Dynamic Slip Resistance using 
ASTM E303-93 (2013) Pendulum Test Method

Client: Tile Tech Inc.  Report date: 3/14/17
Flooring: Porcelain Plank – Porcelain Pavers  Date tested: 3/13/17
Page 1 of 1  Sample no.: 1703-1322
How and when sample obtained: Supplied by client 3/9/17
Location of test: Sotter Engineering Test Laboratory in Mission Viejo, CA
Type, age, condition, and texture of surface: paver, new, clean, rough
Post-test free swing: 0  Age of TRL slider: 1 month
Surface Temperature: 70°F

Measuring Surface Frictional Properties Using the British Pendulum Tester" (astm.org) The trailing 
edge of a three-inch-wide spring-loaded slider, which is attached to the end of a 20-inch pendulum, 
contacts the tested surface when the pendulum is released from a horizontal position. The slider contact 
path length is pre-set to five inches. The pendulum pushes a pointer that stops and stays at the high point of 
the pendulum’s swing. For road-related testing, the slider is usually TRL (Transport & Road Laboratory) 
soft rubber.

Higher Pendulum Test Values (PTV) indicate increased friction. For reference only, with TRL rubber the 
PTV of wet #60 grade silicon carbide abrasive cloth at normal room temperature is approximately 57. For 
clear wet float glass it is 8.

Average Wet PTV with TRL (soft) rubber: 44
Individual PTV values: 44, 44, 44, 44

High Pendulum Test Values indicate potentially good traction. The Ceramic Tile Institute of America 
recommends a minimum pendulum test value of 36 for level floors. Slip resistance can be affected by 
factors such as floor coatings, abrasives, detergents, contamination, chemical treatments, and wear. Values 
of 25-35 are classed as “moderate slip potential”. Values of 024 have “high slip potential”.

Respectfully submitted,
SOTTER ENGINEERING CORPORATION

J. George Sotter, P.E., Ph.D.
President

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TorTest™ Floor Friction Testing Service
SOTTER ENGINEERING CORPORATION
Consultants

Licensed by the State of California
Board of Professional Engineers
And Land Surveyors

Approved by the City of Los Angeles for testing slip resistance of flooring

26705 Loma Verde, Mission Viejo, CA 92691
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Dynamic Slip Resistance using
ASTM E303-93 (2013) Pendulum Test Method

Client: Tile Tech Inc.  Report date: 3/14/17
Flooring: Porce Rustica – Porcelain Pavers  Date tested: 3/13/17
Page 1 of 1  Sample no.: 1703-1323

How and when sample obtained: Supplied by client 3/9/17
Location of test: Sotter Engineering Test Laboratory in Mission Viejo, CA
Type, age, condition, and texture of surface: paver, new, clean, rough
Post-test free swing: 0  Age of TRL slider: 1 month
Surface Temperature: 70°F

American Society for Testing and Materials Method E303-93 (2013), "Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester" (astm.org) The trailing edge of a three-inch-wide spring-loaded slider, which is attached to the end of a 20-inch pendulum, contacts the tested surface when the pendulum is released from a horizontal position. The slider contact path length is pre-set to five inches. The pendulum pushes a pointer that stops and stays at the high point of the pendulum's swing. For road-related testing, the slider is usually TRL (Transport & Road Laboratory) soft rubber. Higher Pendulum Test Values (PTV) indicate increased friction. For reference only, with TRL rubber the PTV of wet #60 grade silicon carbide abrasive cloth at normal room temperature is approximately 57. For clear wet float glass it is 8.

Average Wet PTV with TRL (soft) rubber: 60
Individual PTV values: 59, 60, 60, 60

High Pendulum Test Values indicate potentially good traction. The Ceramic Tile Institute of America recommends a minimum pendulum test value of 36 for level floors. Slip resistance can be affected by factors such as floor coatings, abrasives, detergents, contamination, chemical treatments, and wear. Values of 25-35 are classed as "moderate slip potential". Values of 0-24 have "high slip potential".

Respectfully submitted,
SOTTER ENGINEERING CORPORATION

J. George Sotter, P.E., Ph.D.
President

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Dynamic Slip Resistance using
ASTM E303-93 (2013) Pendulum Test Method

Client: Tile Tech Inc.  Report date: 3/14/17
Flooring: Porc Stone – Porcelain Pavers  Date tested: 3/13/17
Page 1 of 1  Sample no.: 1703-1321
How and when sample obtained: Supplied by client 3/9/17
Location of test: Sotter Engineering Test Laboratory in Mission Viejo, CA
Type, age, condition, and texture of surface: paver, new, clean, bumpy
Post-test free swing: 0  Age of TRL slider: 1 month
Surface Temperature: 70°F

American Society for Testing and Materials Method E303-93 (2013), "Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester" (astm.org) The trailing edge of a three-inch-wide spring-loaded slider, which is attached to the end of a 20-inch pendulum, contacts the tested surface when the pendulum is released from a horizontal position. The slider contact path length is pre-set to five inches. The pendulum pushes a pointer that stops and stays at the high point of the pendulum’s swing. For road-related testing, the slider is usually TRL (Transport & Road Laboratory) soft rubber.

Higher Pendulum Test Values (PTV) indicate increased friction. For reference only, with TRL rubber the PTV of wet #60 grade silicon carbide abrasive cloth at normal room temperature is approximately 57. For clear wet float glass it is 8.

Average Wet PTV with TRL (soft) rubber: 50
Individual PTV values: 51, 50, 50, 49

High Pendulum Test Values indicate potentially good traction. The Ceramic Tile Institute of America recommends a minimum pendulum test value of 36 for level floors. Slip resistance can be affected by factors such as floor coatings, abrasives, detergents, contamination, chemical treatments, and wear. Values of 25-35 are classed as "moderate slip potential". Values of 0-24 have "high slip potential".

Respectfully submitted,
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