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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 17357-2008

Replacing GB/T 18021-2000

In-situ measurements of heat loss through thermal insulation of equipments and pipes - Heat flow meter apparatus and surface temperature method

设备及管道绝热层表面热损失现场测定 热流计法和表面温度法

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Foreword

This standard "Heat flow meter equipment and pipeline insulation layer surface heat loss field," according to GB/T 17357-1998 and Content GB/T 18021-2000 "equipment and piping insulation situ measurements of heat loss in the surface temperature of the Law" integration amendments made. This standard also replace the GB/T 17357-1998 and GB/T 18021-2000. This standard and GB /and GB/T 18021-2000, compared T 17357-1998 main changes are as follows:

--- Standard name changed to "equipment and piping insulation surface heat loss Heat flow meter field and surface temperatures Law";

--- Table 1 were modified according to GB/T 8174 Table 1, is consistent;

--- The measurement error to measurement uncertainty;

--- According to GB/T

1.1 the requirements of the standard format has been modified. Appendix A of this standard is a normative appendix. This standard by the National Standardization Technical Committee for Energy and management proposed. This standard by the National Standardization Technical Committee Sub-Committee on Technical Application of Provincial Energy and Materials Management. This standard is drafted by: building materials industry and technical supervision research center, the China Disease Prevention and Control Center environment and health related products Product safety. Participated in the drafting of this standard. Wuxi City, Jiangsu Insulation Materials Co., China's water supplies electricity company in Tianjin, Yixing City, Bao Jian Temperature Materials Co., Ltd., Beijing North Source United States Engineering Technology Co., Armacell insulation (Guangzhou) Co., Ltd., Zhejiang Jiang Zhenshen science and technology have insulation Ltd., Lanzhou Pengfei insulation Ltd., Owens Corning (China) Investment Co., Ltd. The main drafters of this standard. Wear self-Zhu, Gan Yongxiang, Jinfu Jin, Wu Shouyong, Chen Bin, single Nagae, Zhang Xiangchang. This standard replaces the standards previously issued as follows:

--- GB/T 17357-1998;

--- GB/T 18021-2000. Equipment and pipeline insulation layer surface situ measurements of heat loss Heat flow meter method and the surface temperature method

1 Scope

GB/T 17357-2008 is the Chinese national standard on in-situ measurements of heat loss through thermal insulation of equipments and pipes - heat flow meter apparatus and surface temperature method, in the field of energy and heat transfer engineering. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 19 June 2008 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 January 2009. Classification: ICS 27.010, CCS F04. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This standard specifies the method using heat flow meter method and the surface temperature field measurement equipment and pipeline insulation layer surface heat loss terms and definitions, Install measuring instruments, sensors, measuring step selected measurement segment, on-site measurement conditions, heat flow meter method, the measuring step and the junction surface temperature method If computing, data processing and heat flux to determine the thermal insulation of hot (cold) loss methods and requirements, including measuring instruments, measuring point selection, operation And for data processing. This standard applies to on-site evaluation of insulating properties under normal conditions of equipment and pipeline insulation layer.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 4132 insulation materials and related terms Testing and evaluation

GB/T 8174-2008 equipment and pipeline insulation effect

GB/T 10295 insulation steady thermal resistance and related properties - Heat flow meter method

3 Terms and Definitions

GB/T 4132 and established in the following terms and definitions apply to this standard.

3.1 By a heat flux sensor (or heat flow probe) connected measuring instruments consisting of thermal instrumentation. When using sensors embedded in its insulating Sticking within the structure or the outer surface of the insulating structure can be directly measured heat (cold) loss values.

3.2 The use of a temperature difference on the plate with a determined resistance to measure the heat flux through its own means. Its output potential (Vp) and By heat flux sensor (q) is proportional. It is composed of the core plate, the temperature difference between the surface of the detector and the protective effect of damping and thermal panels and other components. Point can be made (such as round, square Shaped, rectangular or other shape) or the strip heat flux sensor.

3.3 In two successive cycles of 5min heat flux sensor output potential is not monotonic, and the average difference of no more than 2%.

3.4 In other types of thermocouples or temperature sensors as the sensing element for measuring the surface temperature Thermometer. Such as thermocouples Surface Thermometers, resistive surface thermometer.

4 Measuring instrument

4.1 according to the provisions of GB/T 8174, the determination of equipment and piping insulation (cold) effect divided into three levels. Based on the measurement level requirements, to be elected