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No.

WJ-122-2006 (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

HB33-Y 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 10 日

10 May 2006

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

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**TEST REPORT**

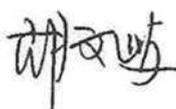
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Test object	Ceramic Pin Insulator
Type	HB 33-Y
Trade Mark	HIVOLT
Manufacturer	DALIAN HIVOLT POWER SYSTEM CO.,LTD.
Client	
Address	Add. : No.39-2-4-1 , B3 Block ,Quanshui, Ganjingzi District, Dalian , P.R. China (Post code: 116031)
Telephone	+86 411-62655875
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 C29.6 -1996 American National Standard for Wet-Process Porcelain Insulators-high voltage Pin Type IEC 60383-1993 Insulators for overhead lines with a nominal voltage above 1000V. Part 1. Ceramic or glass insulator units for a.c systems-definitions. test methods and acceptance ceriteria.
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:



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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	Porosity test
	10	Cantilever - strength tests
	11	Pinhole gaging test
	12	Puncture 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 .

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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	125	124.7	116.3
2	124		
3	125		
Standard value	120	/	X≥120x 95% (114)

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  $\rho_{15.5}=200\Omega.m$ , Correction rain resistivity  $\rho_{20}=182\Omega.m$

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	80.4
2	85		
3	83		
Standard value	80	/	X≥80x 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	228/258	230.5/260.8
5	15	228/253	230.5/255.8
6	15	230/250	232.5/252.8
Standard value	220/230	/	X≥220x 92% (202.4) /230x 92%(211.6)

The result meets the test basis.

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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 $\mu V$
10	15	86.3
11	15	78
12	15	65
Specifications	15	$\leq 100$

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	245	313	128	746
8	247	311	128	745
9	246	314	127	746
Specifications	$245 \pm 11$	$310 \pm 13.5$	126	Min.740

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 kV
10	13	14.17
11	14.5	
12	15	

The result meets the test basis. (Rated value :10kN)



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Annex : The drawing of samples

