



Quality Management System Certificate

DALIAN HIVOLT POWER SYSTEM CO.,LTD.

Registered/Production/Business/Office Address: No.2804, 75 Huili Street, Ganjingzi District, Dalian City, China

Quality Management System complies with
GB/T 19001-2016/ISO 9001:2015 Requirements

The certificate is valid for the following scope:

Manufacture, Design, R&D and Marketing of Porcelain insulators, Composite insulators and Toughened Glass insulators

Certificate No.: 05321Q30790R1S

Date of Issuing Initial Certificate: 25-10-2018

Date of Issuing This Certificate: 31-10-2021

Certificate Expiry Date: 31-10-2021~24-10-2024

Last Certification Cycle Expiry Date: 24-10-2021

Recertification Audit Date: 10-10-2021~11-10-2021

Unified Social Credit Code of the Certified Organization: 91210211588065306E



The validity of this certificate is subject to the scan result of the QR code
This certificate information can be found on the official website of the Certification and Accreditation Administration of the People's Republic of China(www.cnca.gov.cn)



中国认可
国际互认
管理体系
MANAGEMENT SYSTEM
CNAS C053-M

General Manager:

Zhaotang

Registered Address: Unit 1101, Unit 2, 10/F, Block 2-1, No. 82, East 4th Ring Middle Road, Chaoyang District, Beijing.

Mailing Address: 11th Floor, Block B2, Jinchang'an Building, No. 82 East Fourth Ring Middle Road, Chaoyang District, Beijing.

Tel: 010-87531300 P.C.: 100124 Website: <http://www.ngv.org.cn>



China National Accreditation Service for Conformity Assessment
LABORATORY ACCREDITATION CERTIFICATE
(Registration No. CNAS L2233)

XFan High Voltage Apparatus Research Institute Co., Ltd.

(Legal Entity: XFan High Voltage Apparatus Research Institute Co., Ltd.)

No.18, North Section of Xinchuan, XFan, Shaanxi, China

is accredited in accordance with ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories(CNAS-GL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence to undertake the service described in the schedule attached to this certificate.

The scope of accreditation is detailed in the attached schedule bearing the same registration number as above. The schedule forms an integral part of this certificate.

Effective Date: 2014-06-26

Expiry Date: 2014-07-26

Signed on behalf of China National Accreditation Service for Conformity Assessment

China National Accreditation Service for Conformity Assessment(CNAS) is authorized by Certification and Accreditation Administration of the People's Republic of China(CNCA) to operate the national accreditation schemes for conformity assessment. CNAS is a signatory of International Laboratory Accreditation Cooperation Mutual Recognition Arrangement (ILAC MRA) and the Asia Pacific Laboratory Accreditation Cooperation Mutual Recognition Arrangement (APLAC MRA). The validity of this certificate can be checked on CNAS website <http://www.cnas.org.cn/english/Recognition/index.shtml>



Dalian Hivolt Power System Co., Ltd

Routine & Sample test report

Report No. : HV23085HU03

Product Name: Pin Insulator ShF-20G-13-1

Batch Qty.:7050pcs

Date of Report: 21.08. 2023



NOTE:

Product Name: Pin Insulator ShF-20G-13-1

Drawing No.: HP037125.1

Batch Quantity: 7050pcs

Test Bases: IEC60383-1 & Drawing

ROUTINE TEST ITEMS

1. Visual Inspection

The visual inspection conducted on of completed batch quantity, and sorted out unqualified units. the balance quantity was conformed with requirements of standard.

2. Routine flashover test

We apply power frequency voltage on all batch pin insulators one by one until flashover appeared. and we sorted out unqualified units.

And balance qualified units will be packed and conduct further sample test.

3. Conclusion

The routine test for Pin type porcelain insulator ShF-20G-13-1 in conformity with the related IEC standard and drawing requirements. The qualified units are ready for shipment

The tests were carried out by:

Test report was prepared by:





NOTE :

Product Name : Pin Insulator ShF-20G-13-1

Drawing No. : HP037125.1

Batch Quantity : 7050pcs

Test Bases: IEC60383-1

According to IEC 60383-1 standard , **E1=12 , E2=6**

Totally 18 pcs samples selected randomly by the inspector.

SAMPLE TEST ITEMS

1. Visual Inspection

The visual inspection of 18pcs samples was conformed with requirements of standard.

2. Dimension and creepage distance check Qty.=E2=6

Item	Nominal value (mm)	Measuring value (mm)					
		13#	14#	15#	16#	17#	18#
Total height	185 ± 5	186.7	186.5	186.6	186.7	185.2	187.7
Diameter of disc	175 ± 5	175.3	176.5	176.2	176.5	176.8	176.9
Dia. on side-wire groove	104 ± 3	104.0	105.4	104.7	104.3	103.7	104.5
The width of the Neck	82±3	80.9	81.9	82.7	82.8	83.3	82.6
Radius of the top-wire groove	16	√	√	√	√	√	√
Radius of the side-wire groove	10	√	√	√	√	√	√
Leakage distance	400	412	410	413	411	410	411

Conformed with standard and drawing.

3. Temperature Cycle Test Qty.=E1+E2=18

18 Samples deep into the 98℃ hot water and keep 15 minutes and shift into 28 ℃ cold water keep 15 minutes, The temperature difference is 70℃ and then repeat the cycle 3 times . No porcelain creak happened. After that, put all samples in flashover test for 1 minutes , no puncture observed , the test passed.



4. Cantilever-strength test: Qty.=E1=12

Sample No.	Cantilever-strength (kN)	Average value (kN)
1#	15 (porcelain not failed)	Min.15 without failure
2#	15 (porcelain not failed)	
3#	15.5 (porcelain not failed)	
4#	15 (porcelain not failed)	
5#	15 (porcelain not failed)	
6#	15.5 (porcelain not failed)	
7#	15 (porcelain not failed)	
8#	15 (porcelain not failed)	
9#	15 (porcelain not failed)	
10#	15.5 (porcelain not failed)	
11#	15 (porcelain not failed)	
12#	15 (porcelain not failed)	
Standard value	≥13	≥13

Conformed with standard.

5. Puncture withstand test Qty.=E2=6

Sample No.	Puncture value kV	Failing condition	Average value kV
13#	180	Punctured at neck	178.3
14#	175	Punctured at neck	
15#	180	Punctured at neck	
16#	180	Punctured at neck	
17#	175	Punctured at neck	
18#	180	Punctured at neck	
Standard value	X ≥ L(160KV)		

Conformed with standard.

6. Porosity test Qty.=E1=12

Ceramic fragments from the specimens after above item 1# -12# are immersed in a 1% alcohol solution of fuchsin. Under a pressure of 30MPa for 6h. No fragments had revealed any dye penetration. All specimens are successfully passed.



7. Conclusion

The sample test for Pin type porcelain insulator ShF-20G-13-1 with batch No.: HV23085HU03 are in conformity with the related IEC 60383-1 standard and drawing requirements. The tests were passed successfully.

The tests were carried out by:

Test report was prepared by:

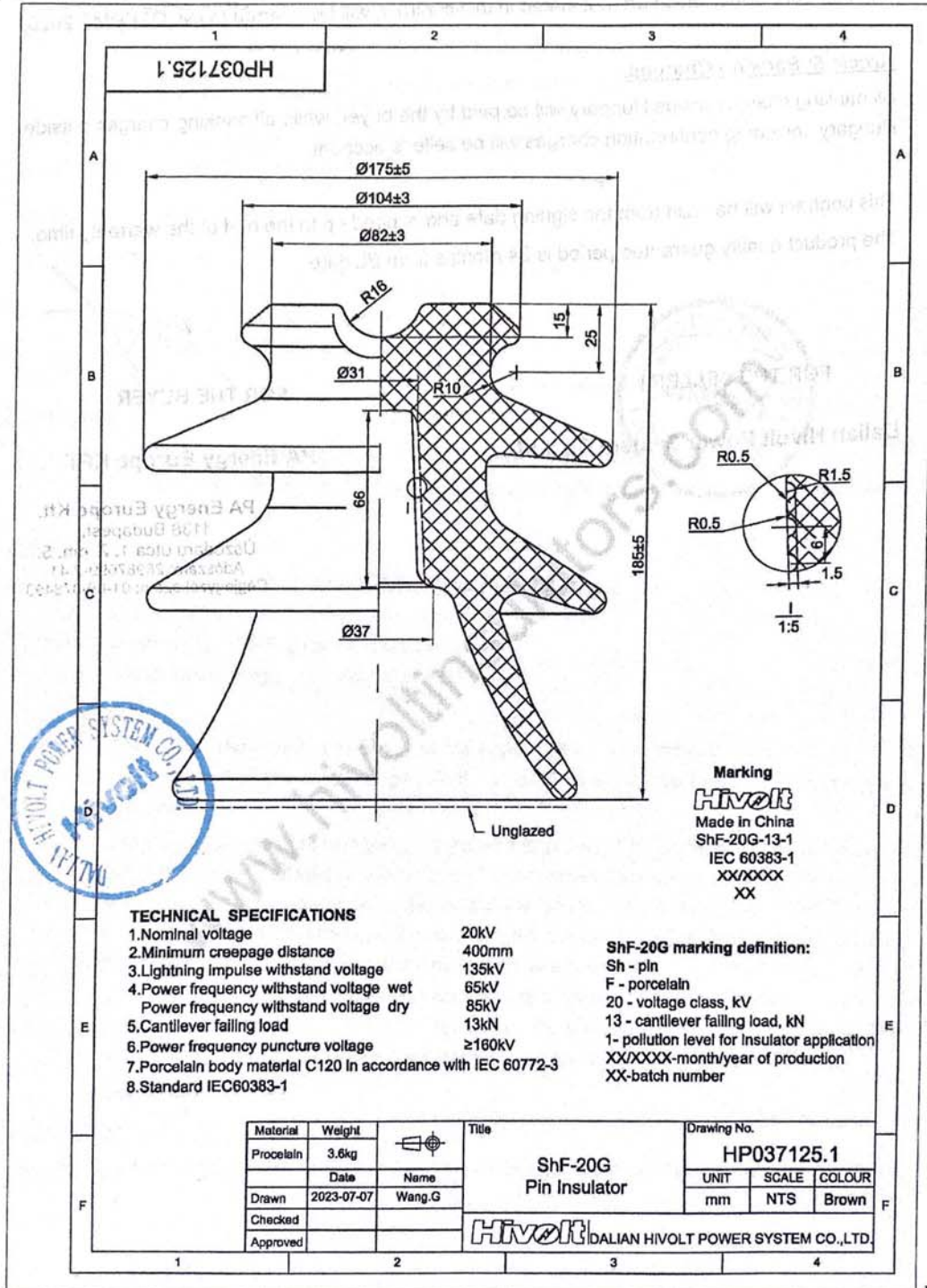




Drawing:

No.: HV23085HU03
Date: 07.07.2023

Annex 1
Drawing



PA Energy Europe Kft.

1138 Budapest. page 4/4

Úszódaru utca 1. 2. em. 5.

Adószám: 28987699-2-41

Cégjegyzékszám: 01-09-378493



No. L0222



2004)国认监证字(059)号



(2004)量认(国)字(A0196)号

No.

WJ-129-2006 (E)

国家绝缘子避雷器质量监督检验中心

CHINA NATIONAL CENTRE FOR QUALITY SUPERVISION
AND TEST OF INSULATORS AND SURGE ARRESTERS

检 验 报 告 TEST REPORT

Object

产 品 名 称

ANSI 56-3 Ceramic Pin Insulator

Client

客 户 名 称

Dalian Hivolt Power System Co., Ltd.

Classification

别

Prototype tests

中国 西安
XIAN R.P CHINA

2006 年 05 月 16 日

16 May 2006



CHINA NATIONAL CENTRE FOR QUALITY SUPERVISION AND TEST OF INSULATORS AND SURGE ARRESTERS

WJ-129-2006 (E)

TEST REPORT

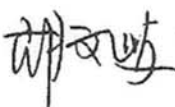
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Test object	Ceramic Pin Insulator
Type	ANSI 56-3
Trade Mark	HIVOLT
Manufacturer	DALIAN HIVOLT POWER SYSTEM CO.,LTD.
Client	
Address	Add. : No.39-2-4-1 , B3 Block ,Quanshui, Ganjingzi District, Dalian , P.R. China (Post code: 116031)
Telephone	+86 411-62655875
Fax	+86 411-39858800 ext.0075
Test classification	Prototype tests
Test items	All test items see page 2 of this report
Reception date	May 9, 2006
Sample number	15
Sample No.	No.1 ~No.15
Test date	10 May ~ 15 May,2006
Test basis	ANSI C29.1-1998 Test methods for electrical power insulators. ANSI C29.6-1996 American National Standard for Wet-Process Porcelain Insulators – high voltage Pin Type. Technical specification of factory The drawing of sample
Test conclusion	The insulator passed all test items and is deemed to meet the test basis satisfactory  Confirmed on 16 May., 2006.
Remarks	The samples were selected randomly by manufacturer from qualified products

Approved:



Checked:



Reported:



**CHINA NATIONAL CENTRE FOR QUALITY SUPERVISION AND TEST OF
INSULATORS AND SURGE ARRESTERS**

WJ-129-2006 (E)

TEST REPORT

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Test Items

Routine tests	1	Visual inspection
	2	Flashover test
Design tests	3	Low-frequency dry flashover test
	4	Low-frequency wet flashover test
	5	Critical impulse flashover tests-positive and negative
	6	Radio-influence voltage test
	7	Thermal shock test
Quality conformance tests	8	Visual and dimensional tests
	9	Cantilever - strength tests
	10	Puncture test
	11	Pinhole gaging test
	12	Porosity test

Routine tests

1 Visual inspection

Specimens No.1~ 15 had fair appearance. No defects exceeding standard permission were observed, meet the test basis satisfactory.

2 Flashover test

All specimens withstood power-frequency sparking voltage for 3 min. satisfactory.
The specimens passed the routine tests successfully .

CHINA NATIONAL CENTRE FOR QUALITY SUPERVISION AND TEST OF INSULATORS AND SURGE ARRESTERS

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TEST REPORT

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Design tests

3 Low-frequency dry flashover test

Tdry=30.5°C; T wet=25.0°C; P=100.3 kPa; Correction coefficient for voltage K=0.932

Specimen No.	Flashover voltage value kV	Average value kV	Corrected value kV
1	128	128.3	119.6
2	129		
3	128		
Standard value	125	/	X $\geq$ 125x 95% (118.75)

The result meets the test basis.

4 Low-flashover wet flashover test

Tdry=30.5°C; T wet=25.0°C; P=100.3 kPa; Rain temperature t=23°C

Rain resistance measured ρ 15.5=200 Ω .m, Correction rain resistivity ρ 20=182 Ω .m

Rainfall : Horizontal amount 4.80 mm/min

Rainfall : Vertical amount 4.82 mm/min

Correction coefficient for voltage K=0.961

Specimen No.	Flashover voltage value kV	Average value kV	Corrected value kV
1	83	83.7	80.3
2	84		
3	84		
Standard value	80	/	X $\geq$ 80 x 90% (72)

The result meets the test basis.

5 Critical impulse flashover Test - Positive and Negative

Tdry=30.5°C; T wet=25.0°C; P=100.3 kPa; Correction coefficient for voltage Kp=1.011

Kn=1.031

Specimen No.	Quantity performed (Positive/Negative)	U50 average voltage Value performed Kv(Positive/Negative)	U50 Corrected value kV (Positive/Negative)
4	15	208/278	210.3/281.1
5	15	212/273	214.3/276.1
6	15	210/270	212.3/272.9
Standard value	200/265	/	X $\geq$ 200 x 92% (184) /265 x 92%(243.8)

The result meets the test basis.

CHINA NATIONAL CENTRE FOR QUALITY SUPERVISION AND TEST OF INSULATORS AND SURGE ARRESTERS

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TEST REPORT

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6 Radio-influence voltage test

Tdry=30.0°C; RH=47% ; P=100.2 kPa

Test frequency :1.0MHz, Background noise level : 6 dB, Specimen mounted: vertical as in service

Specimen No.	Voltage applied kV	Result μV
10	30	86.3
11	30	78
12	30	65
Specifications	30	≤ 100

The result meets the test basis.

7 Thermal shock test

samples (No.4 to No.8) were immersed respectively in hot water (96°C), then in cold water tank (4°C), for 10 times cycles , all samples were good conformed with standard.

The result meets the test basis

Quality conformance tests

8 Visual and dimensional test

Visual inspection of No. 1 ~15 samples were conformed with requirements of standard.

Dimensional inspection result listed below:

Unit : mm

Specimen No.	Spacing	Max.Diameter of shed	Neck diameter	Creepage distance
7	194	268	103	552
8	193	267	104	555
9	191	269	101	546
Specifications	191 ± 5	267 ± 10	102 ± 3	Min.533

The result meets the test basis.

9 Cantilever-strength test

The cantilever load was applied on the insulator neck of the insulators , the strength applied in radial direction again insulator. Increasing the load until porcelain failed.the result listed below:

Specimen No.	Failing load kN	Average value kN
10	16	15.5
11	15.5	
12	15	

The result meets the test basis. (Rated value :13 kN)

**CHINA NATIONAL CENTRE FOR QUALITY SUPERVISION AND TEST OF
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TEST REPORT

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10 Puncture test

Specimen No.	Puncture value kV	Failing condition	Average value kV
13	176	Puncture at neck	180
14	181	Puncture at neck	
15	183	Puncture at neck	

The result meets the test basis(rated value :165kV).

11 Pinhole gaging test

Specimen No. 1~ 15 are tested in accordance with 5.6.2 of ANSI 29.1-1982

The result meets the test basis.

12 Porosity test

Ceramic fragments from the specimens after above item 9 are immersed in a 1% alcohol solution of fuchsine. Under a pressure of 20 MPa for 9 h , no fragments had revealed an dye penetration. The result meets the test basis.

Test Performed : Hu wenqi

Wang pinghe

Zhong yandon

Meng fansheng

Hou yujun

Liu zhiqiang

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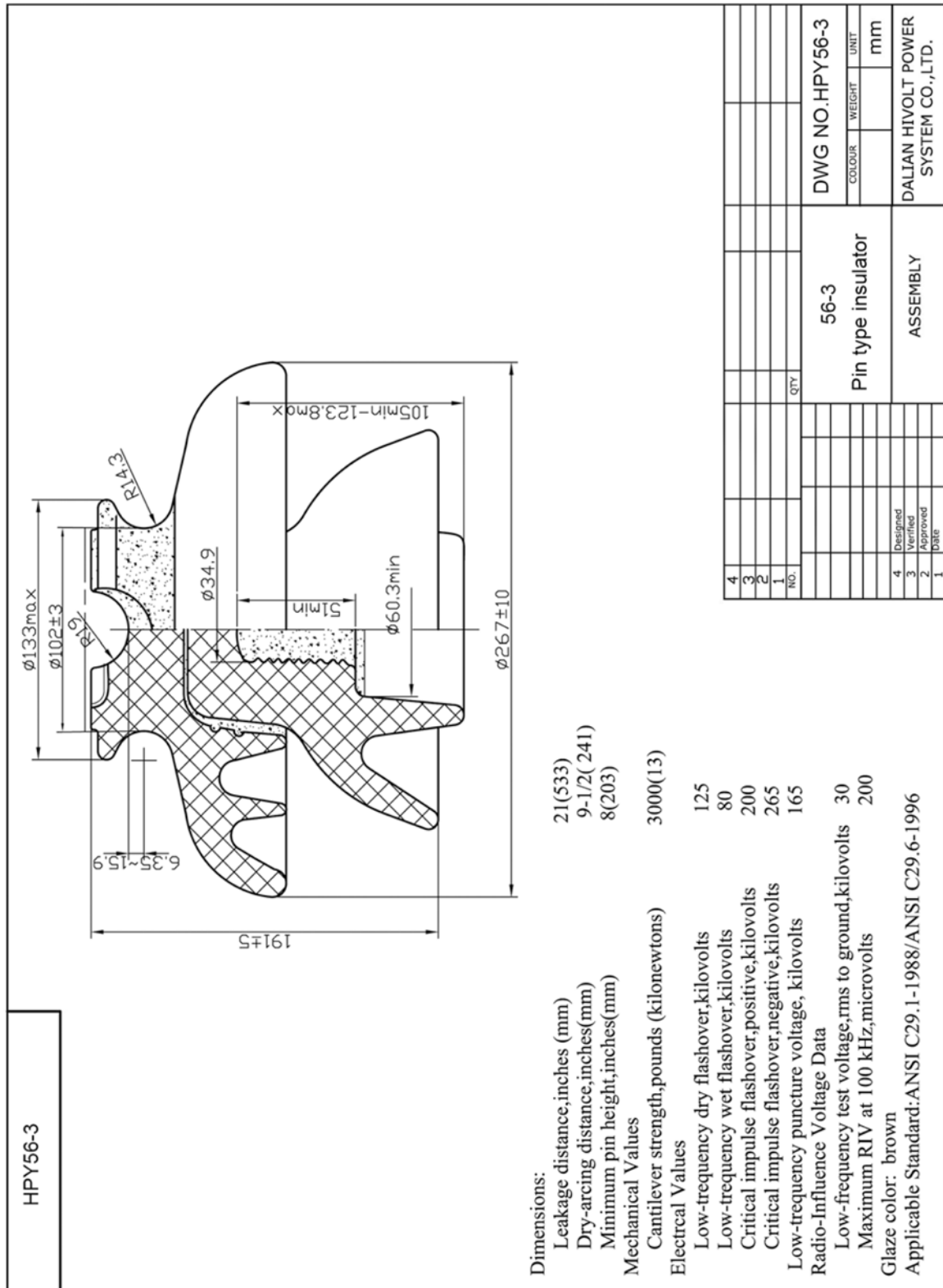
CHINA NATIONAL CENTRE FOR QUALITY SUPERVISION AND TEST OF INSULATORS AND SURGE ARRESTERS

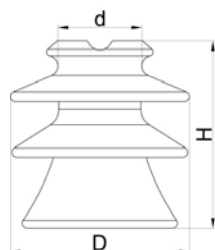
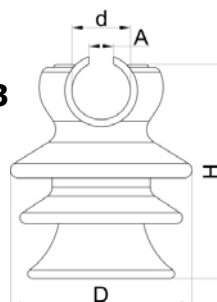
WJ-129-2006 (E)

TEST REPORT

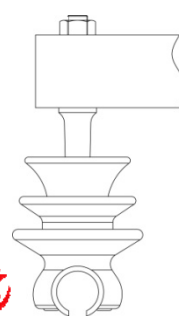
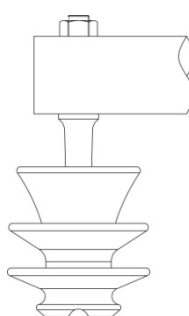
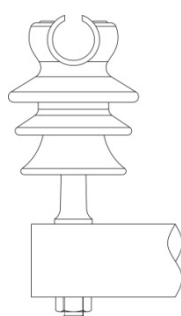
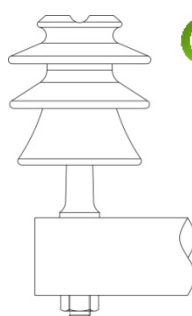
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Annex : The drawing of samples

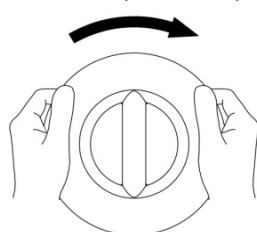


HPSDI30

HPSDI3


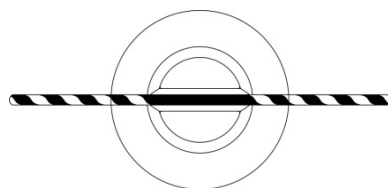
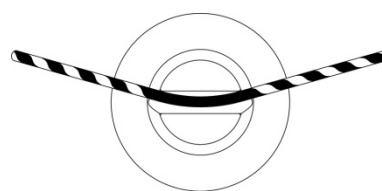
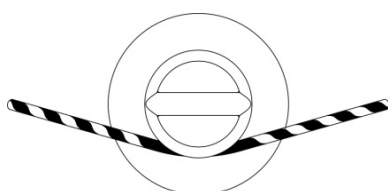
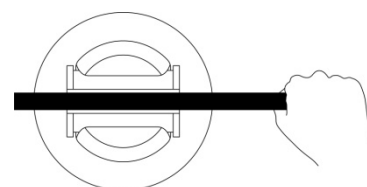
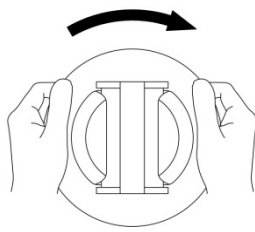
Type	D	H	d	A	U _{max}
HPSDI30	Ø175	185	Ø82	/	24kV
HPSDI37	Ø170	202	Ø53	27±1	24kV



15~20Nm(Max 50Nm)



15~20Nm(Max 50Nm)



NOTICE :

- WARNING** : Failure to follow the installation instructions may lead to product damage or fatal injury !
- The related pin type insulators must be installed by a well trained experienced worker which has sufficient knowledge of good safety for electrical products.
- HIVOLT accepts no liability concerning claims resulting from misuse , incorrect installation