

Excel Tribometers, LLC InterLaboratory Study, Jan 2015, New Orleans, LA

Test Date            January 27-28, 2015  
 Temperature        69-70°F  
 Humidity            49%  
 Surfaces            ASTM F2508 Reference Surface Set 3 - Acquired from ASTM 2/29/2012  
 Procedure           Clean tiles per F2508  
                           Follow English XL VIT User Guide:  
                           Sand Test Foot  
                           Test foot calibration on Tile 252 (C1028) wet with distilled water  
                           Test RS-C in 4 orthogonal directions wet with distilled water  
                           Test RS-D in 4 orthogonal directions wet with distilled water  
                           Sand Test Foot  
                           Test foot calibration on Tile 252 (C1028) wet with distilled water  
                           Test RS-B in 4 orthogonal directions wet with distilled water  
                           Test RS-A in 4 orthogonal directions wet with Triton-X solution

| Surface  | Mean, Xbar | Repeatability Std | Reproducibility Std |
|----------|------------|-------------------|---------------------|
|          |            | Dev, Sr           | Dev, SR             |
| A        | 0.110      | 0.007             | 0.011               |
| B        | 0.184      | 0.009             | 0.015               |
| C        | 0.227      | 0.014             | 0.032               |
| D        | 0.706      | 0.020             | 0.051               |
| C1028 r1 | 0.190      | 0.012             | 0.015               |
| C1028 r2 | 0.185      | 0.013             | 0.016               |

| Laboratory | Tile | N    | E    | S    | W    | Avg   | Stdev |
|------------|------|------|------|------|------|-------|-------|
| 1          | 252  | 0.19 | 0.19 | 0.17 | 0.18 | 0.183 | 0.010 |
| 1          | C    | 0.22 | 0.24 | 0.22 | 0.22 | 0.225 | 0.010 |
| 1          | D    | 0.73 | 0.70 | 0.70 | 0.69 | 0.705 | 0.017 |
| 1          | 252  | 0.19 | 0.19 | 0.19 | 0.19 | 0.190 | 0.000 |
| 1          | B    | 0.20 | 0.19 | 0.20 | 0.19 | 0.195 | 0.006 |
| 1          | A    | 0.13 | 0.12 | 0.12 | 0.12 | 0.123 | 0.005 |
| 2          | 252  | 0.20 | 0.20 | 0.18 | 0.20 | 0.195 | 0.010 |
| 2          | C    | 0.22 | 0.20 | 0.23 | 0.22 | 0.218 | 0.013 |
| 2          | D    | 0.71 | 0.69 | 0.65 | 0.71 | 0.690 | 0.028 |
| 2          | 252  | 0.18 | 0.18 | 0.17 | 0.17 | 0.175 | 0.006 |
| 2          | B    | 0.17 | 0.17 | 0.18 | 0.18 | 0.175 | 0.006 |
| 2          | A    | 0.10 | 0.10 | 0.10 | 0.10 | 0.100 | 0.000 |
| 3          | 252  | 0.18 | 0.20 | 0.18 | 0.18 | 0.185 | 0.010 |
| 3          | C    | 0.23 | 0.20 | 0.21 | 0.21 | 0.213 | 0.013 |
| 3          | D    | 0.72 | 0.76 | 0.72 | 0.74 | 0.735 | 0.019 |
| 3          | 252  | 0.18 | 0.20 | 0.18 | 0.18 | 0.185 | 0.010 |
| 3          | B    | 0.21 | 0.20 | 0.19 | 0.19 | 0.198 | 0.010 |

|   |     |      |      |      |      |       |       |
|---|-----|------|------|------|------|-------|-------|
| 3 | A   | 0.12 | 0.12 | 0.11 | 0.10 | 0.113 | 0.010 |
| 4 | 252 | 0.21 | 0.22 | 0.21 | 0.21 | 0.213 | 0.005 |
| 4 | C   | 0.27 | 0.29 | 0.27 | 0.27 | 0.275 | 0.010 |
| 4 | D   | 0.72 | 0.73 | 0.73 | 0.71 | 0.723 | 0.010 |
| 4 | 252 | 0.21 | 0.20 | 0.20 | 0.20 | 0.203 | 0.005 |
| 4 | B   | 0.20 | 0.21 | 0.20 | 0.20 | 0.203 | 0.005 |
| 4 | A   | 0.11 | 0.11 | 0.12 | 0.12 | 0.115 | 0.006 |
| 5 | 252 | 0.20 | 0.18 | 0.18 | 0.15 | 0.178 | 0.021 |
| 5 | C   | 0.21 | 0.22 | 0.25 | 0.23 | 0.228 | 0.017 |
| 5 | D   | 0.75 | 0.75 | 0.76 | 0.74 | 0.750 | 0.008 |
| 5 | 252 | 0.19 | 0.17 | 0.17 | 0.17 | 0.175 | 0.010 |
| 5 | B   | 0.17 | 0.18 | 0.18 | 0.18 | 0.178 | 0.005 |
| 5 | A   | 0.10 | 0.08 | 0.10 | 0.10 | 0.095 | 0.010 |
| 6 | 252 | 0.21 | 0.18 | 0.17 | 0.19 | 0.188 | 0.017 |
| 6 | C   | 0.17 | 0.17 | 0.21 | 0.19 | 0.185 | 0.019 |
| 6 | D   | 0.73 | 0.75 | 0.79 | 0.80 | 0.768 | 0.033 |
| 6 | 252 | 0.21 | 0.17 | 0.16 | 0.16 | 0.175 | 0.024 |
| 6 | B   | 0.17 | 0.16 | 0.17 | 0.19 | 0.173 | 0.013 |
| 6 | A   | 0.12 | 0.12 | 0.12 | 0.11 | 0.118 | 0.005 |
| 7 | 252 | 0.20 | 0.20 | 0.18 | 0.19 | 0.193 | 0.010 |
| 7 | C   | 0.26 | 0.27 | 0.27 | 0.25 | 0.263 | 0.010 |
| 7 | D   | 0.65 | 0.63 | 0.61 | 0.65 | 0.635 | 0.019 |
| 7 | 252 | 0.20 | 0.18 | 0.17 | 0.17 | 0.180 | 0.014 |
| 7 | B   | 0.16 | 0.18 | 0.17 | 0.17 | 0.170 | 0.008 |
| 7 | A   | 0.11 | 0.11 | 0.11 | 0.11 | 0.110 | 0.000 |
| 8 | 252 | 0.19 | 0.19 | 0.17 | 0.19 | 0.185 | 0.010 |
| 8 | C   | 0.20 | 0.20 | 0.23 | 0.20 | 0.208 | 0.015 |
| 8 | D   | 0.65 | 0.64 | 0.64 | 0.63 | 0.640 | 0.008 |
| 8 | 252 | 0.22 | 0.20 | 0.18 | 0.20 | 0.200 | 0.016 |
| 8 | B   | 0.18 | 0.20 | 0.18 | 0.16 | 0.180 | 0.016 |
| 8 | A   | 0.11 | 0.12 | 0.11 | 0.10 | 0.110 | 0.008 |