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

GB/T 28616-2023

Replacing GB/T 28616-2012

Green manufacturing - Attributes

绿色制造 属性

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Table of Contents

- 1 Scope
- 2 Normative reference documents
- 3 Terms and definitions
- 4 Basic principles of classification

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents" Drafting. This document replaces GB/T 28616-2012 "Mechanical Products with Green Manufacturing Attributes". Compared with GB/T 28616-2012, except for the structure In addition to adjustments and editorial changes, the main technical changes are as follows:

- a) The scope of application of the standard has been changed from the machinery industry to the manufacturing industry (see Chapter 1, Chapter 1 of the.2012 edition);
- b) Added three terms and definitions. "green manufacturing", "life cycle" and "green manufacturing attributes" (see 3.1,
- c) The basic principles of classification have been changed (see Chapter 4, Chapter 4 of the.2012 edition);
- d) Added classification instructions for the green manufacturing attribute system (see Chapter 6), and adjusted and supplemented the content of the classification system (see Figure 1, 2012 version of Figure 1).
- e) Relevant measurement indicators have been deleted (see Table 1 of the.2012 version);
- f) Change "attribute content" to "attribute description", and change some attribute description contents in the table (see Table 1,.2012 version Table 1). Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents. This document is proposed by the Ministry of Industry and Information Technology of the People's Republic of China. This document is under the jurisdiction of the National Green Manufacturing Technology Standardization Technical Committee (SAC/TC337). This document was drafted by: China Machinery Productivity Promotion Center Co., Ltd., Wuhan University of Science and Technology, University of Science and Technology Beijing, Hubei Sanhuan Forging Co., Ltd. Company, ENN Technology Co., Ltd., China Electronics Technology Standardization Institute, China

Machinery Manufacturing Technology Association, Camel Group Resource Cycle Xiangyang Co., Ltd., China Innovation Aviation Technology Group Co., Ltd., Hangzhou Avis Electronics Co., Ltd., Zhejiang Suichang Huijin Nonferrous Metal Co., Ltd. Co., Ltd., Zhejiang Huijin Environmental Protection Technology Co., Ltd., Inner Mongolia Yili Industrial Group Co., Ltd., Tongyi (Quanzhou) Light Industry Co., Ltd., Hai Xin Home Appliances Group Co., Ltd., Hunan Xingbang Intelligent Equipment Co., Ltd., Guangdong Jiana Energy Technology Co., Ltd., Guangdong Dongpeng Control Co., Ltd., Jiangsu Suyanjingshen Co., Ltd., Zhejiang Jiangshan Transformer Co., Ltd., Yongkang Zhenxing Industrial Co., Ltd. Co., Ltd., Maiqi Chemical Co., Ltd., China Southern Power Grid Co., Ltd. Ultra-High Voltage Transmission Company Baise Bureau, China Merchants Jinling Shipbuilding Co., Ltd. (Weihai) Co., Ltd., Jiangsu Longpan Technology Co., Ltd., Yankuang Donghua Heavy Industry Co., Ltd., Guangdong Bangpu Recycling Technology Co., Ltd., Shan Donghuacheng Hi-Tech Adhesive Co., Ltd., Zhejiang Kane New Materials Co., Ltd., People's Cable Group Co., Ltd., Jiangsu Huachen Transformer Co., Ltd. Co., Ltd., Inspur Electronic Information Industry Co., Ltd., Shandong Wanda Baotong Tire Co., Ltd., Harbin Electric Power Generation Equipment National Engineering Research Center Co., Ltd., Baosheng (Shandong) Cable Co., Ltd., Shandong Hengsheng Graphite Technology Co., Ltd. The main drafters of this document. Sun Tingting, Xi Daoyun, Yan Wei, Xiang Dong, Zhang Yunjun, Lu Xiaobo, Zhao Lihua, Yang Yutao, Li Haiyi, Zhan Li, Chen Lin, Zhao Lei, Chen Guoxiang, Liu Guoliang, Cheng Wenbo, Cao Haizhou, Wan Meng, Lu Zhiyong, Li Zhenzhuo, Zhang Wenqiang, Zheng Jiangfeng, Chen Shiqing, Jiang Zhenjun, Xu Lu, Tan Xuejun, Li Maofeng, Zheng Hehui, Shi Yingfei, Zhao Jingjing, Yu Haijun, Chen Bingshan, Liu Chengyue, Xiao Hanjie, Jiang Shuowen, Lu Jian, Shang Yongfeng, Feng Yongzhi, Liu Jun, Liu Zhiqiang, Dong Xiaoling, Zhang Xiaodong, Xie Xintai, Qu Weiying, Zhao Feng, Zhan Hao, Song Guixiang, He Guangxun, Gou Zengliang, Tang Junping, Chen Yuetan. The previous versions of this document and the documents it replaces are as follows:

---First published as GB/T 28616-2012 in.2012;

---This is the first revision. Green manufacturing attributes

1 Scope

China's national standard for green manufacturing attributes. It specifies the basic principles of classification, the green manufacturing attribute system and the description of each attribute, and it applies across manufacturing industry. The 2012 edition was about mechanical products; this one is about manufacturing. That widening of scope is the most consequential change in the revision, because it turns a sector document into the vocabulary layer for the whole green manufacturing standards system - the one that the evaluation standards, the green factory standards and the green product standards for individual sectors all draw their terms from. What an attribute standard does is decide what is being talked about before anyone measures anything. Green manufacturing is a claim

made about a product, a process, a factory or a supply chain, and unless the aspects that make up the claim are enumerated and defined, every party enumerates them differently: one counts energy and emissions, another counts recycled content and recyclability, a third counts hazardous substances, and none of the three claims can be compared. The attribute system here is the enumeration - the classification of what green manufacturing consists of, across the life cycle, described rather than measured. The revision is explicit about that division of labour: it adds definitions of green manufacturing, life cycle and green manufacturing attributes; it changes the basic principles of classification and adds an explanation of the classification system; and it deletes the measurement indicators the 2012 edition carried, changing attribute content to attribute description. Measurement belongs to the evaluation standards; this document names the things to be measured. Issued on 7 September 2023 and in force since 1 January 2024, it replaces GB/T 28616-2012.

This document stipulates the basic principles, classification system and description of green attributes for green manufacturing attributes. This document is applicable to the determination of green manufacturing attributes during the product life cycle of manufacturing enterprises.

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations For undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document.

GB/T 28612 Green Manufacturing Terminology

3 Terms and definitions

The terms and definitions defined in GB/T 28612 and the following apply to this document.

3.1 green manufacturing A modern manufacturing model with low consumption, low emissions, high efficiency and high benefits. Its essence is to take overall consideration of products in the development process of manufacturing industry. Factors such as industrial structure, energy resources, ecological environment, health and safety, climate change, etc., and integrate green development concepts and management requirements throughout the entire production process of products. During the life cycle, in-depth changes in manufacturing models will be used to promote the green transformation and upgrading of traditional industries, lead the green development of emerging industries, and collaboratively promote carbon reduction, Pollution reduction, green expansion and growth will achieve coordinated optimization of economic, ecological and social benefits.

3.2 product life cycle product life cycle A series of consecutive stages in a product system from obtaining raw materials from nature or natural resources to final disposal. [Source: GB/T 24040-2008, 3.1, with modifications]

3.3 Resource energy, ecological environment and health and safety characteristics of organizations, processes, products and materials.

4 Basic principles of classification

4.1 Principle of comprehensiveness The determination of green manufacturing attributes is based on the connotation of green manufacturing and comprehensively considers the green characteristics of the manufacturing enterprise's products and their entire life cycle.

4.2 Systematic principles Green manufacturing attributes are classified and systematized according to resources, energy, ecological environment and health and safety, and the content of green manufacturing attributes is clarified. And form a scientific and reasonable classification system.