



TEST REPORT

24kV/12.5kN

COMPOSITE PIN INSULATOR

Manufacturer: ZHEJIANG HAIVO ELECTRICAL CO., LTD

Product model: FPQ-24KV/12.5KN

Drawing: 1HZ.Q42.1015

Batch number: 2025030004

Production quantity: 3645 pcs

Address: Chongshi Industrial Zone, Panshi, Yueqing, Wenzhou, Zhejiang, China
325603

1. **CUSTOMER: Premier Energy Distribution – POLEV Business**

2. **PROJECT: IZOLATOR POLIMERIC FPQ-24kV-12.5kN**

3. **SAMPLE**

1) Name: 24kV/12.5kN Composite pin Insulator

2) Color: Grey

3) Quantity used in Testing:

(Sample Size : E1 =8 Nos, E2 =4 Nos as per IEC61109 :2008)

4. **NORMATIVE DOCUMENTS**

IEC 61952-2008, SP.538.DE, 1st edition (customer specification)

5. **TEST PERFORMED**

Acceptance Factory Tests for 24kV/12.5kN Composite pin Insulator

6. **TEST DATE: 18th April,2025**

7. **CONCLUSION**

All test results conform to the requirements of standard IEC 61952-2008 and the technical requirements of product drawings.



I. Routine Test

Mechanical Routine Test and Visual Examination

The following routine tests were carried out as shown in table 1.

Table 1: The results of Routine Test

Routine Tests Item	Standard Value or Standard	Verified Value
Verification of Identification Mark	1. Name of manufacturer or trademark	HAIVOL
	2. month and year of manufacturing	04/2025
	3. production batch number	2025030004
	4. products model	FPQ-24kV/12.5kN
	5. Pollution category	III
	6. Standard	IEC61952
	7. Country of manufacturing	Made in China
Visual Examination	IEC 61952-2008	Passed
Conclusion	Meet the requirements	

II. Sample Tests Records

Test Records

Type: FPQ-24KV/12.5KN (Pin)

Rod Diameter: $\Phi 36\text{mm}$

1. Verification of Dimension

12 pcs Samples were verified as the dimensions given in the relevant drawing approved by the client and the results are as shown in table 1:

Table 1: The results of verification of dimension unit: mm

Sample No.	Structural height	Insulation height	Dry Arc Distance	Umbrella diameter	Creepage Distance	rod diameter over insulation	Marking
1-8 E1	290	183	231	146.05/94.12	576	41.72	✓
2-8 E1	292	183	231	146.10/94.12	580	41.95	✓
3-8 E1	291	183	232	146.07/94.05	577	41.98	✓
4-8 E1	291	182	232	146.03/94.09	575	41.93	✓
5-8 E1	290	183	231	146.08/94.05	578	42.05	✓
6-8 E1	291	184	231	146.05/94.04	574	41.91	✓
7-8 E1	291	183	232	146.06/94.09	575	41.97	✓
8-8 E1	291	183	231	146.13/94.11	577	42.03	✓
1-4 E2	291	184	231	146.05/94.12	576	42.05	✓
2-4 E2	291	183	231	146.11/94.05	579	42.09	✓
3-4 E2	291	183	232	146.03/94.01	577	41.92	✓
4-4 E2	290	184	232	146.05/94.07	577	41.95	✓
Standard Value	295±10	184±5	231	146/94	> 530	42	 FPQ-24KV/12.5kN III IEC 61952 04/2025 2025030004 Fabricat in China
Conclusion	Meet the requirements						

2. Galvanizing Test

2.1 Coating thickness magnetic method

12 pcs Samples were subjected to the test according to IEC 61952-2008 and the test results are as shown in table 2:

Table 2: The results of Galvanizing test

Unit: μm

Sample No.		Individual					Individual Average	All Average
		1	2	3	4	5		
1-8 E1	Top Fitting	125	128	122	158	155	137.6	117.9
	Bottom Fitting	106	93	111	96	93	99.8	
2-8 E1	Top Fitting	112	125	130	114	125	121.2	112.7
	Bottom Fitting	113	115	102	98	93	104.2	
3-8 E1	Top Fitting	115	124	138	134	127	127.6	124.1
	Bottom Fitting	105	115	127	124	132	120.6	
4-8 E1	Top Fitting	107	132	150	124	127	128	132.6
	Bottom Fitting	134	150	123	134	145	137.2	
5-8 E1	Top Fitting	135	144	123	132	105	127.8	113.4
	Bottom Fitting	98	93	105	92	107	99	
6-8 E1	Top Fitting	135	125	134	120	109	124	115.5
	Bottom Fitting	122	98	130	95	90	107	
7-8 E1	Top Fitting	124	151	133	125	121	130.8	120.3
	Bottom Fitting	113	124	105	109	98	109.8	
8-8 E1	Top Fitting	114	132	135	144	125	130	116.1
	Bottom Fitting	107	98	92	111	103	102.2	
1-4 E2	Top Fitting	124	132	115	142	138	130.2	114.5
	Bottom Fitting	102	98	92	95	107	98.8	
2-4 E2	Top Fitting	145	138	152	124	115	134.8	122.9
	Bottom Fitting	105	98	113	115	124	111	
3-4 E2	Top Fitting	103	124	134	112	109	116.4	113.5
	Bottom Fitting	112	121	103	114	103	110.6	
4-4 E2	Top Fitting	105	124	115	103	125	114.4	112.2
	Bottom Fitting	105	92	106	114	98	103	
	Bottom Fitting	125	132	105	110	124	119.2	

3.Verification of the Specified Cantilever Load (SCL)

12 pcs samples were subjected according to clause 12.4.1 of IEC61952. The cantilever load shall be applied to the insulator at the conductor position, in the specified direction, and perpendicular to the core of the insulator. The load shall be increased rapidly but smoothly from zero to 75 % of the SCL and then shall be gradually increased in a time between 30 s and 90 s until the SCL is reached. If the SCL is reached in less than 90 s, the load shall be maintained for the remainder of the 90 s. The insulator shall be regarded as passed if the SCL can be maintained for the required time and the test results are as shown in table 3:

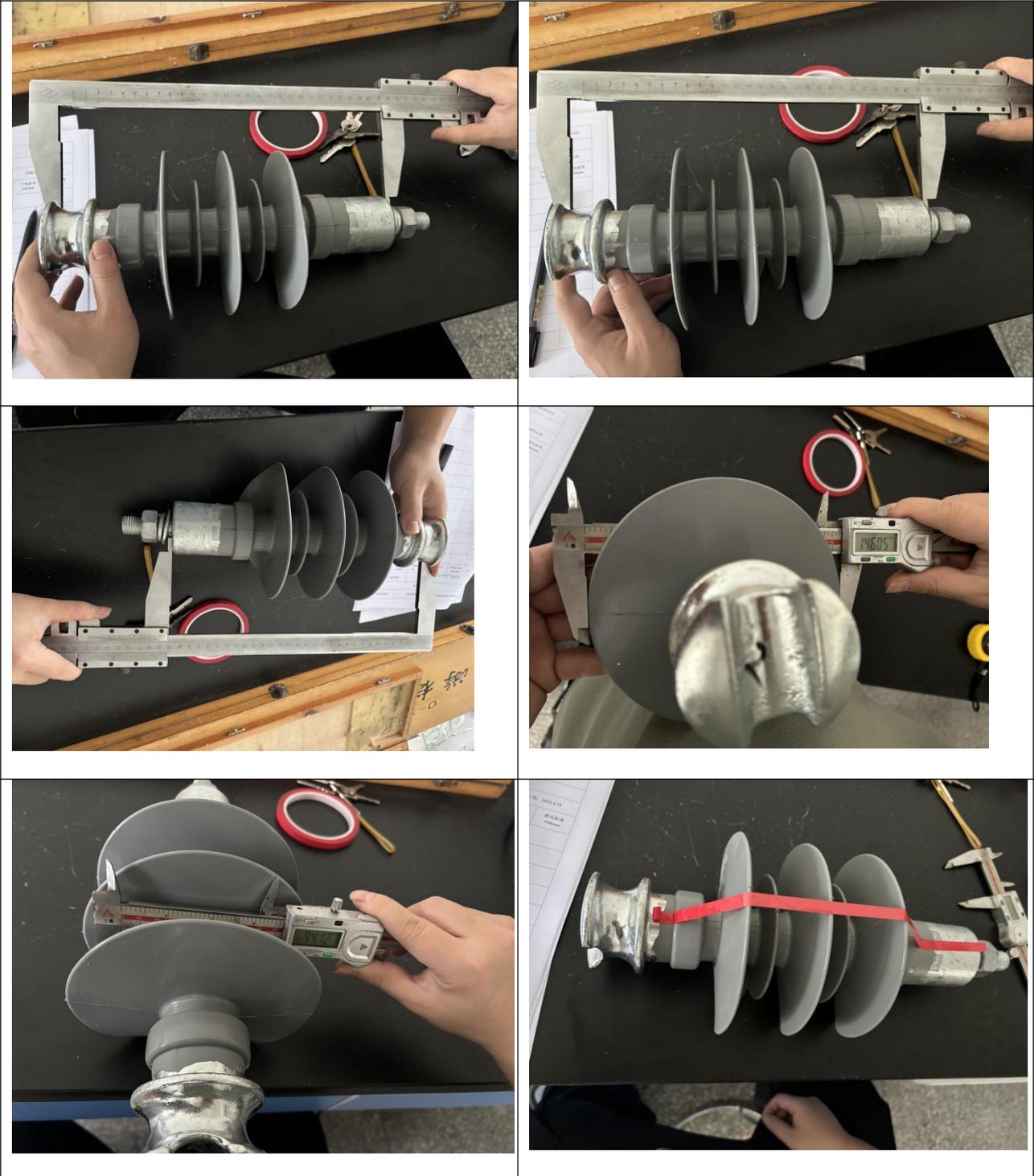
Table 3: The result of Verification of the Specified Cantilever Load (SCL)

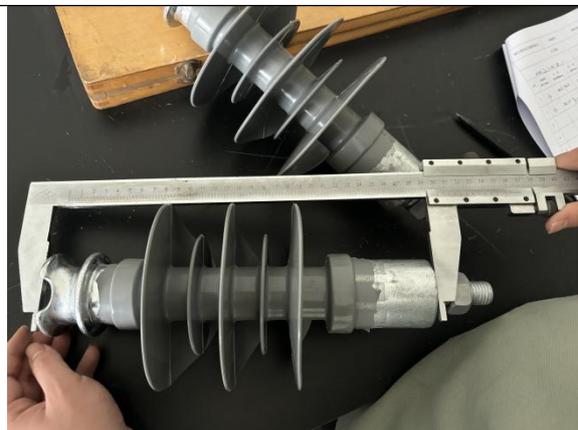
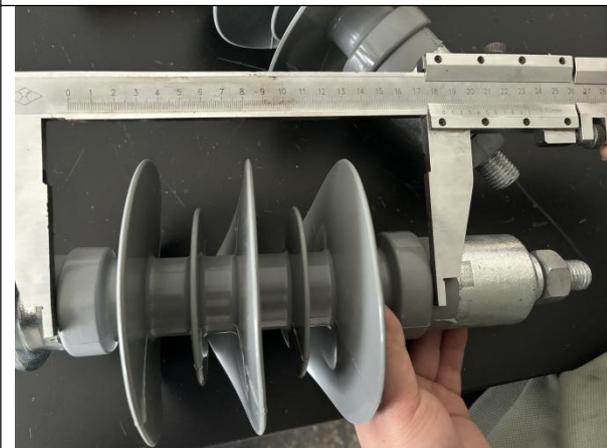
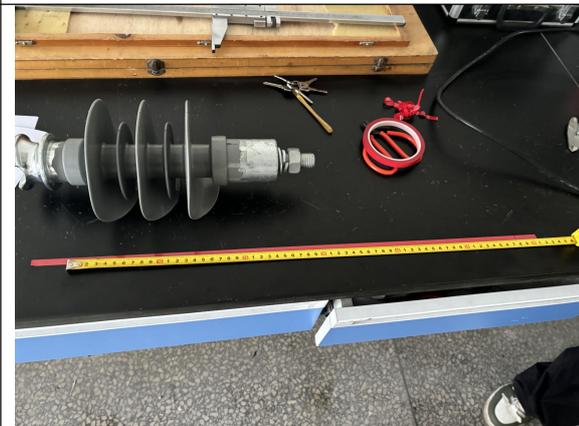
Sample No.	Specified Cantilever Load (kN)	Withstand time (second)	Result
1-8 E1	12.5	90	pass
2-8 E1	12.5	90	pass
3-8 E1	12.5	90	pass
4-8 E1	12.5	90	pass
5-8 E1	12.5	90	pass
6-8 E1	12.5	90	pass
7-8 E1	12.5	90	pass
8-8 E1	12.5	90	pass
Standard Value	12.5	90	pass
Conclusion	PASS		

III Measuring devices used for the tests

Annex A: The photos of the tests carried out

A1. Verification of Dimension and Marking





A2. Galvanizing Test





A3. Verification of the Specified Mechanical Load

