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**BUILDING MATERIALS INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

JC/T 1068-2008

**Waterproof materials for pitched roof Underlayments of self
adhering polymer modified bituminous
(English Translation)**

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1 Scope

This standard specifies the classification, requirements, test methods, inspection rules and signs, packaging, transportation, storage of underlayments of self adhering polymer modified bituminous, for waterproof materials for pitched roof.

This standard is applicable to the underlayments of self adhering polymer modified bituminous waterproof underlayment (referred to as self-adhesive underlayment), which is used under various tiles and other roofing materials, in pitched roof construction projects.

2 Normative references

The provisions in following documents become the provisions of this Standard through reference in this Standard. For the dated references, the subsequent amendments (excluding corrections) or revisions do not apply to this Standard; however, parties who reach an agreement based on this Standard are encouraged to study if the latest versions of these documents are applicable. For undated references, the latest edition of the referenced document applies.

GB/T 328.8 Test methods for building sheets for waterproofing - Part 8: Bitumen sheets for waterproofing-tensile properties

GB/T 328.14 Test methods for building sheets for waterproofing - Part 14: Bitumen sheets for waterproofing-flexibility at low temperature

GB/T 328.18 Test methods for building sheets for waterproofing - Part 18: Bitumen sheets for waterproofing-resistance to tearing (nail shank)

GB/T 328.20 Test methods for building sheets for waterproofing - Part 20: Bitumen sheets

for waterproofing-resistance to peeling of joints

GB/T 16777-1997 Test methods for building waterproof coatings

3.1 Type

The bitumen, which is used in the product, is completely self-adhesive polymer bitumen.

The upper surface material of the self-adhesive underlayment is generally polyethylene film (PE), polyester film (PET), aluminum foil (AL), etc., without internal reinforcing base.

The self-adhesive underlayment can also use other types of upper surface materials, according to the manufacturer's requirements.

3.2 Specifications

The width specification is 1 m; the other width specifications shall be agreed upon by both parties.

The thickness specification is not less than 0.8 mm.

3.3 Marking

It is marked in the order of product's main material name, tire base, upper surface material, thickness, width, length, standard number.

Example: The waterproof underlayment, which uses self-adhesive polymer bitumen PE membrane surface, has a thickness of 1.2 mm, width of 1 m, length of 20 m, is marked as:

Self-adhesive polymer bitumen waterproof underlayment PE-1.2 mm x 1 m x 20 m - JC/T
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4 General requirements

The surface of self-adhesive underlayment products shall have anti-skid function, which is conducive to the safe construction of personnel.

5.1 Size deviation

The allowable deviation of width is $\pm 3\%$ of manufacturer's specified value.

The allowable deviation of the area is not less than 99% of the value specified by the manufacturer.

The thickness shall not be less than 0.8 mm; the average thickness shall not be less than the value specified by the manufacturer.

5.2 Appearance

lower end of the underlayment. Hang the aluminum plate vertically in an oven at $(70 \pm 2) ^\circ\text{C}$ for 24 hours. Measure the sliding distance of the test piece.

6.7 Flexibility at low temperature

Test according to GB/T 328.14; the diameter of the bending shaft is 20 mm. Take 10 test pieces in the longitudinal direction. Carry out test, with five upper surfaces and five lower surfaces face outwards. If the surface of at least four of five test pieces has no crack, this surface is qualified. If both surfaces are qualified, the test passes.

6.8.1 Underlayment and aluminum plate

6.8.1.1 $23 ^\circ\text{C}$ peel strength

Refer to GB/T 328.20, to stick the underlayment test piece on the surface of a smooth aluminum plate, that has been cleaned with a solvent. The bonding surface is recommended to be 50 mm x 75 mm. One end of the aluminum plate is clamped into the fixture. The underlayment at the same end is bent 180° and clamped into another fixture. Carry out the test. Use the maximum force to calculate the peel strength, the unit is N/mm. Take the arithmetic mean value of five test pieces as the test result.

6.8.1.2 $5 ^\circ\text{C}$ Peel strength

Place the test piece and the aluminum plate at $(5 \pm 2) ^\circ\text{C}$ for 24 hours. Then bond them at this temperature. Then place them at this temperature for 2 hours. Measure the peel strength at this temperature.

6.8.2 Underlayment and underlayment

Test according to GB/T 328.20. The lower surface of one test piece is bonded to the upper surface of another test piece.

6.9 Nail shank tear strength

Test according to GB/T 328.18.

6.10 UV treatment

Put the unbonded test piece into the ultraviolet box, that meets the requirements of 7.1.7 in GB/T 16777-1997. The exposed surface faces the light; the test piece is parallel to the lamp tube, at a distance of 47 cm ~ 50 cm. The temperature of the space, which is 50 mm left and right of the surface of test piece, is $(45 \pm 3) ^\circ\text{C}$. The irradiation time is

240 h. Take it out, to observe whether there is foaming, pulverization, cracks or wrinkling on the surface of the test piece. Then carry out the test, according to 6.8.1.1.

The size of the test piece is 150 mm x 50 mm. The bonding surface is 50 mm x 50 mm.

6.11.1 Preparation of test piece

Cut a sample of 300 mm x 300 mm. Remove the anti-adhesive material of the underlayment, under the condition of $(23 \pm 2) ^\circ\text{C}$. Place the underlayment lightly on a plywood, which has a thickness of not less than 10 mm and the same size as the underlayment. The edge of the test piece is pressed and bonded, so that the test piece does not fall when it is erected. The underlayment is then tapped, to bond it to the plywood.

Put two blocks of wood under the plywood for support, to make it easier to drive the nails in. Drive two flange-less galvanized threaded roof nails, which have a length of (30 ± 4) mm and diameter $(3.5 \sim 4)$ mm, into the plywood from the surface of the underlayment. The position is near the center of the specimen. The spacing between nails is $(25 \sim 50)$ mm. Drive the nail, until the nail cap is flush with the surface of the underlayment. Then tap the nail head from the back, to lift the nail, so that the distance between the nail cap and the underlayment surface is 6 mm.

A total of two test pieces are prepared.

6.11.2 Test procedure

Place a circular tube, which has a diameter of $(150 \sim 250)$ mm and a height of not less than 150 mm, in the center on the surface of the underlayment layer of the test piece, which is placed horizontally. Then use sealant, to seal it on the underlayment layer along the outer edge. After standing for 2 h, seal it along the inner edge. Then cure it at room temperature for 24 hours.

Put it in a jar, which has no lid and a similar diameter. Then add distilled water to the round tube above; the water level is (130 ± 3) mm. Then transfer it to a refrigerator, at $(4 \pm 2) ^\circ\text{C}$. Let it standing for 3 d.

6.11.3 Result observation

Take it out, to observe whether there is any water trace in the jar below, on the end of the nail, on the bottom of the plywood. Pour off the water in the round tube and dry it.

Peel off the underlayment. Observe whether there is any water mark on the back of the underlayment.

If no water marks are observed on the two test pieces, it is considered that the test is passed without water seepage.