

# HYCRYL 101, 205 & 304

Methacrylate resin flooring system



**HYCHEM**  
EPOXY SYSTEMS

The HYCRYL 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,

- a) Limited down time requires that the floor to be resurfaced must be ready for use within 24 hours from commencement
- b) The floor surface temperature is below 10°C, thereby preventing an epoxy floor from curing adequately
- c) 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

HYCRYL 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 HYCRYL range of products, comprises:

- HYCRYL 101 - Concrete primer
- HYCRYL 205 - Base coat
- HYCRYL 304 - Topcoat
- BPO Catalyst - 50%

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

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

## TECHNICAL CHARACTERISTICS (AT 20°C)

PROPERTY	HYCRYL 101	HYCRYL 205	HYCRYL 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 MPas	130-170 MPas	70-90 MPas
Pot life @ 20°C	10 mins	15 mins	15 mins
Curing time @ 20°C	30 mins	40 mins	40 mins
Flash point	+11.5°C	+11.5°C	+11.5°C
Catalyst @ 20°C	2 %	2 % by wt	1.5 %

PROPERTY	HYCRYL 224	HYCRYL 301	HYCRYL 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	1.18g/ml	1.19 g/ml	1.14 g/ml
Initial viscosity	620-680 MPas	70-90 MPas	70-90 MPas
Pot life @ 20°C	15 mins	15 mins	15 mins
Curing time @ 20°C	40 mins	40 mins	40 mins
Flash point	+11.5°C	+11.5°C	+11.5°C
Catalyst @ 20°C			

## CHEMICAL RESISTANCE

HYCRYL floors have excellent resistance to water based contaminants such as water, salts, dilute acids and alkalis, 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.

## EPOXY VS METHACRYLATE SELECTION CHART

### Chemical Exposure

PROPERTY	PRIMER	BASECOAT
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

PROPERTY	PRIMER	BASECOAT
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



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## APPLICATION GUIDELINES

### 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 HYCRYL 101 primer. For asphalt surfaces HYCRYL 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) HYCRYL 205 once catalysed is blended with HYCHEM SL quartz aggregate mix. One 12kg bag of SL aggregate mix is added to 6 litres of HYCRYL 205. 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 HYCRYL 205 with 15kg of blended sands containing coarse aggregates. Spread this mix over an area of 3-4 square metres.

### Top Coat

The exposed sandy surface is sealed with HYCRYL 304 at a coverage rate of 2-3 square metres per litre. A further coat of HYCRYL 304 is then applied after the first coat has cured.

### Pigmentation

Liquid HYCRYL pigments may be added to the HYCRYL System as required. An addition of 2% on the total wt of the sand resin mix is generally satisfactory. The HYCRYL 305 Topcoat should have an addition rate of around 3 -4% by wt of the resin.

## USE OF CATALYST

All HYCRYL 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°C by wt. by volume

PRODUCT	CATALYST
HYCRYL 101	2%
HYCRYL 106	2%
HYCRYL 205	2%
HYCRYL 301	1.5%
HYCRYL 304	1.5%
HYCRYL 306	1.5%
HYCRYL 225	2%
HYCRYL Cove	
HYCRYL 107	2%

### Catalyst addition with temperature, HYCRYL 101, 205

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

## HEALTH AND SAFETY

Protective gloves and safety goggles must be worn during mixing and application of HYCRYL 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.

### Field Support

Field support where provided, does not constitute supervisory responsibility. Suggestions made by HYCHEM either verbally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they and not HYCHEM 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 the time of print. As the information herein is of a general nature, no assumption can be made as to the product 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.

### Exclusion Clause

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



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