MasterShield™ 180

Epoxy Based Two Parts Protective Coating

Material Description

MasterShield™ 180 is an epoxy based two parts coating material developed especially to protect concrete and steel.

Complies with EN 1504-2

Areas of Application

- Indoor and outdoor areas for vertical and horizontal applications
- Metal or concrete tanks
- Walls; as gas and vapor barrier coating resistant to chemical materials
- Oil and fuel tanks
- Power stations, sugar factories, hangars, and liquid storage areasIn drinking water depots
- Petroleum refineries and paper factories*
- Beer, wine and raisin industry*
- Soft drink and fruit juice industry*
- Milk, cheese, and yogurt industry*
- Tomato paste and canned food industry*
- Meat and fish industry*
- Medicine, paint, paper, battery and fertilizer industry*
- Printing houses, kitchens and laundries of hotels*
- Laboratories of hospitals, mess halls, wet volumes, and hygienic environments*

* *Used only walls*

Characteristics and Benefits

- Glossy surface
- Forms a surface structure that preventsformation of microbes
- Easy to clean and create hygienic environments.
- High mechanic strength
- Has elasticity to absorb movements on metal surfaces
- Has higher chemical strength compared to standard epoxy coatings
- Easy to apply by brush, roll or spraying method
- Water impermeable
- Does not contain solvents

Processing Method

(A) Preparation of Substrate

Application surface (concrete or metal) must be strong and as smooth as possible. Most importantly,

Technical Properties

Structure of the Material **MasterShield™ 180** Part A **MasterShield™ 180** Part B	 Epoxy Resin Epoxy Hardener	
Color	White-Grey and RAL Colors	**LX**
Consistency	Brush	
Pot Life	45 minutes	
First Curing (+35^{0}C)	12 hours	
Final Curing (+35^{0}C)	7 days	
Dry Film Thickness	125-250 Microns (in each layer)	
Adhesion Strength (EN 1542) To concrete (7 days) To steel (7 days)	 >2,50 N/mm^2 >2,50 N/mm^2	

The above values are given for +23^{0}C and 50% relative humidity. High temperatures shorten the time, low temperatures lengthen it.

MasterShield™ 180

Epoxy Based Two Parts Protective Coating

all the surface that **MasterShield™ 180** will be applied has to be prepared as clean and strong.

Concrete

Cement based surfaces of the structures contacting with water have to be strong, dry, bearing, dustless, clean, and also in balance. Surface must be cleaned off all kinds of oil, grease, rust, and paraffin traces that can weaken adherence and no loose particles must be present. Iron and wooden wedges on the surface have to be removed, and active water leakages and spaces must be filled by **MasterJoint™ 591**, if present. Corners and sides must be beveled with minimum 4 cm radius bevels.

Steel

Steel surfaces have to be cleaned off all kinds of oil, grease, and rust traces that can weaken adherence and suitable surface has to be obtained by sand blasting. When it is not possible to make sand blasting, cleaning must be made by air scraper gun or dish wire brush. When the surface is greasy and oily, oil rippers are used. Right after the cleaning, **MasterShield™ 180** must be applied. Corrosion of surface has to be prevented.

(B) Mixing

MasterShield™ 180 has two parts in pails, produced according to right mixing ratio. Material temperature should be between 15 - 25ºC before mixing. Part B should be added into the Part A without any remaining material in the pail. It should be mixed with using a proper mixer (400 – 600 rpm) for polymer mixing. Mix the parts at least 3-5 minutes to have a homogenous mixture. After waiting for 3-5 minutes, the mixture is mixed again for approximately 30 seconds, and becomes ready to use.

Mixing Ratio

MasterShield™ 180	Part A	Part B
Quantity	4,36 kg	0,64 kg
Mixed Density	~ 1,50 kg/liter	

(C) Processing

MasterShield™ 180 can be applied by roller or spray machine. **MasterShield™ 180** must be applied in two layers. The best application is to apply the second layer when the first one is not completely cured. If the period between layers is over 24 hours, then surface must be roughened.

Top coating

If there is a need for re-coating due to damages or other reasons, the surface to be applied must be roughened by wire brush or emery paper to obtain necessary mechanic holding. The damaged coating must be cleaned off completely and new application must be made like it is the first time.

Consumption

MasterShield™ 180 is suggested to be applied in two layers. The coverage is approximately 0.20-0.40 kg/m^2 for each layer. Dry film thickness of around 125 to 250 microns is enough for **MasterShield™ 180.**

Point to Consider

- Wait for the appropriate ambient and substrate temperature if it is less then 5ºC or more than 30ºC. Also application should not be made in very hot, rainy or windy weathers.
- In cold weather applications, packages have to be conditioned in +20ºC - +25ºC 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.
- In exterior surface applications, the surface must be protected from sun, wind, frost or rain during the first 24 hours.

MasterShield™ 180

Epoxy Based Two Parts Protective Coating

- In water tanks, where movement is expected **MasterJoint™ WP 666** or **MasterJoint™ 525** is suggested to be used before **MasterShield™ 180.**
- Limited UV resistance.
- Please consult **MBT Tech** Technical Service when spraying applications are preferred.

Chemical Resistance Table

Formaldehye	%40 solution	+
Sulfuric Acid	%50 solution	+
Hydrochloric Acid	%50 solution	+
Lactic Acid	%50 solution	+
Nitric Acid	%100 solution	+
Sodium Hydroxide	%50 solution	+
Fuel Oil		(+)
Wine		+
Sea Water		+
Hard Waters		+
Plane Fuels (Skydrol)		(+)
Vegetable Oils		(+)
Signs: + Resistant, (+) Limited Resistant, (-) Resistant		

Cleaning of Tools

All the tools and equipments must be cleaned by water after the application. After **MasterShield™ 180** is hardened, it can only be removed from the surface mechanically.

Packaging

5 kg set
Part A: 4.36 kg tin
Part B: 0.64 kg tin

Shelf Life

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

Storage

Must be stored in unopened original packing, and in cool and dry environment protected from freezing. In short-term storing, maximum 3 palettes can be stowed on top of each other and delivery has to be according to first in first out system. In long-term storing, the palettes must not be stowed 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

Contact

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