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Terms of smart glass

智能玻璃术语

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Table of Contents

- 1 Scope
- 2 Normative reference documents
- 3 Varieties
- 4 Material 2 5 craft
- 10 Index

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. 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 China Building Materials Federation. This document is under the jurisdiction of the National Industrial Glass and Special Glass Standardization Technical Committee (SAC/TC447). This document was drafted by: China National Testing and Testing Holding Group Co., Ltd., Yilaichuang (Beijing) Intelligent Materials Technology Co., Ltd., Fu Yao Glass Industry Group Co., Ltd., Ningbo Niruo Electronic Technology Co., Ltd., Rainbow Group New Energy Co., Ltd., Jiangsu Saidi Le Energy Saving Technology Co., Ltd., Chongqing Youyou Lihong Glass Co., Ltd. The main drafters of this document. Huang Bowen, Li Boye, Li Yijun, Yang Liyong, Liu Jing, Han Song, Lin Shou, Hu Keyin, Tong Xiaofei, Xiao Min, Guo Li, Du Dayan, Feng Gang, Huang Xiaolou, Qiu Juan, Wang Li, Wang Rui, Miao Xiangyang, Wu Jie, Pang Shihong, Yang Xuedong, Liu Haitao, Han Lei, Ding Zuoxin, Li Junjie, Liu Yaru, Miao Wei, Liu Jiaping, Wu Fan, Niu Mengyu, Cui Weijie, Li Shuang, Liu Guiling, Wang Wei, Lu Can, Zhang Jiangyan, Yue Zining, Zhang Rui, Lei Congxuan, Xu Xingmei, Yang Qing. Smart glass terminology

1 Scope

China's national terminology for smart glass. The category has grown fast enough that its words are used inconsistently by the people selling it, and the differences between the technologies are exactly what a buyer needs to understand. Electrochromic glass changes tint by driving ions into a coating and holds its state without power, switching over minutes. Polymer dispersed liquid crystal switches between clear and translucent in milliseconds and needs continuous voltage to stay clear. Suspended particle devices darken by aligning particles and also need power. Thermochromic and photochromic glasses respond to heat

and light with no control at all. Each has a different switching speed, a different power requirement, a different range and a different failure state, and calling them all smart glass conceals every distinction that matters. Fixing the vocabulary is the first useful thing a standard can do here.

This document defines relevant terms and definitions in terms of varieties, materials, processes, testing and performance of smart glass. This document applies to photochromic glass, thermochromic glass, gaschromic glass, electrochromic glass, polymer dispersed liquid crystal dimming glass Smart glass such as glass, suspended particle dimming glass, electronic dye liquid crystal dimming glass, etc.

2 Normative reference documents

This document has no normative references.

3 Varieties

3.1 smart glass smartglass Under the action or excitation of external energy fields such as electricity, light, heat or special gases, it can cause transmission, reflection or absorption of light in a specific waveband. Glass products whose chemical properties have changed and can remain or be reversed after these effects are eliminated.

3.1.1 active smart glass activesmartglass Glass products that change their optical properties under the controlled action of an external electric field or certain gases.

3.1.2 Passive smart glass passivesmartglass Glass that changes its optical properties when excited by the natural environment temperature field or light radiation without consuming any electrical energy products.

3.2 photochromic glass photochromicglass Glass that causes reversible reactions in certain materials under photon excitation, thereby causing changes in optical properties in specific wavelength bands products.

3.3 thermochromic glass Under the influence of the temperature field of the natural environment, the phase change, structure or aggregation state of the material is reversibly changed, which can cause light in a specific waveband. Glass products with changed chemical properties.

3.4 electrochromic glasselectrochromicglass Under the action of an external electric field, reversible chemical reactions occur inside certain materials, and molecules or particles are oriented and arranged, resulting in changes in optical properties. Altered glassware.

3.4.1 suspended particle dimming glass suspended-particledevices Glass products whose optical properties change are made by using the principle that suspended particles will be oriented when an electric field is applied.