

Product Data Sheet – *liqui surfaces*

liqui surfaces: interactive floor tiles. The flexibility of the material allows for the interaction with the underlying fluids. Tiles should be laid on smooth, horizontal surfaces. Liquid colors are non toxic and are of no harm for human contact. Tiles can be laid with polyurethane or water based bi-component glues for vinyl flooring. Special sizes and shapes are available upon request.

The wear layer is high resistance embossed polycarbonate (Makrolon®), secondary polymer layers encompass liquids which move and interact when pressure is applied. For use in interior installations only.

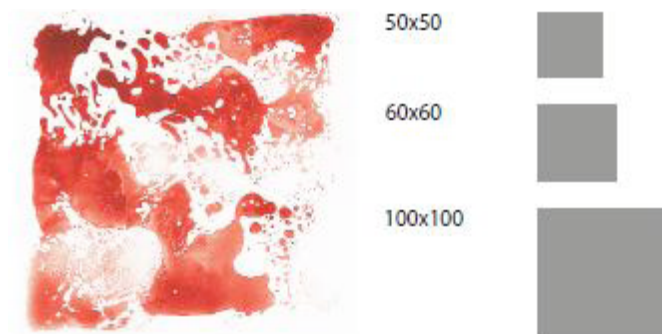
Technical Data

Standard sizes: cm 50x50 (19" ¹/₂ x 19" ¹/₂)

cm 60x60 (23" ⁷/₁₆ x 23" ⁷/₁₆)

cm 100x100 (39" ¹/₄ x 39" ¹/₄)

**custom sizes upon request



Thickness: 7mm (1/4")

Weight: kg.11/sq.m. (2.2lbs/sq.ft.)

Colors: see attached color chart

**custom colors available upon special order

Fire Rating: Class 1

ASTM Standard Test – Product meets or exceeds Class 1 rating as specified in NFPA Life Safety Code 101 and IBC 804.2 Classification.

Installation Instructions

To guarantee a uniform distribution of color install on smooth perfectly horizontal surfaces.

The subfloor should be

Hard: clean dusty surfaces and avoid friable subfloor materials

Dry: Maximum degree of humidity of the subfloor should not be more than 3% at the time of installation.

Test the dryness using a hygrometer if there is a question as to the dryness.

Level: The surface the tiles rest on should be completely horizontal and without cracks or evident ridges.

Any differences in level can cause a nonuniform color distribution. Apply a leveling product before installation if the surface is not already level.

Temporary Installations:

Fix to subfloor with appropriate biadhesive tapes (3M). Use caution and avoid bending when removing.

Permanent Installations:

Use polyurethane or aqueous base bicomponent glues.

Recommended Adhesive– [Mapei G19](#)

Ultrabond G19 is a two-part reactive adhesive specially designed for installation of floor coverings that demand a high performance adhesive (such as sports flooring). Ultrabond G19 is excellent for high-performance indoor/outdoor installations of all types of floor coverings that demand reliable results in various weather conditions.

Recommended Trowels Type of Installation	Trowel Size* and Notch
Over porous substrates	1/16" x 1/32" x 1/32" U notch
Over non-porous substrates	1/16" x 1/32" x 5/64" U notch

Flooring Grout

All permanent installations should be grouted with an elastic sealant or silicon.

Recommended grout widths:

50cm tiles	2mm grout
60cm tiles	2mm grout
100cm tiles	3mm grout

**grout width should be increased by 1mm when tiles are applied on a radiant heating floor.

Recommended grouts: Polyurethane sealant and adhesive with a high modulus of elasticity
 Mapei - [Mapesil LM](#) (tube cartridge)
 Mapei - [Mapeflex PU 50SL](#) (liquid)
 Mapei - [Mapeflex PU 45](#) (fast drying)

Installation temperature

The tiles should be installed in a control temperature environment.

Recommended temperature at installation 15°C- 25°C (60°F-77°F)

Additional Notes:

- ? Liquids contain tiny air particles which sometimes come together to form small air bubbles. This is a natural transformation of the product and is more visible in the two tone tiles.
- ? Because of the nature of the tiles, applying a continuous weight on the tiles during the initial hardening of the adhesive is recommended.
- ? Each tile is tested individually by applying a uniform load of 500 kg per square meter.
- ? Do not bend the tiles in any way. Tiles cannot be cut in the field - this will cause breakage to the liquid chamber of the tiles. Custom shapes and have to be manufactured to size.
- ? The manufacturer is not responsible for field measurements. All custom tiles will be produced by cad drawings furnished by the client.
- ? Place protective pads under furniture and chair legs to protect the longevity of the tile surface.
- ? The edge of the tile should always be protected. Flush installation within a second hard flooring material is the suggested solution. When installed above an existing floor apply a protective metal edge to avoid direct lateral forces. Installing an insert within carpet requires a protective edge between the two materials.

Storage

The tiles should be transported and stored always in a horizontal position. Tile should never be stacked more than 40 tiles per pile. Although the tiles can resist in temperatures ranging from -15°C to 60°C (5°F-140°F) the preferred storage temperature range is 10°C-28°C (50°F-80°F).

Maintenance

To obtain best results, periodically use an auto polishing metallic wax to revive the surface. Recommended product: Metalwax FILA

The tiles can be cleaned regularly using common residential detergents. Do not use automatic cleaning machinery and polishing pads on the tiles. These machines can cause extensive damage to the tiles.

liqui surfaces - Floor Tiles, Table Tops (Makrolon® top-layer)

*additional information in regards to the top ware layer

	Test Conditions	Typical Values	Unit	Test Method
PHYSICAL				
Density		1.2	g/cm ³	ISO 1183-1
Moisture absorption	after storage in standard climate 23 °C/50 % RH	0.15	%	ISO 62-4
	after storage in water at 23 °C until saturation	0.35	%	ISO 62-1
Refractive index	20 °C	1.586	–	ISO 489
MECHANICAL				
Tensile stress at yield		> 60	MPa	ISO 527-2/1B/50
Elongation at yield		6	%	ISO 527-2/1B/50
Tensile strength		> 60	MPa	ISO 527-2/1B/50
Elongation at break		> 70	%	ISO 527-2/1B/50
Elastic modulus		2400	MPa	ISO 527-2/1B/1
Limiting flexural stress		ca. 90	MPa	ISO 178
Impact strength	Charpy, unnotched	no break	kJ/m ²	ISO 179/1fU
	Charpy, notched	ca. 11	kJ/m ²	ISO 179/1eA
	Izod, notched	ca. 10	kJ/m ²	ISO 180/1A
	Izod, notched ¹⁾	ca. 70	kJ/m ²	ISO 180/4A
THERMAL				
Vicat softening temperature	Method B50	148	°C	ISO 306
Thermal conductivity		0.2	W/m °C	DIN 52612
Coeff. of linear thermal expansion		0.065	mm/m °C	DIN 53752-A
Heat deflection temperature under load	Method A: 1.80 MPa	127	°C	ISO 75-2
	Method B: 0.45 MPa	139	°C	ISO 75-2
ELECTRICAL				
Dielectric strength		35	kV/mm	IEC 60243-1
Volume resistivity		10 ¹⁶	Ohm·cm	IEC 60093
Surface resistivity		10 ¹⁴	Ohm	IEC 60093
Dielectric constant	at 10 ³ Hz	3.1		IEC 60250
	at 10 ⁶ Hz	3		IEC 60250
Dissipation factor	at 10 ³ Hz	0.0005		IEC 60250
	at 10 ⁶ Hz	0.009		IEC 60250

** Test Results supplied by BAYER Sheet Europe GmbH, Darmstadt, Germany

Resistance to chemicals

	6 days / 23 °C	6 days / 50 °C
Acetic acid, 10 % in water	+	+
Acetone	swells	
Ammonia, 0.1 % in water	-	
Ammonium nitrate, 10 % in water/neutral	+	-
Benzene	swells	
Benzine (free from aromatic hydrocarbons)	+	+
Butyl acetate	-	
Carbon tetrachloride	swells	
Chloroform	dissolves	
Citric acid, 10 % in water	+	
Dibutyl phthalate	-	
Diethyl ether	-	
Dimethyl formamide	dissolves	
Diethyl phthalate	-	
Dioxane	dissolves	
Ethanol (pure)	+	+
Ethyl acetate	swells	
Ethylamine	-	
Ethylene chloride	swells	
Ethylene glycol, 1:1 with water	+	+
Glycerin	reacts	
Hexane	+	+
Hydrochloric acid, 10% in water	+	+
Hydrogen peroxide, 30 % in water	+	
Iron(III) chloride, saturated/aqueous solution	+	+
Isooctane (2,2,4-trimethyl pentane), pure	+	+ (40 °C)
Isopropanol (pure)	+	
Methanol	-	
Methyl ethyl ketone	swells	
Methylamine	reacts	
Methylene chloride	dissolves	
Nitric acid, 10 % in water	+	
n-propanol	- (30 °C)	
Ozone, 1 % in air	-	
Paraffin, paraffin oil, pure/free from aromatic hydrocarbons	+	+
Phosphoric acid, 1 % in water	+	-
Potassium hydroxide, 1 % in water	-	
Propane	+	+
Silicone oil	+	+
Sodium carbonate (soda), 10 % in water	+	- (70 °C)
Sodium chloride, saturated/aqueous solution	+	+
Sodium hydroxide (caustic soda), 1 % in water	-	
Sodium nitrate, 10 % in water	+	
Styrene	-	
Sulfuric acid, 10 % in water	+	+
Tetrachloroethane	swells	
Tetrachloroethylene	-	
Trichloroethylene	swells	
Tricresyl phosphate	-	
Triethylene glycol	+	+
Xylene	swells	

+ = resistant

- = non resistant

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