KYDEX THERMOPLASTIC SHEET

NEMA HPDL Test Methods and Results

For information applicable to KYDEX® FST please refer to 300 series technical briefs.

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Introduction

The National Electrical Manufacturers Association (NEMA) Standards have been adopted in the public interest and are designed to eliminate misunderstandings between the manufacturer and the purchaser of high-pressure decorative laminates (HPDL) and to assist the purchaser in selecting and obtaining the proper product for their particular needs. KYDEX, LLC submitted KYDEX® L* sheet in various textures for evaluation, specifically P-1 Haircell, P-3 Velour Matte, P-E Smooth Nap, and the second surface of P-1.

The tests performed are described below:

LD 3.1, Wear Resistance

Measures the ability of the surface to maintain its design or color when subject to abrasive wear. A sample is abraded using 180 grit sandpaper, and the number of cycles required to remove decorative inclusions is reported.

Result: 750 Cycles

LD 3.2, Scuff Resistance

Measures the ability of the surface to maintain its original appearance when exposed to scuffing. A pendulum is used to scuff the surface of a sample with a urethane heel. The magnitude of the resulting scuff is reported as having “No Effect,” “Moderate Effect,”” or “Severe Effect.”

Result: Moderate Effect

LD 3.3, Ball Impact

Measures the ability of the surface to maintain its original appearance when exposed to scuffing. A pendulum is used to scuff the surface of a sample with a urethane heel. The magnitude of the resulting scuff is reported as having “No Effect,” “Moderate Effect,”” or “Severe Effect.”

Result: Moderate Effect

LD 3.4, Dimensional Change

Measures the dimensional changes over an extreme range or relative humidities. One sample is conditioned for 24 hours at 70°C (158°F). A second sample is conditioned at 38°C (100.4°F) and 95% - 100% humidity for 7 days. The dimensional change resulting from the two exposures is calculated. The algebraic difference of the average dimensional changes is reported as the dimensional change value.

Results: 0.67% Machine Direction, 0.33% Cross Direction.

*KYDEX® L has been renamed to KYDEX® XD.

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LD 3.9, Stain Resistance

Measures the ability of the surface to resist staining by substances that may be encountered in common household service. Samples are exposed to 29 different substances for 16 to 24 hours. A cleaning procedure is followed, and the effect of each staining substance is determined. Effects are reported as having "No Effect," "Moderate Effect," or "Severe Effect." Materials that caused moderate or severe effects are reported.

Results: Reagents 1-5, 7-28, 30 No Effect, Reagants 6,29 Severe.

LD 3.12, Cleanability of Surface

Measures the ability of the surface to be cleaned. A standard soiling agent is applied to a test sample. After 24 hours of exposure, the sample is cleaned using a standardized procedure. The effects of the soiling agent are reported as having "No Effect," "Slight Effect,"" Moderate Effect," or "Severe Effect."

Result: No Effect

LD 3.15, Blister Resistance

Measures the resistance to blistering during forming operations. A sample is placed decorative face down on a radiant electric heating apparatus. The time required to blister is reported, based on the average of three test specimens. Result: Does not blister, but experienced melting at 107.2°C (225°F).

Average time to melting was 12 seconds.

LD 3.16, Dart Impact Resistance

Measures the resistance to fracturing due to impact by a small diameter ball. A dart 4.95mm (0.195") in diameter is dropped from increasing heights to determine the maximum height that does not cause fracture. The maximum height not causing fracture is reported as the dart impact resistance value.

Result: 736.60mm (29") (50g (1.76oz) Dart).

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