

November 13, 2014

Extended Wear Testing – Coefficient of Friction

Sample Preparation

A large panel coated with existing PRECIDIMUM™ MTI Rail Floor was selected for testing the coefficient of friction of the floor system after intermediate and extreme wear to validate the slip resistance over the lifetime of the floor. The finish was non-skid 100.

The panel was tested in sections with various amounts of wear, and identified as follows;

- “A” Unadulterated
 - Surface was wiped clean with a damp towel
- “B” Heavy Scotchbrite
 - Section was abraded by hand until the non-skid particles were completely worn. The surface was still somewhat textured due to the accents and spray texture.
- “C” Sand to colour coat
 - A handheld orbital sander with 150 grit sandpaper was used to abrade down through the accent layer to the colour coat, representing localized areas of high wear
- “D” Sand to membrane
 - A handheld orbital sander with 150 grit sandpaper was used to abrade through the colour coat to the base membrane, representing a worst possible case scenario for long term wear.

All sections were wiped with a dry and then damp cloth to remove dust from sanding, then were allowed to dry completely prior to testing.

Test Method

The **ASTM C1028** is the Standard Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method. The measurement made by this apparatus is believed to be one important factor relative to slip resistance. The static coefficient of friction is determined under both wet and dry conditions using Neolite heel assemblies (common footwear material).

Pre-test preparations were as follows:

1. Slip meter pulled across a piece of 400 grit silicon carbide sandpaper on a flat surface
2. Step one repeated another three times, for a total of four pulls
3. Slip meter rotated 90 degrees and another four sandings
4. Repeat for the two remaining directions
5. Clean the heel assemblies with a fine haired brush.
6. Suspend the slip meter from the calibration chain and adjust until reading is within 1% of 1.00.

Figure 1: Calibration of Dynamometer pull meter



Results

Results are summarized in Table 1.

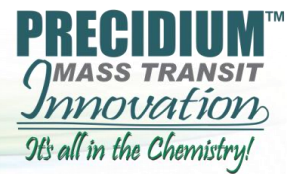
Table 1: Summary of Results

Wear Condition	Coefficient of Friction (Dry)	Coefficient of Friction (Wet)
A	.90	.79
B	.67	0.66
C	1.05	0.92
D	0.97	0.92

Figure 2: Results during Testing (Dry)

Figure 2: Results during Testing (Wet)





Conclusions

For most public walkway surfaces, the minimum COF (coefficient of friction) recognized as providing a non-hazardous surface is 0.50 (ASTM D2047, and the Slip and Fall Handbook, Stephen I. Rosen, Hanrow Press). Further, in the USA, the American Disabilities Act and the Architectural and Transportation Barriers Compliance Board recommend flooring and walkways to have a COF of 0.60 and 0.80 for ramps.

Based on these values, the COF for the PRECIDIUTM MTI Rail Floor meets and exceeds the industry standard for providing a non-hazardous surface for pedestrian traffic.