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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB 40161-2021

Filters - Safety requirements

过滤机 安全要求

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1 Scope

GB 40161-2021 is the Chinese national standard on filters - safety requirements, in the field of mining and minerals. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 30 April 2021 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 May 2022. Classification: ICS 73.120, CCS J77. 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 safety requirements for filter design, manufacturing, installation and use, as well as the inspection and judgment of use information and safety performance. Set method. This standard applies to industrial filters and filters for solid-liquid separation (hereinafter referred to as filters).

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article Pieces. For undated reference documents, the latest version (including all amendments) is applicable to this document.

GB/T 150 (all parts) pressure vessel

GB 2894 Safety signs and guidelines for their use

GB/T 3766 General rules and safety requirements for hydraulic transmission systems and their components

GB 3836.1 Explosive Atmosphere Part

3 Terms and definitions

The terms and definitions defined in GB/T 4774 and GB/T 15706 apply to this document.

4.1 General The dangerous items listed in 4.2~

4.7 are based on the provisions of GB/T 15706, and the risk assessment of the filter specified in GB/T 7780 is carried out. result. These dangerous items may occur when the equipment is used, transported, installed, debugged, repaired, and dismantled under the predetermined conditions specified in the instruction manual. In various links such as unloading and disposal.

4.2.1 Design factors

4.2.1.1 The structural design is wrong or unreasonable, such as insufficient strength and rigidity of the structural parts and connecting parts, poor stability or the fastening parts of the rotating parts Without reliable anti-loosening measures, it cannot effectively prevent personnel from being injured.

4.2.1.2 Wrong selection of materials.

4.2.1.3 The calculation of the strength of the pressure component (such as the cylinder) of the filter within the scope of TSG21-2016 is incorrect or unreasonable.

4.2.1.4 The filters used in the pharmaceutical and food industries do not meet the requirements of the "Pharmaceutical Production Quality Management Regulations (Revised in.2010)".

4.2.1.5 There are no effective protective devices or protective measures for the moving parts.

4.2.1.6 The design of hydraulic and pneumatic systems is unreasonable, there is no overload or pressure loss protection device, and there is no interlock protection for related actions during operation.

4.2.1.7 The vibration hazard caused by the filter feed shock, material fluctuation, rapping device and other factors.

4.2.1.8 The sealing measures of the dangerous parts of the filter are unqualified or not sealed, such as the flange of the hydraulic cylinder, the pipe connection part of the pressure component Bit and so on.

4.2.2 Manufacturing factors

4.2.2.1 The chemical composition and mechanical properties of the material do not meet the standards or design requirements.

4.2.2.2 Welding and inspection are not carried out in accordance with the regulations, and the welding quality does not meet the design requirements.

4.2.2.3 Castings and forgings did not meet the design requirements or were not inspected as required.

4.2.2.4 The manufacturing and processing accuracy of parts does not meet the design requirements, and the assembly of parts or the whole machine does not meet the design requirements.

4.2.2.5 The main parts and components that should be processed by the process are not processed or processed in accordance with the regulations, and the parts do not meet the requirements after the processing.

4.2.2.6 The accessible parts of the filter have burrs, sharp corners and sharp edges that may cause personal injury.

4.3 Electrical hazards

4.3.1 The electrical system design is unreasonable and there is a safety risk.

4.3.2 The electrical equipment does not meet the safety requirements.

4.3.3 Insufficient alarms for electric shock, overload protection and faults.

4.4 Noise hazard The filter does not take effective measures to reduce noise and noise, and the hearing loss, fatigue, tension and loss of consciousness caused by noise, and the resultant Causes the risk of misoperation of the machine, falling and falling of personnel.

4.5 Danger of temperature and temperature rise

4.5.1 Dangers caused by excessive temperature and temperature rise of parts such as the main bearing of the filter.

4.5.2 The oil temperature of the hydraulic system and the danger caused by excessive oil temperature rise.

4.5.3 Due to the high temperature in the working process of the filter (such as a filter designed with a heating jacket or coil) or the material itself has Danger caused by high temperature, etc.

4.6 Supplementary materials and material hazards

4.6.1 Dangers caused by contact with toxic or harmful auxiliary materials (such as asbestos, coating materials, etc.).

4.6.2 Dangers caused by toxic or corrosive materials.

4.6.3 Poisoning, allergies, burns and explosions caused by volatile, flammable or explosive materials.

4.6.4 The hazards caused by the gas, mist, fiber, dust and suspended matter that may be generated during the filtering process of the material.

4.7 Other dangers

4.7.1 The possible dangers caused by ignoring the principles of ergonomics, such as error-prone operating directions, device heights, and inappropriate photos Obviously, the improper design of the operating program leads to excessive tension and fatigue of the operator.

4.7.2 The safety warning signs and instructions for use are improperly designed or invalid.