MasterShield® 1825

A Non-toxic High Build, Phenol Novolac Protective Epoxy Resin Coating

Material Description

MasterShield® 1825 is a protective high build phenol novolac epoxy resin coating specifically developed to protect concrete. Supplied as a twopack system comprising pigmented base and a hardener, it requires only on site mixing to produce an easily applied decorative and chemically resistant finish.

Areas of Application

For the internal protection of concrete tanks containing certain chemicals, oils and fuel particularly in oil refineries, paper mills, power stations, garages, hospitals, sugar refineries, hangars, laboratories, sewage and waste water treatment plants and most other liquid containment areas.

Characteristics and Benefits

- Excellent chemical resistance
- Easily applied by brush, roller or spray
- High build coating
- Application for anti-slip finish system
- Solvent free
- Non-toxic
- Hygienic and easily cleaned
- High gloss and ultra dense surface

Processing Method

(A) Preparation of Substrate

The concrete surfaces to which the product will be applied must be type C25 or have a minimum dosage quality of 350 and be at least three weeks old. After preparing the surface, the concrete floor's strength must be at least 1.5 N/mm^2. The moisture content of the concrete floor should not exceed 4% (as measured by a CM device). If necessary, apply a moisture-proof layer. The floor temperature must be at least 50°F, and care must be taken to ensure that the dew point is at least 33°F above this temperature. All surfaces must be solid, load-bearing, dust-free, dry, and clean. The surface must be free of oil, grease, rust, paraffin, or other residues that could weaken adhesion. Any foam layer formed on oil-absorbed surfaces should be removed with a Blastrac or Rotatiger, and the resulting dust should be swept up with an industrial vacuum cleaner.

Technical Properties	
Mixed Density	1,3 kg/m^3
Color	Grey
Volume Solids	>%98
Pot Life	30 minutes
Re-coatable Time	16 hours
Full Curing	7 days
Abrasion Resistance (EN ISO 5470-1 Lost of weight <3000 mg H22 wheel)	1030 mg
Compressive Strength (28 days)	> 75 N/mm^2
Flexural Strength (28 days)	> 50 N/mm^2
Tensile Strength (EN 1542 Rigid Systems With trafficking:>2,0 N/mm^2(1,5 min))	> 3,0 N/mm^2
Shore D Hardness (EN ISO 868 7 days)	> 90

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(B) Mixing

Slowly add the hardener component, **MasterShield® 1825** Part B, to the resin component **MasterShield® 1825** Part A and mixed with a 400 - 500 rpm mixer for 3-4 minutes until a homogeneous mixture is obtained. After resting for approximately 3 – 5 minutes, mix again for 30 seconds, and the material is ready for use.

(C) Processing

Primer Application

The primer material, MasterCoat® PRI 617 or **MasterShield® 1825**, is mixed at the ratio specified in the product technical data sheet using a suitable mixer at low speed (400-500 rpm) and applied to the surface with a roller at a consumption rate of approximately 250-300 g/m^2. The surface must be protected from further corrosion.

Coating Application

MasterShield® 1825 can be applied using a special roller, brush, or spray machine. The second coat must be applied within the specified timeframe. If the second coat application time is exceeded, the surface must be roughened.

By using **MasterShield® 1825** in combination with **MasterJoint® C Glass** fiberglass mesh, thicker systems with higher performance characteristics can be created. For technical specifications, please contact **MBT Tech** Technical Service.

Consumption

MasterShield® 1825 consumption is approximately 350–400 g/m^2 per coat. It should be applied in at least two coats, depending on the condition of the application surface, its porosity, and the desired film thickness. Thicker systems can be created in chemically challenging environments or areas requiring higher temperature resistance.
These consumption rates are theoretical and may vary depending on the absorbency and roughness of the surface. Field tests must be conducted on-site to determine the exact consumption rate.

Chemical Resistance

MasterShield® 1825 is resistant to intermittent spills of the chemicals listed below. Since the temperature and concentration of the chemical are the two most important factors affecting the resistance of the coating, please consult **MBT Tech** Technical Service for details and other chemicals and resistance times.

Sulfuric Acid (%98)	Skydrol
Sulfuric Acid (%70)	Xylene
Sulfuric Acid (%10)	Citric Acid (%50)
Hydrochloric Acid (%37)	Sewage Water
Hydrofluoric Acid (%25)	Diesel Fuel
Lactic Acid (%20)	Bleach
Nitric Acid (%30)	Jet Fuel
Tartaric Acid (%50)	Toulene
Sodium Hydroxide (%50 solution)	Sea Water

Point to Consider

- Wait for the appropriate ambient and substrate temperature if it is less then 5°C or more than 35°C. Also application should not be made in very hot, rainy or windy weathers.
- In cold weather applications, packages have to be conditioned in +20°C - +35°C to maximize the material's workability.
- Working and reaction time of epoxy resin based systems are affected by environment and ground temperature, and relative humidity in the air. Low temperatures slow down the chemical reaction, and increase working period, coating time, and work time. Also coverage decreases because viscosity increases. High temperatures accelerate the chemical reaction and times stated above are reduced depending on this. For the material to complete its curing, environment and ground temperatures must not fall down below the minimum allowed value.

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- Do not add solvents or similar substances to MasterShield® 1825.
- After application, the surface must be protected from sunlight, wind, frost, or rain for the first 24 hours.

Packaging

MasterShield® 1825 Part A: 3,68 kg tin
MasterShield® 1825 Part B: 1,52 kg tin

Shelf Life

12 months after the production date under appropriate storing conditions.Opened packages have to be stored by tightly sealing the bag/cover and must be used in one week.

Storage

It should be stored in its unopened original package, in a cool (+5°C - +35°C) and dry environment, protected from frost. In short-term storage, maximum 3 pallets should be placed on top of each other and shipment should be made with a first-in, first-out system. In long-term storage, pallets should not be placed on top of each other.

Health and Safety

It is dangerous to approach the application sites. During the application, a protective apparel, protective gloves, goggles and masks which comply with the Occupational Health and Safety Rules should be used. Due to the irritation effect of the uncured materials, the mixture should not come into contact with skin and eyes; in case of a contact, the affected area should be washed with plenty of water and soap; in case of swallowing, a physician should be consulted immediately. No food or beverages should be brought to the application area. The product should be stored and kept out of reach of children. For detailed information please consult the Material Safety Data Sheet.

Disclaimer

The technical information given in this publication is based on the present state of our best scientific and practical knowledge. **MBT Teknik Yapı Kimyasalları Sanayi ve Ticaret A.Ş.** is only responsible for the quality of the product **MBT Teknik Yapı Kimyasalları Sanayi ve Ticaret A.Ş.** is not responsible for results that may occur because the product is used other than advised and/or out of instructions regarding the place and the method of use. This technical form is valid only till a new version is implemented and nullifies the old ones.

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MasterShield® 1825

TS EN 1504-2:2004
2.2 Nem Kontrolü, 8.2 Nem içeriğini sınırlayarak direnci artırma
2.2 Moisture control, 8.2 Increasing resistivity

Beton için yüzey koruma sistemleri
Surface protection systems for concrete

Kaplama uygulaması
Coating application

Su Buharı Geçirgenliği (Permeability to water vapour)	Sınıf I Class I
Kapiler Su emme ve Su geçirgenliği (Capillary absorption and permeability to water)	w<0,1 kg /m².√h
Çekip koparma deneyi (Adhesion strength by pull-off test)	Rijit sistemler trafik yük ile birlikte: ≥2 N/mm² Rigid systems with traffic load
Yangına karşı tepki (Reaction to fire)	E
Tehlikeli maddeler (Dangerous substances)	Madde 5.3 'e uygun (Comply with clause 5.3)