COMPOSITE POST & POLYMER SUSPENSION INSULATORS

FRP Core · HTV Silicone Rubber · Post IEC 61952 (12–252 kV) · Suspension IEC 61109 (35–500 kV)

PRODUCT OVERVIEW

Vuulcan composite insulators combine an ECR glass FRP rod core with a high-temperature vulcanised (HTV) silicone rubber housing. Post insulators to IEC 61952 cover 12–252 kV with bending loads 4–16 kN for substation and distribution structures. Polymer suspension insulators to IEC 61109 cover 35–500 kV at SML 70–300 kN with hydraulically crimped forged-steel end-fittings for transmission lines. Both series are 60% lighter than equivalent porcelain — critical for reducing tower loads and installation labour.

KEY FEATURES

- ✓ ECR glass FRP rod — zero puncture risk, high SML retention
- ✓ HTV silicone rubber — permanent hydrophobicity, no washing
- ✓ 60% lighter than equivalent porcelain insulators
- ✓ Post: 4 / 8 / 12.5 / 16 kN bending · Custom flanges available
- ✓ Suspension: SML 70–300 kN · Ball/Socket, Clevis, Eye, Tongue
- ✓ Corona rings supplied for 220 kV and above
- ✓ DNV ISO 9001 · CRCC · KEMA type tested

COMPOSITE POST INSULATORS — IEC 61952 (12 KV – 252 KV)

VOLTAGE (KV)	BENDING (KN)	HEIGHT (MM)	CREEPAGE (MM)	CREEPAGE RATIO (MM/KV)	NOTES
12	4	215	385	32.1	Distribution post
24	8	350	385	16.0	Medium voltage
40.5	8	445	650	16.0	Sub-transmission
72.5	4	770	1,160	16.0	Sub-transmission
126	4 / 8 / 12.5	1,220	2,015	16.0	3 bending options
252	8 / 12.5 / 16	2,300	4,030	16.0	3 bending options

Custom bending load and 380 kV+ available with GA drawing · Flange dimensions and bolt pattern configurable per project · Standard pollution ratio 16 mm/kV; heavy pollution creepage on request

MATERIAL SPECIFICATION — BOTH SERIES

COMPONENT	MATERIAL	SPECIFICATION
Core Rod	ECR Glass FRP	Pultruded ECR glass fibre / epoxy resin. IEC 61109 Annex B compliant. Acid resistant. 100% hydrolysis tested.
Housing	HTV Silicone Rubber	High-temperature vulcanised (HTV) dimethyl silicone. Permanent hydrophobicity. UV stable. IEC 60587 Track & Erosion Class 1A 4.5.
End Fittings	Forged Steel, HDG	Hydraulically crimped. Ball/Socket · Clevis · Eye · Tongue (specify). Zinc ≥ 86 µm per ISO 1461. Pull-out tested 100%.
Corona Ring	Aluminium Alloy	Supplied assembled for 220 kV and above. Sized per conductor geometry and tower configuration.

POLYMER SUSPENSION INSULATORS — IEC 61109 (35 KV – 500 KV)

VOLTAGE (KV)	SML (KN)	CREEPAGE (MM)	COUPLING L. (MM)	WT. (KG)	CORONA RING	NOTES
110	70	2,670	1,182	4.1	—	Standard creepage
110	70	2,930	1,282	4.3	—	Heavy pollution
220	100	4,840	2,122	8.2	Yes	Standard creepage
220	100	5,950	2,122	8.8	Yes	Heavy pollution
345	120	8,390	2,822	11.5	Yes	—
400	120	10,400	3,522	14.5	Yes	—
500	120	11,980	4,322	15.3	Yes	—
400	210	9,270	3,620	24.7	Yes	High SML
500	300	11,980	4,350	43.3	Yes	Max SML standard

End-fitting type must be specified at order: Ball/Socket · Clevis & Tongue · Eye · Custom SML and creepage available · Corona rings assembled and included for 220 kV+

Weight Advantage: A 220 kV polymer suspension insulator at 8.2 kg replaces a traditional disc string of approximately 22 kg — **60% weight reduction** reduces tower structural load and cuts installation time significantly.

ROUTINE TESTS — PER PRODUCTION BATCH

1	Visual & dimensional inspection (100%)	IEC 61109 §9	**2**	Mechanical load test at rated SML / bending	IEC 61952 §8
3	Power frequency voltage test (dry, 1 min)	IEC 61109 §9	**4**	Hydraulic crimp pull-out test (end-fitting samples)	IEC 61109 §9
5	Hydrolysis resistance test — FRP core	IEC 61109 Ann.B	**6**	Track & erosion resistance (HTV silicone housing)	IEC 60587

APPLICABLE STANDARDS & CERTIFICATIONS

POST DESIGN	SUSPENSION DESIGN	QUALITY SYSTEM
IEC 61952	IEC 61109	DNV ISO 9001:2015
POLLUTION CLASS	**TRACK & EROSION**	**GALVANIZING**
IEC 60815 C/D/E	IEC 60587 Class 1A 4.5	ISO 1461 ≥ 86 µm

IEC 61952 · IEC 61109 · IEC 60815 · IEC 60587 · DNV ISO 9001 · CRCC · KEMA

ORDERING INFORMATION

Post Insulator: `VCP – 126kV – 8kN – IEC61952` Suspension: `VCS – 220kV – SML100 – B/S – IEC61109`

VCP = Vuulcan Composite Post · **VCS** = Vuulcan Composite Suspension · **kN** = Bending / SML rating · **B/S** = End-fitting: Ball/Socket, Clevis, Eye, Tongue · **380 kV+** = Custom GA drawing required

Custom voltage classes, SML ratings, creepage levels, and flange configurations available. Type-test reports per IEC 61952 / IEC 61109 for standard configurations. Third-party inspection (SGS, BV, Intertek) welcome at any production stage. Contact: **inquiry@vuulcaninsulators.com** · vuulcaninsulators.com