

TEKCRYL 101, 205 & 304

Methacrylate Resin Flooring System

Description

The TEKCRYL Methacrylate Flooring System is designed for use as an industrial seamless floor, where the site conditions do not allow the application of a conventional epoxy floor. ie. when,

- Limited down time requires that the floor to be resurfaced must be ready for use within 24 hours from commencement.
- The floor surface temperature is below 10 deg. C, thereby preventing an epoxy floor from curing adequately.
- Chemical exposure to dilute organic acids such as 20 % acetic and 20 % lactic acid as well as mineral acids up to 40% phosphoric and 20 % nitric acid is required.

The Methacrylate Flooring System is NOT suitable for exposure to strong solvents and animal and vegetable fats at elevated temperatures.

Major Applications

TEKCRYL Methacrylate Floors are suitable for use in a wide range of industries.

- Beverage manufacturers, dairies, breweries, juice processors and wineries.
- Abattoirs, meat processors, the seafood industry and canneries.
- Retail and hospitality outlets, eg. kitchens, bars and service counters.
- Pharmaceuticals and cleaning product manufacturers.
- The transport sector, railway platforms, bus depots, ferry terminals etc.

The products are particularly suited to use on loading docks and traffic and safety markers due to their fast cure and high impact and shock resistance. Their use in freezers and cold storage warehouses is well documented. Floors can be repaired or resurfaced without turning of the cooling unit.

Application of a methacrylate floor, requires that the surface be well prepared, primed and sealed. The level of topping thickness required is dependant on the impact and traffic flow and type that the floor surface will be subjected to.

The basic TEKCRYL range of products, comprises

TEKCRYL 101 Concrete primer

TEKCRYL 205 Base coat

TEKCRYL 304 Topcoat

BPO Catalyst 50%

Plus a range of companion products which are required for specific environmental conditions

- TEKCRYL 106, primer for damp substrates
- TEKCRYL 107 Specialist primer for metals and tiles
- TEKCRYL 224 Flexibilised basecoat for sub zero temperatures
- TEKCRYL 404 Catalyst for subzero temperatures
- TEKCRYL Mortar for patching holes in floors prior to coating
- TEKCRYL bfk Resin for producing non sag methacrylate coves
- TEKCRYL 301 Sealing resin for abrasion & chemical exposure
- TEKCRYL 306 Specialist sealer for wet production areas

Technical Characteristics

At 20 C

PROPERTY	TEKCRYL 101	TEKCRYL 205	TEKCRYL 304
Tensile Strength	10.3 MPa	6.8 MPa	42 MPa
Elongation	0.6 %	135 %	4 %
Elastic Modulus	2000 MPa	38 MPa	2600 MPa
Cured Density	1.16 g/ml	1.10 g/ml	1.18 g/ml
Initial Viscosity	100-130	130-170 mPas	70-90 mPas
Pot Life@ 20 deg	10 min	15 min	15 min
Curing Time@20 deg	30 min	40 min	40 min
Flash Point	+ 11.5	+ 11.5 deg	+ 11.5 deg
Catalyst @ 20 deg	2 %	2 % by wt	1.5 %

PROPERTY	TEKCRYL 224	TEKCRYL 301	TEKCRYL 306
Tensile Strength	4.5 MPa	40 MPa	26 MPa
Elongation	285 %	1.7 %	35 %
Elastic Modulus	23 MPa	3140 MPa	700 MPa
Cured Density	1.18 g/ml	1.19	1.14 g/ml
Initial Viscosity	620-680 mPas	70-90 mPas	70 – 90 mPas
Pot Life@ 20 deg	15 min	15 min	15 min
Curing Time@20 deg	40 min	40 min	40 min
Flash Point	+ 11.5 deg	+ 11.5 deg	+ 11.5 deg
Catalyst @ 20 deg			

Chemical Resistance:

TEKCRYL floors have excellent resistance to water based contaminants such as water, salts, dilute acids and alkalies, as well as sterilizing solutions such as hydrogen peroxide and hypochlorite solutions. The products are also suitable for use with paraffinic hydrocarbons such as diesel and motor oils. The following table gives a comparison between a methacrylate floor and a premium performance epoxy floor. It can be seen that the epoxy floor is superior only in its exposure to solvents, hot oils, fatty acids and aromatic oils.

- 100% Solids
- Suited for Low Downtimes Floors
- Quick Cure

Epoxy vs Methacrylate Selection Chart

Chemical Exposure

CHEMICAL	TEKCRYL Methacrylate	ATECH EPOFLOOR SLF
Acetic acid 15%	Good	Poor
Lactic Acid 5 %	Good	Good
Fatty acid/ hot animal fats	Poor	Good
Hydrochloric acid 30%	Good	Poor
Nitric acid 20%	Good	Poor
Phosphoric acid 40%	Good	Poor
Sulphuric acid 30%	Good	Poor
Sodium hydroxide 30 %	Fair	Excellent
Butyl acetate etc	Poor	Fair
Butyl alcohol	Poor	Good
Ethyl alcohol 15 %	Poor	Excellent
Kerosene, Diesel	Good	Excellent
Skydrol Fluid	Poor	Excellent
Toluene, Xylene etc	Poor	Good
White spirit	Good	Excellent

Application

Surface preparation - All surfaces need to be dry and free from dust, loose material and contaminants such as curing membranes, oil and grease. Standard methods of floor preparation such as degreasing, diamond grinding and shotblasting are suitable.

Priming – Concrete needs to be primed with TEKCRYL 101 primer. For asphalt surfaces TEKCRYL primer 102 is used. A coverage rate of 3 sqm / litre is normal, this may vary slightly with the porosity of the surface. The primed surface may be sprinkled lightly with a coarse sand to aid adhesion.

Base coat

(1) TEKCRYL 205 once catalysed is blended with ATECH SL quartz aggregate mix. One 12 Kg bag of SL aggregate mix is added to 6 litres of TEKCRYL 205.

Field Support

Field support where provided, does not constitute supervisory responsibility. Suggestions made by ATECH either verbally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they and not ATECH are responsible for carrying out procedures appropriate to a specific application.

Customer Responsibility

The technical information and application advice given in this publication is based on the best information available at time of print. As the information herein is of a general nature, no assumption can be made as to the products suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by Commonwealth or State Legislation. The owner, his representative or the contractor is responsible for checking the suitability of products for their intended use.

This mix is applied by trowel over an area of 5 sqm, giving an average topping depth of 2.5 mm. The wet mix is then broadcast with a – 1 mm sand until a beach finish is obtained. After curing, excess 1 mm sand is removed by sweeping or vacuuming.

(2) Alternative method for floors with falls. Prepare a trowel mix by blending 5 litres of TEKCRYL 205 with 15 Kg of blended sands containing coarse aggregates. Spread this mix over an area of 3 - 4 square metres.

Topcoat - The exposed sandy surface is sealed with TEKCRYL 304 at a coverage rate of 2 – 3 square metres per litre. A further coat of TEKCRYL 304 is then applied after the first coat has cured. Pigmentation – Liquid TEKCRYL pigments may be added to the TEKCRYL System as required. An addition of 2 % on the total wt of the sand resin mix is generally satisfactory. The TEKCRYL 305 Topcoat should have an addition rate of around 3 -4 % by wt of the resin

Use of Catalyst

All TEKCRYL Methacrylate Resins use the same catalyst, a 50 % benzoyl peroxide powder. The quantity of catalyst required is dependant on the application temperature and the type of resin in question

Catalyst addition at 20 deg C by wt. by volume x 1.6

Product	Catalyst	Product	Catalyst	Product	Catalyst
TEKCRYL	101 2 %	TEKCRYL	301 1.5 %	TEKCRYL	225 2 %
TEKCRYL	106 2%	TEKCRYL	304 1.5 %	TEKCRYL	Cove
TEKCRYL	205 2 %	TEKCRYL	306 1.5 %	TEKCRYL	107 2 %

Catalyst addition with temperature, TEKCRYL 101, 205

30 deg	1 %	15 deg	3 %	5 deg	5 %	Minus 0	6%
20 deg	2 %	10 deg	4 %	0 deg	6 %	Plus 404	

Health & Safety

Protective gloves and safety goggles must be worn during mixing and application of TEKCRYL Resins. These resins are highly flammable, keep away from all sources of ignition and do not smoke.

Safety Precautions

Epoxy products may cause allergic reactions through skin contact, goggles, protective gloves and overalls must be worn. Ensure that there is adequate ventilation and avoid breathing the vapour.

Exclusion Clause

- The information contained in this data sheet is based on many years experience and is correct to the best of our knowledge. ATECH will be under no liability whatsoever whether in:
 - Contract or tort (including, without limitation, negligence)
 - Breach of statute
 - Any other legal or equitable obligation other than the quality of the product at the time of despatch.
- Any queries about specification use or application should be directed to our technical service department immediately.
- This exclusion clause does not operate to exclude any warranty that by law may not be excluded.



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