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

GB/T 15604-2024

Replacing GB/T 15604-2008

Terminology for dust explosion prevention and protection

粉尘防爆术语

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part

1. Structure and drafting rules for standardization documents" Drafting. This document replaces GB/T 15604-2008 "Dust Explosion Protection Terminology". Compared with GB/T 15604-2008, except for structural adjustment and editing, In addition to the changes in performance, the main technical changes are as follows:

a) Changed the following terms. "dust", "dust cloud", "dust explosion", "dust deflagration", "dust detonation", "secondary explosion", "dust fire", "dust explosion" Definitions of 10 terms. "hazardous location", "flammable mixture", "ignition source" (see 3.1, 3.3, 3.6, 3.7, 3.8, 3.9, 3.10, 3.18, 3.26, 3.31, 2008 edition 2.1, 2.4, 2.11, 2.12, 2.13, 2.25, 2.14, 3.13, 2.6, 2.16);

b) Added "combustible dust", "conductive dust", "dust cloud ignition", "dust layer ignition", "explosive dust atmosphere", "dust explosion" Hazardous area", "Non-dust explosion hazardous area", "Location", "Zone", "Zone 20", "Zone 21", "Zone 22", "Dust release source", "Continuous level release release", "continuous formation of dust cloud", "clean-up", "dust explosion-related enterprises", "dust-related positions", "number of dust-related workers", "dust explosion products", "abnormal "Mechanical spark" 22 terms and definitions (see 3.2, 3.5, 3.11, 3.12, 3.14, 3.15, 3.16, 3.17, 3.19, 3.20, 3.21, 3.22, 3.23, 3.24, 3.25, 3.27, 3.28, 3.29, 3.30, 3.32, 3.33, 3.34);

c) Deleted "combustible dust", "explosive dust", "dust resistivity", "conductive dust", "non-conductive dust", "explosion products", and "flame front" "Shock wave", "blast wind", "dust minimum breakdown field strength", "dust layer critical specific resistance" 11 terms and definitions (see 2008 Version 2.2, 2.3, 2.7, 2.8, 2.9, 2.17, 2.18, 2.21, 2.22, 2.26, 2.27);

d) Modified "Dust explosion characteristic parameters", "Dust explosion index", "Dust cloud explosion limit concentration", "Dust layer minimum ignition temperature" Definitions of the five terms "flame propagation speed" (see 4.1, 4.4, 4.14, 4.16, 4.20, 3.1, 3.11, 3.3, 3.6, 2.19);

e) Added "minimum explosion concentration", "lower explosion limit concentration", "explosion pressure rise rate", "maximum explosion pressure of dust cloud", "dust cloud Maximum explosion pressure rise rate", "minimum ignition energy", "ignition delay time", "ignition time", "resistivity", "dust explosion temperature 10 terms and definitions of "degree" (see 4.2, 4.3, 4.7, 4.8, 4.9, 4.11, 4.12, 4.18, 4.19, 4.22);

f) Deleted "ignition induction period", "minimum ignition energy of dust", "maximum explosion pressure of dust", "speed of increase of maximum explosion pressure of dust" 4 terms and definitions of "rate" (see 3.7, 3.8,

3.10 of the.2008 edition);

g) Deleted the terms and definitions related to "dust explosion prevention" and "dust explosion control" (see Chapter 4 and Chapter 5 of the.2008 edition);

h) Added terms and definitions related to "dust removal terms", "explosion prevention and control terms", and "informatization terms" (see Chapter 5, Chapter 6, Chapter 7). Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents. This document is proposed by the Ministry of Emergency Management of the People's Republic of China. This document is under the jurisdiction of the National Technical Committee on Work Safety Standardization (SAC/TC288). This document was drafted by: Sinosteel Wuhan Safety and Environmental Protection Research Institute Co., Ltd., Northeastern University, Tianjin Fire Research Institute of the Ministry of Emergency Management, Dalian University of Technology, China Institute of Work Safety, Huazhong University of Science and Technology, Guangzhou Special Electromechanical Equipment Testing Institute, Changsha Mining Research Institute Institute Limited Liability Company. The main drafters of this document are. Wu Qibing, Wu Xiaoyu, Zhong Shengjun, Chen Chen, Ren Changxing, Gao Wei, Shi Xunxian, Zhao Jiaquan, Wang Jiye, Cao Fengjin. The previous versions of this document and the documents it replaces are as follows:

---First published in.1995 as GB/T 15604-1995, first revised in.2008;

---This is the second revision. Dust explosion protection terminology

1 Scope

GB/T 15604-2024 is the Chinese national standard on terminology for dust explosion prevention and protection, in the field of environment and health protection, safety. 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 28 November 2024 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 June 2025. Classification: ICS 13.230, CCS C67. 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 document defines the terminology for dust explosion protection. This document is applicable to the formulation of dust explosion prevention standards, the preparation of technical documents, and the compilation and translation of professional manuals and teaching materials. This document does not apply to dust from underground coal mines, fireworks, explosives and strong oxidizers.

2 Normative references

This document has no normative references.

3 Basic terminology

3.1 Dust In the atmospheric environment, fine solid particles may settle down according to their own weight or may remain suspended in the air for a period of time.

3.2 Combustible dust Dust (3.1), fibers or flying catkins that can undergo violent oxidation reactions with gaseous oxidants under atmospheric conditions. Note

1.The gaseous oxidant is mainly air. Note

2.Combustible dust can cause dust explosion under certain conditions.

3.3 Dust cloud A mixture of combustible dust (3.2) and gaseous oxidant in a certain concentration suspended in the gaseous oxidant in an atmospheric environment.

3.4 Dust layer Combustible dust (3.2) group deposited (pile) on the ground or on the surface of objects.

3.5 Conductive dust conductivedust Metal dust or dust with a resistivity less than or equal to $10^3 \Omega \cdot m$ (3.1).

3.6 Dust explosion In the atmospheric environment, dust (3.1) undergoes a violent oxidation reaction with gaseous oxidants, causing a significant jump in pressure and temperature.

3.7 Dust deflagration Dust explosion in which the flame propagation velocity is lower than the speed of sound in the original dust cloud (3.6).

3.8 Dust detonation Dust explosion in which the flame and shock wave propagation speed exceeds the speed of sound in the original dust cloud (3.6).

3.9 Secondary explosion subsequent explosion When a dust explosion (3.6) occurs, the shock wave generated by the initial explosion will lift up the deposited dust that has not exploded, forming a new explosion.

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