance and exceptional performance.

Design Features and Manufacturing

One Piece Insulator without Joints

SHEMAR's composite transmission line post insulators are designed with advanced one-piece housing technology that eliminates internal interfaces, providing superior bonding performance and protection against erosion damage. The housing is directly vulcanized to the core, resulting in a single, seamless HTV silicone rubber housing (sheath and sheds) that is impenetrable to moisture ingress and provides ultimate defense against environmental factors.

During manufacturing a single-shot injection molding process is used, which applies high pressure and temperature to ensure a robust, one-piece housing that is chemically bonded to the core rod. This one-piece housing design features only one internal interface, i.e. the boundary interface between the housing and the FRP core rod, which significantly reduces sensitivity to tangential electrical field stress that can cause erosion damage.

Integrated injection machine

Excellent bonding performance

Excellent Bonding between Core and Housing

SHEMAR's injection molding manufacturing process also creates an unmatched quality of chemically bonded interface between the rod and housing, as well as the end fitting and housing, which eliminates the risk of internal tracking along the longitudinal interface of the composite insulator. The bond between the silicone rubber housing and fiberglass rod is also mechanically stronger than the intrinsic tear strength of the silicone rubber, ensuring an incredibly durable and reliable insulator.

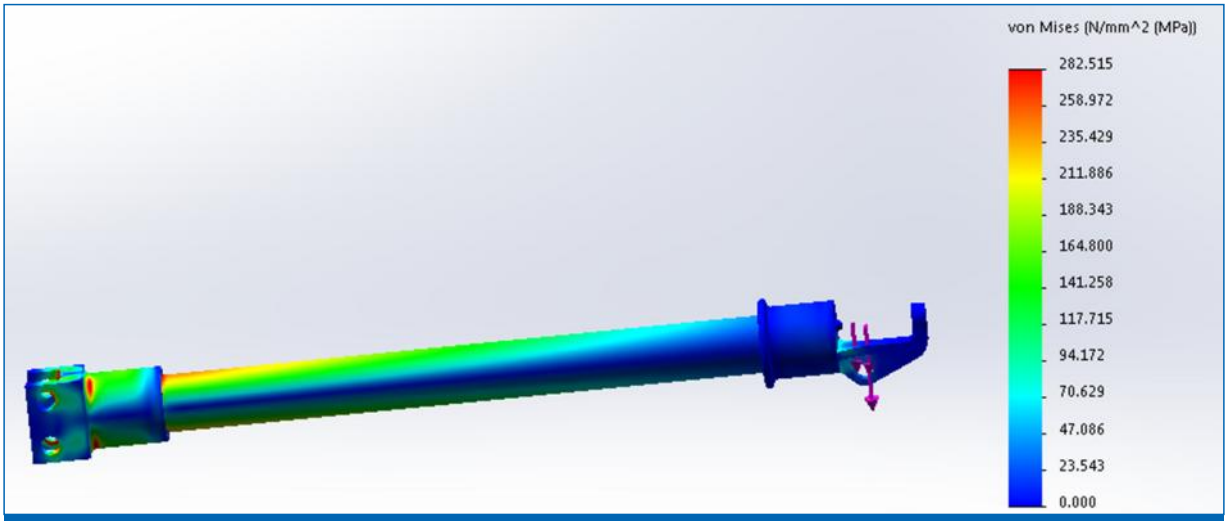
Impenetrable Triple Point

SHEMAR's composite transmission line post insulators feature an innovative and unique impenetrable cast sealing system to prevent water and contamination from entering the insulator at its triple point. This is achieved by using a HTV silicone rubber O-ring and overlapping part of the metal end fittings with an RTV rubber layer to ensure total enclose and protection of the sensitive triple junction zone (where metal end fitting/core rod/silicone housing meet).

Maximized Mechanical Integrity

To ensure uniform stress distribution and maximum mechanical integrity of the finished insulator a circumferential, multi-step crimping system is used for the attachment of metal end fittings to the FRP core. Each crimping process is monitored for acoustic emission, crimp pressure and travel distance of compression dies as control parameters.

In addition, we also conduct mechanical simulations based on the actual crimping process, material parameters and product design, in order to confirm that there are no performance risks by checking the stress nephogram of each component. This process along with corresponding laboratory tests ensures a safe installation and operation of insulators during their service.



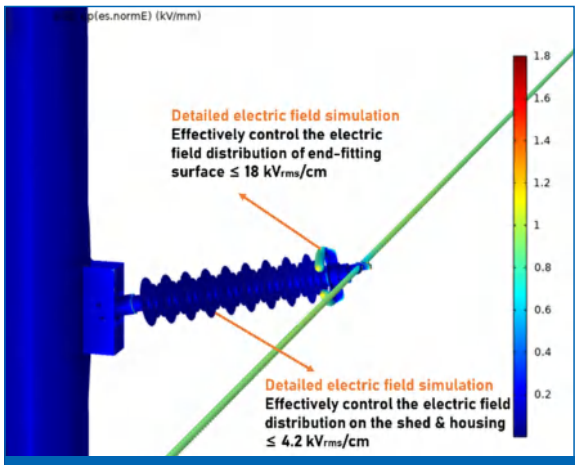
Stress nephogram of line Post Insulator

Optimal Electric Field Grading - No Water Droplet Corona

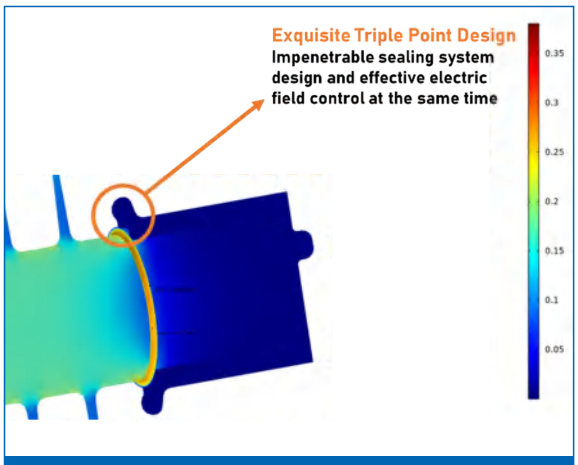
At SHEMAR, our composite insulators are carefully engineered to eliminate RIV and corona (under both dry and wet conditions). Rather than taking a one-size-fits-all approach, we design our corona rings in accordance with the actual requirements and use of the individual user. To achieve this, our application engineers utilize state-of-the-art 3D modeling and FEA simulations to determine the optimal size and placement of corona rings based on the specific structure design and overall assembly configuration.

It is ensured that the maximum electric field criteria of ≤ 4.2 kVrms/cm on silicone rubber housing recommended by EPRI/STRI* is maintained on all of our designs and thus the phenomenon of water droplet induced corona (WDIC) and corresponding risk of material erosion is avoided. Lowering of electric field stress is also aided by the shape of the silicone rubber housing at the overmolded connection zone which works to decrease the electric field strength at the inner triple point and on the silicone surface itself.

Furthermore, all of our corona rings are designed with an open (c-section) style, making them easy to install and replace.



Overall electric field simulation



Triple point electric field simulation

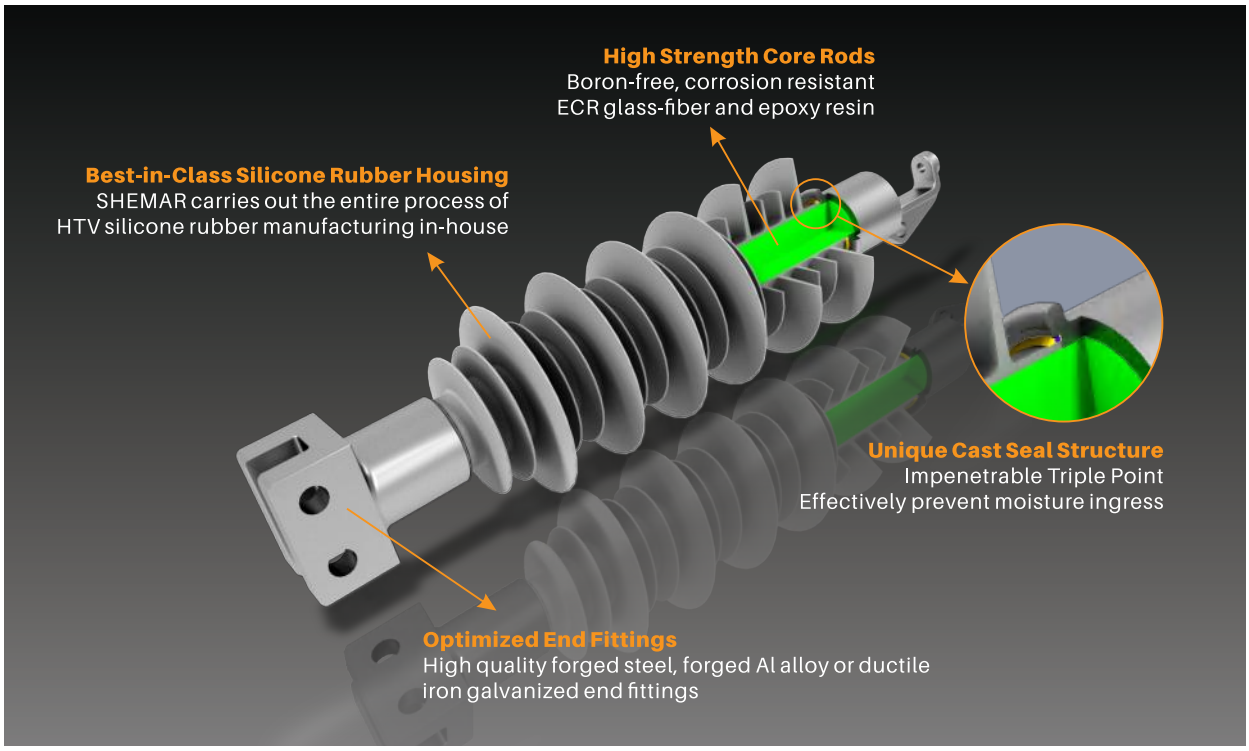
Designed to Endure Severe Environments

SHEMAR's composite transmission line post insulators are created to endure even the most severe service conditions, such as coastal salt fog, dust and industrial contamination without impairment in performance.

Superior hydrophobicity retention and short hydrophobicity transfer and recovery times prevents the formation of conductive layer and the excellent tracking and erosion performance of the housing provides an additional defense mechanism.

The insulator housing features alternating weather-shed profiles with both standard and high leakage distance designs, along with optimized shed spacing (S), overhang (P) and creepage factor (CF) parameters, to ensure maximum effectiveness, self-cleaning performance and resistance to contamination, ice and leakage currents in various environmental applications. All of our housing shed profile designs adhere to the recommendations given in IEC 60815-3 and have a minimum 3mm sheath thickness.

Materials and Components



Best-in-Class Silicone Rubber Housing

The special HTV silicone rubber formulation used in SHEMAR's composite insulator housings has been scientifically engineered as a result of extensive R&D in order to overcome the various environmental, electrical and physical degradation mechanisms and deliver the best-in-class ageing resistance and long-term reliable performance.

SHEMAR carries out the entire process of HTV silicone rubber manufacturing in-house from raw material sourcing to mixing with special additives and fillers which achieves the best UV, tracking and erosion, weather ability and contamination resistance performance. SHEMAR HTV silicone rubber formulation has a long-term track record of successfully performing in some of the most extreme and demanding service conditions without degradation.

Fracture-Proof Core Rods

The fiberglass core rods for SHEMAR's composite transmission line post insulators are manufactured with boron-free, corrosion resistant ECR glass-fiber and epoxy resin. By using this E-CR boron-free formulation of fiberglass, the core rods have exceptional electrical integrity, and they are extremely resistant to hydrolysis and stress corrosion attack, which eliminates the risk of brittle fracture. Additionally, the core rods can withstand a 96-hour nitric acid resistance test as specified in IEC 62039. SHEMAR manufactures all of its fiberglass core rods in-house using a high-quality pultrusion process.

Standardized End Fittings

SHEMAR uses industry standard forged steel or ductile iron galvanized end fittings. All end fittings are subjected to rigorously incoming quality control inspections.

Corona Rings

Standard corona rings are made from high grade aluminum alloy. Rings made of galvanized steel are also available in case of arc current withstand requirements.

Corona ring installment

Standard corona ring

Testing and Quality

Compliant with National and International Standards

SHEMAR takes pride in being a truly global composite insulator enterprise. We have customized quality control plans for each type of transmission line post insulator and work instructions for each production line. Every transmission line post insulator goes through rigorous process verification, internal testing and third party testing. All of our composite transmission line insulators meet ANSI C29.17 and IEC 61952, and we carry out routine and sample tests on each batch of insulators to ensure a reliable manufacturing process.

Additionally, SHEMAR's composite insulators also comply with the following tests:

- 5000 Hour Multi Stress Test as specified in IEC 62730
- Accelerated Weathering Test (1000 h UV test) as specified in IEC 61109
- Tracking and Erosion Test (Class 1A 4,5) as specified in IEC 60587
- Resistance to Weathering and UV (5000 h UV test) as per ISO 4892-3
- Resistance to Hydrolysis and Acid Attack on FRP Core as specified in IEC 62039
- Tracking Wheel Test as specified in CSA C411.4
- Resistance to Corona Cutting as per SHEMAR propriety test method
- Resistance to Acid Rain as per SHEMAR propriety test method
- Corona Ring Power Arc Withstand Test (20kA-0.25s, 5 shots) as per IEC 61467

Continuous R&D and Improvement

SHEMAR is dedicated to advancing key technologies, enhancing technical support, and ensuring the success of key projects. We are also focused on improving our independent innovation capabilities and core competitiveness in the rapidly evolving energy industry. This commitment has resulted in significant advancements in technical innovation, exceptional performance, and influential demonstration initiatives. These achievements have also earned recognition from the National Energy Administration. As evidence of our success, the National Energy Administration granted SHEMAR approval to establish the "National Energy Power Insulation Composite Material Key Laboratory" on August 24, 2014.

(A) High low temperature humid-heat test box.

(B) Optical Contact Angle Measuring Device.

(C) Tensile Tester.

(D) Thermal Gravimetric Analyzer.

(E) Ultraviolet aging test chamber.

Currently, SHEMAR possesses robust and extensive in-house self-testing facilities that continually undergo refinement and enhancement. The company has established a comprehensive collection of material testing laboratories, structural mechanics testing laboratories, and electrical performance testing laboratories. These facilities are fully equipped to conduct physical and chemical property experiments on raw materials and samples, as well as structural mechanics and high-voltage electrical experiments on semi-finished and finished products. These resources enable SHEMAR to meet the research and development demands of high-quality external insulation products.

(A) Static contact angle

(B) Tearing strength test

(C) Tensile strength test

(D) Tracking and erosion resistance test

Static contact angle test

Our R&D team currently comprises 155 members, including 7 senior experts with doctorate degrees, 12 foreign technical experts, and 49 individuals with master's degrees. The team's research and development center is fortified by an interdisciplinary and cross-functional approach. With our team's continual expansion, more researchers from both domestic and international backgrounds are choosing to join SHEMAR's R&D efforts, contributing to the advancement of the green energy industry.

As of December 31, 2022, SHEMAR holds a total of 481 patents internationally.

Advantages and Reasons for Choosing SHEMAR Transmission Line Post Insulators

- Innovative and reliable design methods and advanced manufacturing technology
- Best-in-class composite materials and high quality components
- Rigorous production quality control plan and strict testing of products
- Fast delivery cycle and rapid after-sales service
- Eliminates or reduces maintenance, more economical life cycle cost

How to Select the Right Transmission Line Post Insulator

Customized solutions

At SHEMAR, we can offer customized solutions tailored to our customers' specific requirements. We take into consideration the actual working conditions, such as the size of the support pole, connection method, required working load, and pollution level, as well as any unique applications that need to be addressed. By doing so, we guarantee that our products will meet 100% of our customers' needs

Standard catalogue products

To simplify the promotion of transmission grid projects and to facilitate quick selection by our customers, we have developed a range of standardized catalog products to choose from. These products offer shorter delivery cycles and increased flexibility for future replacements. For ease of reference, our detailed standardized selection library is provided below.

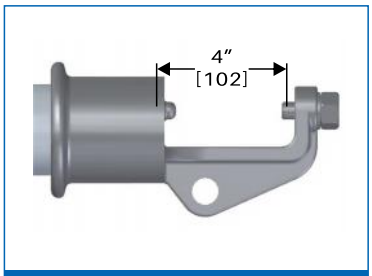
SHEMAR Catalog Number Definition

S	D	F	G10	0076	A1	0
S=SHEMAR	D= Distribution Line Post T= Transmission Line Post	F= F-Neck V= Vertical Clamp-Top H= Horizontal Clamp-Top U= Universal Clamp D= Drop Tongue B= Bolt Circle	G10=3/4 Stud base G11=3/4 Gain base G20=7/8 Stud base G21=7/8 Gain base G30= Gain base - Steel G31= Gain base - Al. G40= Flat base - Steel G41= Flat base - Al. GBC= Bolt circle	0076=7.6"Dry Arc Distance 0111=11.1" Dry Arc Distance	A1=1.57" Alternating shed A2=1.77" Alternating shed A3=2.5" Alternating shed A4=3.0" Alternating shed A5=3.5" Alternating shed U3=2.5" Uniform shed U4=3.0" Uniform shed U5=3.5" Uniform shed	0= No Corona Ring 1=With Corona Ring

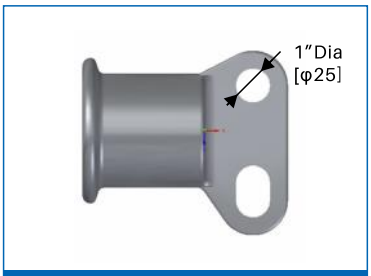
Transmission Line Post Insulators

LINE END FITTING

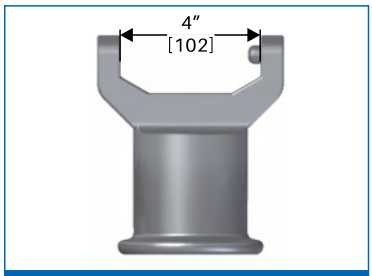
The line end fitting of Transmission Line Post Insulators are available in three different configurations: Horizontal Clamp-Top, Drop Tongue and Vertical Clamp-top.



Horizontal Clamp-Top



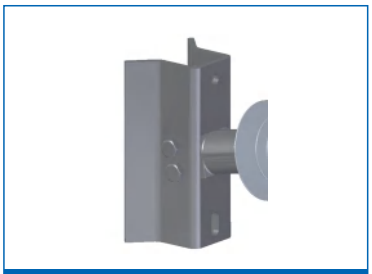
Drop Tongue



Vertical Clamp-Top

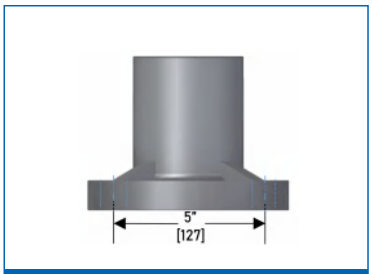
BASE END FITTING

The base end fitting of Transmission Line Post Insulators are available in three different configurations: Bendable Gain Base, Bendable Flat Base and Bolt circle.
*For other special bases, please contact local SHEMAR Sales Representative.



Bendable Gain Base

Bendable Flat Base



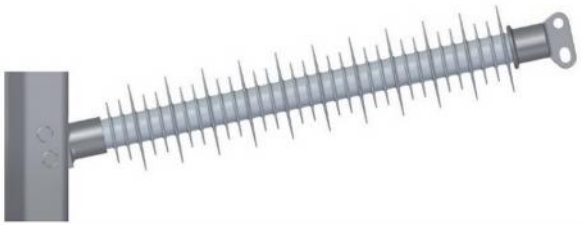
Bolt Circle

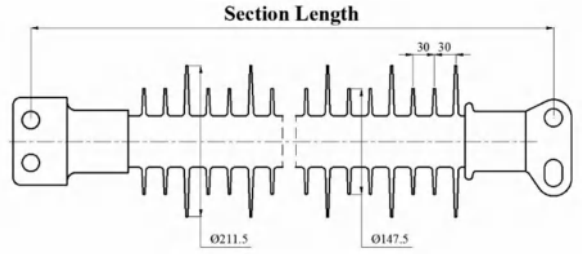
CORONA RINGS

SHEMAR's corona rings for transmission line post insulator are available in standard sizes of 11", 12".
Corona ring application recommendations are provided based on the specific application.
For more information, please consult your local SHEMAR Sales Representative.

Transmission Line Post - Drop Tongue

2.5" (63.5 mm) Rod Diameter





TECHNICAL DATA

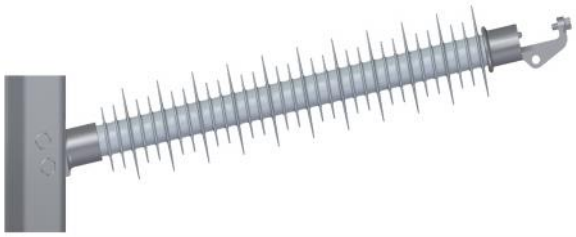
Line Voltage kV						Catalog No.	SCL		Section Length(L)		Dry Arc		Leakage		Electrical Flashover(kV) 60HZ		CIFO	
69	115	138	161	230	345		lbs	kN	In	mm	In	mm	In	mm	Dry	Wet	Pos	Neg
						STDG300200A30	7498	33.3	28.2	717	20.0	509	59.4	1510	207	198	338	450
						STDG300240A30	6563	29.2	32.2	819	23.8	605	74.0	1880	242	228	397	508
						STDG300260A30	6029	26.8	34.7	882	26.3	668	83.2	2114	265	249	436	546
						STDG300290A30	5489	24.4	37.9	962	29.9	760	92.9	2360	298	278	492	602
						STDG300310A30	5378	23.9	39.4	1000	30.9	785	102.8	2612	307	286	507	617
						STDG300330A30	5000	22.2	41.8	1062	33.6	853	111.2	2825	332	308	549	658
						STDG300360A30	4771	21.2	44.5	1130	36.4	925	118.1	3000	358	330	593	701
						STDG300380A30	4454	19.8	46.9	1192	38.2	970	126.8	3221	374	345	621	728
						STDG300400A30	4319	19.2	48.3	1227	40.2	1020	134.7	3422	392	361	651	758
						STDG300410A30	4243	18.9	50.0	1270	41.4	1051	141.7	3600	403	371	670	777
						STDG300440A30	4004	17.8	52.4	1332	44.2	1123	153.3	3893	429	394	714	820
						STDG300450A30	3914	17.4	53.6	1362	45.2	1148	154.4	3923	438	402	730	835
						STDG300470A30	3815	17.0	55.6	1412	47.3	1202	160.6	4080	457	419	763	868
						STDG300490A30	3644	16.2	57.6	1462	49.1	1246	169.3	4300	473	433	790	894
						STDG300510A30	3487	15.5	60.1	1527	51.4	1306	181.7	4614	495	452	826	930
						STDG300530A30	3442	15.3	61.6	1565	52.8	1341	184.4	4683	508	463	848	951
						STDG300560A30	3300	14.7	64.3	1632	55.7	1416	197.6	5018	535	487	894	996
						STDG300570A30	3194	14.2	65.6	1667	57.6	1462	204.4	5191	551	502	922	1024
						STDG300590A30	3104	13.8	67.6	1717	59.1	1500	210.3	5341	565	514	945	1047
						STDG300610A30	3014	13.4	69.6	1767	61.4	1560	218.7	5556	587	533	982	1083
						STDG300630A30	2971	13.2	71.3	1812	62.8	1596	225.7	5733	600	545	1004	1105
						STDG300658A30	2835	12.6	74.6	1896	65.9	1673	236.2	6000	627	569	1051	1151
						STDG300670A31	2675	11.9	79.2	2012	66.9	1699	242.8	6167	637	577	1067	1167
						STDG300690A31	2565	11.4	81.6	2072	69.5	1766	255.6	6493	661	599	1108	1207
						STDG300730A31	2452	10.9	85.1	2162	73.1	1856	269.6	6849	693	627	1163	1261
						STDG300760A31	2411	10.7	87.9	2232	76.0	1931	282.8	7184	721	651	1209	1306
						STDG300809A31	2250	10.0	93.0	2362	80.9	2056	298.4	7580	766	691	1285	1382
						STDG300840A31	2182	9.7	96.5	2452	84.5	2146	312.4	7936	798	720	1341	1436
						STDG300870A31	2159	9.6	98.1	2492	86.8	2205	324.5	8242	819	739	1377	1471
						STDG300900A31	2047	9.1	102.0	2592	90.6	2300	334.9	8507	854	769	1435	1529
						STDG300940A31	1980	8.8	105.6	2682	94.1	2389	348.9	8863	886	798	1489	1582
						STDG300980A31	1927	8.6	109.9	2792	98.0	2490	357.2	9073	922	830	1551	1643
						STDG301010A31	1845	8.2	113.9	2892	101.7	2584	378.1	9604	956	860	1609	1699
						STDG301050A31	1777	7.9	117.0	2972	105.1	2670	395.7	10050	987	887	1661	1751
						STDG301120A31	1687	7.5	124.1	3152	112.2	2850	423.7	10762	1052	945	1772	1860

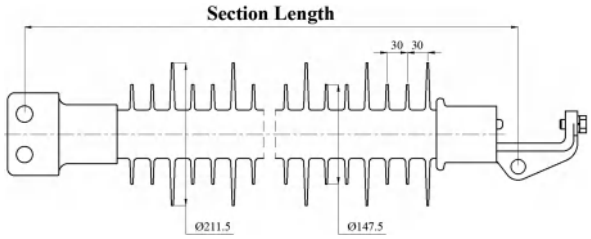
Notes:

1) SCL = Specified Cantilever Load
2) Mounting Angle=12 deg.
3) STL (Specified Tensile Load) = 15,000 lbs [66.7 kN]
4) For other ratings or customized insulator designs, please contact your local SHEMAR Sales Representative.

Transmission Line Post -Horizontal Clamp-Top

2.5" (63.5 mm) Rod Diameter





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						STHG300200A30	5000	22.2	28.1	713	20.0	509	59.4	1510	207	198	338	450
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						STHG300260A30	5000	22.2	34.6	878	26.3	668	83.2	2114	265	249	436	546
						STHG300290A30	5000	22.2	37.7	958	29.9	760	92.9	2360	298	278	492	602
						STHG300310A30	5000	22.2	39.2	996	30.9	785	102.8	2612	307	286	507	617
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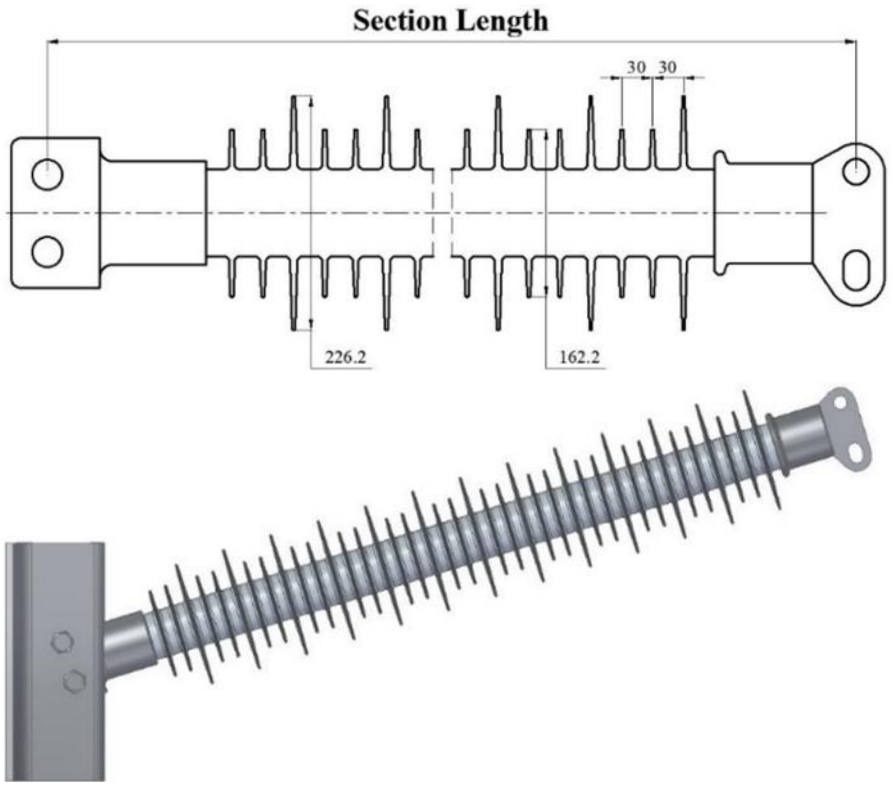
						STHG300440A30	4004	17.8	52.3	1328	44.2	1123	153.3	3893	429	394	714	820
						STHG300450A30	3914	17.4	53.5	1358	45.2	1148	154.4	3923	438	402	730	835
						STHG300470A30	3815	17.0	55.4	1408	47.3	1202	160.6	4080	457	419	763	868
						STHG300490A30	3644	16.2	57.4	1458	49.1	1246	169.3	4300	473	433	790	894
						STHG300510A30	3487	15.5	60.0	1523	51.4	1306	181.7	4614	495	452	826	930
						STHG300530A30	3442	15.3	61.5	1561	52.8	1341	184.4	4683	508	463	848	951
						STHG300560A30	3300	14.7	64.1	1628	55.7	1416	197.6	5018	535	487	894	996
						STHG300570A30	3194	14.2	65.5	1663	57.6	1462	204.4	5191	551	502	922	1024
						STHG300590A30	3104	13.8	67.4	1713	59.1	1500	210.3	5341	565	514	945	1047
						STHG300610A30	3014	13.4	69.4	1763	61.4	1560	218.7	5556	587	533	982	1083
						STHG300630A30	2971	13.2	71.2	1808	62.8	1596	225.7	5733	600	545	1004	1105
						STHG300658A30	2835	12.6	74.5	1892	65.9	1673	236.2	6000	627	569	1051	1151
						STHG300670A31	2675	11.9	79.1	2008	66.9	1699	242.8	6167	637	577	1067	1167
						STHG300690A31	2565	11.4	81.4	2068	69.5	1766	255.6	6493	661	599	1108	1207
						STHG300730A31	2452	10.9	85.0	2158	73.1	1856	269.6	6849	693	627	1163	1261
						STHG300760A31	2411	10.7	87.7	2228	76.0	1931	282.8	7184	721	651	1209	1306
						STHG300809A31	2250	10.0	92.8	2358	80.9	2056	298.4	7580	766	691	1285	1382
						STHG300840A31	2182	9.7	96.4	2448	84.5	2146	312.4	7936	798	720	1341	1436
						STHG300870A31	2159	9.6	98.0	2488	86.8	2205	324.5	8242	819	739	1377	1471
						STHG300900A31	2047	9.1	101.9	2588	90.6	2300	334.9	8507	854	769	1435	1529
						STHG300940A31	1980	8.8	105.4	2678	94.1	2389	348.9	8863	886	798	1489	1582
						STHG300980A31	1927	8.6	109.8	2788	98.0	2490	357.2	9073	922	830	1551	1643
						STHG301010A31	1845	8.2	113.7	2888	101.7	2584	378.1	9604	956	860	1609	1699
						STHG301050A31	1777	7.9	116.9	2968	105.1	2670	395.7	10050	987	887	1661	1751
						STHG301120A31	1687	7.5	123.9	3148	112.2	2850	423.7	10762	1052	945	1772	1860

Notes:

1) SCL = Specified Cantilever Load
2) Mounting Angle=12 deg.
3) STL (Specified Tensile Load) = 5,000 lbs [22.2 kN]
4) For other ratings or customized insulator designs, please contact your local SHEMAR Sales Representative.

Transmission Line Post - Drop Tongue

3.0" (76.2 mm) Rod Diameter



TECHNICAL DATA

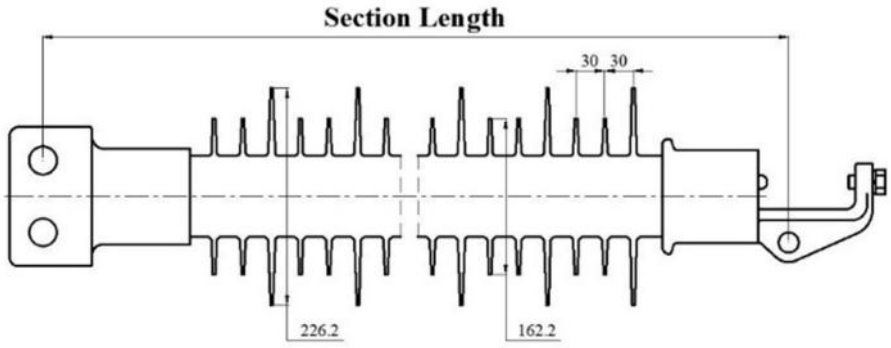
Line Voltage kV						Catalog No.	SCL		Section Length(L)		Dry Arc		Leakage		Electrical Flashover(kV) 60HZ		CIFO	
69	115	138	161	230	345		lbs	kN	In	mm	In	mm	In	mm	Dry	Wet	Pos	Neg
						STDG300300A40	8888	39.5	39.0	990	29.6	752	102.4	2600	295	275	487	597
						STDG300330A40	8087	35.9	42.8	1088	33.3	847	116.9	2970	329	306	545	654
						STDG300370A40	7412	32.9	46.7	1187	37.0	940	129.9	3300	363	335	602	710
						STDG300410A40	6825	30.3	50.7	1289	40.8	1037	143.0	3632	398	366	662	768
						STDG300450A40	6343	28.2	54.6	1387	44.9	1140	157.6	4003	435	399	725	830
						STDG300490A40	5822	25.9	59.5	1511	49.3	1251	175.6	4460	475	434	793	897
						STDG300520A40	5579	24.8	62.1	1577	52.2	1326	186.7	4741	502	458	839	942
						STDG300560A40	5300	23.6	65.3	1660	55.6	1413	200.7	5097	534	486	892	995
						STDG300590A40	5010	22.3	69.1	1756	59.3	1505	215.2	5467	567	516	948	1050
						STDG300670A40	4507	20.0	76.8	1952	66.6	1692	246.5	6260	634	575	1063	1163
						STDG300700A40	4499	20.0	80.2	2036	70.1	1780	257.0	6527	666	603	1116	1216
						STDG300760A41	3897	17.3	88.8	2257	76.4	1941	288.8	7335	724	655	1215	1312
						STDG300870A41	3467	15.4	99.9	2537	87.2	2215	332.1	8436	823	742	1383	1477
						STDG300980A41	3124	13.9	110.8	2816	97.6	2479	375.5	9537	918	826	1544	1636
						STDG301070A41	2865	12.7	120.8	3070	106.9	2715	407.0	10339	1003	901	1689	1778
						STDG301195A41	2610	11.6	132.8	3372	119.5	3035	426.5	10833	1119	1004	1885	1971

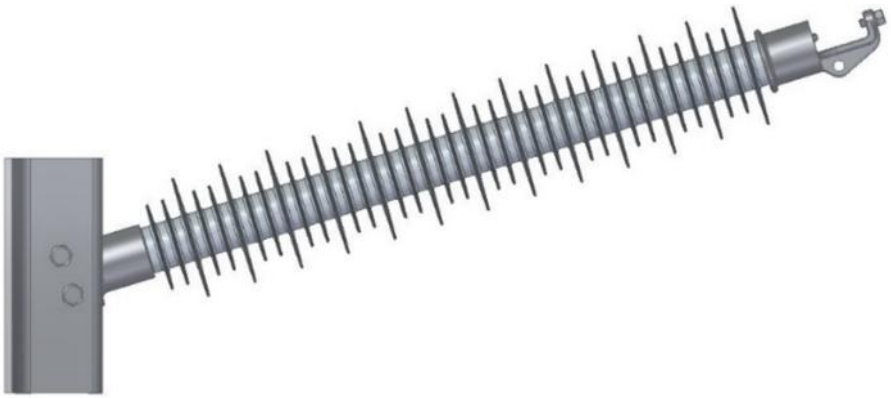
Notes:

1) SCL = Specified Cantilever Load
2) Mounting Angle = 17 deg.
3) STL (Specified Tensile Load) = 20,000 lbs (88.9 kN)
4) For other ratings or customized insulator designs, please contact your local SHEMAR Sales Representative

Transmission Line Post -Horizontal Clamp-Top

3.0" (76.2 mm) Rod Diameter





TECHNICAL DATA

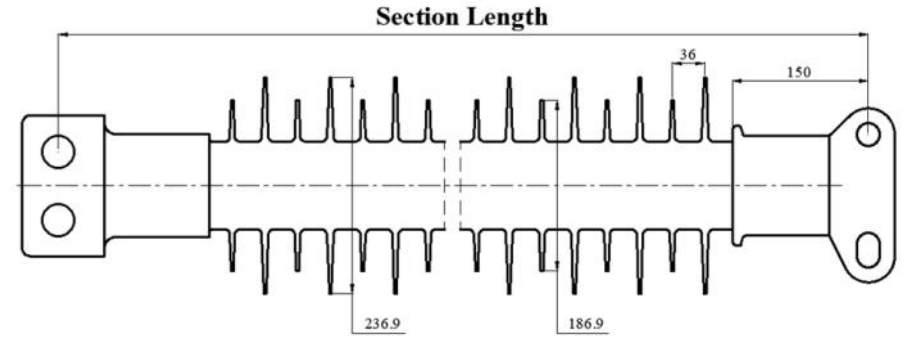
Line Voltage kV						Catalog No.	SCL		Section Length(L)		Dry Arc		Leakage		Electrical Flashover(kV) 60HZ		CIFO	
69	115	138	161	230	345		lbs	kN	In	mm	In	mm	In	mm	Dry	Wet	Pos	Neg
						STHG300300A40	5000	22.2	38.7	984	29.6	752	102.4	2600	295	275	487	597
						STHG300330A40	5000	22.2	42.6	1082	33.3	847	116.9	2970	329	306	545	654
						STHG300370A40	5000	22.2	46.5	1181	37.0	940	129.9	3300	363	335	602	710
						STHG300410A40	5000	22.2	50.5	1283	40.8	1037	143.0	3632	398	366	662	768
						STHG300450A40	5000	22.2	54.4	1381	44.9	1140	157.6	4003	435	399	725	830
						STHG300490A40	5000	22.2	59.3	1505	49.3	1251	175.6	4460	475	434	793	897
						STHG300520A40	5000	22.2	61.9	1571	52.2	1326	186.7	4741	502	458	839	942
						STHG300560A40	5000	22.2	65.1	1654	55.6	1413	200.7	5097	534	486	892	995
						STHG300590A40	5000	22.2	68.9	1750	59.3	1505	215.2	5467	567	516	948	1050
						STHG300670A40	4519	20.1	76.6	1946	66.6	1692	246.5	6260	634	575	1063	1163
						STHG300700A40	4499	20.0	80.2	2036	70.1	1780	257.0	6527	666	603	1116	1216
						STHG300760A41	3907	17.4	88.6	2251	76.4	1941	288.8	7335	724	655	1215	1312
						STHG300870A41	3475	15.4	99.6	2531	87.2	2215	332.1	8436	823	742	1383	1477
						STHG300980A41	3130	13.9	110.6	2810	97.6	2479	375.5	9537	918	826	1544	1636
						STHG301070A41	2870	12.8	120.6	3064	106.9	2715	407.0	10339	1003	901	1689	1778
						STHG301195A41	2610	11.6	132.5	3366	119.5	3035	426.5	10833	1119	1004	1885	1971

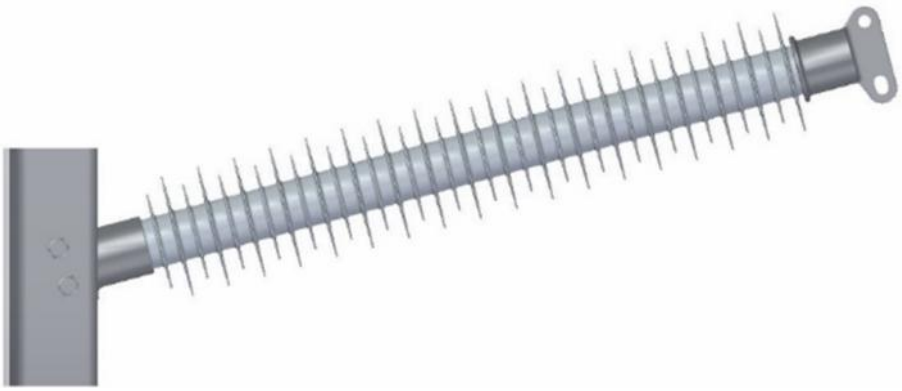
Notes:

1) SCL = Specified Cantilever Load
2) Mounting Angle=17 deg.
3) STL (Specified Tensile Load) = 5,000 lbs [22.2 kN]
4) For other ratings or customized insulator designs, please contact your local SHEMAR Sales Representative

Transmission Line Post -Drop Tongue

3.5" (88.9 mm) Rod Diameter





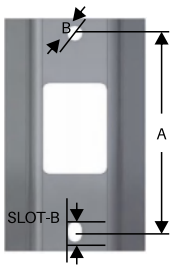
TECHNICAL DATA

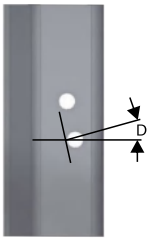
Line Voltage kV						Catalog No.	SCL		Section Length(L)		Dry Arc		Leakage		Electrical Flashover(kV) 60HZ		CIFO	
69	115	138	161	230	345		lbs	kN	In	mm	In	mm	In	mm	Dry	Wet	Pos	Neg
						STDG300390A50	10361	46.1	49.5	1258	39.0	990	135.9	3452	381	351	633	740
						STDG300450A50	9284	41.3	55.3	1404	44.8	1137	157.5	4000	434	398	723	828
						STDG300460A50	9033	40.2	56.8	1443	45.7	1161	165.9	4215	443	406	738	843
						STDG300520A50	8061	35.8	63.7	1617	52.1	1324	183.1	4650	502	458	837	941
						STDG300570A50	7556	33.6	67.9	1725	57.0	1448	202.2	5135	546	497	913	1016
						STDG300660A50	6657	29.6	77.1	1958	66.0	1677	236.5	6006	629	570	1053	1154
						STDG300746A51	5760	25.6	89.1	2263	74.6	1896	277.2	7040	708	640	1187	1285
						STDG300860A51	5126	22.8	100.1	2543	85.9	2182	318.1	8081	811	731	1363	1457
						STDG300969A51	4619	20.5	111.1	2822	96.9	2460	362.5	9208	911	820	1533	1625
						STDG301070A51	4225	18.8	121.5	3085	106.6	2707	398.0	10109	1000	899	1684	1773

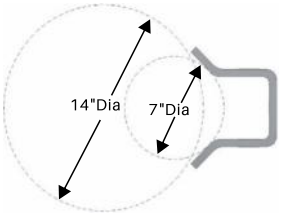
Notes:

1) SCL = Specified Cantilever Load
2) Mounting Angle=15 deg.
3) STL (Specified Tensile Load) = 25,000 lbs [111.2 kN]
4) For other ratings or customized insulator designs, please contact your local SHEMAR Sales Representative

Transmission Line Post -Gain Base & Flat Base

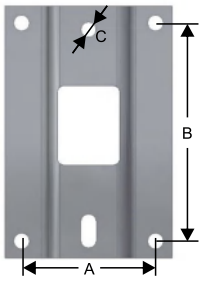


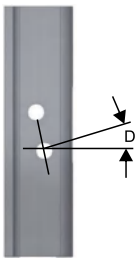




Bendable Gain Base Common Dimensions

Rod Diameter Inches[mm]	A, Bolt Hole Spacing Inches	B, Nominal Bolt Size Inches	D, Degree
2.5"[63.5]	12	7/8	12
2.5"[63.5]	12	3/4	12
3"[76.2]	14	7/8	17
3"[76.2]	14	1	17
3.5"[88.9]	14	1	15





Bendable Flat Base Common Dimensions

Rod Diameter Inches[mm]	A, Bolt Hole Spacing Inches	B, Bolt Hole Spacing Inches	C, Nominal Bolt Size Inches	D, Degree
2.5"[63.5]	8	10	3/4	12
	8	10	7/8	12
	8	10	7/8	12
	8	13	7/8	12
3"[76.2]	9	13	1	17
	9	13	7/8	17
	9	14	7/8	17
3.5"[88.9]	10	15	1	15
	10	15	7/8	15
	10	15	3/4	15

Notes

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Rev. 05/2024