Flooring systems used on industrial, commercial, and residential floors should provide a safe walking surface in both wet and dry conditions. By measuring the coefficient of friction (COF), a quantitative number can be used to express the degree of slip resistance of a floor surface.

When the coefficient of friction is measured from a resting position, it is called the “static coefficient of friction” (SCOF). When it is measured when the surfaces are in relative motion, it is called the “dynamic coefficient of friction”. Measuring the dynamic COF is difficult and requires a strict laboratory environment for accurate results. The James Machine would be used in this situation under the ASTM D-2047 standard. Almost all portable and laboratory meters measure only the static COF and most measuring devices (slip meters) refer to static COF based off the ASTM C1028 standard. The Sellmaier slip test meter measures both Static and Dynamic coefficient and provides a digital printout and audit trail.

The higher the SCOF, the less slippery the surface. It is possible to have too high a SCOF; the surface can be too slip resistant and difficult to walk on. The American Society for Testing and Materials (ASTM) initially set a standard of 0.50 or higher for polished surfaces. Because the required friction for normal walking is significantly below that figure (as measured on the James Machine), a coefficient of 0.35 is sufficient. The Occupational Safety and Health Administration (OSHA) will only recommend that you try to achieve a 0.50 SCOF for flat surfaces. In short, there really is no set standard that anyone will stand behind. Plus, all of the standards were tested using natural stone and liquid sealers / coatings. So we have to group ourselves in with this category until they do testing for polished concrete.

The test results shown here were done with the Sellmaier FSC-2000 at HTC’s facility in Knoxville, TN. Test #1 was a dry test with a leather slider on polished concrete at a level of 3000 grit. Test #2 was a wet test with synthetic slider on polished concrete at a level of 3000 grit. The results were taken from an average of multiple readings and tests.