Ptest
product testing

TEST REPORT

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TEST SPECIFICATION: EN 12608:2003 Unplasticized polyvinylchloride (PVC-u) profiles for the fabrication of windows and doors

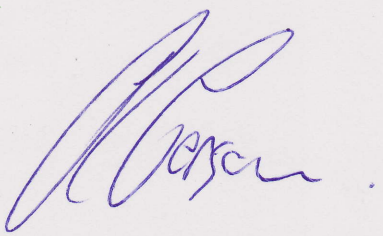
ITEM TESTED: Two samples of PVC-u profile Transome 1469-White, KO 41234427

DATE OF TEST: October 2006 to February 2009

RESULTS: Refer to the body of this report.

This report relates only to the results obtained from the tests performed on the samples submitted.

TESTED BY: A.L. Carson
Laboratory Manager



Report on Artificial weathering and testing of PVC-u profile, (KO 41234427-Transome 1469-White) for the fabrication of windows and doors.

Synopsis

Two samples of White Kommerling PVC-u window and door profile, (See figure 1), were submitted for artificial weathering and testing in accordance with clause 5.8 Resistance to Weathering of EN 12608:2003. In variation to the standard the UV exposure apparatus as shown in figure 2 was used and the exposure time increased to 18000 hours to represent 15 years of outdoor weathering.
The profile submitted was found to **comply** with the requirements of the clauses tested.

Figure 1

Figure 2

Calculation of Exposure time

The equivalent exposure time, for a severe environment, in the conditioning chamber for 15 years of natural exposure is 18000 hours using a xenon arc lamp of 550watts/m^2 spectral irradiance. The definition of a severe environment is:

Annual total solar energy on horizontal surface	>5Gjoules/m^2
Average of the daily maximum temperature of the warmest month per year	>22 degrees Celsius

**from EN 12608 Unplasticized polyvinylchloride (PVC-u) profiles for the fabrication of windows and doors.*

At the request of the client the parameters for a severe environment were used as the basis for the time of exposure to artificial weathering.
The Ultraviolet exposure is only an approximation of natural exposure bearing in mind that natural weathering is a variable phenomenon depending on location, aspect, shading etc.

Results:

Clause 5.8.2 Impact strength after artificial weathering

After assessment of the visual change in colour the exposed and un-exposed test specimens were cut into impact test pieces and tested in accordance with ASTM D6110-2008 Standard Test Method for Determining the Charpy impact Resistance of Notched Specimens of Plastics. This standard was used instead of ISO 179 as a machine complying with ISO 179 was not available within New Zealand.
The test specimen was found to **comply** with the requirements of clause 5.8.2. The reduction in impact strength of the exposed test specimens expressed as a percentage of the impact strength of unexposed test specimens was found to be less than 40%.

Note: The pass/fail criteria value of 40% is tentative and subject to the results of current research. This standard was published in 2003 and is still current.
The test specimens were machined as closely as possible to the requirements of this standard within the constraints of the sample supplied.

Clause 5.8.3 Colour fastness

At the completion of conditioning the specimen was removed from the chamber and assessed for visual change in colour using a grey scale in accordance with ISO 105-A02:1987. The visual change in colour was assessed as between 1.5 and 2 on the grey scale. This result **complies** with the requirements of clause 5.8.3 of EN 12608 Unplasticized polyvinylchloride (PVC-u) profiles for the fabrication of windows and doors.