Coefficient of Friction Concrete Test

Utilizing Glasstonefloor Data

For the Durotec Glasstone Custom Polishing System

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1. Introduction

1.1 Kenneth R. Fisher is a Safety Consultant for Nu-Safe Floor Solutions and many well-known corporations nationwide. As author of numerous articles concerning various approaches to floor safety, he has researched and documented certain claims made 'in' and 'out' of the floor industry regarding floor safety.

2. Background

2.1 Slipping, tripping and falling accidents remain the most common cause of personal injury in the workplace and in public settings. Any system that will reduce the number of accidents will be a significant benefit to an employer in terms of both employee welfare and cost.

2.2 Most slipping accidents occur as a result of a surface becoming wet. While many floors provide an adequate amount of grip when dry, most floors and floor finishes fail to provide an adequate static co-efficient of friction (SCOF) when they become contaminated by liquids.

2.3 Highly polished concrete surfaces have a tendency to become slippery as a result of the polishing process employed when finishing the floor surface. The abrasiveness of natural concrete is normally diminished when grinding and high speed buffing is performed. Therefore, it would be a logical assumption that the SCOF would be lower as the concrete is honed to a higher degree of gloss. This was not the case, in a general sense, with the Durotec Glasstone Customer Polishing system.

3. Instruction Received

3.1 Kenneth Fisher was requested by Advanced Floor Products to conduct several static co-efficient of friction (SCOF) tests on a Durotec Glasstone Customer Polishing treated concrete floor surface at a distribution facility. The tests would be performed under the direction of Advanced Floor Products personnel.

3.2 Several SCOF tests would be performed at various stages of the process in the dock area of the facility. The parameters of the SCOF tests were to include dry and wet conditions of the concrete surface as various levels were reached. Such personnel determined the process performed by personnel from Advanced Floor Products and the assigned levels of polishing. I was instructed to perform SCOF tests on the areas polished only after the area was cleaned and rinsed to remove any contaminants produced from the polishing process.

3.3 The results were to be provided in a written report that would show if the polishing performed would enhance or detract from the SCOF on the floor surface when subjected to both wet and dry conditions.

4. Summary of Conclusions

4.1 The SCOF tests performed for dry conditions for all levels of grinding and polishing exceeded OSHA & ADA recommendations for dry, hard surfaces. The ASTM 1028 method was used to determine the benchmark for the SCOF on the test surfaces. The Sellmier Slip Tester from Germany was used to measure the SCOF.

4.2 The SCOF tests performed for wet surfaces for all levels of grinding and polishing exceeded both OSHA & ADA recommendations for wet, hard surfaces. ASTM 1028 does not outline SCOF tests for wet conditions. These tests were performed using ISO testing procedures that are currently accepted worldwide. The Sellmier Slip Tester was used to measure the SCOF.

5. Equipment Used to Perform SCOF Tests

5.1 The static co-efficient of friction measurements were taken with a recognized floor tester that is setting new standards for independent floor testing. This machine is the Sellmier Slip Tester. Made in Germany, the Sellmier is self-propelled and is not prone to interpretations by the user. It was designed to be used with leather, rubber, and neolite shoe pad samples.