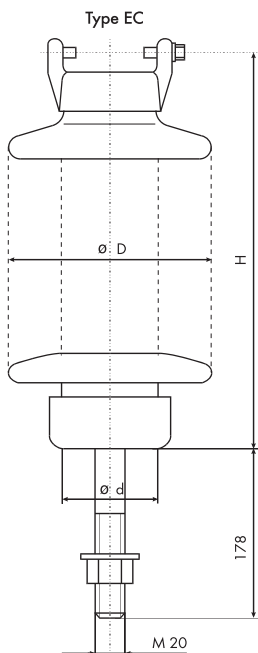
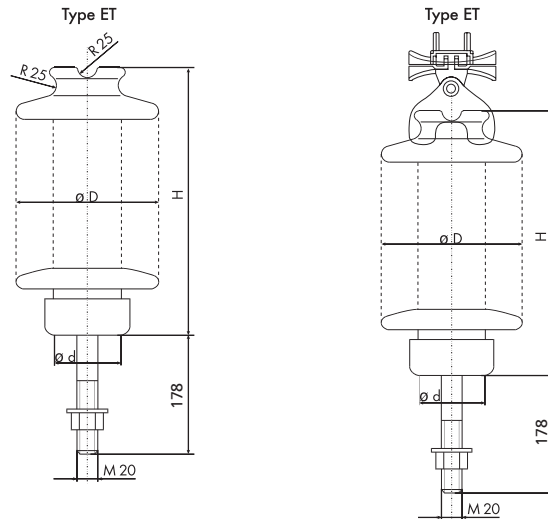


Medium voltage insulator

Line post insulators type R-ET						
Commercial designation	LPI 12 L ET	LPI 17,5 L ET	LPI 24 N ET <sup>1)</sup>	LPI 24 L ET/5 <sup>1)2)</sup>	LPI 24 L ET/6 <sup>1)2)</sup>	LPI 38 L ET <sup>1)</sup>
Designation acc. to IEC 720	R 8 ET 75 L	R 8 ET 95 L	R 12,5 ET 125 N	R 12,5 ET 125 L	R 12,5 ET 125 L	R 12,5 ET 170 L
Rated insulation (kV)	12	17,5	24	24	24	36
Minimum bending failing load (kN)	8	8	12,5	12,5	12,5	12,5
Lightning impulse withstand voltage (kV)	75	95	125	125	125	170
Wet power frequency withstand voltage (kV)	28	38	50	50	50	70
Minimum nominal creepage distance (mm)	250	350	400	530	530	720
Dimensions (mm)	H ±8%	190	222	305	305	370
	max D	140	145	160	170	180
	min d	90	90	100	100	110
No. of ribs	3	4	5	5	6	6
Glaze colour	BROWN - RAL 8011, 8016, 8017					
Testing standard	IEC 383					

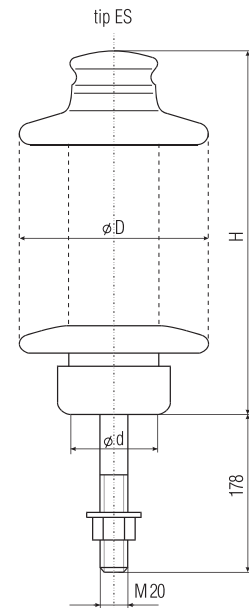
- 1) LPI 24 and 38 insulators are available with or without a clamp.
- 2) R 12,5 ET 125 L insulator made to client requirement with either 5 or 6 ribs.



Line post insulators type R-EC			
Commercial designation	LPI 24 N NG	LPI 24 L NG	LPI 38 L NG
Designation acc. to IEC 720	R 12,5 EC 125 N	R 12,5 EC 125 L	R 12,5 EC 170 L
Rated insulation (kV)	24	24	36
Minimum bending failing load (kN)	12,5	12,5	12,5
Lightning impulse withstand voltage (kV)	125	125	170
Wet power frequency withstand voltage (kV)	50	50	70
Minimum nominal creepage distance (mm)	400	530	720
Dimensions (mm)	H ±8%	350	420
	max D	160	180
	min d	100	110
Glaze colour	brown – RAL 8011, 8016, 8017		
Testing standard	IEC 383		

**Line post insulators type R-ES**

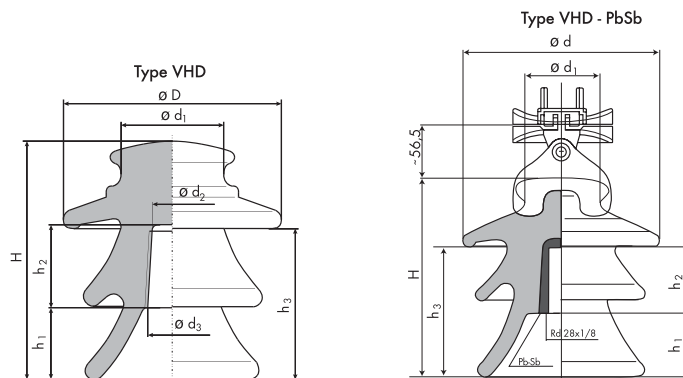
Commercial designation	LPI 24 N ES	LPI 38 L ES
Designation acc. to IEC 720	R 12.5 ES 125 N	R 12.5 ES 170 L
Rated voltage (kV)	24	36
Minimum bending failing load (kN)	12.5	12.5
Lightning impulse withstand voltage (kV)	125	170
Wet power frequency withstand voltage (kV)	50	70
Minimum nominal creepage distance (mm)	400	720
Dimensions (mm)	H ±8%	305
	max D	160
	min d	100
Glaze colour	Brown – RAL 8011, 8016, 8017	
Testing standard	IEC 383	

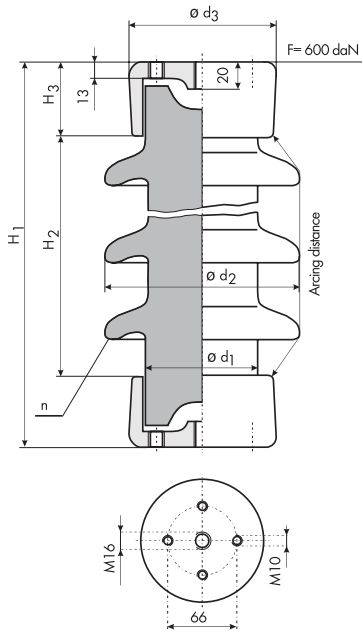

**Pin insulators type VHD and VHD-PbSb**

Designation acc. to DIN 48004	VHD 10	VHD 15	VHD 20	VHD 20-PbSb	VHD 25*	VHD 25*-PbSb
Rated insulation (kV)	12	17.5	24	24	24	24
Low frequency withstand voltage (kV)	dry	55	60	80	80	80
	wet	40	45	65	65	65
Lightning impulse withstand voltage dry (kV)	pos	110	110	150	150	150
	neg	145	145	190	190	190
Puncture voltage (kV)	120	120	150	150	150	150
Minimum nominal creepage distance (mm)	195	280	384	384	435	435
Breaking load (kN)	12.5	12.5	15	15	15	15
Dimensions (mm)	H	130	150	185	215	215
	h <sub>1</sub>	32	36	57	57	70
	h <sub>2</sub>	55	60	65	65	80
	h <sub>3</sub>	82	95	123	123	150
	D	135	150	175	175	205
	d <sub>1</sub>	70	78	83 <sup>+4</sup>	83 <sup>+4</sup>	83 <sup>+4</sup>
	d <sub>2</sub>	28 <sup>+3</sup>	28 <sup>+3</sup>	31 <sup>+4</sup>	-	32 <sup>+4</sup>
	d <sub>3</sub>	31 <sup>+4</sup>	31 <sup>+4</sup>	35 <sup>+4</sup>	-	37 <sup>+4</sup>
Glaze colour	brown – RAL 8011, 8016, 8017					
Testing standard	IEC 383					

\*VHD 25\* insulator made to client's requirements.

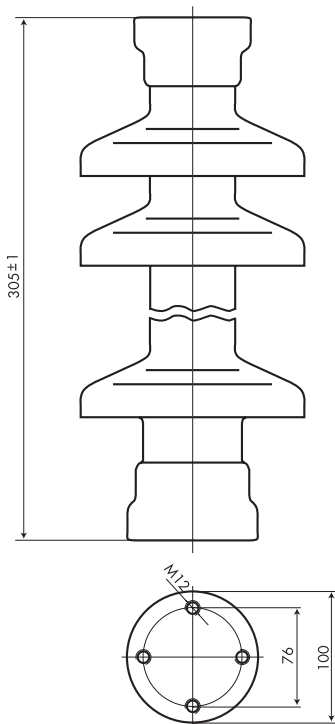
VHD PbSb insulator with or without a clamp.





**Post insulator for outdoor mounting type FSAR**

Designation acc. to DIN 43632	FSAR 10	FSAR 20	FSAR 30
Rated insulation (kV)	10	20	30
Minimum bending failing load (kN)	6	6	6
Lightning impulse withstand voltage (kV)	75	125	170
Wet power frequency withstand voltage (kV)	28	50	70
Arcing distance (mm)	180	260	360
Dimensions (mm)	d <sub>1</sub>	80	100
	d <sub>2</sub>	140	160
	d <sub>3</sub>	105	128
	H <sub>1</sub>	285	490
	H <sub>2</sub>	165	344
H <sub>3</sub>	60	73	
Number of ribs - n	3	4	5
Glaze colour	Brown RAL 8011, 8016, 8017		
Test standard	IEC 168		



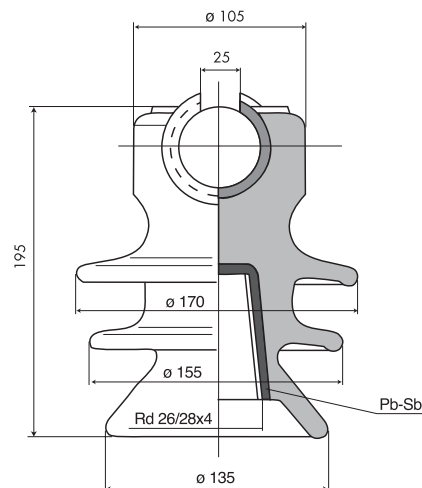
**Post insulator for outdoor mounting type C**

Designation acc. to IEC 273	C4-125 Class I	**C4-125 Class II
Commercial designation		
Rated insulation (kV)	24	24
Wet power frequency withstand voltage (kV)	50	50
Withstand lightning impulse voltage (kV)	125	125
Nominal creepage distance (mm)	380	520
Mechanical failing load (kN)	Bending (kN)	4
	Torsion (kNm)	0.8
Glaze colour	Brown RAL 8011, 8016, 8017	
Test standard	IEC 168 and IEC 383	

\*\* Insulator made according to customer specifications (ceramic and metal part).

**Line pin insulators type EKO – 24**

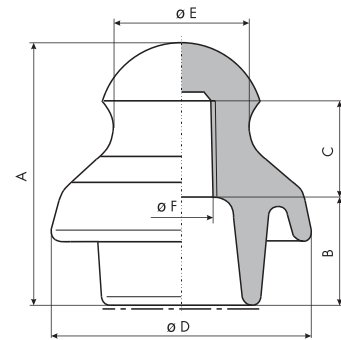
Commercial designation	EKO – 24 PbSb
Rated insulation (kV)	24
Cross-section semi insulated Al conductor	35 - 70 mm <sup>2</sup>
Wet power frequency withstand voltage (kV)	50
Lightning impulse withstand voltage (kV)	125
Nominal creepage distance (mm)	384
Breaking load (kN)	12.5
Glaze colour	Brown – RAL 8011, 8016, 8017
Test standard	IEC 383



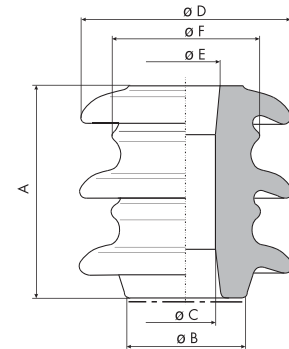
## Low voltage insulator

**Pin insulators type N**

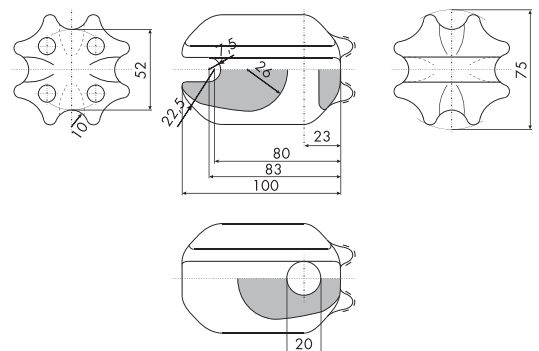
Designation acc. to DIN 48150	-	N95
Designation acc. to IS ETI	N-80	N-95
Rated insulation (kV)	1	
Minimum bending failing load (kN)	12	18
Dimensions (mm)	A	85
	B	38
	C	31
	D	80
	E	42
	F	21
Glaze colour	Brown – RAL 8011, 8016, 8017 or white	
Test standard	VDE 0446	


**Shackle insulators type S**

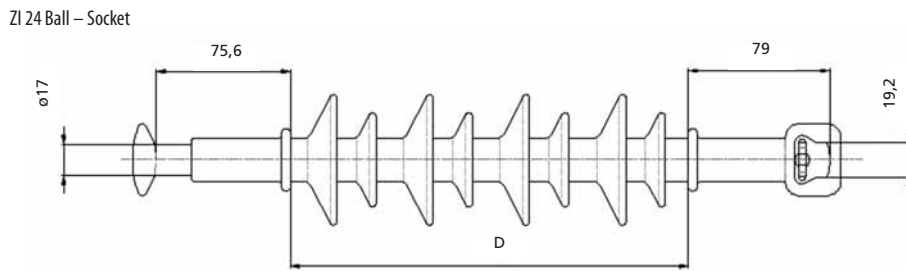
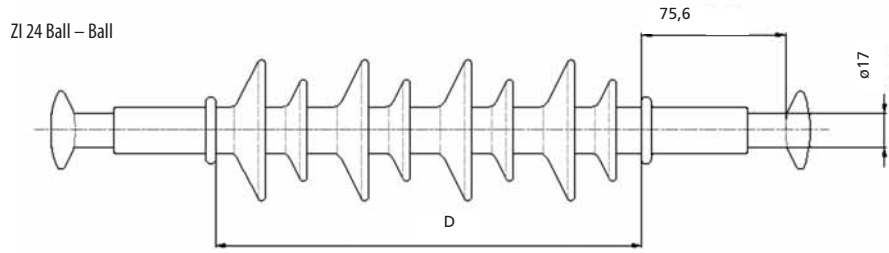
Commercial designation	Z-80	Z-115
Designation acc. to DIN 48154	S-80	S-115
Rated insulation (kV)	1	1
Minimum bending failing load (kN)	12.5	20
Dimensions (mm)	A	80
	B	45
	C	22
	D	80
	E	26
	F	57
Glaze colour	Brown – RAL 8011, 8016, 8017	
Test standard	VDE 0446	


**Strain insulator type E**

Designation acc. to DIN 48156	E-100
Rated insulation (V)	500
Minimum bending failing load (kN)	62
Glaze colour	Brown – RAL 8011, 8016, 8017
Test standard	VDE 0446



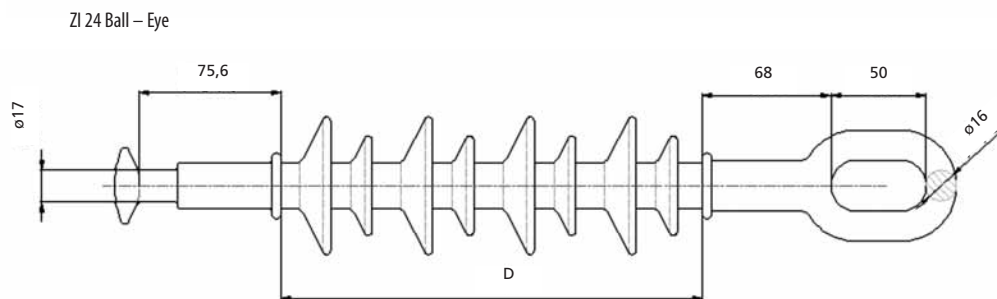
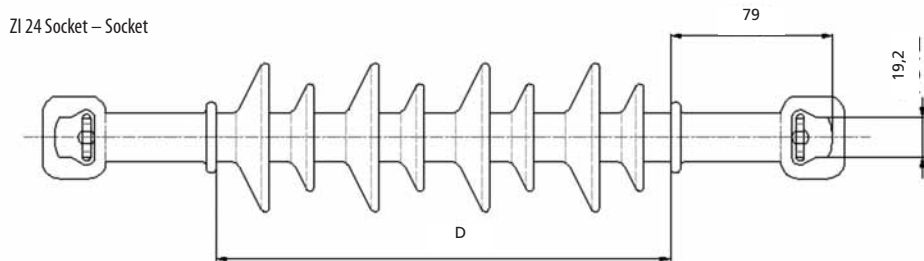
Tension insulator



Electrical and mechanical characteristics

type	length D (mm)	min. surface insulation distance (mm)	max. tension load (KN)	longitudinal atmospheric impulse voltage		weight (kg)	colour
				1.2/50 $\mu$ s (KV)	industrial frequency constant voltage in the rain 50Hz (KV)		
N	240	520	70	125	50	1.0	gray
L	340	765	70	170	70	1.1	gray

The insulators are manufactured in accordance with the standard IEC 61 109

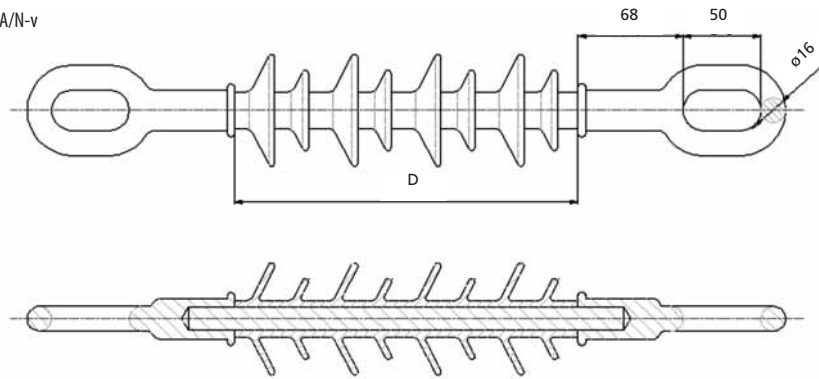


Electrical and mechanical characteristics

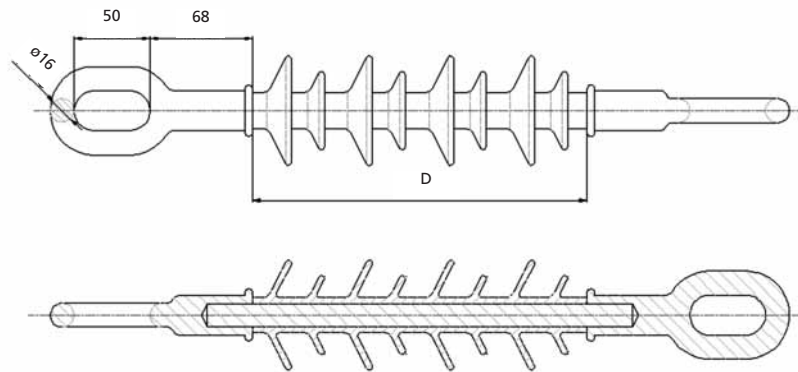
type	length D (mm)	min. surface insulation distance (mm)	max. tension load (KN)	longitudinal atmospheric impulse voltage		weight (kg)	colour
				1.2/50 $\mu$ s (KV)	industrial frequency constant voltage in the rain 50Hz (KV)		
N	240	520	70	125	50	1.0	gray
L	340	765	70	170	70	1.1	gray

The insulators are manufactured in accordance with the standard IEC 61 109

ZI 24 AA/N-v



ZI 24 AA/L-90



**Electrical and mechanical characteristics**

type	length D (mm)	min. surface insulation distance (mm)	max. tension load (KN)	longitudinal atmospheric impulse voltage		weight (kg)	colour
				1.2/50 $\mu$ s (KV)	industrial frequency constant voltage in the rain 50Hz (KV)		
N	240	520	70	125	50	1.0	gray
L	340	765	70	170	70	1.1	gray

The insulators are manufactured in accordance with the standard IEC 61 109

Note:

v - parallel clamping

90 - right-angled clamping