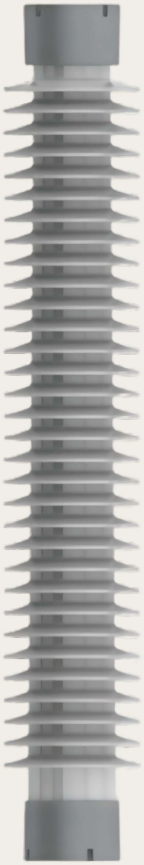
ZDVolt
智达电气

PORCELAIN POST INSULATORS

—ANSI/IEC Standard
—6-765 kV



JIANGSU ZHIDA HIGH VOLTAGE ELECTRIC CO., LTD

General Description

ZDVolt porcelain insulators are manufactured and tested in strict compliance with ANSI C29.9 and IEC 60273 standards, with rigorous quality control implemented throughout the production process. Every production step is meticulously planned and executed starting from raw materials, resulting in C130 high-strength porcelain. This material delivers exceptional reliability and an optimal strengthtoweight ratio, and ensures long service life and stable performance through internal material property control standards.

ZDVolt Product Advantages

- High-strength C130 core, suitable for higher-performance designs
- Quartz content < 1%, providing outstanding structural rigidity
- Stable uniformity for extremely tight tolerances
- Isostatic drypress and wet processes to meet diverse product requirements
- Low maintenance cost and long service life
- Optional RTV coating for enhanced pollution resistance
- Optional semiconductor glaze for improved anti-pollution flashover performance

Product Design

High-purity bauxite raw materials are used, with strict control of total alkali metal, iron and titanium impurities≤2%. Chemical composition analysis is performed regularly on each incoming batch and slurry, ensuring Al_2O_3content in calcined bauxite ≥ 85% to guarantee stable quality from the source.
The production process is tightly controlled, with realtime monitoring of key parameters during firing to achieve sufficient flow and homogenization of the glass phase, minimizing intragranular defects, grainboundary microcracks, residual pores and other defects.
The finished porcelain features excellent performance: bulk density 2.71 g/cm³, bending strength ≥ 140 MPa, combining outstanding mechanical strength and electrical insulation properties.

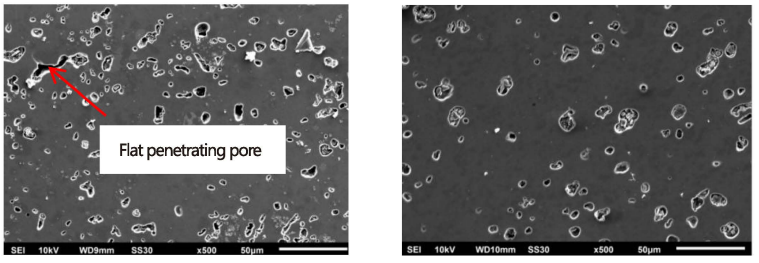


Fig.1 SEM Microstructure Comparison: Competitor's Product vs Our Product

Stress on station post insulators in operation mainly comes from cantilever loading (Figure 2 shows the product structure and main loading conditions). Some applications require compressive, torsional or tensile strength. Cantilever strength is positively correlated with core diameter, so high-strength insulators provide a higher strength-to-weight ratioratio. Figure 3 clearly illustrates weight savings (TR weight by BIL level).

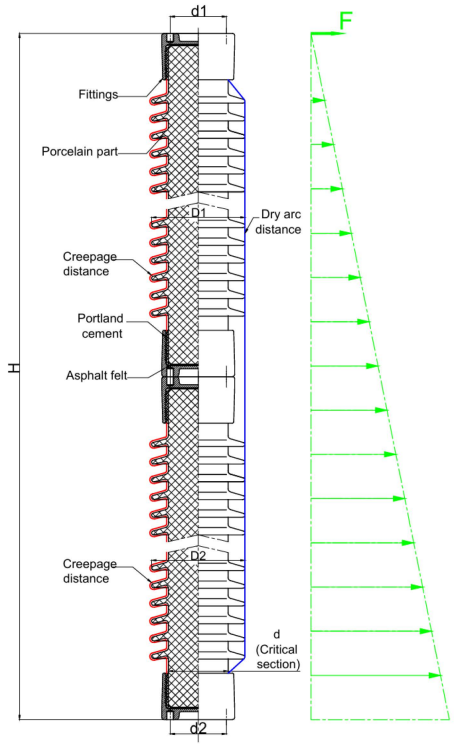


Fig.2 Product Structure Diagram

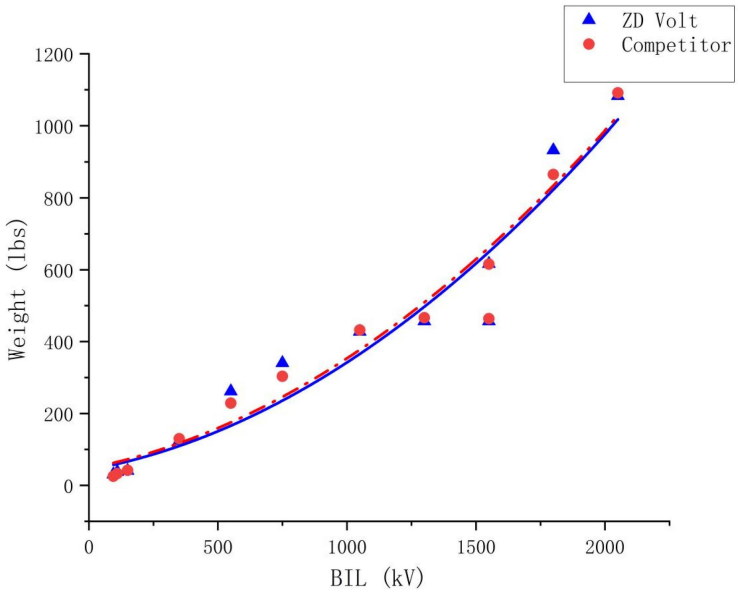


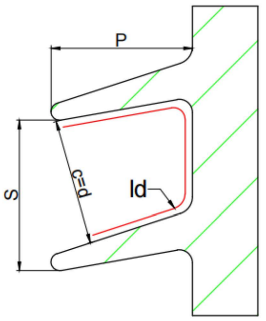
Fig.3 Curve of Product Weight vs. Competitor by Voltage Class

Shed Design

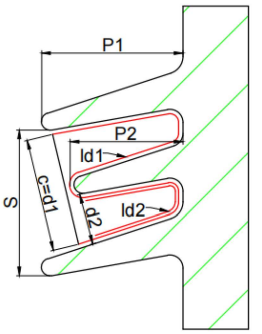
Pollution and contaminants are key considerations in insulator design and dimensioning. Recommendations for insulator use in harsh environments are provided below.

Class	Pollution	Specific Creepage Distance	
A	Very Light	12.7 mm/kV	0.5 inch/kV
B	Light	16 mm/kV	0.630 inch/kV
C	Medium	20 mm/kV	0.787 inch/kV
D	Heavy	25 mm/kV	0.984 inch/kV
E	Very Heavy	31 mm/kV	1.220 inch/kV

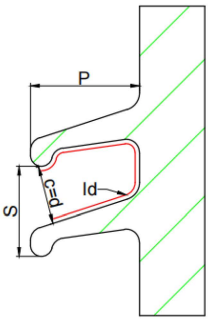
Creepage distances required by different standards can be achieved through various shed designs. The following rules are summarized from global long-term experience:Conventional shed design offers higher creepage distance, better self-cleaning performance and optimal overall performance. All current designs can achieve the best configuration through flexible shed combinations.



Plain Shed



Alternating Shed



Standard Shed

(1) c≥30mm
(2) S/p≥0.65
(3) ld/d＜5 or ld1/d1＜5, ld2/d2＜5
(4) p1-p2≥15mm
(5) Ⅰ/Ⅱ ant-ipollution,CF(Creepage Distance / Dry Arc Distance)≤3.5
Ⅲ/Ⅳ ant-ipollution,CF(Creepage Distance / Dry Arc Distance)≤4
(6) PF= (2p1+2p2+s) /l or PF= (2p+s) /l
Ⅰ/Ⅱ ant-ipollution,PF＞0.8
Ⅲ/Ⅳ ant-ipollution,PF＞0.7

Innovation and Manufacturing Capability

Dry process production line

ZDVolt has been deeply engaged in the field of high-voltage electrical equipment manufacturing for more than 20 years. We own mature dry-process production lines and continuously upgrade equipment and processes for dry pressing molding, covering key production links such as isostatic pressing equipment, pressing molds, turning lathes and turning tools.

During operation, cold isostatic presses (CIP) require frequent pressure boosting and releasing, especially large-bore models where the cylinder bears extremely high stress. The conventional wire-wound structure widely adopted in the industry features difficult machining, heavy weight and high manufacturing cost. Based on independent R&D, ZDVolt innovatively adopts chemical fiber winding reinforced cylinder, fundamentally solving the above pain points. At present, the maximum cylinder bore reaches 1250 mm, enabling three mud segments per pressing cycle, realizing high-efficiency mass production with 100% capacity increase, approximately 17% energy reduction, greatly shortened production cycle and remarkable comprehensive benefits.

Fig.4 Cold Isostatic Press

The conventional turning process uses single-direction tool movement, taking 70 minutes to finish one insulator, resulting in low efficiency. Dimensional accuracy and quality are also affected by operator skills and machine vibration. Our independently developed dual-spindle automatic turning machine adopts a gantry structure to greatly enhance rigidity, eliminate vibration during machining and ensure accuracy and consistency. With dual-tool processing, the cycle is shortened to 50 minutes, turning qualification rate exceeds 95%, supporting products up to 2m in length and 800mm in diameter.

Fig.5 Automatic Trimming Machine (Horizontal & Vertical)

In conventional dry-process production, insulators are usually dried in hot-air chambers after glazing. This method features slow heating, high heat loss and high energy consumption. Uneven moisture distribution often causes umbrella shedding, and premature skinning on the glaze surface easily leads to crazing, impairing product quality.

ZDVolt innovatively adopts an integrated microwave glazing and drying system, achieving uniform dehydration and balanced moisture content in the body, fundamentally eliminating umbrella shedding and glaze cracking, and delivering a denser and smoother glaze layer. In addition, microwave heating features higher energy efficiency, greatly shortening drying time, reducing heat and power consumption, and upgrading both quality and energy saving.

Fig.6 Microwave Glazing Machine

Wet process production line

In addition to our stable dry-process lines, ZDVolt continues to optimize insulator manufacturing to meet high-quality and high-efficiency demands. We have built a state-of-the-art automatic wet-process production line in China, achieving synergy and complementation between dry and wet processes.

Unlike conventional wet lines with manual operation and disconnected processes, the new line realizes full-process automatic uninterrupted operation, greatly improving equipment utilization and increasing overall efficiency by more than 40%, eliminating long cycles and low efficiency. Intelligent robots replace manual work, reducing potential safety hazards by 90% and protecting workers. The annual output reaches 100,000 units, with reduced labor cost and energy consumption, achieving safety, efficiency, energy saving and quality improvement.

In conventional wet-process molding, aging slowly improves mud properties but at low efficiency: plasticity increases by only ~1.4% per day and drying strength by ~0.6% per day, leading to long cycles and low productivity. ZDVolt innovatively uses multi-stage vacuum pugging instead of traditional aging, rapidly optimizing mud properties: plasticity increased by~6% and drying strength by ~9%. It significantly improves process performance while drastically shortening the production cycle, enabling high-efficiency and high-quality wet-process molding.

Fig.7 Mud Filter Press

Fig.8 Multi-stage Vacuum Pug Mill

ZDVolt automatic insulator turning line is equipped with high-precision industrial robots for fully automated turning. Compared with manual turning, dimensional accuracy is controlled within ±0.2 mm. Manual intervention is greatly reduced, significantly improving efficiency-one machine produces up to 40 units per shift. Full-process digital control minimizes rejects from human error, greatly improving qualification rate and reliably supporting firing quality, realizing high-efficiency, high-precision and stable intelligent turning.

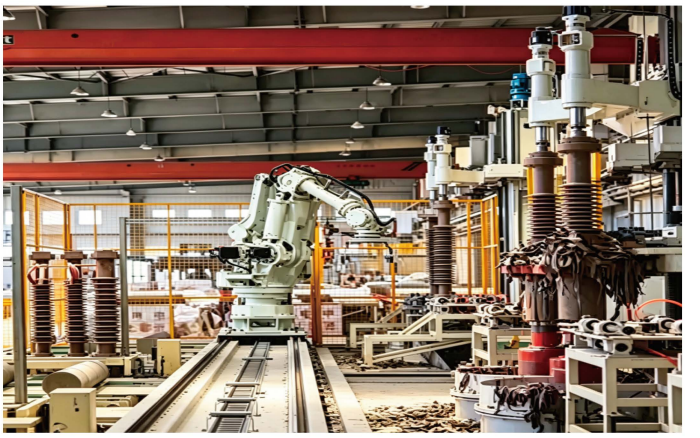


Fig.9 Fully Automatic Trimming Line

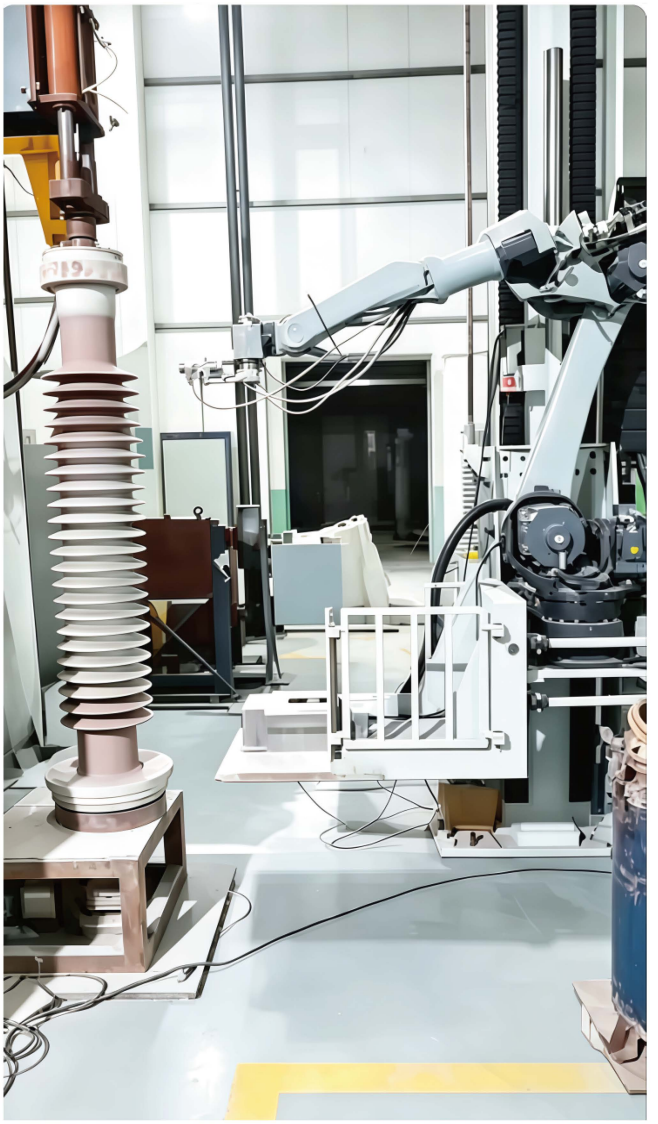


Fig. 10 Automatic Glazing Robot

By adopting AI vision spraying robots to replace traditional manual glazing, the equipment can accurately replicate the motion trajectories of skilled operators and realize standardized and high-efficiency automatic glazing. Free from fatigue, mood fluctuation and skill differences, the robot ensures highly uniform glaze thickness, greatly reducing defective products such as glaze sagging, missing glazing and uneven coating, and improving product qualification rate. Equipped with AI vision recognition, it adapts to insulators of various specifications by real-time contour identification. Meanwhile, it cuts down labor intensity, avoids glaze dust hazards, stabilizes continuous production capacity, and boosts the intelligent, standardized and eco-friendly upgrading of insulator manufacturing.

Conventional kiln loading relies on overhead cranes and manual work. Limited by working-at-height safety, high-voltage pillars are usually loaded in a single layer, resulting in low kiln utilization, high energy consumption and safety risks, restricting operational efficiency. With profound technical expertise, ZDVolt pioneered the world's first automatic kiln loading production line, replacing manual work with high-precision industrial robots.

Equipped with intelligent positioning, path optimization and real-time monitoring, the line achieves fully automated closed-loop operation, eliminates working-at-height risks, enables multi-layer kiln loading, and upgrades safety, efficiency and energy saving, leading industry transformation with hardcore innovation.

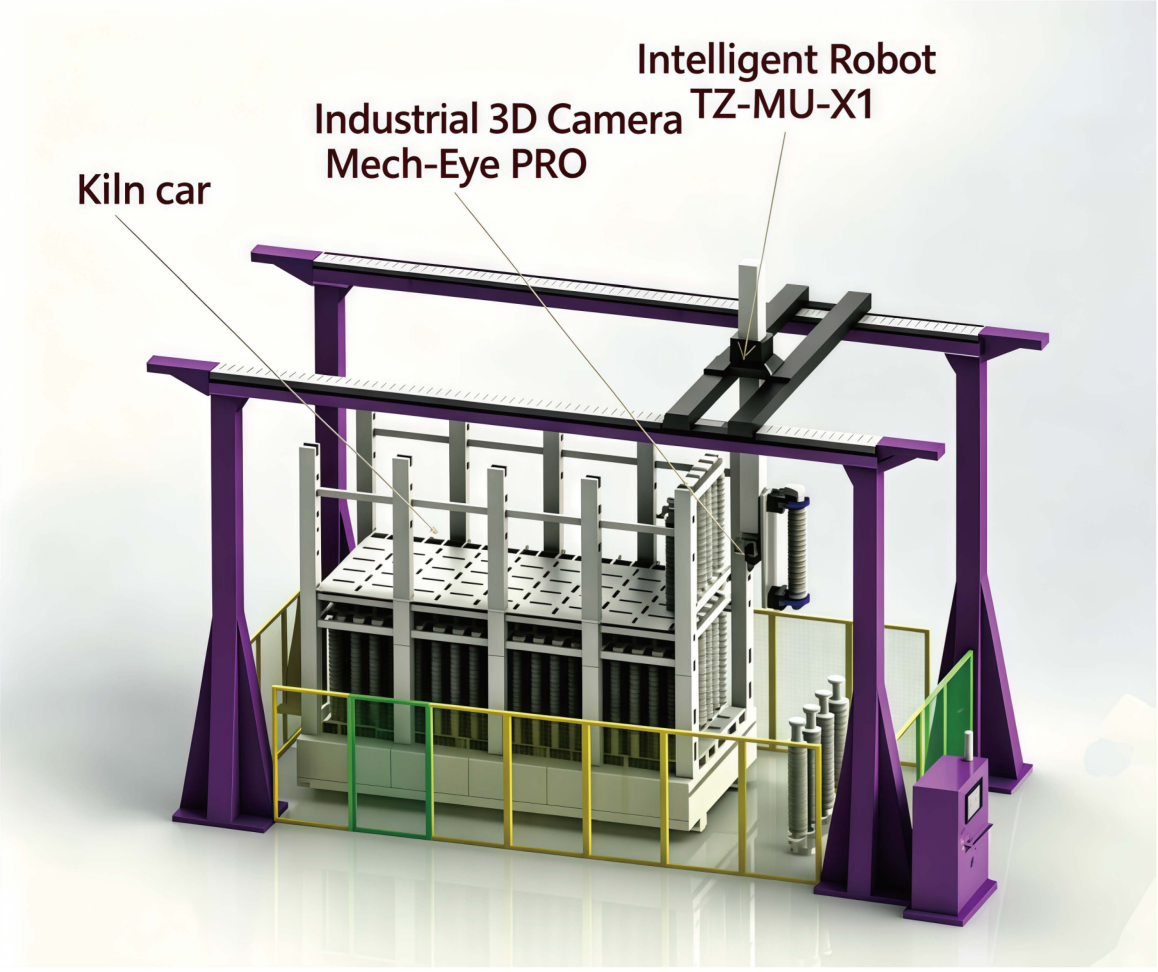
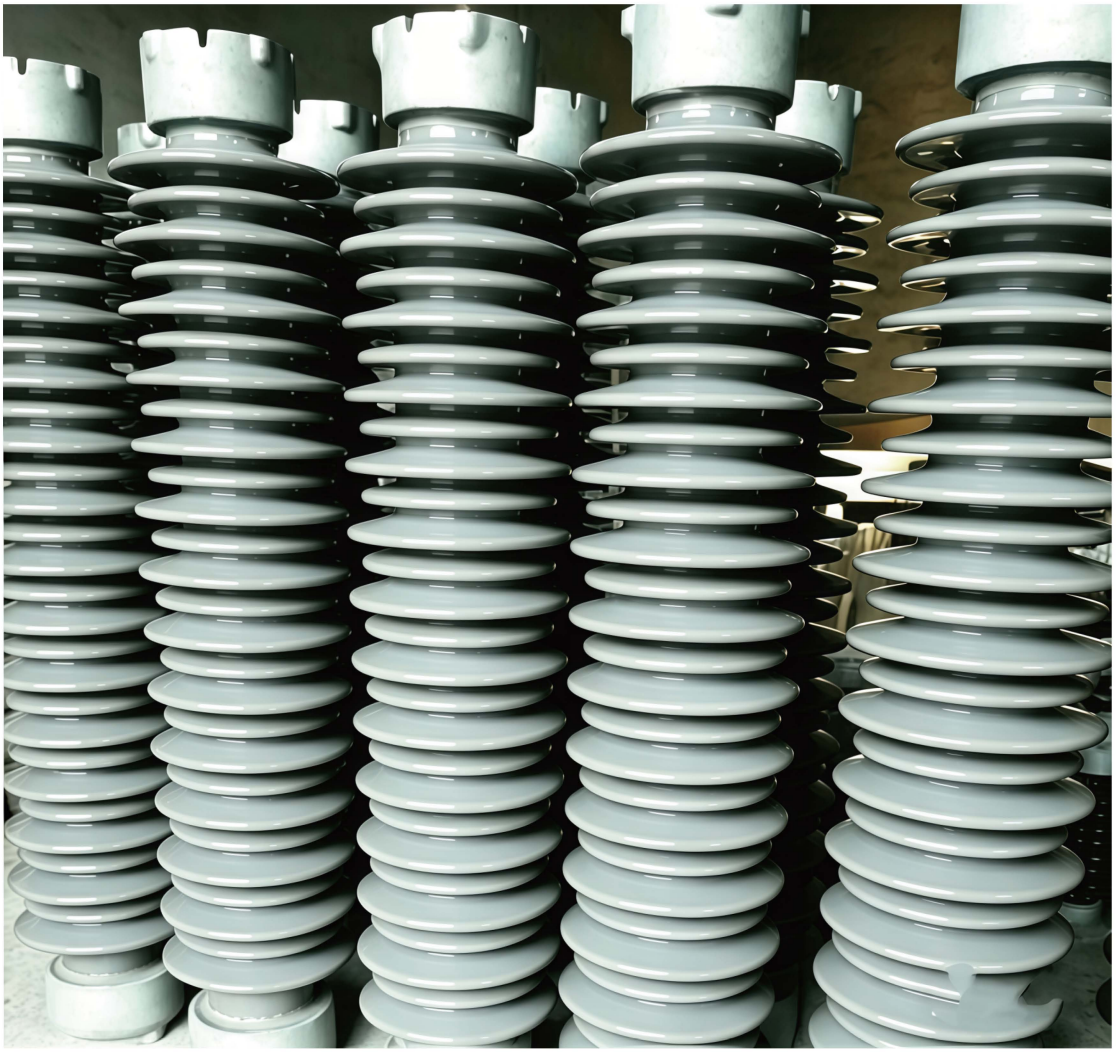


Fig.11 Automatic Kiln Loading Production Line

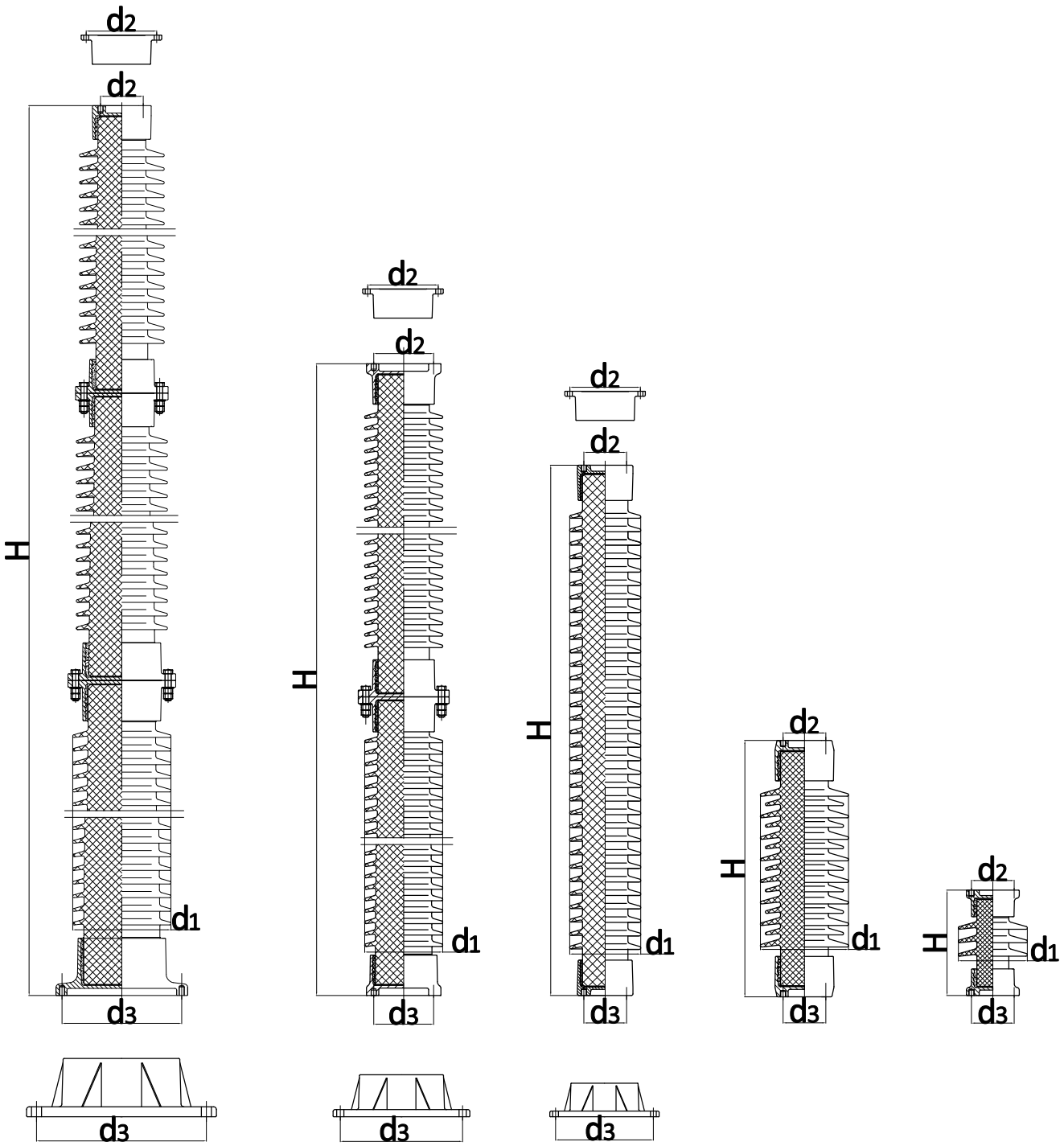
Quality Control

Item	IEC 60273	ANSI C29.9	ZDVolt
Max. deviation between axes of center circles of top and bottom mounting holes	2×(1+H) mm (H: m)	0.001×H in (H: in)	2×(0.5+H) mm (H: m)
Endface parallelism	0.5 mm when H ≤ 1 m; 0.5×H mm when H > 1 m (H: m)	0.004×H in (H: in)	0.5×H mm (H: m)
Angular deviation of top and bottom mounting holes	≤1°	≤2°	≤1°



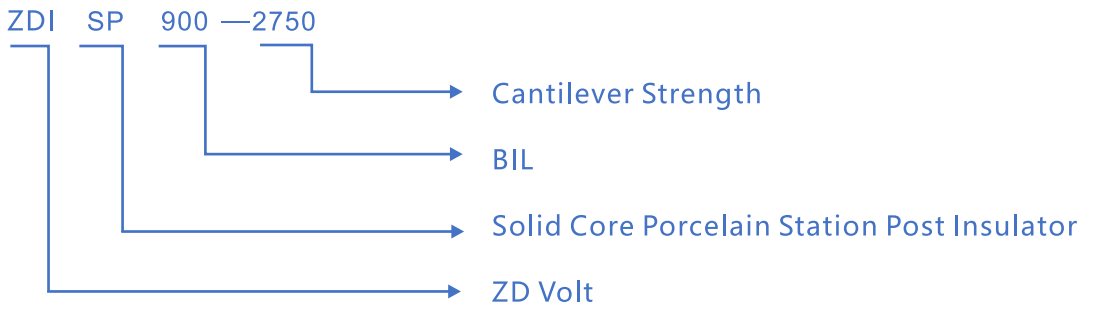
Selection Parameters

Product Diagram



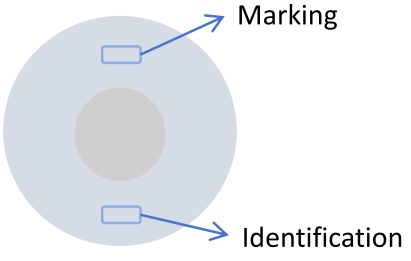
ANSI Series Station Post Insulators

ANSI series station post insulator selection is generally based on system voltage and mechanical strength ratings. Product uniqueness also depends on other special mechanical strength requirements, creepage distance requirements, mounting method and dimensions. Final selection is determined jointly by style number and catalog number. Any special requirements affecting dimensions or structure are indicated in the catalog number, usually by adding a letter suffix.
ZDISP specifically denotes porcelain station post insulators complying with ANSI C29.9.
Style Number & Catalog Number Example



Special requirements	Style No.	Catalog No.
Standard Specification	ZDISP900-2750	SP900-2750
High Torsion Strength	ZDISP900-2750	SP900-2750T
High Creepage Distance	ZDISP900-2750	SP900-2750P
Note: Other customer special requirements are distinguished by adding “- 1” to the catalog number.		

Product Marking Example



Marking	Logo
	Style No.
	Production Date
Identification	Ceramic Component Code, Kiln Batch No.
	Workshop No., Extrusion Team No., Forming Team No., Glazing Team No.

ANSI Selection Parameters

Style No.	ANSI Technical Reference Number	System Voltage (kV)	BIL	Dimensions		Bolt Circle		Mechanical Ratings		Catalog No.
			Rating	Height	Minimum Leakage Distance	Top	Base	Cantilever Strength	Torsion Strength	
			(kV)	(in)	(in)	(in)	(in)	(Lbs)	(in-lbs)	
ZDISP95-2000	TR202	4.16	95	7.5	10.5	3	3	2000	6000	SP95-2000
ZDISP95-4000	TR222	4.16	95	10	10.5	5	5	4000	12000	SP95-4000
ZDISP95-8000	TR232	4.16	95	10	10.5	5	5	8000	40000	SP95-8000
ZDISP110-2000	TR205	13.8	110	10	15.5	3	3	2000	7000	SP110-2000
ZDISP110-4000	TR225	13.8	110	12	15.5	5	5	4000	14000	SP110-4000
ZDISP110-8000	TR235	13.8	110	12	15.5	5	5	8000	40000	SP110-8000
ZDISP150-2000	TR208	24.94	150	14	24	3	3	2000	8000	SP150-2000
ZDISP150-4000	TR227	24.94	150	15	24	5	5	4000	16000	SP150-4000
ZDISP150-8000	TR237	24.94	150	15	24	5	5	8000	40000	SP150-8000
ZDISP200-2000	TR210	34.5	200	18	37	3	3	2000	10000	SP200-2000
ZDISP200-4000	TR231	34.5	200	20	37	5	5	4000	20000	SP200-4000
ZDISP200-8000	TR241	34.5	200	20	37	5	5	8000	40000	SP200-8000
ZDISP250-2000	TR214	46	250	22	43	3	3	2000	12000	SP250-2000
ZDISP250-4000	TR267	46	250	24	43	5	5	4000	20000	SP250-4000
ZDISP250-8000		46	250	25	43	7	7	8000	90000	SP250-8000
ZDISP350-1500	TR216	69	350	30	72	3	3	1500	15000	SP350-1500
ZDISP350-3000	TR278	69	350	30	72	5	5	3000	40000	SP350-3000
ZDISP350-6000		69	350	32	72	7	7	6000	90000	SP350-6000
ZDISP550-1700	TR286	115	550	45	99	5	5	1700	40000	SP550-1700
ZDISP550-2600	TR287	115	550	45	99	5	5	2600	90000	SP550-2600
ZDISP550-5000		115	550	45	95	7	7	5000	120000	SP550-5000
ZDISP550-1700	High Creepage Distance	115	550	45	125	5	5	1700	40000	SP550-1700P
ZDISP550-2600		115	550	45	125	5	5	2600	90000	SP550-2600P
ZDISP550-5000		115	550	45	120	7	7	5000	120000	SP550-5000P
ZDISP650-1400	TR288	138	650	54	116	5	5	1400	40000	SP650-1400
ZDISP650-2200	TR289	138	650	54	116	5	5	2200	90000	SP650-2200
ZDISP650-4100		138	650	54	116	7	7	4100	120000	SP650-4100
ZDISP650-1450	High	138	650	54	155	5	5	1450	60000	SP650-1450P

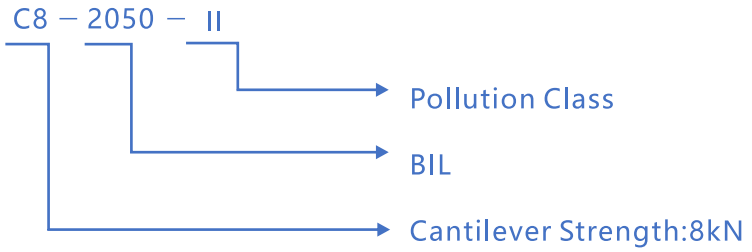
Style No.	ANSI Technical Reference Number	System Voltage (kV)	BIL	Dimensions		Bolt Circle		Mechanical Ratings		Catalog No.
			Rating	Height	Minimum Leakage Distance	Top	Base	Cantilever Strength	Torsion Strength	
			(kV)	(in)	(in)	(in)	(in)	(Lbs)	(in-lbs)	
ZDISP650-2200	Creepage Distance	138	650	54	155	5	5	2200	90000	SP650-2200P
ZDISP650-4100		138	650	54	150	7	7	4100	120000	SP650-4100P
ZDISP750-1200	TR291	161	750	62	132	5	5	1200	40000	SP750-1200
ZDISP750-1850	TR295	161	750	62	132	5	5	1850	90000	SP750-1850
ZDISP750-3500		161	750	62	132	7	7	3500	120000	SP750-3500
ZDISP750-1200	High Creepage Distance	161	750	62	180	5	5	1200	40000	SP750-1200P
ZDISP750-1850		161	750	62	180	5	5	1850	90000	SP750-1850P
ZDISP750-3500		161	750	62	180	7	7	3500	120000	SP750-3500P
ZDISP900-950	TR304	230	900	80	165	5	5	950	40000	SP900-950
ZDISP900-1450	TR308	230	900	80	165	5	5	1450	90000	SP900-1450
ZDISP900-2750		230	900	80	173	5	7	2750	90000	SP900-2750
ZDISP900-2750		230	900	80	167	7	7	2750	133000	SP900-2750T
ZDISP900-3000	High Strength	230	900	80	165	5	7	3000	90000	SP900-3000
ZDISP900-4000		230	900	80	171	5	12	4000	88500	SP900-4000
ZDISP900-950	High Creepage Distance	230	900	80	227	5	5	950	60000	SP900-950P
ZDISP900-1450		230	900	80	229	5	5	1450	90000	SP900-1450P
ZDISP900-2750		230	900	80	228	5	7	2750	90000	SP900-2750P
ZDISP1050-800	TR312	345	1050	92	198	5	5	800	40000	SP1050-800
ZDISP1050-1250	TR316	345	1050	92	198	5	5	1250	90000	SP1050-1250
ZDISP1050-2300	TR362	345	1050	92	198	7	7	2300	120000	SP1050-2300T
ZDISP1050-2300		345	1050	92	206	5	7	2300	90000	SP1050-2300
ZDISP1050-3500	High Strength	345	1050	92	209	7	12	3500	133000	SP1050-3500
ZDISP1050-5000		345	1050	92	317	7	11.8	5000	115000	SP1050-5000
ZDISP1050-800	High Creepage Distance	345	1050	92	268	5	5	800	40000	SP1050-800P
ZDISP1050-1250		345	1050	92	271	5	5	1250	90000	SP1050-1250P
ZDISP1050-2300		345	1050	92	270	5	7	2300	90000	SP1050-2300P
ZDISP1300-1000	TR324	345	1300	106	231	5	5	1000	90000	SP1300-1000
ZDISP1300-1450	TR367	345	1300	106	231	5	7	1450	40000	SP1300-1450
ZDISP1300-2050	TR368	345	1300	106	231	7	7	2050	120000	SP1300-2050T

Style No.	ANSI Technical Reference Number	System Voltage (kV)	BIL	Dimensions		Bolt Circle		Mechanical Ratings		Catalog No.
			Rating	Height	Minimum Leakage Distance	Top	Base	Cantilever Strength	Torsion Strength	
			(kV)	(in)	(in)	(in)	(in)	(Lbs)	(in-lbs)	
ZDISP1300-2050	TR369	345	1300	106	231	5	7	2050	40000	SP1300-2050
ZDISP1300-3000	High Strength	345	1300	106	237	5	12	3000	133000	SP1300-3000
ZDISP1300-4000		345	1300	106	233	5	11.8	4000	133000	SP1300-4000
ZDISP1300-1000	High Creepage Distance	345	1300	106	326	5	5	1000	90000	SP1300-1000P
ZDISP1300-1450		345	1300	106	322	5	7	1450	40000	SP1300-1450P
ZDISP1300-2050		345	1300	106	315	5	7	2050	90000	SP1300-2050P
ZDISP1470-900	TR330	500	1470	122	264	5	5	900	90000	SP1470-900
ZDISP1470-1170	TR371	500	1470	122	264	5	7	1170	40000	SP1470-1170
ZDISP1470-1750	TR372	500	1470	122	264	7	7	1750	120000	SP1470-1750T
ZDISP1470-1750	TR373	500	1470	122	264	5	7	1750	40000	SP1470-1750
ZDISP1470-1000	High Creepage Distance	500	1470	122	376	5	5	1000	90000	SP1470-1000P
ZDISP1470-1750		500	1470	122	373	5	7	1750	90000	SP1470-1750P
ZDISP1550-1000	TR378	500	1550	128	320	5	7	1000	40000	SP1550-1000
ZDISP1550-1700	TR379	500	1550	128	280	5	7	1700	40000	SP1550-1700
ZDISP1550-2500	TR380	500	1550	128	280	5	14	2500	60000	SP1550-2500
ZDISP1550-1700	High Creepage Distance	500	1550	128	373	5	7	1700	90000	SP1550-1700P
ZDISP1800-1400	TR391	500	1800	152	330	5	7	1400	40000	SP1800-1400
ZDISP1800-1750	TR392	500	1800	152	330	5	14	1750	60000	SP1800-1750
ZDISP1800-2500	TR393	500	1800	152	330	5	14	2500	90000	SP1800-2500
ZDISP1800-3500	High Strength	500	1800	152	337	5	14	3500	133000	SP1800-3500
ZDISP1800-1400	High Creepage Distance	500	1800	152	450	5	7	1400	60000	SP1800-1400P
ZDISP2050-1150	TR400	765	2050	182	396	5	7	1150	60000	SP2050-1150
ZDISP2050-2000	TR401	765	2050	185	432	5	14	2000	60000	SP2050-2000
ZDISP2050-3000	High Strength	765	2050	182	414	5	14	3000	75000	SP2050-3000
ZDISP2050-1200	High Creepage Distance	765	2050	182	557	5	7	1200	60000	SP2050-1200P

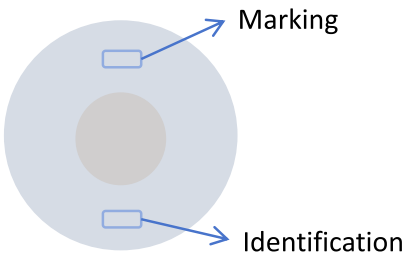
Fittings: Made of malleable cast iron or ductile iron, with hot-dip galvanizing per ASTM A153M.

IEC (GB) Series Station Post Insulators

The following explains the IEC series product naming convention. Final selection shall be confirmed with top and bottom flange mounting dimensions and glaze color.



Product Marking Example



Marking	Logo
	Style No.
	Production Date
Identification	Ceramic Component Code, Kiln Batch No.
	Workshop No., Extrusion Team No., Forming Team No., Glazing Team No.

IEC Selection Parameters

Style No.	System Voltage (kV)	Lightning Impulse Withstand Voltage/kV	Power Frequency Wet Withstand Voltage/ kV	Height of post insulator/ mm	Minimum Nominal Creepage Distance/mm		Mechanical Failure Load	
					I	II	Bending Po/kN	Torsion/ (kN ·m)
C4-60	6	60	20	190±1	120	190	4	0.6
C6-60		60	20	190±1	120	190	6	0.6
C8-60		60	20	190±1	120	190	8	0.8
C10-60		60	20	190±1	120	190	10	1
C4-75	10	75	28	215±1	190	280	4	0.6
C6-75		75	28	215±1	190	280	6	0.6
C8-75		75	28	215±1	190	280	8	0.8
C10-75		75	28	215±1	190	280	10	1
C4-95	15	95	38	255±1	280	380	4	0.8
C6-95		95	38	255±1	280	380	6	0.8
C8-95		95	38	255±1	280	380	8	1.2
C10-95		95	38	255±1	280	380	10	1.2
C12.5-95		95	38	255±1	280	380	12.5	1.8
C4-125	20	125	50	305±1	380	500	4	0.8
C6-125		125	50	305±1	380	500	6	0.8
C8-125		125	50	305±1	380	500	8	1.2
C10-125		125	50	305±1	380	500	10	1.2
C12.5-125		125	50	305±1	380	500	12.5	2
C4-150	20	150	50	355±1	450	660	4	1
C6-150		150	50	355±1	450	660	6	1.2
C8-150		150	50	355±1	450	660	8	1.5
C10-150		150	50	355±1	450	660	10	1.8
C12.5-150		150	50	355±1	450	660	12.5	2.5
C4-170	30	170	70	445±1	580	850	4	1.2
C6-170		170	70	445±1	580	850	6	1.5
C8-170		170	70	445±1	580	850	8	2
C10-170		170	70	445±1	580	850	10	2.5
C12.5-170		170	70	445±1	580	850	12.5	3
C4-200	30	200	70	475±1	680	950	4	1.2
C6-200		200	70	475±1	680	950	6	1.8
C8-200		200	70	475±1	680	950	8	2
C10-200		200	70	475±1	680	950	10	2.5
C12.5-200		200	70	475±1	680	950	12.5	3
C4-250	35	250	95	560±1	835	1200	4	1.8
C6-250		250	95	560±1	835	1200	6	2
C8-250		250	95	560±1	835	1200	8	2.5

Style No.	System Voltage (kV)	Lightning Impulse Withstand Voltage/kV	Power Frequency Wet Withstand Voltage/ kV	Height of post insulator/ mm	Minimum Nominal Creepage Distance/mm		Mechanical Failure Load	
					I	II	Bending Po/kN	Torsion/ (kN ·m)
C10-250		250	95	560±1	835	1200	10	3
C12.5-250		250	95	560±1	835	1200	12.5	4
C2-325	66	325	140	770±1	1160	1600	2	1.2
C4-325		325	140	770±1	1160	1600	4	2
C6-325		325	140	770±1	1160	1600	6	2.5
C8-325		325	140	770±1	1160	1600	8	3
C10-325		325	140	770±1	1160	1600	10	4
C12.5-325		325	140	770±1	1160	1600	12.5	4
C16-325		325	140	770±1	1160	1600	16	5
C20-325		325	140	770±1	1160	1600	20	6
C2-450	110	450	185	1020±1	1600	2300	2	1.8
C4-450		450	185	1020±1	1600	2300	4	2.5
C6-450		450	185	1020±1	1600	2300	6	3.5
C8-450		450	185	1020±1	1600	2300	8	4
C10-450		450	185	1020±1	1600	2300	10	4
C12.5-450		450	185	1020±1	1600	2300	12.5	6
C16-450		450	185	1020±1	1600	2300	16	6
C20-450		450	185	1020±1	1600	2300	20	6
C2-550	132	550	230	1220±1	1970	2900	2	2
C4-550		550	230	1220±1	1970	2900	4	3
C6-550		550	230	1220±1	1970	2900	6	4
C8-550		550	230	1220±1	1970	2900	8	4
C10-550		550	230	1220±1	1970	2900	10	4
C12.5-550		550	230	1220±1	1970	2900	12.5	6
C16-550		550	230	1220±1	1970	2900	16	6
C20-550		550	230	1220±1	1970	2900	20	6
C2-650	150	650	275	1500±2.5	2300	3350	2	2
C4-650		650	275	1500±2.5	2300	3350	4	3
C6-650		650	275	1500±2.5	2300	3350	6	3
C8-650		650	275	1500±2.5	2300	3350	8	4
C10-650		650	275	1500±2.5	2300	3350	10	4
C12.5-650		650	275	1500±2.5	2300	3350	12.5	6
C16-650		650	275	1500±2.5	2300	3350	16	6
C20-650		650	275	1500±2.5	2300	3350	20	6
C2-750	220	750	325	1700±2.5	2700	3900	2	2
C4-750		750	325	1700±2.5	2700	3900	4	3
C6-750		750	325	1700±2.5	2700	3900	6	3

Style No.	system voltage (kV)	Lightning Impulse Withstand Voltage/kV	Power Frequency Wet Withstand Voltage/ kV	Height of post insulator/ mm	Minimum Nominal Creepage Distance/mm		Mechanical Failure Load	
					I	II	Bending Po/kN	Torsion/ (kN ·m)
C8-750		750	325	1700±2.5	2700	3900	8	4
C10-750		750	325	1700±2.5	2700	3900	10	4
C12.5-750		750	325	1700±2.5	2700	3900	12.5	6
C16-750		750	325	1700±2.5	2700	3900	16	6
C20-750		750	325	1700±2.5	2700	3900	20	6
C4-850		850	360	1900±3.5	3100	4400	4	3
C6-850		850	360	1900±3.5	3100	4400	6	3
C8-850		850	360	1900±3.5	3100	4400	8	4
C10-850	275	850	360	1900±3.5	3100	4400	10	4
C12.5-850		850	360	1900±3.5	3100	4400	12.5	6
C16-850		850	360	1900±3.5	3100	4400	16	6
C20-850		850	360	1900±3.5	3100	4400	20	g
C4-950		950	395	2100±3.5	3400	4900	4	3
C6-950		950	395	2100±3.5	3400	4900	6	3
C8-950		950	395	2100±3.5	3400	4900	8	4
C10-950	275	950	395	2100±3.5	3400	4900	10	4
C12.5-950		950	395	2100±3.5	3400	4900	12.5	6
C16-950		950	395	2100±3.5	3400	4900	16	6
C20-950		950	395	2100±3.5	3400	4900	20	6
C4-1050		1050	460	2300±3.5	4000	5650	4	3
C6-1050		1050	460	2300±3.5	4000	5650	6	3
C8-1050		1050	460	2300±3.5	4000	5650	8	4
C10-1050	275	1050	460	2300±3.5	4000	5650	10	4
C12.5-1050		1050	460	2300±3.5	4000	5650	12.5	6
C16-1050		1050	460	2300±3.5	4000	5650	16	6
C20-1050		1050	460	2300±3.5	4000	5650	20	6
C4-1175		1175	/	2650±4.5	4600	6500	4	3
C6-1175		1175		2650±4.5	4600	6500	6	3
C8-1175		1175		2650±4.5	4600	6500	8	4
C10-1175	330	1175		2650±4.5	4600	6500	10	4
C12.5-1175		1175		2650±4.5	4600	6500	12.5	6
C16-1175		1175		2650±4.5	4600	6500	16	6
C20-1175		1175		2650±4.5	4600	6500	20	6
C4-1300		1300		2900±4.5	5100	7000	4	3
C6-1300	380	1300		2900±4.5	5100	7000	6	3
C8-1300		1300		2900±4.5	5100	7000	8	4

Style No.	System Voltage (kV)	Lightning Impulse Withstand Voltage/kV	Power Frequency Wet Withstand Voltage/ kV	Height of post insulator/ mm	Minimum Nominal Creepage Distance/mm		Mechanical Failure Load	
					I	II	Bending Po/kN	Torsion/ (kN ·m)
C10-1300		1300		2900±4.5	5100	7000	10	4
C12.5-1300		1300		2900±4.5	5100	7000	12.5	6
C16-1300		1300		2900±4.5	5100	7000	16	6
C20-1300		1300		2900±4.5	5100	7000	20	6
C4-1425		1425		3150±4.5	5600	7800	4	3
C6-1425		1425		3150±4.5	5600	7800	6	3
C8-1425		1425		3150±4.5	5600	7800	8	4
C10-1425	380	1425		3150±4.5	5600	7800	10	4
C12.5-1425		1425		3150±4.5	5600	7800	12.5	6
C16-1425		1425		3150±4.5	5600	7800	16	6
C20-1425		1425		3150±4.5	5600	7800	20	6
C4-1550		1550		3350±4.5	6200	8500	4	3
C6-1550		1550		3350±4.5	6200	8500	6	3
C8-1550		1550		3350±4.5	6200	8500	8	4
C10-1550	500	1550		3350±4.5	6200	8500	10	4
C12.5-1550		1550		3350±4.5	6200	8500	12.5	9
C16-1550		1550		3350±4.5	6200	8500	16	6
C20-1550		1550		3350±4.5	6200	8500	20	6
C4-1675		1675		3650±5.5	6350	9400	4	3
C6-1675		1675		3650±5.5	6350	9400	6	3
C8-1675	750	1675		3650±5.5	6350	9400	8	4
C10-1675		1675		3650±5.5	6350	9400	10	4
C12.5-1675		1675		3650±5.5	6350	9400	12.5	6
C16-1675		1675		3650±5.5	6350	9400	16	6
C4-1800		1800		4000±5.5	6900	10250	4	3
C6-1800		1800		4000±5.5	6900	10250	6	3
C8-1800	750	1800		4000±5.5	6900	10250	8	4
C10-1800		1800		4000±5.5	6900	10250	10	4
C12.5-1800		1800		4000±5.5	6900	10250	12.5	6
C16-1800		1800		4000±5.5	6900	10250	16	6
C4-1950		1950		4400±5.5	7650	11350	4	3
C6-1950		1950		4400±5.5	7650	11350	6	3
C8-1950	750	1950		4400±5.5	7650	11350	8	4
C10-1950		1950		4400±5.5	7650	11350	10	4
C12.5-1950		1950		4400±5.5	7650	11350	12.5	6
C4-2100	750	2100		4700±5.5	8250	12250	4	3
C6-2100		2100		4700±5.5	8250	12250	6	3

Style No.	System Voltage (kV)	Lightning Impulse Withstand Voltage/kV	Power Frequency Wet Withstand Voltage/ kV	Height of post insulator/ mm	Minimum Nominal Creepage Distance/mm		Mechanical Failure Load	
					I	II	Bending Po/kN	Torsion/ (kN ·m)
C8-2100		2100		4700±5.5	8250	12250	8	4
C10-2100		2100		4700±5.5	8250	12250	10	4
C12.5-2100		2100		4700±5.5	8250	12250	12.5	6
C4-2250		2250		5000±6.5	8700	13200	4	3
C6-2250		2250		5000±6.5	8700	13200	6	3
C8-2250	750	2250		5000±6.5	8700	13200	8	4
C10-2250		2250		5000±6.5	8700	13200	10	4
C12.5-2250		2250		5000±6.5	8700	13200	12.5	6
C4-2400		2400		5300±6.5	9200	14100	4	3
C6-2400		2400		5300±6.5	9200	14100	6	3
C8-2400	750	2400		5300±6.5	9200	14100	8	4
C10-2400		2400		5300±6.5	9200	14100	10	4
C12.5-2400		2400		5300±6.5	9200	14100	12.5	6
C4-2550		2550		5700±6.5	9800	15000	4	3
C6-2550	750	2550		5700±6.5	9800	15000	6	3
C8-2550		2550		5700±6.5	9800	15000	8	4
C10-2550		2550		5700±6.5	9800	15000	10	4

Note: For multisection insulators, required assembly fittings are delivered with the goods.

RTV Coating

RTVcoated insulators are porcelain insulators with a silicone rubber layer. The silicone rubber layer is applied to new insulators or existing substation insulators via specialized spraying technology.
RTV coating provides a hydrophobic surface, reducing the adverse effects of pollution, improving electrical performance in highly polluted areas, and lowering leakage current.

Advantages of RTV Coating

- Excellent self-cleaning properties
- Long-term hydrophobicity
- Suppresses leakage current, discharges and pollution flashover
- Reduces maintenance costs
- Easy cleaning under extreme contaminant deposition
- Resists highpressure water jet cleaning
- Service life of at least 15 years
- Nontoxic and environmentally friendly material

RTV Coating Quality Control

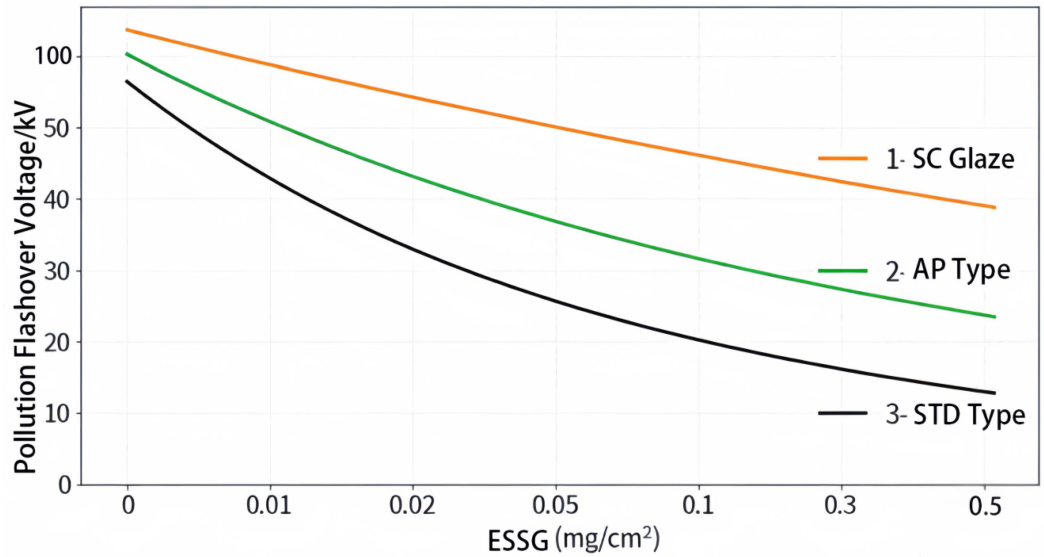
A digital thickness gauge with 0.001 mm precision is used. Six measuring points are placed around a single shed at 60° intervals; three additional points are arranged linearly at equal spacing starting 1 cm from the shed edge toward the core.
RTV coating thickness: ≥ 400 μm on the upper shed surface, ≥ 320 μm on the lower surface. Coating thickness deviation shall not exceed ±20% of the average value.

Semiconducting Glaze

Semiconducting glaze for insulators is a special functional glaze with surface semiconducting properties. Its resistivity is strictly controlled within 10^6–10^{10} Ω, effectively equalizing electric field distribution and eliminating end field concentration.

It generates Joule heat via micro leakage current during operation, suppresses the formation of conductive water films, enhances anti-pollution flashover performance, and provides self-cleaning and deicing functions. This significantly improves operational reliability and service life in harsh environments such as heavy pollution, high humidity and extreme cold.

ZDVolt precisely controls the content of conductive crystal phases by adjusting the proportion of semiconducting oxides, optimizes the glazing process to maintain glaze thickness at 0.2–0.3 mm, and monitors firing temperature and kiln pressure in real time. This ensures uniform dispersion of conductive crystal phases and controls surface resistance between 20 MΩ and 30 MΩ.



ZDVolt
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