

MASTERSEAL™ 180

Non-toxic, solvent free, high build epoxy resin, protective coating for concrete and metal

Description

MASTERSEAL 180 is a two-component epoxy resin system, comprising pigmented base and a hardener, specifically formulated to protect concrete and steel. On mixing of the two components, it yields a high build, chemical resistant protective coating, which cures to a semi glossy, ultra dense surface that is easily cleaned, hygienic and safe for contact with foodstuff and potable water.

Uses

MASTERSEAL 180 is recommended as a protective coating for the inside surfaces of tanks, sumps and walls and as a pore free surface sealer resistant to the growth of bacteria. Applications include:

- Coating drink water reservoirs
- Chemicals storage tanks.
- Dairies & grain silos
- Pulp and paper plants
- As a gas and vapour barrier coating to concrete and metal surfaces.
- Meat processing, food industries & breweries.
- Clean rooms in pharmaceutical facilities
- As protective coating in oil refineries, paper mills, power stations, garages, hospitals, hangars, etc.

Advantages

- Non-toxic & non-tainting: safe for drinking water
- Impermeable – vapour barrier for low RH areas
- High chemical resistance
- Solvent free – Virtually no odour, Zero VOC
- High build coating – tough & durable
- Hard surface - Easy to clean
- Resistant to mould growth & abrasion

Typical properties

Volume Solids	: 100%
Pot life	: 60 Minutes at 25°C
	: 30 Minutes at 40°C
Mixed density	: 1.55 kg/litre at 25°C
Mixing Ratio, by weight	: 100(Base): 14.4(Hardener)
Touch dry	: 4 Hours at 30°C
Recoat able	: 12 -18 Hours at 30°C
Open to foot traffic	: 24 Hours at 30°C
Final cure	: 5 Days at 30°C
Adhesive bond strength to concrete, (ASTM D 4541)	: >1.5 MPa (concrete failure)
Abrasion resistance CS17 wheel (ASTM D4060, 1000 cycles)	: < 20 mg
DFT, in two coats	: 400 - 500 microns

Approvals

- CFTRI approval for use with potable water

Specification Clause:

The non-toxic, high build epoxy coating shall be MASTERSEAL 180, solvent-less, taint free potable grade, protective coating. The product shall exhibit excellent bond strength with the substrate at least exceeding 1.5 MPa, when tested as per ASTM D4541. The product shall be formulated to have high build thickness exceeding 200 microns per coat on average and shall be applied to achieve overall thickness of 400 microns in two coats. The product must be approved by reputed institute such as CFTRI for use in contact with potable water.

Chemical resistance

MASTERSEAL 180 is resistant to intermittent spillages of the following typically encountered chemicals:

- Formaldehyde, 40% solution
- Sulphuric Acid, 50% solution
- Hydrochloric Acid, 50% solution
- Hydrochloric Acid 5% solution
- Lactic Acid, 50% solution
- Nitric Acid, 10% solution
- Sodium Hydroxide, 50% solution
- Diesel oil
- Wine
- Sea and brackish water
- Aviation hydraulic fuels (Skydrol)
- Vegetable oils

Note: Higher concentration of mineral acids may cause matting of the surface and colour changes.

Directions for use

Surface preparation

It is most important to ensure that thorough surface preparation is undertaken prior to application of the MASTERSEAL 180 coating.

Temperature Requirements

- Substrate temperatures: 15°C – 35°C
- Material temperatures: 15°C – 30°C

Very low or very hot temperatures will make application more difficult and careful consideration should be given to storage of materials. In the cold weather conditions, pre-condition materials by keeping it in a heated room. In hot weather conditions, some form of air-conditioned storage is required. Pre-conditioned materials at 20-25°C will reduce the possibilities of flash/slow setting and other defects.

Concrete

Ensure concrete is at least 28 days old and sound. Oil, grease, mould release agent, curing membrane, and such other contaminants must be removed by mild detergent and water, and by thoroughly scrubbing with a soft brush. If the wall surface is damp or water is seeping out, it is necessary to stop the leakage before coating. For advice on the appropriate method for the site situation, contact BASF. It is important to note that the final finish obtained is entirely dependent on the surface finish of the substrate.

Where a hygienic surface is critical such as in potable water tanks and food industries even out all unevenness such as blowholes, pin holes and other surface defects with CONCRESEAL 2200 before application of coating.

Steel

Remove all previous surface treatments and corrosion products by sand/shot blasting to SA 2½ finish or to bright metal finish. Do not allow long time gap between the surface preparation and the coating to prevent re-oxidising of metal before application of MASTERSEAL 180.

Mixing

MASTERSEAL 180 is supplied in two pre-weighed components, Base and Hardener. Properly stir each component separately before mixing together to ensure uniform consistency.

MASTERSEAL 180 is supplied in pre-proportioned kits for complete mixing. Combine Hardener and Base component in a suitably sized container. Ensure to scrap the sides of the containers to ensure a complete reaction.

Mix properly for 3 minutes with a slow-speed drill and wing style mixing paddle at 300-400 rpm until a homogeneous colour is achieved. Keep the paddle below the surface to avoid entrapping air. Do not mix by hand.

Application

MASTERSEAL 180 can be applied using short nap roller, shorthaired brushes or by airless spray. Apply in two coats preferably in contrasting colours, each at a W.F.T. of 180 to 250 microns, the second coat applied after the first coat has dried (12-18 hours at 30°C) and at right angles to it. Should the application of second coat be delayed, abrade the previous coat to give an adequate mechanical key and wipe with CLEANING SOLVENT NO. 2 before the application.

Airless spray

For application by airless spray, use a pump with 45:1 or higher ratio, minimum 9 mm dia hoses and a nozzle tip of size 0.48 mm to 0.58 mm.

Coverage

Each 5 kg pack yields 3.2 L on mixing and is sufficient to coat approximately 8 m² in 2 coats of 200 microns each, on a fair faced concrete surface.

Actual coverage depends on the numbers of coats, surface profile, loss and wastage.

Packaging

MASTERSEAL 180 is supplied in 5kg packs consisting of Base and Hardener.

Storage and Shelf life

Store under cover, out of direct sunlight and protect from extremes of temperature. In tropical climates the product must be stored in an air-conditioned environment.

Shelf life is 12 months when stored as above.

Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice please consult BASF's Technical Services Department.

Safety precautions

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs (which can also be tainted with vapour until product fully cured or dried). Treat splashes to eyes and skin immediately. If accidentally ingested, seek immediate medical attention. Keep away from children and animals. Reseal containers after use. Do not reuse containers for storage of consumable item. For further information refer to the material safety data sheet. MSDS available on demand or on BASF construction chemicals web site.

Note

All BASF Technical Data Sheets are updated on regular basis; it is the user's responsibility, to obtain the most recent issue.

Field services where provided, does not constitute supervisory responsibility, for additional information contact your local BASF representative.

Disclaimer

Whilst any information contained herein is true, accurate and represents our best knowledge and experience, no warranty is given or implied with any recommendations made by us, our representatives or distributors, as the conditions of use and the competence of any labour involved in the application are beyond our control.

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