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Photovoltaic glass - Test method and performance evaluation for exposure to damp heat outdoor environments

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard proposed by the China Building Materials Federation. This standard by the National Industrial Glass and Special Glass Standardization Technical Committee (SAC/TC447) centralized. The main drafting units of this standard. Changzhou Ya Mardon Co., Ltd., Follett Glass Group Co., Ltd., China Building Materials Inspection and certification set Group Co., Ltd., 3M China Limited. Participated in the drafting of this standard. Jiangsu Sellavin photovoltaic system Co., Ltd., the national building materials industry solar photovoltaic (electricity) product quality Supervision and Inspection Center, National Safety Glass and Quartz Glass Quality Supervision and Inspection Center, Zhejiang Jiafu Glass Co., Ltd., Yingli Energy (China) Co., Ltd., Xinjiang Turpan Natural Environment Test and Research Center, China Building Materials Inspection and Certification Group Beijing Tianyu Co., Ltd. The main drafters of this standard. Qiu Juan, Wang Dong, Lin Jinxi, Lin Jinhan, Ruan Hongliang, Xiao Pengjun, Yang Fan, Xiong Ming Na, Liu Hongliang, Wang Li, Liu Zhimin, Li Yang, Wang Jingjing, Zhao Xiaofei, Zhang Yingyu, Bu Cong, Guo Chunyun, Li Boye, Li Menglei, Li Na, Wang Li Chuang, Chen Jie, Qin Xianming, including Ba. Photovoltaic glass hot and humid atmospheric environment natural exposure Test methods and performance evaluation

1 Scope

China's national standard for the natural outdoor exposure testing of photovoltaic glass in damp heat environments. It specifies the terms and definitions, the exposure site and equipment, the specimens, the test procedure, the results and performance evaluation, and the test report. The glass is the front surface of a solar module and the component that has to survive longest: a module is warranted for twenty-five years, and everything behind the glass depends on the glass keeping its transmittance and staying intact. Damp heat is the condition that ages it fastest. In a hot humid climate the surface is wet for much of the night,

the glass runs above ambient all day, and the combination leaches sodium out of the surface and can leave a haze that costs output permanently. Accelerated chamber testing predicts this imperfectly, because the mechanism depends on wetting and drying cycles that a chamber does not reproduce. Real exposure at a representative site, for a defined period, against a defined evaluation, is the honest test.

This standard specifies the terms and definitions of the natural exposure test photovoltaic glass damp hot atmosphere, exposure test site and test equipment, samples, Test procedures, test results and performance evaluation and test reports. This standard applies to outdoor natural exposure test photovoltaic glass in hot and humid atmospheres for the evaluation of photovoltaic glass in the environment Optical properties attenuation characteristics. This standard applies to the front panel glass and backplane glass for photovoltaic modules.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article Pieces. For undated references, the latest edition (including all amendments) applies to this document. Molecular sieves GB/T 10504-2008

GB 24266-2009 Hollow glass silicone structural sealants Glass for solar energy - Part 1. Ultra white embossed glass Design code for photovoltaic power station Antireflective glass for solar photovoltaic modules

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Hot and humid atmospheric environment dampheatoutdoorenvironment Annual high temperature and annual average temperature above 20 °C, high humidity and annual average relative humidity above 60%, annual precipitation is greater than the evaporation and the average annual Precipitation in more than 1600mm, the average annual sunshine hours to reach more than 1800h, the year without wind or windy climatic environment.

4.1 Environment and venue

4.1.1 Exposure test site should be set in hot and humid atmospheric conditions.

4.1.2 The exposure test site should be open to the surrounding area. No obstructions such as buildings or trees that obscure the sample or affect the prevailing wind direction are allowed in the vicinity.

4.1.3 exposure test site The ground should be flat, no water of the earth's surface or well-drained concrete paved ground, but also for regular pruning Of the lawn ground, and

lawn ground trim should not have straw splash to the exposed specimen surface.

4.1.4 exposure test site within the scope of 50m not allowed to have air pollution sources.

4.1.5 Exposure test site should have adequate safety and security.

4.2 Exposure sample rack

4.2.1 Exposure The specimen holder consists of a holder and a cross brace holding the specimen. The bolster is fixed to the holder by bolts or screws. Exposure sample rack display The intent is shown in Figure 1.