



Sustainable Slip Resistance and Tiling Services

Building Construction and Engineering, Graham Road (PO Box 56), Highett, Victoria 3190, Australia
Telephone: 61 3 9252 6000 Facsimile: 61 3 9252 6244 Web: <http://www.dbce.csiro.au>

Registered Testing Authority - Building Code of Australia

9 May 2001

Our Ref. EN13 / 734

TEST REPORT No. 1909-3s

Requested by: Forbo Floorcoverings P/L
on (date): 8 May 2001
Manufacturer: Forbo
Product Desc.: Colorex: A homogenous PVC floor tile.

Sampling details:
Where: Delivered
Date: 8 May 2001
By whom: Courier
How (methods): N/A

The results reported relate only to the sample(s) tested and the information received.

No responsibility is taken for the accuracy of the sampling unless it is done under our own supervision.
CSIRO cannot accept responsibility for deviations in the manufactured quality and performance of the product.
The reproduction of this test report is only authorised in the form of a complete photographic facsimile.
Our written approval is necessary for any partial reproduction.

This test report consists of 5 pages

It is important to realise that test results obtained on unused factory-fresh samples may not be directly applicable in service, where proprietary surface coatings, contamination, wear and subsequent cleaning all influence the behaviour of the floor.

SUMMARY OF SLIP RESISTANCE TESTS PERFORMED:

		Result	Class
AS/NZS 4586:1999	Slip resistance classification of new pedestrian surface materials Appendix A: WET Pendulum (Four S slider):		
	Mean BPN:	23	Z
AS/NZS 4586:1999	Slip resistance classification of new pedestrian surface materials Appendix C: WET/BAREFOOT Ramp		
	Mean angle of inclination:	12°	A
AS/NZS 4586:1999	Slip resistance classification of new pedestrian surface materials Appendix D: OIL-WET Ramp		
	Mean overall acceptance angle:	4.9°	R 9



Sustainable Slip Resistance and Tiling Services

Building Construction and Engineering, Graham Road (PO Box 56), Highett, Victoria 3190, Australia
Telephone: 61 3 9252 6000 Facsimile: 61 3 9252 6244 Web: <http://www.dbce.csiro.au>

REPORT NO: 1909-3s
ISSUE DATE: 9 May 2001
MANUFACTURER: Forbo
PRODUCT DESC: Colorex: A homogenous PVC floor tile.

Page 2 of 5

SLIP RESISTANCE CLASSIFICATION OF NEW PEDESTRIAN SURFACE MATERIALS

WET PENDULUM TEST METHOD

TEST CARRIED OUT IN ACCORDANCE WITH
AS/NZS 4586:1999 (Appendix A)

Test Date: 8 May 2001

RESULTS: Location: Ceramic Tile Laboratory
Sample: Unfixed
Cleaning: Water
Temperature: 23°C

Rubber used: Four S

Pendulum Friction Tester: Stanley (S/N: 9234)

	Specimen				
	1	2	3	4	5
Last 3 swings	25	24	22	21	21
	25	24	22	21	21
	24	23	22	21	21
Averages	25	24	22	21	21

Mean BPN : 23

CLASS :

Z

Interpretation of class

Contribution of the floor surface to risk of slipping when wet = Very high



Sustainable Slip Resistance and Tiling Services

Building Construction and Engineering, Graham Road (PO Box 56), Highett, Victoria 3190, Australia
Telephone: 61 3 9252 6000 Facsimile: 61 3 9252 6244 Web: <http://www.dbce.csiro.au>

REPORT NO: 1909-3s
ISSUE DATE: 9 May 2001
MANUFACTURER: Forbo
PRODUCT DESC: Colorex: A homogenous PVC floor tile.

Page 3 of 5

SLIP RESISTANCE CLASSIFICATION OF NEW PEDESTRIAN SURFACE MATERIALS

WET/BAREFOOT RAMP TEST METHOD

TEST CARRIED OUT IN ACCORDANCE WITH
AS/NZS 4586:1999 (Appendix C)

Test Date: 8 May 2001

Location: Ceramic Tile Laboratory

Sample Fixed

Joint width: mm

Surface structure: ☒ Smooth
☐ Profiled
☐ Structured

RESULTS

		Actual mean	Reported mean
Mean angle of inclination:	Calibration Board A:	12.28 °	12 °
	Calibration Board B:	18.48 °	18 °
	Calibration Board C:	28.94 °	29 °
Mean angle of inclination of Test Board:		12.38 °	12 °

CLASSIFICATION:

Quality Group:

A



Sustainable Slip Resistance and Tiling Services

Building Construction and Engineering, Graham Road (PO Box 56), Highett, Victoria 3190, Australia
Telephone: 61 3 9252 6000 Facsimile: 61 3 9252 6244 Web: <http://www.dbce.csiro.au>

REPORT NO: 1909-3s
ISSUE DATE: 9 May 2001
MANUFACTURER: Forbo
PRODUCT DESC: Colorex: A homogenous PVC floor tile.

Page 4 of 5

SLIP RESISTANCE CLASSIFICATION OF NEW PEDESTRIAN SURFACE MATERIALS

OIL-WET RAMP TEST METHOD

TEST CARRIED OUT IN ACCORDANCE WITH
AS/NZS 4586:1999 (Appendix D)

Test Date: 9 May 2001

Location: Ceramic Tile Laboratory

Sample Fixed

Joint width: mm

Surface structure: ☒ [X] Smooth
☐ [] Profiled
☐ [] Structured

RESULTS

Mean overall acceptance angle: 4.9 °

Displacement space: not tested

CLASSIFICATION:

Slip Resistance Assessment Group:

R 9

Displacement Space Assessment Group:

-



CSIRO

Sustainable Slip Resistance and Tiling Services

Building Construction and Engineering, Graham Road (PO Box 56), Highett, Victoria 3190, Australia
Telephone: 61 3 9252 6000 Facsimile: 61 3 9252 6244 Web: <http://www.dbce.csiro.au>

REPORT NO: 1909-3s
ISSUE DATE: 9 May 2001
MANUFACTURER: Forbo
PRODUCT DESC: Colorex: A homogenous PVC floor tile.

Page 5 of 5

Date and Place

9 May 2001,

Highett, Vic

Name(s), Title(s) and Signature(s):

RICHARD BOWMAN
PRINCIPAL CERAMIC
SCIENTIST

PETER WESTGATE
SENIOR LABORATORY
TECHNICIAN



Sustainable Slip Resistance and Tiling Services

Building Construction and Engineering, Graham Road (PO Box 56), Highett, Victoria 3190, Australia
Telephone: 61 3 9252 6000 Facsimile: 61 3 9252 6244 Web: <http://www.dbce.csiro.au>

REPORT NO: 1909-3s
ISSUE DATE: 9 May 2001
MANUFACTURER: Forbo
PRODUCT DESC: Colorex: A homogenous PVC floor tile.

Addendum

DETERMINATION OF Rz SURFACE ROUGHNESS

(Using a Taylor-Hobson Surtronic 10 Rz roughness meter using a 0.8mm cut off length)

Test Date: 8 May 2001

RESULTS

Location: Ceramic Tile Laboratory

Rz values

1	8.6
2	9.7
3	8.1
4	8.2
5	10.8
6	8.9
7	8.8
8	9.1
9	7.6
10	9.3

Surface Roughness (Rz) mean = 8.9 microns

The measurement of the various aspects of surface roughness is complex given the number of potential roughness parameters. While there is still some uncertainty as to exactly what type of roughness needs to be measured, peak-to-trough roughness (Rz) gives a useful guide to the likely slip resistance in wet conditions. Research has suggested that hard floors need to have a slightly higher Rz roughness than polymeric floors for the same degree of safety in wet conditions, but whatever flooring material is used an Rz roughness value of at least 10 microns is required where wet slip resistance may be required. In circumstances where wetness is normal or expected, this figure should be increased by a factor of 2 or more.

Greater peak surface roughnesses are likely to be required where floors slope or where the floor is likely to become contaminated with high viscosity liquids.