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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 4056-2019

**Dimensions of ball and socket couplings of string insulator
units**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard replaces GB/T 4056-2008 "Ball and socket connection dimensions of insulator string components". This standard is in accordance with GB/T 4056-2008

The main technical changes are as follows.

--- Combining Chapters 1, 2, and 3 of the.2008 edition into Chapter 1 "Scope" (see Chapter 1, Chapters 1 and 2 of the.2008 edition

Chapters 2 and 3).

This standard uses the redrafting method to modify and adopt IEC 60120. 1984 "Ball and socket connection dimensions of insulator string elements".

Compared with IEC 60120. 1984, the structure of this standard has the following changes.

--- Combine Chapters 1, 2 and 3 of IEC 60120. 1984 into Chapter 1 "Scope" (see Chapter 1);

--- Added "normative references" "terms and definitions" (see Chapters 2 and 3).

The technical differences between this standard and IEC 60120. 1984 and their causes are as follows.

--- Regarding the normative reference documents, this standard has made adjustments with technical differences to suit China's technical conditions and the situation of adjustment.

The situation is reflected in Chapter 2 "Regulatory Reference Documents", and the specific adjustments are as follows.

* Replaced IEC 60372..2003 with GB/T 25318-2019 that adopted the international standard (see Chapter 3, Chapter 10,

Chapter 15);

* Added references to GB/T 1001.1-2003, GB/T 2900.8-2009, and GB/T 26874-2011 (see Chapter 3).

--- Table 1 ~ Table 8, Table A.1 ~ Table A.2, Table B.1 ~ Table B.9, added the connection marks 36 and 40 and their size data.

--- The labeling of the connection marks 36 and 40 has been added in FIG. 2.

The following editorial changes have been made to this standard.

--- Increased references.

This standard was proposed by the China Electrical Equipment Industry Association.

This standard is under the jurisdiction of the National Insulator Standardization Technical Committee (SAC/TC80).

This standard was drafted. Xi'an High Voltage Apparatus Research Institute Co., Ltd., China Electric Power Research Institute Co., Ltd., Dalian Power

Porcelain Group Transmission and Transformation Material Co., Ltd., Suzhou Electric Porcelain Factory Co., Ltd., Sichuan Yibin Global Group Co., Ltd., Nanjing Electric

Yuanzi Co., Ltd., General Electric Power Planning and Design Institute, China Southern Power Grid Scientific Research Institute Co., Ltd., China Power Engineering Consulting Group East China Power

Li Design Institute, Sadieville Glass Insulators (Shanghai) Co., Ltd., National Insulator Lightning Arrester Quality Supervision and Inspection Center, NGK Tangshan Electric

Porcelain Co., Ltd., Sinoma Jiangxi Electric Porcelain Electric Co., Ltd., Inner Mongolia Jingcheng High Voltage Insulator Co., Ltd., Zhejiang Tailun Insulator Co., Ltd.

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Pingxiang Best Electric Co., Ltd., Pingxiang Huawei Electric Porcelain Technology Co., Ltd., Xi'an Guanghui Mould Co., Ltd.

With), Sanrui Technology Jiangxi Co., Ltd., Zibo Electric Porcelain Factory Co., Ltd., Xiangyang State Grid Synthetic Insulator Co., Ltd., Zibo Taiguang

Power equipment factory.

1 Scope

This standard specifies the standard ball and socket coupling series dimensions using standard locking pins (see GB/T 25318-2019), including foot balls and hat sockets

The dimensions of insulator installations and their tolerances are also specified in the inspection gauges required to check these dimensions so that insulators or metal

The pieces are interchangeable.

This standard applies to disc-shaped and long rod-shaped insulator string components with ball and socket connections and their metal accessories.

The size of the ball and cap socket specified in this standard is applicable to the finished product after any surface treatment.

The extreme position of the foot ball in the hat socket is given in Appendix A.

Note. This standard only covers the dimensions necessary for installation, and does not specify material properties and workload. The combination of the connection mark and the strength level is in GB/T 7253-

Provisions in.2019 and GB/T 26874-2011.

2 Normative references

The following documents are essential for the application of this document. For dated references, only the dated version applies to this article

Pieces. For undated references, the latest version (including all amendments) applies to this document.

GB/T 1001.1-2003 Insulators for overhead lines with a nominal voltage higher than 1000V Part 1. Porcelain or glass for AC systems

Insulator component definition, test method and judgment criteria (IEC 60383-1..1993, MOD)

GB/T 2900.8-2009 Insulators for electrical terms (IEC 60050-471..2007, IDT)

GB/T 25318-2019 Lock pin dimensions and tests for ball and socket connection of insulator string components (IEC 60372..2003, MOD)

GB/T 26874-2011 Characteristics of long rod porcelain insulators for high voltage overhead lines (IEC 60433..1998, MOD)

3 terms and definitions

Terms defined in GB/T 1001.1-2003, GB/T 2900.8-2009, GB/T 25318-2019 and GB/T

26874-2011

And definitions apply to this document.

4 foot ball

The main dimensions of the ball shall comply with the provisions of Chapter 9. The main dimensions controlling the shape of the ball are h_1 , d_2 , r_1 and r_2 . Exact size r_3

Values can only be obtained by plotting and are given for reference only. In addition, the connecting length of the foot bar should be in the range of H3 (see Chapter 11)

Within the range, the diameter of the foot rod d_1 should not exceed the specified value.

5 Hatwell

The main dimensions of the cavity of the hat socket and the minimum thickness of the locking pin should be in accordance with Chapter 10.

Note 1. The hat sockets described in this chapter are flat-bottomed. A hat socket with a round bottom with a radius of curvature not less than the ball's size r_2 can also be used. In this case, size R5

Will be reduced accordingly.

Note 2. There are two sizes of hat sockets with standard coupling mark 16 in Chapter 10.A and B sizes are the same except for sizes H1, H2 and T

At the same time, there is only one type of steel foot that matches it, and the locking pin used corresponds to that.