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REPORT

on

COMMERCIAL INSPECTION AND TESTING INVESTIGATION OF
Roof Panel Coatings for Thermal Emittance and Solar Reflectance

Astec Paints Australia LTD
Australia

GENERAL

INVESTIGATION:

The products covered under this investigation are roof panel coatings identified by the manufacturer as described in Table 1 of Test Record No. 1. The test specimens were supplied by Astec Paints, Ltd., 24 Pinn St., St. Marys, Australia and were tested prior to aging or weathering.

The purpose of this investigation was to develop thermal emittance and solar reflectance test data, without conclusions, on the subject products in accordance with ASTM C 1371-04, "Determination of Emittance of Materials Near Room Temperature" and ASTM C 1549-02, "Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer."

The test results apply only to the specific samples tested and are not intended to imply Listing, Classification or Recognition.

DESCRIPTION

PRODUCT TESTED:

The roof panel coatings used in the tests were submitted in a ready to use form and are identified in Table 1 of Test Record No. 1. Underwriters Laboratories did not witness the fabrication of the test specimens nor verified the product components.

TEST RECORD NO. 1

SAMPLE

Each sample consisted of a cured homogeneous liquid coating applied to a nominal 152 mm wide by 203 mm long light gauge metal substrate. The nominal thickness of each sample was 0.75 mm.

METHOD

Solar reflectance measurements were made with a portable reflectometer in accordance with ASTM C1549-02, "Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer." Solar reflectance is identified as the fraction of solar flux reflected by a surface expressed within the range of 0.00 and 1.00.

Initial Thermal Emittance was determined in accordance with ASTM C1371-04 "Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using a Portable Emissometer." Thermal emittance is identified as the fraction of surface emittance expressed within the range of 0.00 to 1.00.

RESULTS

The tests were conducted on November 22, 2005 at UL's Northbrook, IL test facility. For all tests the ambient laboratory room temperature was 22 °C and 45% RH. The calibrated source and assigned emittance value for the thermal emittance readings were Standard #1267, 0.87 and Standard #1221, 0.05.

Table 1 - Results

Sample Description	Initial Emissivity	Initial Reflectance
Energy Star Cool Pave White	0.8664	0.896
Energy Star Sportscoat	0.9225	0.910
Energy Star Accent Astec C/B Iron Bark 8074	0.9225	0.402
Energy Star Accent Astec Mid Bruns Green 8099	0.8664	0.280
Energy Star Accent Astec Regal Brown 8076	0.9120	0.390
Energy Star Accent Charcoal 8079	0.8840	0.320
Energy Star Accent Astec C/B Mountain Blue 8180	0.9155	0.259
Energy Star Accent Astec 8180 R/B Rivergum	0.8279	0.428
Energy Star Accent Astec C/B Mist Green 8100	0.8699	0.419
Red Oxide 8069	0.8524	0.392
C/B Heritage Red 8068	0.8244	0.393
Mid Astec Warm Clay 8072	0.8314	0.594
White Astec C/B Smooth Cream 8087	0.8804	0.784

White Astec Sandalwood 8086	0.8734	0.775
White Astec Off White 8085	0.9295	0.752
Mid Astec C/B Beige 8083	0.8454	0.540

Table 1 (cont.)

Sample Description	Initial Emissivity	Initial Reflectance
Accent Astec C/B Slate Grey 8080	0.8524	0.405
White Astec Gull Grey 8109	0.8910	0.688
White Astec Light Cream 8096	0.8629	0.783
White Astec Neutral White	0.8279	0.779
White Astec Broken White 8091	0.8875	0.810
Accent Astec C/B Birch Grey 8081	0.8559	0.628
DG IR Elastic White	0.9120	0.898
Metal-Flex GLS/LS White	0.8910	0.892
Tile Guard SM White	0.8804	0.888
GLS/LS White	0.8840	0.884
Armatex White	0.9400	0.774
Astec E100 T SM White	0.9085	0.830
Ceram-4000 White	0.9015	0.838
DG IR Gloss White	0.8875	0.887
EC100 Dirtguard White	0.9085	0.896
Tileguard White	0.9085	0.888

The tests conformed with all requirements of ASTM C 1371-04 with the exception that one reading was taken for thermal emittances due to the smooth homogeneous nature of the tests specimens.

The tests conformed with all requirements of ASTM C 1549-02

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