Advisory Bulletin

BOBRICK
BUILDING VALUE SINCE 1906

TB-79 Scratch-Resistance of Various Toilet Partition Materials

INDEPENDENT LABORATORY TESTING

Samples of six different toilet partition materials including [High-Density Polyethylene (HDPE), Powder-Coated Metal (Metal), Stainless Steel (SS), High Pressure Laminate (HPL), Compact Grade Laminate, Black-Core (CGL), and Solid Color Reinforced Composite (SCRC)] were sent to an independent laboratory for testing and evaluation to determine the relative scratch-resistance of these materials. The tests were performed in accordance with the American Society for Testing and Material ASTM D 2197-16 (2002) "Standard Test Method for Adhesion of Organic Coatings by Scrape Adhesion." This procedure tests the scrape resistance of coatings (such as paints, varnishes, etc) applied to smooth substrates and was developed to provide relative ratings for a series of coated panels with different adhesion properties. This procedure adds weight to a scrape adhesion tester and drags a material sample underneath the loaded scraper. The amount of weight is varied (up to a maximum of 10 kg) to discover load that can be added to the scraper until there is visible damage to the surface of the test sample. A full description of the test is available from ASTM.

Bobrick selected this ASTM standard because, in our opinion, this standard provided an objective, repeatable, and comparable procedure with which to analyze the relative scratch-resistance properties of the different toilet partition materials available. In the tests conducted, a pointed 1.6mm stylus was used to represent the types of common objects used to scratch toilet partitions (e.g. door, car key). A comparison of the loads can be used to evaluate the relative scratch-resistance of the different materials tested. A copy of the independent laboratory test result is available upon request.

continued . . .

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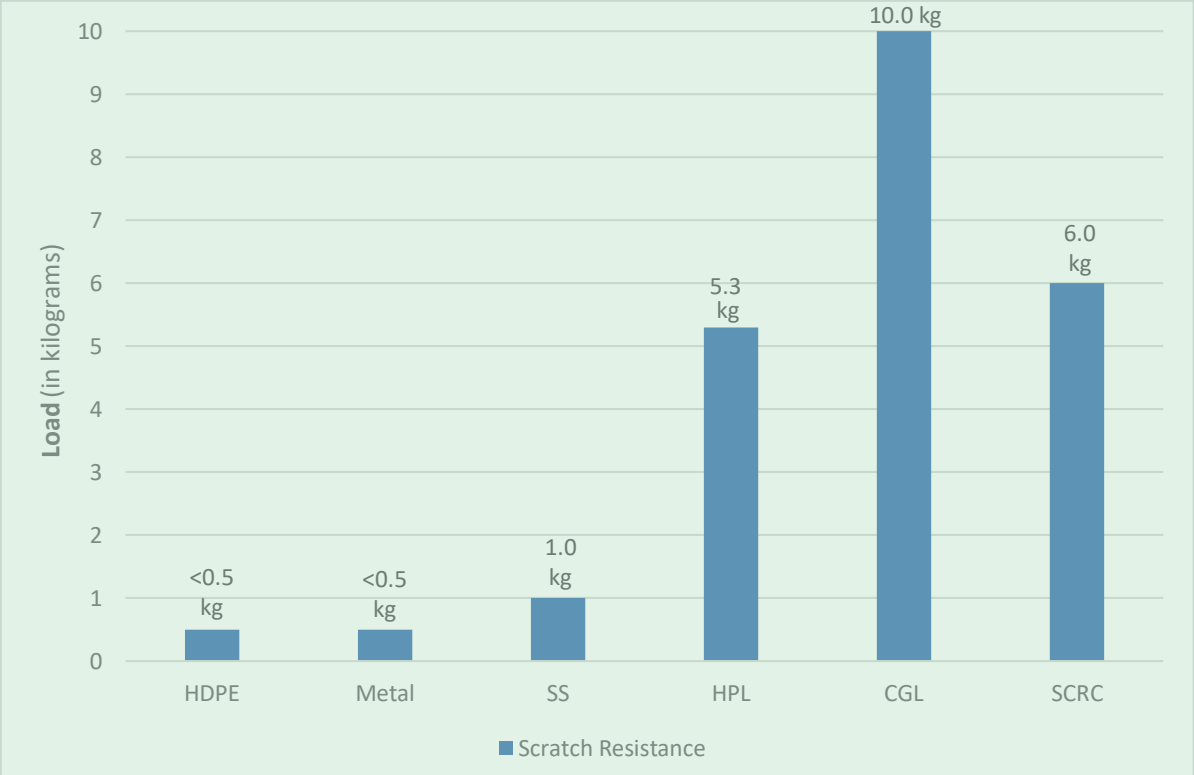
RESULTS OF TEST[1]

Material Samples[2]	Load[3]
High-Density Polyethylene (HDPE)[4]	<0.5 kg
Powder-Coated Metal (Metal)	<0.5 kg
Stainless Steel (SS)	1.0 kg
High Pressure Laminate (HPL)	5.3 kg
Compact Grade Laminate, Black-Core (CGL)	10.0 kg
Solid Color Reinforced Composite (SCRC)	6.0 kg



Source: **Data is from test conducted by an independent laboratory in November 2018 for all materials except HPL; HPL was tested in February 2019.**

CONCLUSION

Of the materials tested, Solid Color Reinforced Composite and Compact Grade Laminate exhibited the greatest scratch resistance properties.

Notes:

[1] *All testing was performed at ambient laboratory conditions of 23±2°C and 50±5% relative humidity.*

[2] *Material samples were 4" x 6" panels.*

[3] *Load is the amount of weight (in kilograms) at which there are visible scratches in the test specimen surface.*

[4] *HDPE tested was NFPA 286 compliant as required for toilet partitions by the ICC and NFPA model codes.*