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PROFESSIONAL STANDARD

OF THE PEOPLE'S REPUBLIC OF CHINA

JG/T 402-2013

**Roofing products from metal sheet with reflect
thermal coating
热反射金属屋面板**

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Foreword

This Standard is prepared according to the rules specified in GB/T 1.1-2009.

This Standard is proposed by Research Institute of Standards & Norms of Ministry of Housing and Urban-Rural Development.

This Standard is under the jurisdiction of National Technical Committee on Building Components and Fittings of Standardization Administration of Ministry of Housing and Urban-Rural Development.

The responsible drafting organizations are China Building Materials Inspection Certification Group Co., Ltd and National Research Center of Testing Techniques for Building Materials.

The participated drafting organizations are Hangzhou United Metaltek Industrial Holding Co., Ltd, Beijing BIAM New Materials Technologies & Engineering Co. Ltd, Fujian Baihua Chemical Co., Ltd, Shenzhen Radiant Industrial Co., Ltd, Shenzhen Grandland Decoration Group., Co., Ltd, Shenzhen Jiada Hi-Tech Industry Development Co., Ltd, Shanghai Datong Hi-tech Material Co., Ltd, Guangzhou B&G Building Materials Tech Co., Ltd, Akzo Nobel Car Refinishes (Jiaxing) Co., Ltd, Daikin Fluorochemicals (China) Co., Ltd, Nippon Paint (China) Co., Ltd, Suzhou Donglin Energy-saving Environment Protection Building Material Co., Ltd, Changzhou Shuangou Flooring Co., Ltd, Shenzhen Grace Shenli Alu. Co., Ltd, Jiangyin Zhongjiang Prepainted Steel Mfg Co. Ltd, Dong E Blue Sky and Seven Color Building Materials Co., Ltd, Changzhou Lihua Metal Materials Co., Ltd, Shanghai Jixiang Technology Development Group Co., Ltd and Ziwei Machinery Equipment Co., Ltd, Shenyang.

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Roofing products from metal sheet with reflect thermal coating

1 Scope

This Standard specifies the terms and definitions, classification and mark, materials, requirements, test methods, inspection rules, marking, packaging, transportation and storage of reflect thermal roofing products of metal sheet ("roofing board" for short).

This Standard applies to reflect thermal coating metal plate for building's roofing.

2 Normative References

The articles contained in the following documents have become part of this Standard when they are quoted herein. For the dated documents so quoted, all the modifications (including all corrections) or revisions made thereafter shall be applicable to this Standard.

GB/T 191 Packaging - Pictorial marking for handling of goods

GB/T 1740 Determination of resistance to heat and humidity of paint films

GB/T 1766 Paints and varnishes - Rating schemes of degradation of coats

GB/T 3880.2-2006 Wrought aluminum and aluminum alloy plate sheets and strips for general engineering - part 2: mechanical properties

GB/T 4956 Non-magnetic coatings on magnetic substrates -- Measurement of coating thickness -- Magnetic method

GB/T 4957 Non-conductive coatings on non-magnetic basis metals—Measurement of coating thickness—Eddy current

GB/T 5698-2001 Glossary of color terms

GB/T 6388 Transport package shipping mark

GB/T 9754 Paints and varnishes—Determination of specular gloss of non-metallic paint films at 20°, 60° and 85°

- b) When there is significant change in structure, material or process, which might affect the performance of the product;
- c) When resuming production after more than six months;
- d) When the regular production runs for 2 years;
- e) When the out-of-factory inspection results are significantly different from those of last type inspection;
- f) When quality supervision agency requires type inspection.

7.4 Batch grouping and sampling rules

7.4.1 Batch grouping

Out-of-factory inspection shall be based on the batch of continuously manufactured products with the same specification, variety and color.

The samples for type test shall be taken from the products with the same type, specifications and color passing out-of-factory inspection. The roller-coating products shall be taken from a batch of 6,000m². The spray-coating products shall be taken from a batch of 3,000m². When the amount [i.e. less than 6,000m² / 3,000m²] is insufficient, it shall be considered as an independent batch.

7.4.2 Sampling

7.4.2.1 Out-of-factory inspection

Appearance quality inspection may be continuously carried out on the production line, and dimension and deviation shall be tested on each product. For the remaining, no less than 2m² of the products shall be randomly selected from the same test batch and randomly cut, based on the dimension and quantity required by the respective items.

7.4.2.2 Type inspection

TAKE randomly at least 2m² sample from the same test batch for inspection of appearance quality, size deviation, coating thickness and glossiness deviation. And randomly CUT according to size and number required by the respective items.

7.5 Determining rules

If all inspection results conform to the requirements of the standard, this batch of products is deemed as qualified products. If there is any non-conformity, double-quantity samples

- 3—— Thermoelectric couple
- 4—— Xenon lamp;
- 5—— Wind speed sensor
- 6—— Axial fan (with wind-guide fairing);
- 7—— Temperature sensor

**Figure B.1 Thermal Insulation Temperature Difference Experimental Setup
Schematic Diagram**

B.6 Test steps

- a) ADJUST the lab environment to meet the requirements of B.3;
- b) CONNECT the thermoelectric couple and heat flow meter at the back of standard board, then INSTALL them at the test port above the metering tank and SEAL it.
- c) SWITCH-ON xenon lamp, ADJUST the radiation intensity of surface of test piece to $800\text{W/m}^2 \pm 20\text{W/m}^2$;
- d) TURN-ON the axial fan and ADJUST the wind speed to 1.0m/s - 2.0m/s;
- e) When the air temperature inside the metering tank reaches 23°C, START to record the time, and 1h later RECORD temperature T_0 of inner surface of heat source of standard board;
- f) REPLACE the standard board with test piece, REPEAT the above steps to obtain the temperature T_s of inner surface of the heat source.

B.7 Data processing

CALCULATE and OBTAIN the thermal insulation temperature difference of the sample coating, according to formula (B.1). Each group of samples shall be tested for three times, and the range of the results shall not exceed 2°C. TAKE the average value of three tests as the test result.

$$\Delta T = T_0 - T_s \quad \dots\dots\dots (B.1)$$

Where:

ΔT —— Thermal insulation temperature difference, °C;

T_s —— The inner surface temperature of the heat source of the test piece, °C;

T_0 —— The inner surface temperature of the heat source of the standard plate, °C.

References and Original Chinese Documents

- [1] JG/T 402-2013 Roofing products from metal sheet with reflect thermal coating.
<http://www.chinesestandard.net/Default.aspx?PDF-English-ID=JG/T%20402-2013>

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