

• POWER SYSTEM

Hivolt[®]

Dalian Hivolt

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DALIAN HIVOLT POWER SYSTEM CO.,LTD

Hivolt®



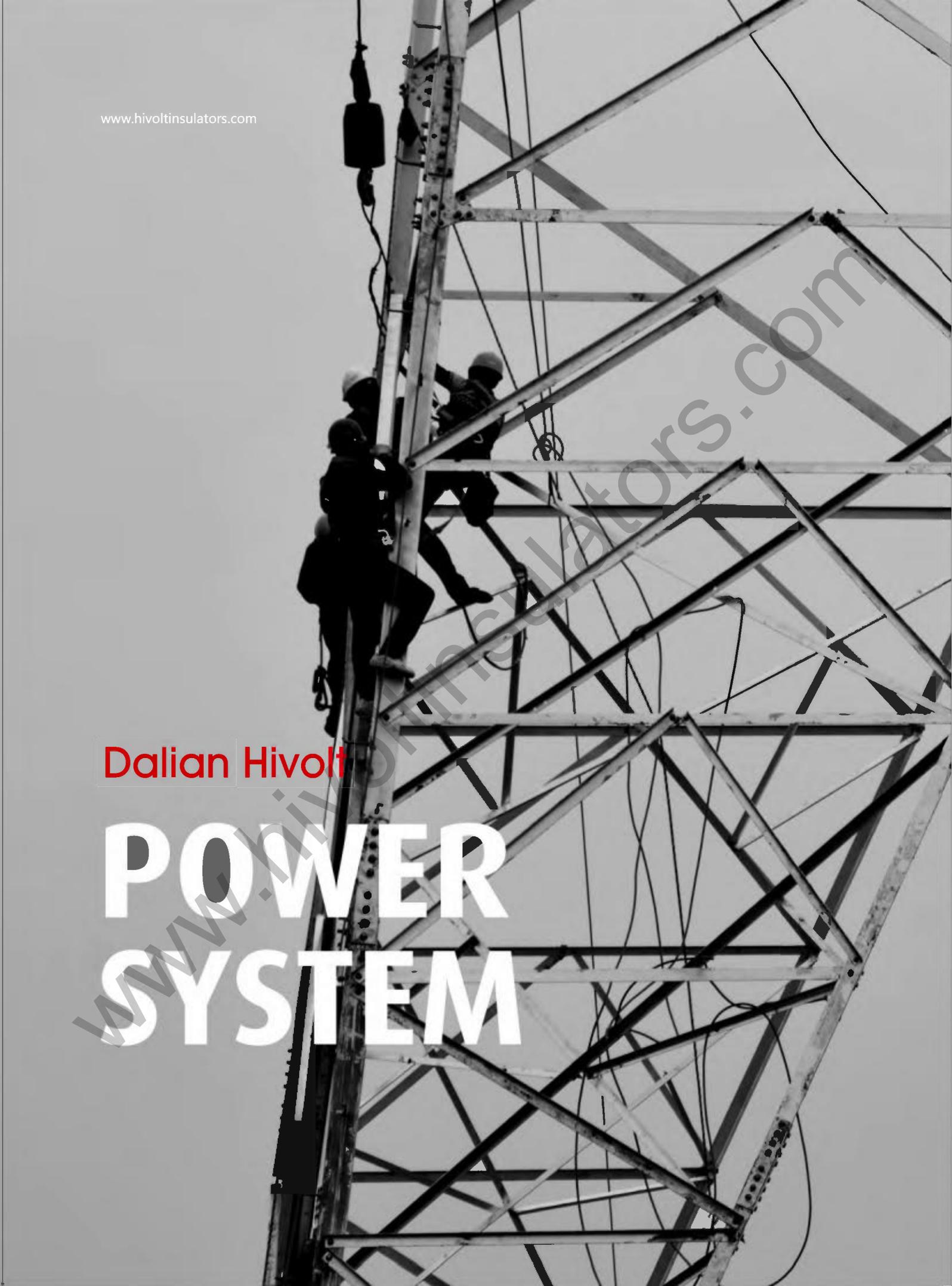
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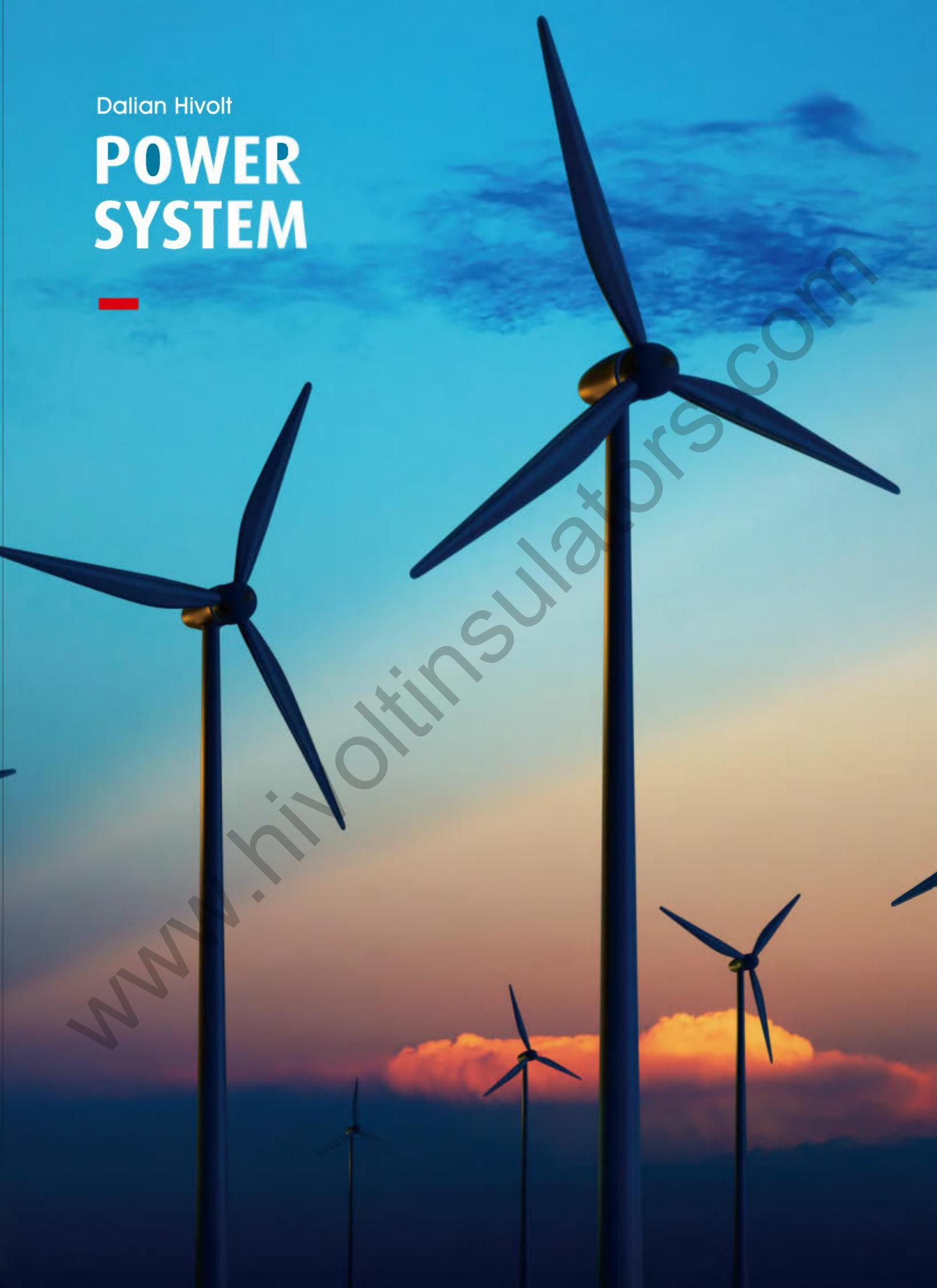
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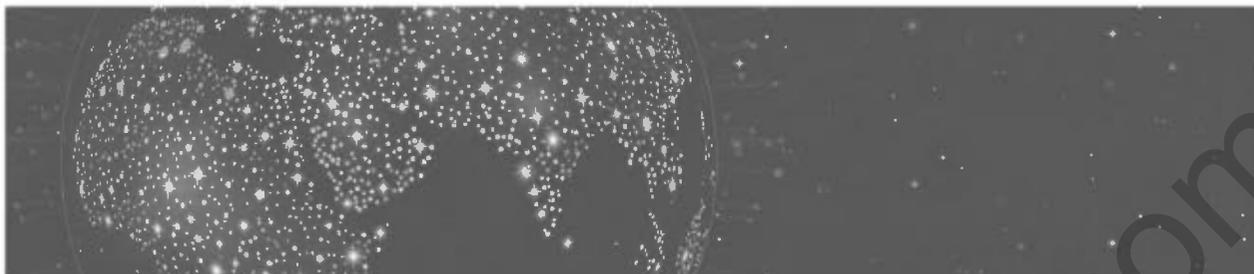
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BRIEF INTRODUCTION

Hivolt[®]

Dalian Hivolt Power System Co., Ltd. was established in 1992, has 460 experienced staff, with headquarter in Dalian City, China. We are reputable manufacturer for porcelain insulators, composite insulators.

We have modern manufacturing facilities and test equipments, which can guarantee every piece of product is well controlled. Our insulators have been running many years in China Power Grid up to 750kV transmission lines and substations without negative report.

With growing business, the overseas market had a rapid increasing. We have exported our products to more than 30 countries and regions: North American countries & South American countries, Europe, Russia and middle east countries etc.

We already set up long term and multi-benefit cooperation with our reputable customers, for example: ABB, GE etc.

▪ **Our products include:**

▪ **Porcelain insulators:**

- 1) Line insulators: suspension insulators (both normal type and fog type), line post insulators, pin type insulators etc. for up to 750KV transmission lines.
- 2) Insulators for substations: station post insulator (both wet process and isostatic press shaping method) for up to 750KV class; hollow insulators for Current Transformers, SF6 breakers, Surge arresters, Capacitors etc. up to 1000 KV.
- 3) Electrical Apparatus: fuse cutout up to 35KV, transformer bushings, surge arresters up to 220KV.

▪ **Silicone rubber insulators:**

Longrod insulators up to 750KV.
Station post insulators, pin type insulators etc.
Deadend insulators.

We are ISO 9001 certified company, The high quality products & most reasonable price gain us good reputation. We can offer 3 years product quality guarantee from shipment date.

We sincerely hope to establish solid relationship with customers and finalize the multi-benefit cooperations



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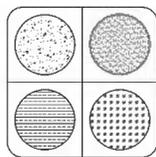
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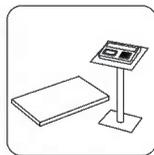


PRODUCTION PROCESS

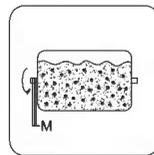
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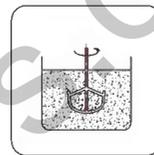
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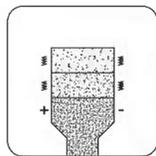
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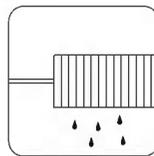
3 Mixing and ball milling



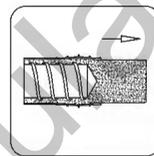
4 Slip mixing



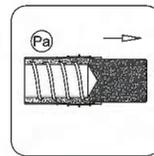
5 Magnetic separating and screen vibrating



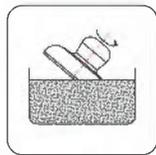
6 Filter pressing



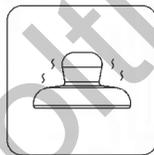
7 Pug mill



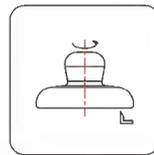
8 De-airing pug mill



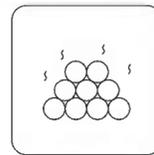
12 Glazing



11 Green body drying



10 Green body shaping



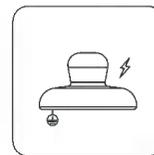
9 Drying



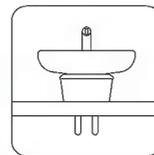
13 Firing in kiln



14 Dimensional and visual control

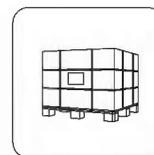


15 Electrical test on porcelain body

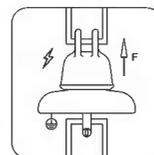


16 Insulator cementing

...

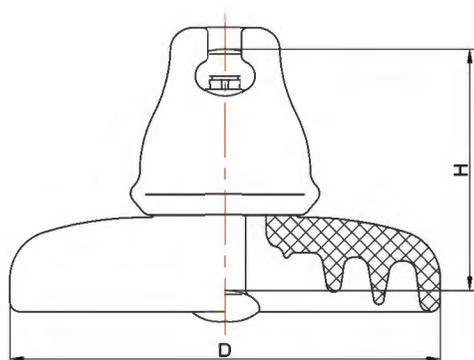


18 Packing



17 Electrical & Mechanical test

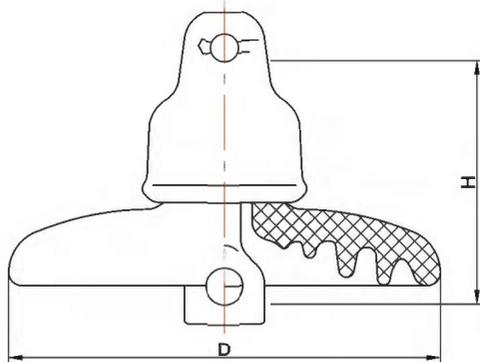
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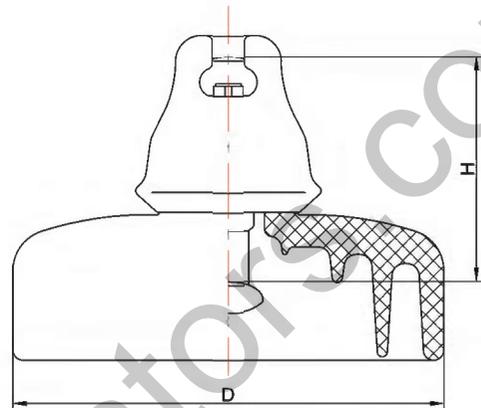
▪ FIG 1.1.1

1.1 Suspension insulators IEC Standard

Type	Unit	U70BL	U70C	U70BLP	U80BL	U80BLP	U100BL	U100BLP	U120B	U120BP	U125BS	
Figure No.		1.1.1	1.1.2	1.1.3	1.1.1	1.1.3	1.1.1	1.1.3	1.1.1	1.1.3	1.1.1	
Unit spacing "H"	mm	146	146	146	146	146	146	146	146	146	146	
Nominal diameter "D"	mm	255	255	255	255	255	280	255	255	320	255	
Nominal creepage distance	mm	295	295	432	295	432	340	432	295	555	295	
Coupling size		16	16C	16	16	16	16	16	16	16	20	
Routine tensile load	kN	35	35	35	40	40	50	50	60	60	62.5	
Rated E&M failing load	kN	70	70	70	80	80	100	100	120	120	125	
Impact strength	N.m	6	6	6	6	6	7	7	7	7	7	
Power frequency withstand voltage	Wet	kV	40	40	45	40	45	40	45	40	55	40
	Dry	kV	70	70	80	70	80	70	80	70	80	70
Dry lightning impulse withstand voltage	kV	100	100	120	100	120	100	120	100	135	100	
Puncture voltage	kV	110	110	120	110	120	100	120	110	130	110	
Radio interference voltage	Test voltage to ground	kV	10	10	10	10	10	10	10	10	10	
	Max. RIV at 1MHz	μ V	50	50	50	50	50	50	50	50	50	
Weight	Kg	4.6	4.8	6.1	4.9	6.5	6.6	7.7	5.7	10.3	5.8	
Applicable standard		IEC60383										



▪ FIG 1.1.2

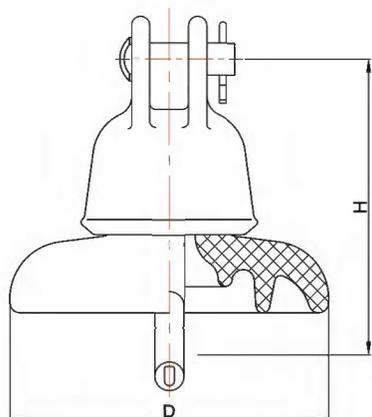


▪ FIG 1.1.3

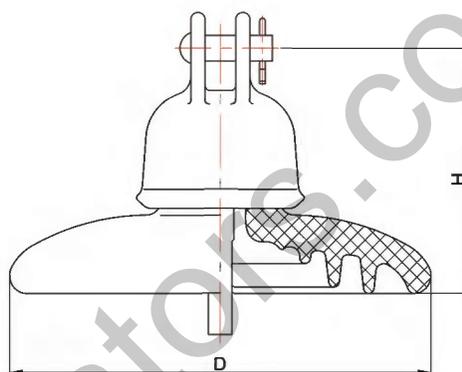
1.1 Suspension insulators IEC Standard

U125BL	U160BM	U160BS	U160BL	U160BLP	U210B	U210BP	U240B	U240BP	U300B	U300BP	U400B	U400BP
1.1.1				1.1.3	1.1.1	1.1.3	1.1.1	1.1.3	1.1.1	1.1.3	1.1.1	1.1.3
178	155	146	170	170	170	170	170	170	195	195	205	205
292	255	255	280	320	280	300	280	330	320	320	340	400
356	305	320	405	550	335	450	405	550	370	485	545	635
20	20	20	20	20	20	20	24	24	24	24	28	28
62.5	80	80	80	80	105	105	120	120	150	150	200	200
125	160	160	160	160	210	210	240	240	300	300	400	400
7	10	10	10	10	10	10	10	10	10	10	10	10
40	40	40	40	55	40	45	45	55	45	45	55	60
70	70	70	70	90	70	80	75	90	75	80	75	90
100	100	100	100	135	105	130	110	135	110	130	140	150
110	110	110	110	130	120	130	120	130	120	130	130	130
10	10	10	10	10	10	10	10	10	10	10	10	10
50	50	50	50	50	50	50	50	50	50	50	50	50
8.0	7.4	7.8	9.1	12.0	10.2	12.6	11.1	15.2	13.2	15.2	19.7	23.5
IEC60383												

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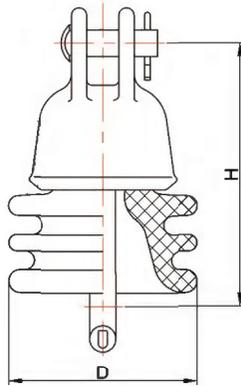
▪ FIG 1.2.1



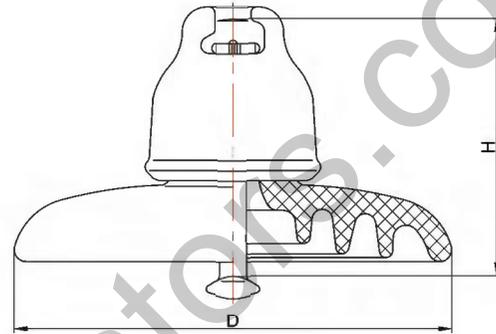
▪ FIG 1.2.2

1.2 Suspension insulators ANSI Standard

Type	Unit	52-1	52-2	52-2	52-3	52-3	52-3	52-4	52-4	52-5	52-5
Figure No.		1.2.1			1.2.4			1.2.2		1.2.4	
Unit spacing "H"	mm	140	146	146	146	146	146	146	146	146	146
Nominal diameter "D"	mm	160	200	200	255	255	270	255	255	254	255
Nominal creepage distance	mm	178	210	210	292	432	432	292	292	320	305
Combined E&M failing load	kN	45	70	90	90	70	90	70	90	110	134
Tension proof test load	kN	22.5	35	45	45	35	45	35	45	55.5	67
Impact failing load	N.m	5.0	5.5	5.5	6.0	6.0	6.0	6.0	6.0	7.0	7.0
Low frequency flashover voltage	Dry	kV	60	65	65	80	80	80	80	80	80
	Wet	kV	30	35	35	50	50	50	50	50	50
Critical impulse flashover voltage	Positive	kV	100	115	115	125	125	125	125	125	125
	Negative	kV	100	115	115	130	130	130	130	130	130
Low frequency puncture voltage	kV	80	90	90	110	110	110	110	110	110	110
Radio influence voltage	Test voltage to ground	kV	7.5	7.5	7.5	10	10	10	10	10	10
	Max. RIV at 1MHz	μ V	50	50	50	50	50	50	50	50	50
Weight	kg	2.5	3.9	4.6	5.6	7.0	7.9	4.8	5.6	6.0	5.7
Applicable standard		ANSI C29.2									



▪ FIG 1.2.3

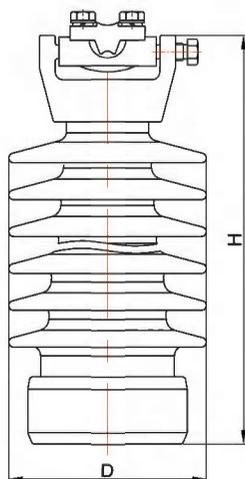
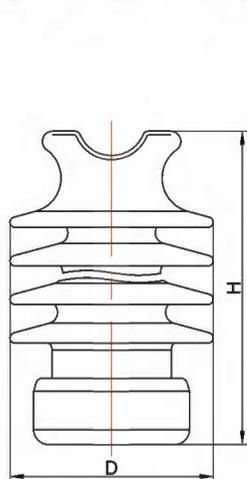


▪ FIG 1.2.4

1.2 Suspension insulators ANSI Standard

52-5	52-5	52-6	52-6	52-6	52-8	52-8	52-8	52-8	52-8	52-9-A	52-10	52-11	52-11	52-12
1.2.4		1.2.2			1.2.4					1.2.3	1.2.2	1.2.4		1.2.2
146	146	146	146	146	170	146	146	146	146	158.5	165	155.5	170	178
254	270	255	255	254	280	255	272	280	280	108	280	292	280	280
432	432	292	295	432	380	280	292	300	432	172	300	381	380	405
110	134	110	134	110	160	160	160	178	178	45	178	222	220	222
55.5	67	55.5	67	55.5	80	80	80	89	89	22.5	89	111	110	111
7.0	7.0	7.0	7.0	7.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0
80	80	80	80	80	80	80	80	80	80	60	80	80	80	80
50	50	50	50	50	50	50	50	50	50	30	50	50	50	50
125	125	125	125	125	125	125	125	125	125	100	125	140	140	140
130	130	130	130	130	130	130	130	130	130	90	130	140	140	140
110	110	110	110	110	110	110	110	110	110	80	110	125	125	125
10	10	10	10	10	10	10	10	10	10	7.5	10	10	10	10
50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
7.8	8.0	5.6	6.5	8.0	9.2	7.8	6.8	7.8	9.7	2.3	8.1	9.7	9.7	11.4
ANSI C29.2														

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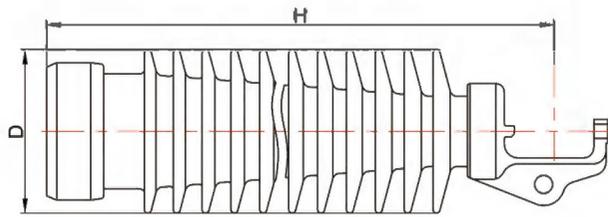


▪ FIG 2.1.1

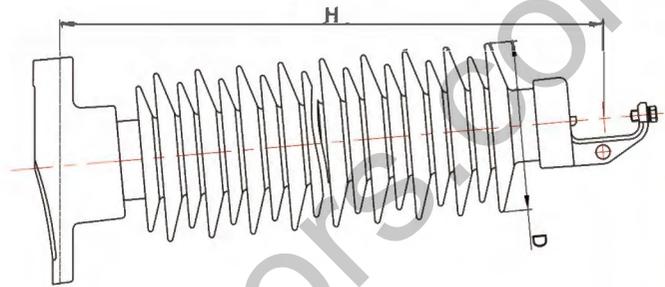
▪ FIG 2.1.2

2.1 Line post insulators (<100kV) ANSI standard

ANSI designation	Unit	57-1	57-2	57-3	57-4	57-5	57-6	57-11	57-12	57-13	
Figure No.		2.1.1						2.1.2			
Neck type		F	F	F	N	N	N	-	-	-	
Height "H"	inches	8-3/4	12	14-1/2	17	20	23	10-5/8	13-3/4	16-1/2	
Max. Shed diameter "D"	inches	5-3/4	5-3/4	6	7	7	7-5/16	5-3/4	6	6	
Creepage distance	inches	14	22	29	40	45	53	14	22	29	
Dry arcing distance	inches	6-1/2	9-1/2	12-1/4	14-1/2	17-1/4	19-1/4	6-1/2	9-1/2	12-1/4	
Thread	inches	3/4-10 UNC	7/8-9 UNC	3/4-10 UNC	3/4-10 UNC	3/4-10 UNC					
Cantilever strength	pounds	2800	2800	2800	2800	2800	2800	2800	2800	2800	
Low frequency flashover voltage	dry	kV	80	110	125	150	175	200	80	110	125
	wet	kV	60	85	100	125	150	170	60	85	100
Critical impulse flashover voltage	positive	kV	130	180	210	255	290	330	130	180	210
	negative	kV	155	205	260	340	380	425	155	205	260
Radio influence voltage data	Test voltage, rms to ground	kV	15	22	30	44	44	44	15	22	30
	Max. RIV, at 1000kHz	μ V	100	100	200	200	200	200	100	100	200
Net weight	pounds	12	18	23	37	47	52	16	23	27	
Applicable standard ANSI		ANSI C29.7									



▪ FIG 2.1.3



▪ FIG 2.1.4

Line post insulators

2.1 Line post insulators (<100kV) ANSI standard



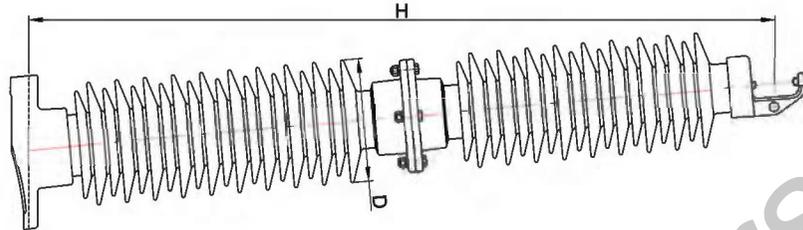
57-14	57-15	57-16	57-21	57-22	57-23	57-24	57-25	57-26	57-31	57-32	57-33	57-34	57-35	57-36
2.1.2			2.1.3						2.1.4					
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	21-5/8	24-1/4	11-3/8	14-1/2	17-1/4	19-3/4	22-3/8	25	11-3/4	14-7/8	17-5/8	19-3/4	22-3/8	25
6-3/4	6-3/4	7-1/4	5-3/4	6	6	6-3/4	6-3/4	7-1/4	5-3/4	6	6	6-3/4	6-3/4	7-1/4
40	45	53	14	22	29	40	45	53	14	22	29	40	45	53
14-1/2	17-1/4	19-1/4	6-1/2	9-1/2	12-1/4	14-1/2	17-1/4	19-1/4	6-1/2	9-1/2	12-1/4	14-1/2	17-1/4	19-1/4
3/4-10 UNC	3/4-10 UNC	3/4-9 UNC	3/4-10 UNC	3/4-10 UNC	3/4-10 UNC	3/4-10 UNC	3/4-10 UNC	7/8-9 UNC	-	-	-	-	-	-
2800	2800	2800	2800	2800	2800	2800	2800	2800	2800	2800	2800	2800	2800	2800
150	175	200	80	110	125	150	175	200	80	110	125	150	175	200
125	150	170	70	100	115	135	160	180	70	100	115	135	160	180
255	290	330	130	180	210	255	290	330	130	180	210	255	290	330
340	380	425	155	205	260	340	380	425	155	205	260	340	380	425
44	44	44	15	22	30	44	44	44	15	22	30	44	44	44
200	200	200	100	100	200	200	200	200	100	100	200	200	200	200
36	42	51	17	23	29	37	43	53	21	27	33	43	55	62
ANSI C29.7														

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2.2 Line post insulators ANSI standard ($\geq 100\text{kV}$)

Wood pole mounting		Unit	H72459	H70147	H70148	H70149	H305169
Figure No.			2.2.1				
Usual line voltage(kV)		kV	115/138	115/138	115/138	115/138	115/138
Length "H"		inches	42.25	48.5	54	61	47
Max. sheds diameter "D"		inches	8.5	8.5	9	9.25	-
Min. Creepage distance		inches	82	100	110	130	82
Dry arcing distance		inches	36.25	42.25	48.25	54.25	36.25
Cantilever strength		pounds	2800	2800	2500	2800	4000
Tension strength		pounds	5000	5000	5000	5000	10000
Low frequency flashover voltage	dry	kV	325	380	435	458	325
	wet	kV	290	330	390	435	290
Critical impulse flashover voltage	Pos	kV	525	610	695	780	525
	Neg	kV	660	780	900	1000	660
Radio influence voltage data	Test voltage, rms to ground	kV	88	88	88	88	88
	Max. RIV, at 1000kHz	μV	100	100	100	100	100
Net weight,each		pounds	154	160	170	185	250
Applicable Standard			ANSI C29.7				



Line post insulators

▪ FIG 2.2.1

2.2 Line post insulators ANSI standard (≥100kV)

H305170	H79135	H79136	H76072-A	H76073-A	H76074-A	H305248	H305249	H303070
2.2.1								
115/138	115/138	115/138	161/230	161/230	161/230	161/230	161/230	161/230
50	58	62	73	79.75	84.75	73.25	80	85
-	-	-	-	-	-	-	-	-
100	110	130	138	154	167	138	154	167
42.25	48.25	54.25	59	65	71	59	65	71
4000	4000	3600	2800	2800	2800	2800	2800	2800
10000	10000	10000	5000	5000	5000	5000	5000	5000
380	435	485	540	590	640	540	590	640
330	390	435	485	530	575	485	530	575
610	695	780	860	945	1025	860	945	1025
780	900	1000	1100	1200	1300	1100	1200	1300
88	88	88	103	103	103	103	103	103
100	100	100	100	100	100	100	100	100
256	260	265	315	337	359	327	349	371
ANSI C29.7								

POWER SYSTEM

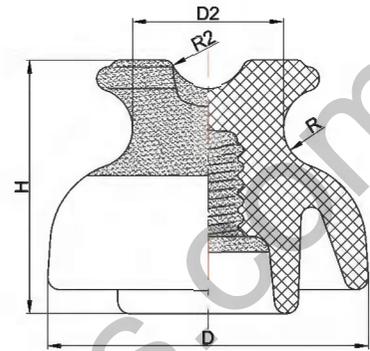
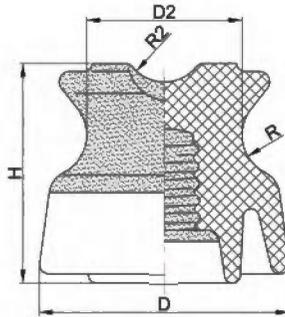
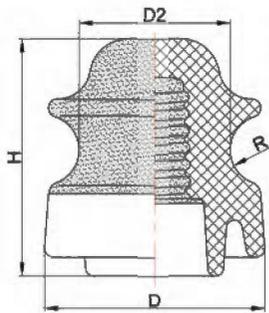
NOTES:

- 1. Surfaces coated with semi-conductive glaze considered as effective leakage surfaces and the distance over them is included in the leakage distance.



3.1 Pin type insulators ANSI C29.5

ANSI class		Unit	55-1		55-2	
Figure No.			3.1.1		3.1.2	
Insulator type			Plain	Radio Freed	Plain	Radio Freed
Neck Designation			C		C	
Rating Voltage (U.S.Practice)		kV	7.2		7.2	
Creepage distance		inches	4		5	
Dry-arcing distance		inches	2-1/4		3-3/8	
Dimensions	H	inches	2-7/8		3-1/4	
	D	inches	3-1/4		3-3/4	
	D2	inches	2-1/4		2-1/4	
	R	inches	1/2		5/8	
	R2	inches	/		5/8	
Cantilever strength		pounds	3000		2500	
Low-frequency flashover voltage	dry	kV	35	35	50	45
	wet	kV	20	20	25	25
Critical impulse flashover voltage	positive	kV	50	50	75	70
	negative	kV	70	70	95	85
Low-frequency puncture voltage		kV	50		70	
Radio-Influence Voltage Data	test voltage,rms to ground	kV	5	5	5	5
	maximum RIV at 1000kHz	μ V	2500	50	2500	50
Net weight		pounds	1.2		1.4	
Applicable Standard			ANSI C29.5			



▪ FIG 3.1.1

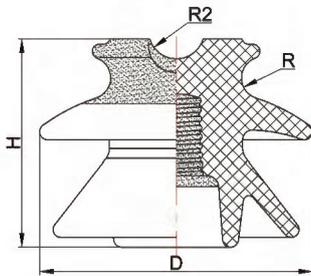
▪ FIG 3.1.2

▪ FIG 3.1.3

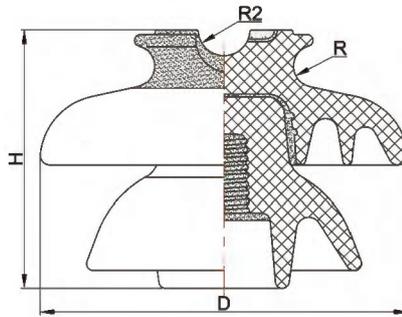
3.1 Pin type insulators ANSI C29.5

55-3		55-4		55-5		55-6		55-7	
3.1.3									
Plain	Radio Freed	Plain	Radio Freed	Plain	Radio Freed	Plain	Radio Freed	Plain	Radio Freed
C		F		F		J		J	
13.2		13.2		13.2		15/25		15/25	
7		9		12		15		15	
4-1/2		5		6-1/4		8		8	
3-3/4		4-3/8		4-7/8		5-1/2		5-1/2	
4-3/4		5-1/2		7		8-3/8		8-3/8	
2-1/4		2-7/8		2-7/8		3-1/2		3-1/2	
9/16		9/16		9/16		5/8		5/8	
9/16		1		1		1		1	
2500		3000		3000		3000		3000	
65	55	70	65	85	80	100		100	
35	30	40	35	45	45	50		50	
100	90	110	105	140	130	150		150	
130	110	140	130	170	150	170		170	
90		95		115		135		135	
10	10	10	10	15	15	22	22	22	22
5500	50	5500	50	8000	100	8000	100	8000	100
2.4		3.7		6.4		/		/	
ANSI C29.5									

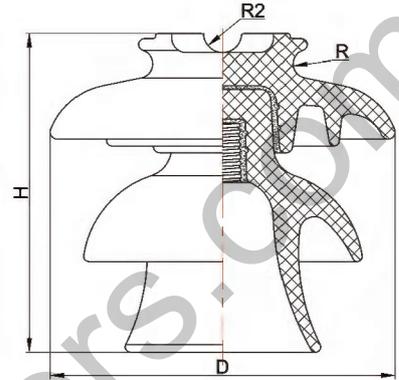
POWER SYSTEM



▪ FIG 3.2.1



▪ FIG 3.2.2



▪ FIG 3.2.3

3.2 Pin type insulators ANSI C29.6

ANSI class	Unit	56-1	56-2	56-3	56-4	56-5	
Figure No.		3.2.1	3.2.2		3.2.3		
Neck Designation		J	K	K	/	/	
Voltage Rating (U.S.Practice)	kV	23	23	34.5	46	69	
Creepage distance	inches	13	17	21	27	34	
Dry-arcing distance	inches	7	8-1/4	9-1/2	11-1/4	14	
Main dimensions	H	inches	5-3/4	6-1/2	7-1/2	9-1/2	12-1/2
	D	inches	7-1/2	9	10-1/2	12	13-1/2
	R	inches	9/16	9/16	9/16	9/16	9/16
	R2	inches	3/4	3/4	3/4	3/4	3/4
Cantilever strength	pounds	2500	3000	3000	3000	3000	
Low-frequency flashover voltage	dry	kV	95	110	125	140	175
	wet	kV	60	70	80	95	125
Critical impulse flashover voltage	positive	kV	150	175	200	225	270
	negative	kV	190	225	265	310	340
Low-frequency puncture voltage	kV	130	145	165	185	225	
Radio-Influence Voltage Data	test voltage,rms to ground	kV	15	22	30	30	44
	maximum RIV at 1000kHz	μ V	100	100	200	200	200
Net weight	pounds	7.7	11.0	17.6	24.3	30.9	
Applicable Standard		ANSI C29.6					

The Hivolt logo is displayed in white text on a black rectangular background. The word "Hivolt" is in a bold, sans-serif font, with a registered trademark symbol (®) to its upper right.

NOTES:

- 1. Surfaces coated with semi-conductive glaze considered as effective leakage surfaces and the distance over them is included in the leakage distance.



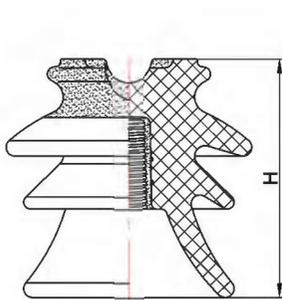
Pin type insulators

POWER SYSTEM

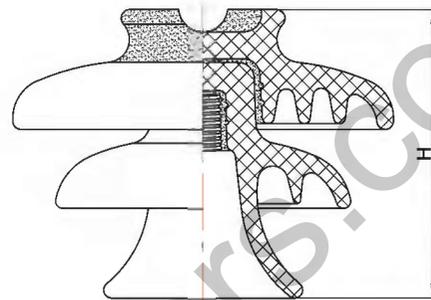


3.3 Pin type insulators BS standard

Type		Unit	P-11-Y		P-15-Y	
Figure No.			3.3.1			
Insulator type			Plain	Radio Freed	Plain	Radio Freed
Nominal system voltage		kV	11		15	
Total creepage distance		mm	254		298	
Protect creepage distance		mm	102		133	
Height "H"		mm	130		137	
Cantilever strength		kN	11		11	
Power-frequency flashover voltage	Dry	kV	75		80	
	Wet	kV	50		55	
50% impulse flashover voltage	Positive	kV	115		130	
	Negative	kV	150		175	
Power-frequency puncture voltage		kV	150		150	
Radio-influence voltage data	Test voltage to ground	kV	15	15	15	15
	Maximum RIV at 1,000kHz	μ V	8.000	100	8.000	100
Dimension of pin head			Small Steel Head			
Net weight		kg	1.7		2.0	
Applicable standard			BS 137			



▪ FIG 3.3.1



▪ FIG 3.3.2

Pin type insulators

3.3 Pin type insulators BS standard

P-22-Y		P-33-Y		P-33-Y		P-44-Y	
3.3.1				3.3.2			
Plain	Radio Freed	Plain	Radio Freed	Plain	Radio Freed	Plain	Radio Freed
22		33		33		44	
432		630		699		864	
200		381		381		483	
165		280		244		318	
11		11		11		14	
100		130		130		155	
60		85		95		110	
160		185		215		240	
205		260		290		305	
145		185		210		250	
22	22	22	22	30	30	44	44
12.000	100	16.000	200	16.000	200	25.000	200
Large Steel Head specified in B.S							
2.3		11.5		10.0		13.6	
BS 137							

POWER SYSTEM

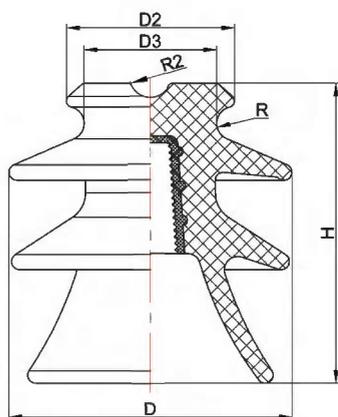


FIG 3.4.1

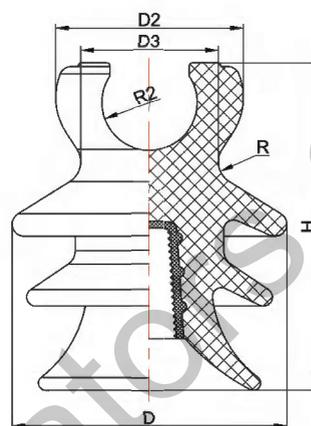
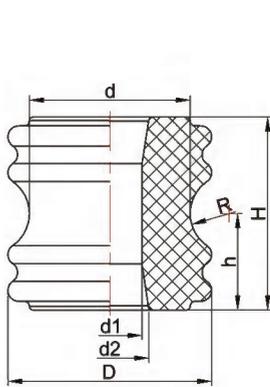


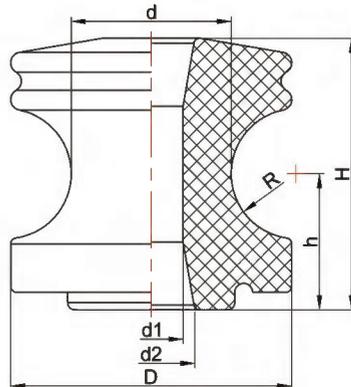
FIG 3.4.2

3.4 Other standard types

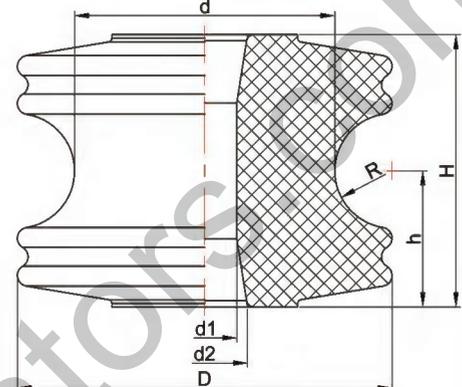
Type	Unit	HP2001R	HPSDI30	HPSDI37	
Figure No.		3.4.1		3.4.2	
Rating Voltage	kV	20	20	20	
Creepage distance	mm	400	325	325	
Main dimensions	H	mm	185	160	202
	D	mm	175	170	170
	D2	mm	104	102	118
	D3	mm	82	75	85
	R	mm	10	16	14.5
	R2	mm	12	16	59
Cantilever strength	kN	13	13	12.5	
Lightning impulse withstand voltage	kV	135	125	125	
Power frequency withstand voltage	Dry	kV	85	85	85
	Wet	kV	50	45	45
Power frequency puncture voltage	kV	160	160	130	
Net weight	kg	3.7	3.4	3.9	
Applicable Standard		IEC 60383			



▪ FIG 4.1



▪ FIG 4.2



▪ FIG 4.3

⚡
Spool insulators

4 Spool insulators

ANSI Class	Unit	53-1	53-2	53-3	53-4	53-5		
Figure No.		4.1	4.2	4.3		-		
Main dimensions	H	mm	54	76	81	76	105	
	h	mm	27	38	40.5	38	52.5	
	D	mm	57	79	76	105	102	
	d	mm	45	45	45	73	73	
	d1	mm	18	18	18	18	18	
	d2	mm	22	24	24	24	24	
	R	mm	11	18	11	16	11	
Transverse strength	kN	8.9	13.3	17.8	20.0	26.7		
Low frequency flashover voltage	Dry	kV	20	25	25	25	35	
	Wet	Vertical	kV	8	12	12	12	18
		Horizontal	kV	10	15	15	15	25
Weight	kg	0.22	0.54	0.59	1.0	1.18		
Applicable Standard		ANSI C29.3						

POWER SYSTEM

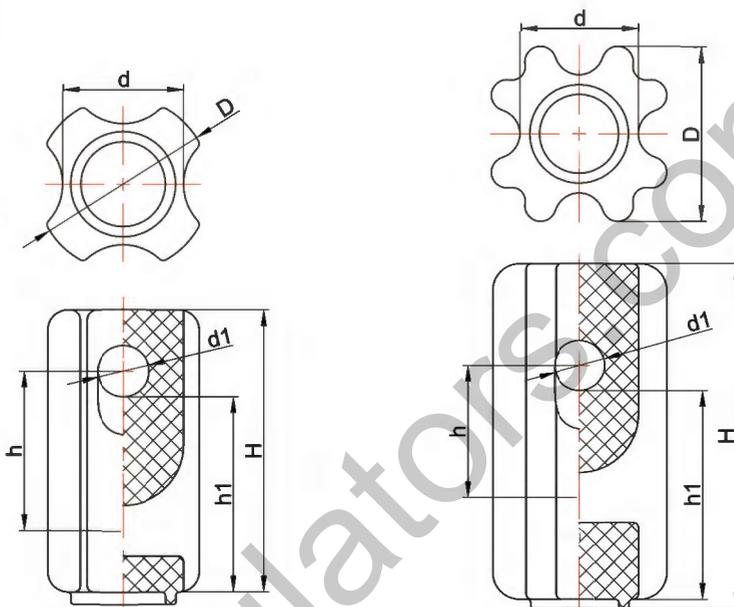


FIG 5.1

FIG 5.2

5 Strain insulators

ANSI Class	Unit		54.1	54.2	54.3	54.4
Figure No.				5.1		5.2
Main dimensions	H	mm	89	108	140	172
	h	mm	44	57	79	67
	h1	mm	64	76	103	114
	D	mm	64	73	86	89
	d	mm	44	54	60	60
	d1	mm	16	22	25	25
Tensile strength	kN		44	53	89	89
Creepage distance	mm		41	48	57	76
Low frequency flashover voltage	Dry	kV	25	30	35	40
	Wet	kV	12	15	18	23
Weight	kg		0.5	0.65	1.2	1.85
Applicable Standard			ANSI C29.4			

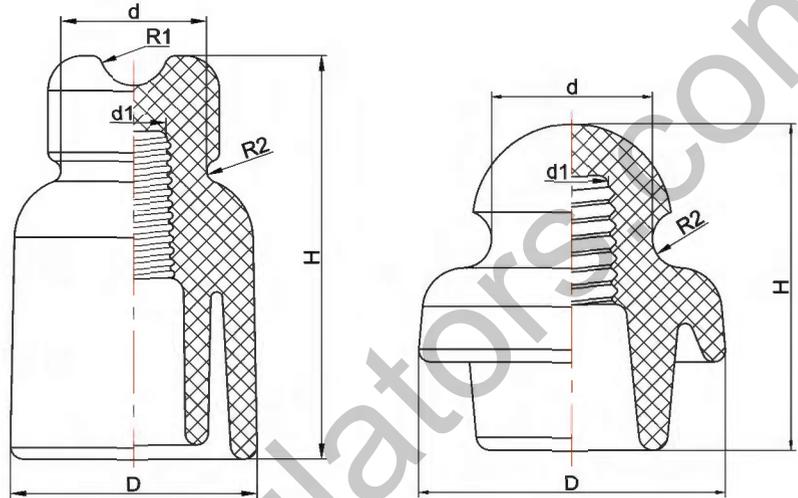


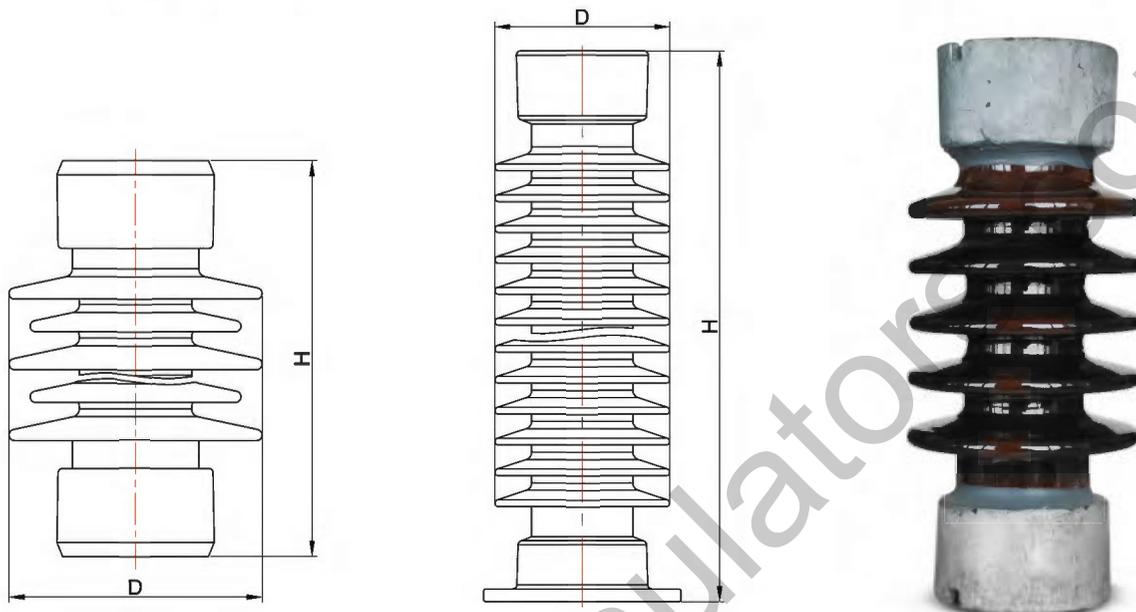
FIG 6.1

FIG 6.2

6 Telephone insulators

Type	Unit		RM-1	RM-2	RM-3	N80	N95
Figure No.			6.1			6.2	
Main dimensions	H	mm	140	100	80	85	97
	D	mm	86	70	60	80	95
	d	mm	51	44	35	42	50
	d1	mm	22.5	18.5	13	16	24
	R1	mm	12	8.5	7	-	-
	R2	mm	4	3.5	3	7.5	14
Insulation resistance	kMQ		50	40	20	20	40
Creepage distance	mm		298	215	150	120	140
Weight	kg		1.0	0.3	0.3	0.35	0.55
Standard			IEC 60383				

POWER SYSTEM

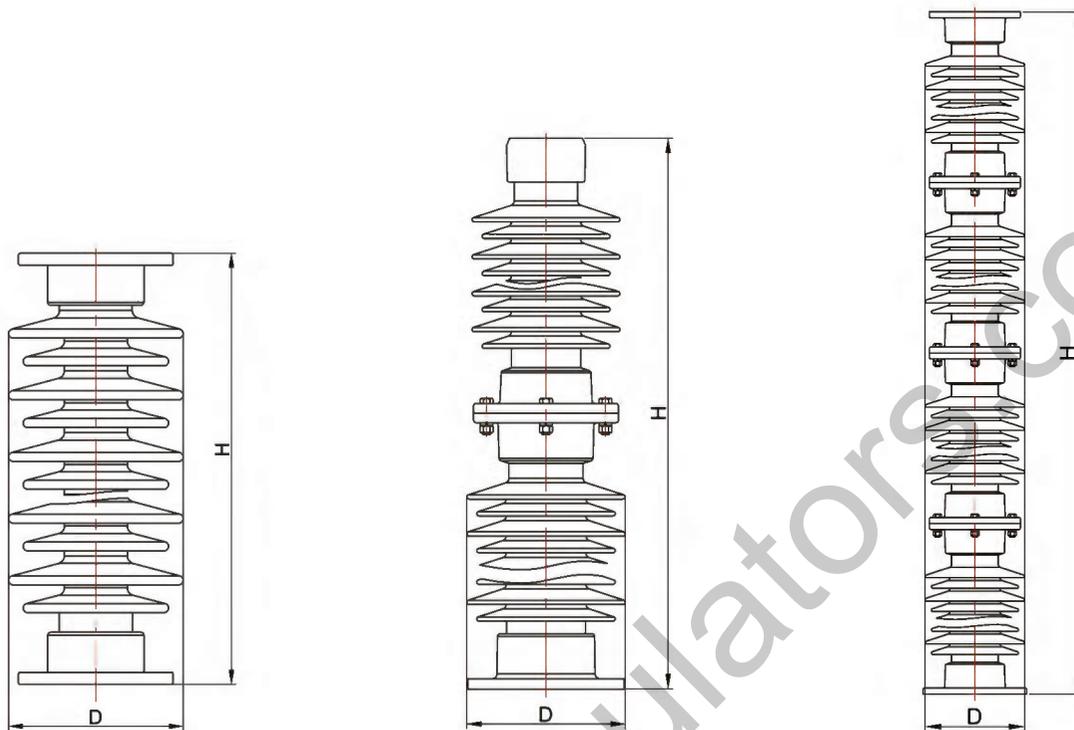


▪ FIG 7.1.1

▪ FIG 7.1.2

7.1 Station post insulators IEC standard

IEC designation	Unit	C6-60	C10-60	C6-95	C10-95	C6-125	C10-125	C6-150
Figure No.		7.1.1						
Overall height "H"	mm	190	190	255	255	305	305	355
Max. shed diameter "D"	mm	180	190	178	178	195	230	195
Creepage distance	mm	290	290	450	420	560	630	660
Top Fitting P.C.D./Hole pattern	mm	Φ 76.2/M12	Φ 76.2/M12	Φ 76.2/M12	Φ 76.2/M12	Φ 76.2/M12	Φ 76.2/M12	Φ 76.2/M12
Bottom Fitting P.C.D./Hole pattern	mm	Φ 76.2/M12	Φ 76.2/M12	Φ 76.2/M12	Φ 76.2/M12	Φ 76.2/M12	Φ 76.2/M12	Φ 76.2/M12
Min. cantilever strength	kN	6	10	6	10	6	10	6
Min. torsion strength	kN-m	0.68	1.0	0.8	1.2	0.8	1.2	1.2
Power frequency withstand voltage wet	kV	20	20	38	38	50	50	50
Lightning impulse withstand voltage dry	kV	60	60	95	95	125	125	150
Applicable standard		IEC60168, IEC60273						



▪ FIG 7.1.3

▪ FIG 7.1.4

▪ FIG 7.1.5

7.1 Station post insulators IEC standard

C10-150	C6-60	C10-60	C6-95	C10-95	C6-125	C10-125	C6-150	C10-150	C4-60	C6-60	C8-60
7.1.1											
355	190	190	255	255	305	305	355	355	190	190	190
180	190	195	185	190	178	203	171	178	170	170	180
720	267	267	420	420	520	520	600	600	190	190	190
Φ76.2/M12	Φ76.2/M12	Φ76.2/M12	Φ76.2/M12	Φ76.2/M12	Φ76.2/M12	Φ76.2/M12	Φ76.2/M12	Φ76.2/M12	Φ76.2/M12	Φ76.2/M12	Φ76.2/M12
Φ76.2/M12	Φ76.2/M12	Φ76.2/M12	Φ76.2/M12	Φ76.2/M12	Φ76.2/M12	Φ76.2/M12	Φ76.2/M12	Φ76.2/M12	Φ76.2/M12	Φ76.2/M12	Φ76.2/M12
10	6	10	6	10	6	10	6	10	4	6	8
1.8	1.0	1.5	2.0	2.0	1.0	2.0	1.2	1.8	0.6	0.6	0.8
50	20	20	38	38	50	50	50	50	20	20	20
150	60	60	95	95	125	125	150	150	60	60	60
IEC60168, IEC60273											

Station post insulators

7.1 Station post insulators IEC Standard

IEC designation	Unit	C10-60	C4-75	C6-75	C8-75	C10-75	C4-95	C6-95
Figure No.		7.1.1						
Overall height "H"	mm	190	215	215	215	215	255	255
Max. shed diameter "D"	mm	180	150	150	165	165	150	155
Creepage distance	mm	190	280	280	280	280	380	380
Top Fitting P.C.D./Hole pattern	mm	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)
Bottom Fitting P.C.D./Hole pattern	mm	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)
Min. cantilever strength	kN	10	4	6	8	10	4	6
Min. torsion strength	kN-m	1	0.6	0.6	0.8	1	0.8	0.8
Power frequency withstand voltage wet	kV	20	28	28	28	28	38	38
Lightning impulse withstand voltage dry	kV	60	75	75	75	75	95	95
Applicable standard		IEC60168, IEC60273						
IEC designation	Unit	C12.5-150	C4-170	C6-170	C8-170	C10-170	C12.5-170	C4-200
Figure No.		7.1.1						
Overall height "H"	mm	355	455	445	445	445	445	475
Max. shed diameter "D"	mm	205	180	190	195	205	210	180
Creepage distance	mm	660	850	850	850	850	850	950
Top Fitting P.C.D./Hole pattern	mm	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 127/M16(4x)	Φ 76/M12(4x)
Bottom Fitting P.C.D./Hole pattern	mm	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 127/M16(4x)	Φ 76/M12(4x)
Min. cantilever strength	kN	12.5	4	6	8	10	12.5	4
Min. torsion strength	kN-m	2.5	1.2	1.5	2	2.5	3	1.2
Power frequency withstand voltage wet	kV	50	70	70	70	70	70	70
Lightning impulse withstand voltage dry	kV	150	170	170	170	170	170	200
Applicable standard		IEC60168, IEC60273						
IEC designation	Unit	C8-325	C10-325	C12.5-325	C16-325	C20-325	C6-550-III	C8-550-III
Figure No.		7.1.1			7.1.2			
Overall height "H"	mm	770	770	770	770	770	1220	1220
Max. shed diameter "D"	mm	205	210	220	230	240	255	260
Creepage distance	mm	1600	1600	1600	1600	1600	3150	3150
Top Fitting P.C.D./Hole pattern	mm	Φ 127/M16(4x)	Φ 127/M16(4x)	Φ 127/M16(4x)	Φ 127/M16(4x)	Φ 127/M16(4x)	Φ 127/M16(4x)	Φ 127/M16(4x)
Bottom Fitting P.C.D./Hole pattern	mm	Φ 127/M16(4x)	Φ 127/M16(4x)	Φ 127/M16(4x)	Φ 225/Φ 18(8x)	Φ 254/Φ 18(4x)	Φ 200/Φ 18(4x)	Φ 200/Φ 18(4x)
Min. cantilever strength	kN	8	10	12.5	16	20	6	8
Min. torsion strength	kN-m	3	4	4	5	6	4	4
Power frequency withstand voltage wet	kV	140	140	140	140	140	230	230
Lightning impulse withstand voltage dry	kV	325	325	325	325	325	550	550
Applicable standard		IEC60168, IEC60273						
IEC designation	Unit	C16-1050-III	C10-1050-II	C8-1050-III	C12.5-1050-III	C10-1425-II	C6-1550-III	C10-1550-III
Figure No.		714			715	714		
Overall height "H"	mm	2300	2300	2300	2300	3150	3350	3350
Max. shed diameter "D"	mm	330	275	285	315	290	315	295
Creepage distance	mm	6300	6000	6300	6300	8400	9080	9080
Top Fitting P.C.D./Hole pattern	mm	Φ 254/M16(4x)	Φ 127/M16(4x)	Φ 127/M16(4x)	Φ 254/Φ 18(8x)	Φ 127/M16(4x)	Φ 127/M16(4x)	Φ 127/M16(4x)
Bottom Fitting P.C.D./Hole pattern	mm	Φ 300/Φ 18(8x)	Φ 275/Φ 18(8x)	Φ 254/Φ 18(8x)	Φ 275/Φ 18(8x)	Φ 300/Φ 18(8x)	Φ 254/Φ 18(8x)	Φ 300/Φ 18(8x)
Min. cantilever strength	kN	16	10	8	12.5	10	6	10
Min. torsion strength	kN-m	10	4	6	6	6	4	6
Power frequency withstand voltage wet	kV	460	460	460	460	-	-	-
Lightning impulse withstand voltage dry	kV	1050	1050	1050	1050	1425	1550	1550
Applicable standard		IEC60168, IEC60273						

C8-95	C10-95	C12.5-95	C4-125	C6-125	C8-125	C10-125	C12.5-125	C4-150	C6-150	C8-150	C10-150
7.1.1											
255	255	255	305	305	305	305	305	355	355	355	355
165	170		170	180	190	190	200	175	190	190	195
380	380	380	500	500	500	500	500	660	660	660	660
Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)
Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)
8	10	12.5	4	6	8	10	12.5	4	6	8	10
1.2	1.2		0.8	0.8	1.2	1.2	2	1	1.2	1.5	1.8
38	38	38	50	50	50	50	50	50	50	50	50
95	95	95	125	125	125	125	125	150	150	150	150
IEC60168, IEC60273											

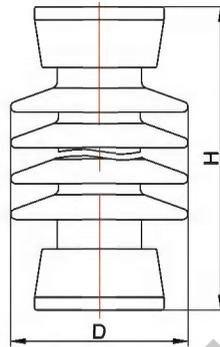
C6-200	C8-200	C10-200	C12.5-200	C4-250	C6-250	C8-250	C10-250	C12.5-250	C2-325	C4-325	C6-325
7.1.1											
475	475	475	475	560	560	560	560	560	770	770	770
190	200		215	175	185	200	200	200	165	185	195
950	950	950	950	1200	1200	1200	1200	1200	1600	1600	1600
Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 127/M16(4x)	Φ 76/M12(4x) Φ 127/M16(4x)	Φ 76/M12(4x) Φ 127/M16(4x)	Φ 127/M16(4x)					
Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 76/M12(4x)	Φ 127/M16(4x)	Φ 76/M12(4x) Φ 127/M16(4x)	Φ 76/M12(4x) Φ 127/M16(4x)	Φ 127/M16(4x)					
6	8	10	12.5	4	6	8	10	12.5	2	4	6
1.8	2		3	1.8	2	2.5	3	4	1.2	2	2.5
70	70	70	70	95	95	95	95	95	140	140	140
200	200	200	200	250	250	250	250	250	325	325	325
IEC60168, IEC60273											

C10-550-III	C12.5-550-III	C16-550-III	C10-550-IV	C8-650-III	C10-650-III	C12.5-650-III	C40-650-IV	C6-1050-III	C8-1050-III	C10-1050-III	C12.5-1050-III
7.1.2				7.1.3	7.1.3	7.1.2	7.1.3	7.1.4			
1220	1220	1220	1220	1500	1500	1500	1500	2300	2300	2300	2300
270	280	290	300	295	305	305	345	275	280	295	315
3150	3150	3150	4500	4612	4612	4612	5200	6300	6300	6300	6300
Φ 127/M16(4x)	Φ 127/M16(4x)	Φ 127/M16(4x)	Φ 127/M16(4x)	Φ 225/Φ 18(4x)	Φ 225/Φ 18(4x)	Φ 127/M16(4x)	Φ 275/Φ 18(8x)	Φ 127/M16(4x)	Φ 127/M16(4x)	Φ 127/M16(4x)	Φ 127/M16(4x)
Φ 225/Φ 18(4x)	Φ 254/Φ 18(8x)	Φ 254/Φ 18(8x)	Φ 225/Φ 18(4x)	Φ 225/Φ 18(8x)	Φ 255/Φ 18(8x)	Φ 254/Φ 18(8x)	Φ 300/Φ 18(8x)	Φ 225/Φ 18(4x)	Φ 254/Φ 18(8x)	Φ 275/Φ 18(8x)	Φ 275/Φ 18(8x)
10	12.5	16	10	8	10	12.5	40	6	8	10	12.5
4	6	6	6	4	4	10	10	3	4	6	10
230	230	230	230	275	275	275	275	460	460	460	460
550	550	550	550	650	650	650	650	1050	1050	1050	1050
IEC60168, IEC60273											

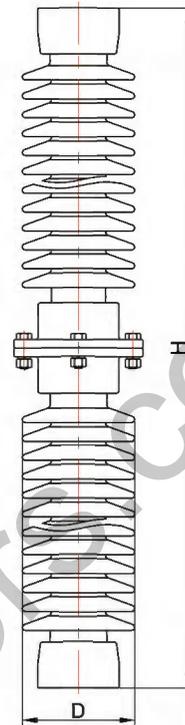
C12.5-1550-III	C6-1550-IV	C8-1550-IV	C8-1675-IV	C16-1675-IV	C8-1950-III	C10-1950-III	C12.5-1950-III	C16-1950-III	C12.5-2250-IV	C12.5-2400	C10-2550
7.1.5	7.1.4		7.1.5		7.1.4				7.1.5		
3350	3350	3350	3600	3600	4400	4400	4400	4400	5700	5300	5700
285	315	325	310	360	340	340	345	385	385	385	420
9080	11260	11260	11260	11260	13750	13750	13750	13750	17050	16100	18000
Φ 225/Φ 18(8x)	Φ 127/M16(4x)	Φ 127/M16(4x)	Φ 225/Φ 18(4x)	Φ 225/Φ 18(8x)	Φ 255/M16(4x)	Φ 225/M16(4x)	Φ 254/M16(8x)	Φ 254/M16(8x)	Φ 254/Φ 18(8x)	Φ 225	Φ 225
Φ 325/Φ 18(8x)	Φ 254/Φ 18(8x)	Φ 275/Φ 18(8x)	Φ 300/Φ 18(8x)	Φ 356/Φ 18(8x)	Φ 300/Φ 18(8x)	Φ 325/Φ 18(8x)	Φ 356/Φ 18(8x)	Φ 356/Φ 18(8x)	Φ 356/Φ 22(16x)	Φ 356	Φ 356
12.5	6	8	8	16	8	10	12.5	16	12.5	12.5	12.5
6	4	4	6	10	4	4	10	10	10	6	6
-	-	-	-	-	-	-	-	-	-	-	-
1550	1550	1550	1675	1675	1950	1950	1950	1950	2250	2400	2550
IEC60168, IEC60273											

Station post Insulators

POWER SYSTEM



▪ FIG 7.2.1



▪ FIG 7.2.2

7.2 Station post insulators ANSI standard

ANSI designation		Unit	TR202	TR222	TR205
Figure No.			7.2.1		
Height "H"		inches	7.5	10	10
Max. shed diameter "D"		inches	7.1	7.5	7.1
Creepage distance		inches	10.5	10.5	15.5
Top cap P.C.D./Max. cap diameter		inches	3/4	5/6.2	3/4.1
Bottom cap P.C.D./Max. cap diameter		inches	3/4	5/6.2	3/4.1
Cantilever strength		pounds	2000	4000	2000
Tensile strength		pounds	7000	15000	8500
Torsional strength		inch-pounds	6000	12000	7000
Compression strength		pounds	10000	20000	10000
Critical impulse flashover voltage	Positive	kV	105	105	125
Low frequency withstand voltage	Wet	kV	30	30	45
Lightning impulse withstand voltage		kV	95	95	110
Radio influence voltage data	Test voltage, rms to ground	kV	5	5	10
	Max. RIV, at 1000kHz	μ V	50	50	50
Net weight		pounds	13	34	15
Applicable standard			ANSI C29.9		



7.2 Station post insulators ANSI standard



TR225	TR208	TR227	TR210	TR231	TR214	TR267	TR216
7.2.1							
12	14	15	18	20	22	24	30
8.1	7.0	9.0	7.5	10.0	8.0	10.0	9.2
15.5	24	24	37	37	43	43	72
5/6.3	3/4.4	5/6.3	3/4.4	5/6.3	3/5.1	5/6.4	3/5.1
5/6.3	3/4.4	5/6.3	3/4.4	5/6.3	3/5.1	5/6.4	3/5.1
4000	2000	4000	2000	4000	2000	4000	1500
20000	10000	20000	15000	25000	14000	25000	16000
14000	8000	16000	10000	20000	12000	20000	15000
20000	10000	20000	5000	30000	15000	60000	25000
125	170	170	225	225	280	280	390
45	60	60	80	80	100	100	145
110	150	150	200	200	250	250	350
10	15	15	22	22	30	30	44
50	100	100	100	100	200	200	200
44	26	40	47	76	54	87	68
ANSI C29.9							

POWER SYSTEM

ANSI designation		Unit	TR278	TR286	TR287
Figure No.			7.2.1		
Height "H"		inches	30	45	45
Max. shed diameter "D"		inches	9.7	10.5	12
Creepage distance		inches	72	99	99
Top cap P.C.D./Max. cap diameter		inches	5/6.3	5/6.4	5/6.3
Bottom cap P.C.D./Max. cap diameter		inches	5/6.3	5/6.4	5/6.3
Cantilever strength		pounds	3000	1700	2600
Tensile strength		pounds	25000	20000	25000
Torsional strength		inch-pounds	40000	40000	90000
Compression strength		pounds	60000	60000	75000
Critical impulse flashover voltage	Positive	kV	390	610	610
Low frequency withstand voltage	Wet	kV	145	230	230
Lightning impulse withstand voltage		kV	350	550	550
Radio influence voltage data	Test voltage, rms to ground	kV	44	73	73
	Max. RIV, at 1000kHz	μ V	200	200	200
Net weight		pounds	102	141	117
Applicable standard			ANSI C29.9		

ANSI designation		Unit	TR362	TR324	TR367
Figure No.			7.2.2		
Height "H"		inches	92	106	106
Max. shed diameter "D"		inches	10.9	10.5	10.5
Creepage distance		inches	198	231	231
Top cap P.C.D./Max. cap diameter		inches	7/8.5	5/6.3	5/6.3
Bottom cap P.C.D./Max. cap diameter		inches	7/8.5	5/6.3	7/8.7
Cantilever strength		pounds	2300	1000	1450
Tensile strength		pounds	40000	25000	20000
Torsional strength		inch-pounds	120000	90000	40000
Compression strength		pounds	100000	75000	60000
Critical impulse flashover voltage	Positive	kV	1210	1410	1410
Low frequency withstand voltage	Wet	kV	455	525	525
Lightning impulse withstand voltage		kV	1050	1300	1300
Radio influence voltage data	Test voltage, rms to ground	kV	146	220	220
	Max. RIV, at 1000kHz	μ V	500	1000	1000
Net weight		pounds	278	245	265
Applicable standard			ANSI C29.9		

7.2 Station post insulators ANSI standard

TR288	TR289	TR291	TR295	TR304	TR308	TR312	TR316
7.2.1				7.2.2			
54	54	62	62	80	80	92	92
10.5	12	10.5	12	10.5	12	10.5	12
116	116	132	132	165	165	198	198
5/6.3	5/6.3	5/6.3	5/6.3	5/6.3	5/6.3	5/6.3	5/6.3
5/6.3	5/6.3	5/6.3	5/6.3	5/6.3	5/6.3	5/6.3	5/6.3
1400	2200	1200	1850	950	1450	800	1250
20000	25000	20000	25000	20000	25000	20000	25000
40000	90000	40000	90000	40000	90000	40000	90000
60000	75000	60000	75000	60000	75000	60000	75000
710	710	810	810	1010	1010	1210	1210
275	275	315	315	385	385	455	455
650	650	750	750	900	900	1050	1050
88	88	103	103	146	146	146	146
200	200	500	500	500	500	500	500
139	139	174	153	190	228	273	342
ANSI C29.9							

TR368	TR369	TR330	TR371	TR372	TR373	TR379	TR391
7.2.2							
106	106	122	122	122	122	128	152
10.9	10.5	10.5	10.5	10.9	10.5	10.5	10.5
231	231	264	264	264	264	280	330
7/8.5	5/6.3	5/6.3	5/6.3	7/8.5	5/6.3	5/6.3	5/6.3
7/8.5	7/8.5	5/6.3	7/8.5	7/8.5	7/8.5	7/8.5	7/8.5
2000	2050	900	1170	1750	1750	1700	1400
40000	20000	25000	20000	40000	20000	20000	20000
120000	40000	90000	40000	120000	40000	40000	40000
100000	60000	75000	60000	100000	60000	60000	60000
1410	1410	1610	1610	1610	1610	1710	2000
525	525	590	590	590	590	620	710
1300	1300	1470	1470	1470	1470	1550	1800
220	220	220	220	210	220	318	318
1000	1000	1000	1000	1000	1000	2000	2000
369	366	287	314	395	393	422	487
ANSI C29.9							

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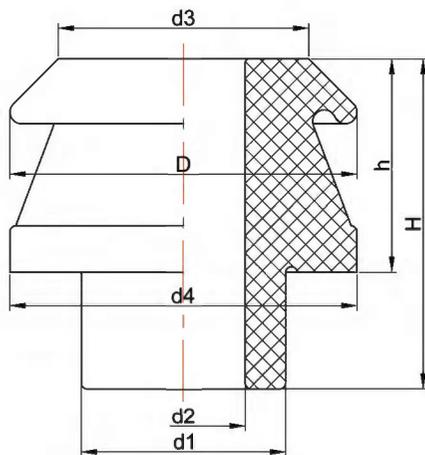
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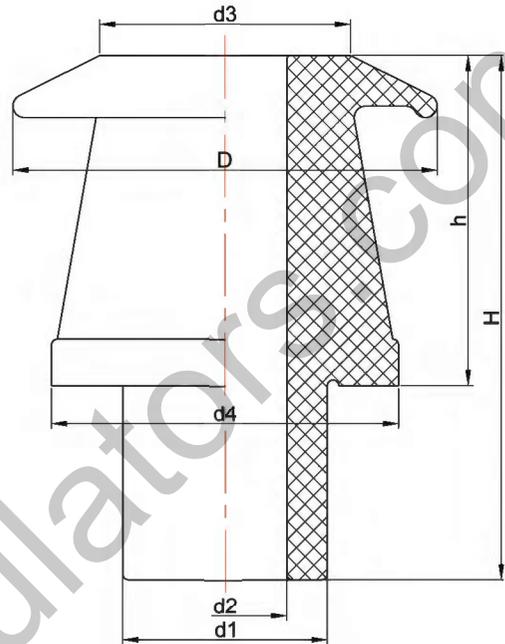
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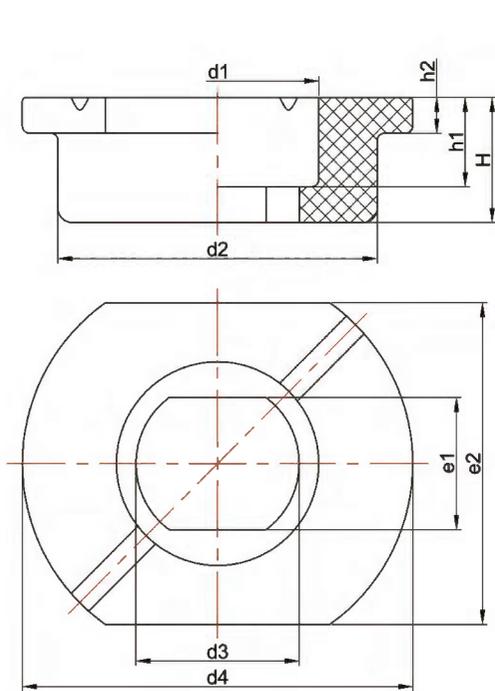
▪ FIG 8.1



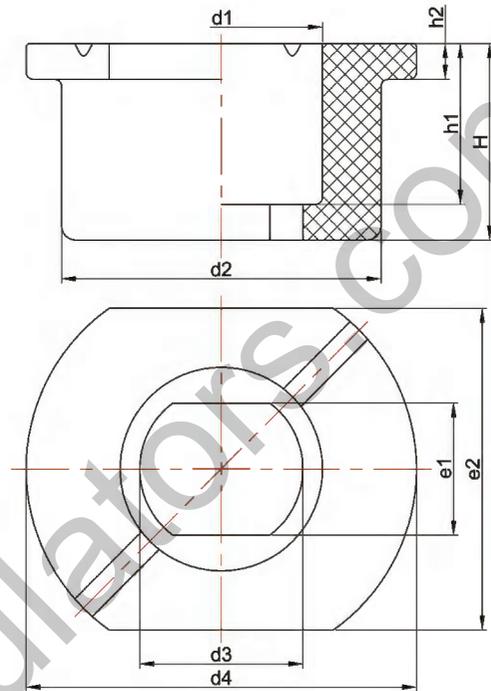
▪ FIG 8.2

8 DIN transformer bushing insulators

Type	Figure No	Main dimension(mm)							Weight(kg)	Standard
		H	D	h	d1	d2	d3	d4		
A1-250	8.1	70	50	45	27	14	32	50	0.15	DIN42530
A1-630		80	70	55	43	22	47	70	0.40	
A1-1000		85	90	55	53	32	65	90	0.60	
A1-2000		85	104	55	66	44	80	104	0.80	
A1-3150		85	125	55	86	50	100	125	1.30	
A3-250	8.2	135	60	85	37	14	32	75	0.40	DIN42539
A3-630		135	70	85	43	22	47	90	0.60	
A3-1000		135	90	85	53	32	65	110	1.00	
A3-2000		135	102	85	66	44	80	125	1.40	
A3-3150		135	125	85	86	50	100	145	2.00	



▪ FIG 8.3



▪ FIG 8.4

8 DIN transformer bushing insulators

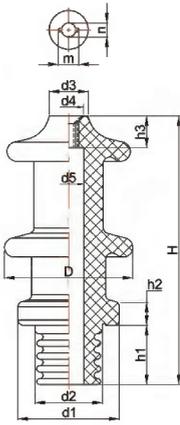
Type	Figure No	Main dimension(mm)									Weight(kg)	Standard
		H	h1	h2	d1	d2	d3	d4	e1	e2		
B1-250	8.3	30	20	8	30	50	26	60	20	50	0.10	DIN42530
B1-630		30	20	8	46	70	41	85	28	70	0.20	
B1-1000		35	25	10	57	90	46	110	37	90	0.40	
B1-2000		35	25	10	70	104	64	125	51	104	0.50	
B1-3150		35	25	12	90	125	80	150	61	125	0.65	
B3-250	8.4	55	45	10	40	60	26	70	20	60	0.30	DIN42539
B3-630		55	45	10	46	70	41	85	28	70	0.30	
B3-1000		55	45	10	57	90	46	110	37	90	0.60	
B3-2000		55	45	10	70	105	64	125	51	105	0.70	
B3-3150		55	45	10	90	125	80	150	61	125	1.00	

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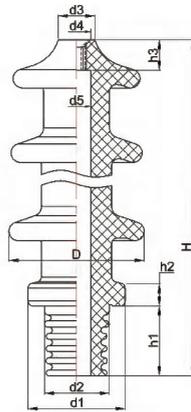
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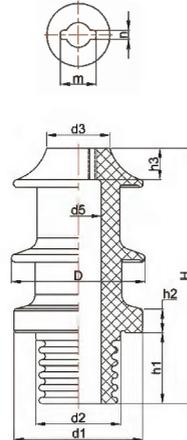
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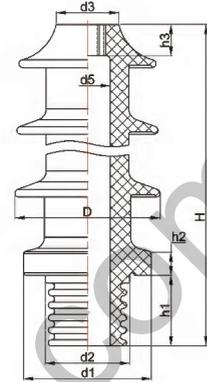
▪ FIG for 8.5 8.6



▪ FIG 8.6



▪ FIG for 8.7 8.8



▪ FIG 8.8

8 DIN transformer bushing insulators

Type	Figure. No	Creepage distance (mm)	Main dimensions(mm)												No. of sheds	Standard
			H	D	h1	h2	d1	d2	h3	d3	d4	d5	m	n		
10NF250	8.5	305	295	140	65	25	111	74	35	42	32	33	22	15	2	DIN 42531
20NF250	8.6	450	385	155	80	25	111	74	35	42	32	33	22	15	3	
		480	385	155	80	25	111	74	35	42	32	33	22	15	4	
30NF250	8.6	600	485	155	80	25	111	74	35	42	32	33	22	15	4	
		720	485	170	80	25	111	74	35	42	32	33	22	15	5	
		900	485	185	80	25	111	74	35	42	32	33	22	15	6	
		990	556	190	100	25	111	74	35	42	32	33	22	15	6	
		1096	550	170	86	25	111	74	35	42	32	33	22	15	11	
		1260	546	175	81	25	111	74	35	42	32	33	22	15	10	
	8.6	1320	475	200	95	25	111	74	35	42	32	33	22	15	11	
		590	180	95	25	111	74	35	42	32	33	22	15	11		
		1650	670	185	105	25	111	74	35	42	32	33	22	15	13	
10NF630	8.5	305	295	150	65	25	128	88	35	50	40	39	30.5	24.5	2	DIN 42532
20NF630	8.6	440	385	165	80	25	128	88	35	50	40	39	30.5	24.5	3	
30NF630		662	510	180	100	25	128	88	35	50	40	39	30.5	24.5	4	
		720	510	180	100	25	128	88	35	50	40	39	30.5	24.5	5	
900	510	196	100	25	128	88	35	50	40	39	30.5	24.5	7			
10NF1000	8.7	295	325	170	90	30	163	108	40	80	-	58	46	12	2	DIN 42533
20NF1000	8.8	445	410	185	100	30	163	108	40	80	-	58	46	12	3	
30NF1000		635	540	200	125	30	163	108	40	80	-	58	46	12	4	
10NF3150	8.7	295	325	190	90	30	183	131	40	100	-	74	62	17	2	
20NF3150	8.8	445	410	210	100	30	183	131	40	100	-	74	62	17	3	
30NF3150		635	540	230	125	30	183	131	40	100	-	74	62	17	4	
		900	545	248	125	30	183	131	40	100	-	74	62	17	6	
10NF4500	8.7	295	325	190	90	30	183	131	40	100	-	74	68	17	2	
20NF4500	8.8	440	410	210	100	30	183	131	40	100	-	74	68	17	3	
30NF4500		680	540	230	125	30	183	131	40	100	-	74	68	17	4	

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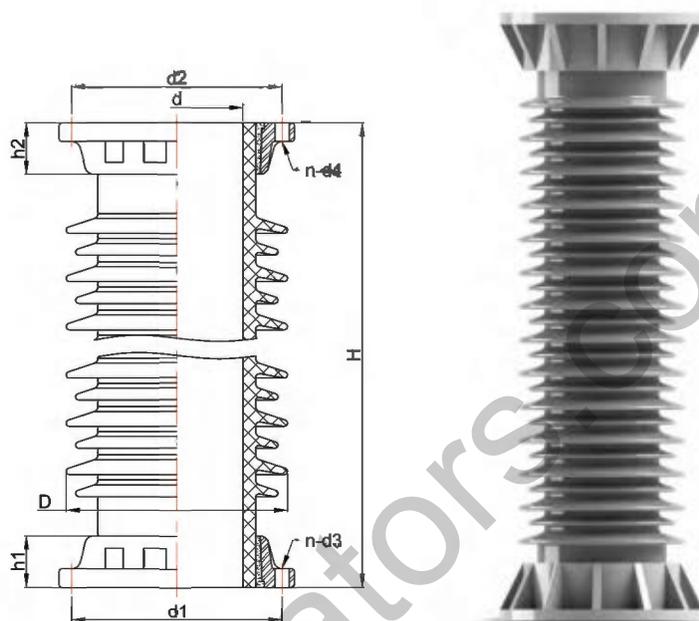


FIG 9.1.1

9.1 Hollow insulators for SF6 breakers

Rated voltage	kV	40.5	40.5	40.5	40.5	40.5	
Figure No.		9.1.1					
Shed No.		5/4	5/4	5/5	6/6	5/4	
Creepage distance	mm	1050	1050	1260	1260	1256	
Main dimensions	H	mm	500	460	520	620	500
	D	mm	255	255	275	320	280
	h1	mm	60	80	70	80	60
	h2	mm	45	65	70	80	45
	d	mm	95	95	95	170	95
	d1	mm	220	220	210	268	220
	d2	mm	198	198	268	268	198
	n-d3	mm	8-φ14	8-φ14	8-M12	8-M12	8-φ14
	n-d4	mm	8-M12	8-M12	8-φ14	8-M12	8-M12
Inner hydro test	Routine water pressure test	Mpa	2.0	2.0	2.0	2.0	2.0
	Withstand time	min	3	3	3	3	3
	Failing load of water pressure	Mpa	3.5	3.5	3.5	3.5	3.5
Cantilever failing load	kN.m	8.5	8.0	10.0	16.0	8.5	
Applicable standard		IEC62155					



Hollow insulators

9.1 Hollow insulators for SF6 breakers

FIG 9.1.2

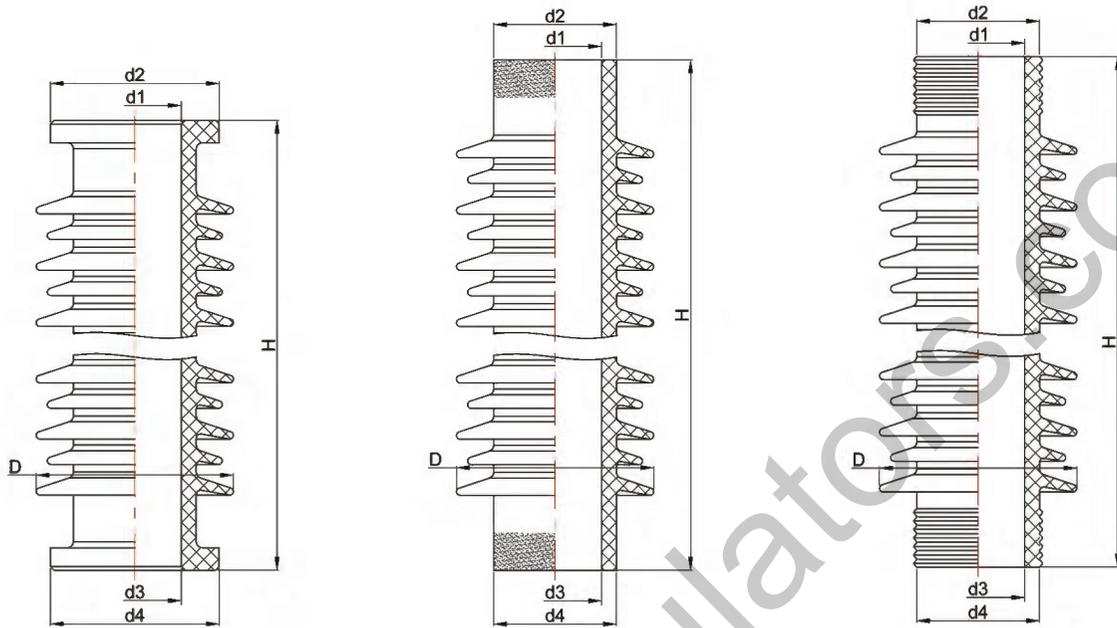
40.5	126	126	126	126	126	252	252	252	330	330
9.1.1										9.1.2
6/6	11/11	12/12	12/12	12/12	15/14	21/20	38/37	22/21	40/39	86/46
1300	3150	3906	3930	3150	3906	6300	7812	6800	11000	10325
600	1200	1380	1350	1350	1440	2336	2550	2330	3100	3720
255	420	430	395	385	365	580	520	490	420	-
80	100	100	100	100	100	150	140	125	257	-
65	100	100	100	100	100	150	140	125	257	-
95	240	240	185	185	185	370	290	290	290	-
220	385	385	335	335	335	560	460	470	470	120
198	385	385	335	335	335	560	460	470	470	320
8-φ14	16-φ18	16-φ18	12-φ18	12-φ18	16-φ18	16-φ18	18-φ18	16-φ18	18-φ18	-
8-M12	16-φ18	16-φ18	12-φ18	12-φ18	16-φ18	16-φ18	18-φ18	16-φ18	18-φ18	-
2.0	1.6	1.6	1.8	1.6	1.6	1.6	2.0	1.3	1.6	2.0
3	5	5	5	5	5	5	5	5	5	5
3.5	2.6	2.6	2.6	2.6	2.6	2.6	3.6	2.6	2.6	2.8
10.0	15.6	16.0	12.0	16.0	16.0	16.0	25.0	49.0	25.0	37.2
IEC62155										

POWER SYSTEM



9.2 Hollow insulators for Transformer bushings

Rated voltage		kV	550	252	252	252	330
Figure No.	9.2.1						
Shed No. big/small	61/60 26/25 28/27 21/20 33/32						
Creepage distance		mm	15530	6700	7950	6300	9763
Main dimensions	H	mm	4250	2200	2200	2435	2530
	D	mm	552	410	430	755	390
	d1	mm	332	220	220	525	200
	d2	mm	420	355	355	665	-
	d3	mm	332	220	220	525	200
d4	mm	420	355	355	665	-	
Applicable Standard	IEC62155						



▪ FIG 9.2.1

▪ FIG 9.2.2

▪ FIG 9.2.3

9.2 Hollow insulators for Transformer bushings

220	126	66	132	132	132	132	126	126	66
9.2.2				9.2.3					
27/26	15/14	8/7	13/13	13/12	13/12	13/13	14/13	14/13	8/8
7788	4050	2250	3360	3270	3848	3978	3245	3906	2250
2130	1150	660	1180	1280	1280	1180	1330	1340	858
385	310	820	406	400	430	430	305	360	310
200	175	130	220	220	220	220	135	135	110
-	225	170	270	280	280	270	175	175	160
200	175	130	220	220	220	220	135	135	110
-	225	170	280	283	283	280	188	213	163
IEC62155									

Hollow insulators

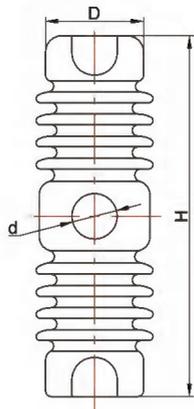
POWER SYSTEM



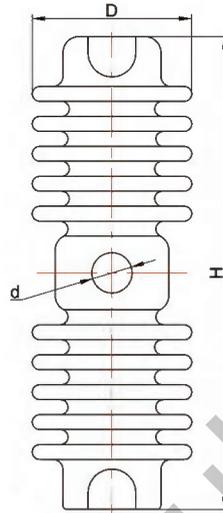
■ FIG 9.3.1

9.3 Hollow insulators for capacitance transformers

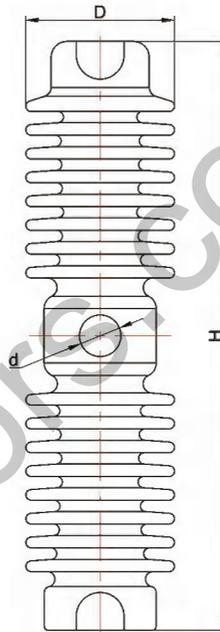
Rated voltage	kV	330	500	550	750
Figure No.		9.3.1			
Shed No. big/small		43/42	64/63	57/56	96/95
Cantilever failing load	kN.m	58	65	107	127.2
Creepage distance	mm	13800	20460	18755	29760
Main dimensions	H	3869± 4	5115± 6	5110± 6	8100± 20
	d1	195± 5	270± 3	195± 5	230± 6
	d2	305± 4	405± 3	340± 5	510± 10/-15
Routine cantilever failing load	kN.m	40.6	45.5	66.4	89.1
Routine power frequency withstand voltage	kV	50.5	50.5	50.5	60
Routine withstand load of inner pressure	Mpa	0.8	1	0.8	0.8
Failing load of inner pressure	Mpa	1.6	2	1.6	2.4
Applicable Standard		IEC62155			



▪ FIG 10.1



▪ FIG 10.2



▪ FIG 10.3

Fuse cutout insulators

10 Fuse cutout insulators

Voltage class		kV	15	24/27	24/27	24/27	25/27	33/36	33/36
Figure No.			10.1	10.2			10.3		
Shed No.			8	10	10	10	10	16	16
Creepage distance		mm	250	450	460	500	550	600	660
Main dimensions	H	mm	286	376	375	365	375	467	467
	D	mm	90	127	129	150	155	121	130
	d	mm	32	32	32	35	35	35	32
Cantilever strength		kN	19.2	17	17	10	10	6.8/10	6.8/10
Weight		kg	3.5	5.8	6.0	6.5	6.9	7.5	7.5

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