



Technical Data Sheet: 02022016

Title: Laboratory Assessment of painted Aluminium Sheet

Relevant Standard: AS/NZS 2728

Introduction: An Independent approved Laboratory undertook tests and assessment methods of several types of painted Aluminium samples were undertaken. The samples were either finished products such as perforated edging or venting strips or flat sheet being pressures to the finished product.

The laboratory assessment tests are intended to characterise the substrate and coating and complement the previously conducted performance-based exposure tests, UV/Condensation, Condensation and Acetic Acid Modified Salt Spray test.

Samples: 16 various colours of 150mm x 150mm materials were tested.

Test Methods:

Coating Thickness:

- Coating thickness measurements were conducted using an electronic thickness gauge (eddy current principle) and a minimum of eight measurements per specimen. The coating thickness was further also determined using pant inspection gauge, which relies on optical measurements (microscopy)

Result; *The coatings met or exceeded specified requirements where such documented guidelines as per ASNZS 2728 for coating properties are in existence (T-Bend test, reverse impact tests)*

For other coating properties the results obtained were found to be generally quite typical for a resilient pre-painted products of high quality.

Adhesion:

- Adhesion was also assessed using two methods, pull-off adhesion tests and cross hatch adhesion tests. Pull;-off adhesion tests yield very useful numerical results but are

notoriously difficult to conduct on thick, pre-painted coatings as well as thin, easily distorted almost flexible substrate materials.

Result; *Pull-off adhesion tests yielded strictly speaking no true coating adhesion results. The test failures generally originated only to 10%-20% at the substrate-coating interface, with the remainder a coating-adhesive failure at the coating adhesive interface.*

Reverse Impact Test:

- A reverse impact test was conducted on selected samples as per the requirements of AS/NZS 2728 for that substrate type and material thickness.

Result; *Of the 7 tests, all resulted with "NO COATING CRACKING OR DELAMINATION"*

T-Bend Test & Pencil Hardness:

- T-Bend tests were conducted as per the requirements of AS/NZS 2728, whereby the material is folded back onto itself forming initially a very tight bend (OT), which is then repeated at higher radii.
- Pencil hardness tests return a result on the pencil hardness scale ranging from 6B (very soft) to 6H (very hard). The results reported here are the hardest pencil not to physically damage and remove the coating, a harder pencil would have removed the coating.

Result; *T-Bend tests resulted in all being "1T".*

Pencil hardness tests with OT radii could not be properly assessed as the process damaged the coating in that area to an extent impeding assessment.

No adverse observations or other results were obtained that would give rise to concerns.