

# MasterProtect® 190 / 190SP

**A two-component solvent free high build flexible epoxy polyurethane resin coating system**

## DESCRIPTION

**MasterProtect 190 / 190SP** is a two-component solvent free, liquid epoxy polyurethane resin. The superior adhesion and chemical resistance of the epoxy resin, in combination with the flexibility of polyurethane and water-resistant qualities of epoxy produce a system that will provide a high build, ultra dense coating to protect concrete, other cementitious substrates, and metal, against a wide range of aggressive media present in the sewerage environment. The coating will not support the growth of bacteria.

**MasterProtect 190 / 190SP** in appearance, is smooth, the unique formulation of the system with the aliphatic polyurethane modification exhibits some degree of the flexibility and resistance to U.V. **MasterProtect 190 / 190SP** is high gloss in finish, heavy bodied, ultra dense surface. Hygienic and easily cleaned. Standard colours are light grey, dark grey, black, white, red, green and blue.

## TYPICAL APPLICATIONS

**MasterProtect 190 / 190SP** is particularly suitable for use in offshore or marine environments and sewerage work applications such as aeration tanks clarifiers and permanent submerged condition where chemical resistance is of paramount importance.

**MasterProtect 190 / 190SP** is used to provide heavy-duty protective, waterproof, and flexible coating. Uses include the lining of tanks, pipes and ducting, coating concrete, asbestos cement, steel pipes and non-ferrous metals.

## ADVANTAGES

- No primer required
- Limited UV resistant
- High build coating
- Easy application: brush, roller or spray
- Economical
- Excellent chemical resistance to aqueous media
- Non-solvented
- Excellent broad-spectrum chemical resistance
- Abrasion resistant
- Seamless finish
- Pre-weighed components
- Long-term corrosion protection

- Also available in sprayable version (**MasterProtect 190SP**) which should be applied using suitable airless spray equipment only

## PACKAGING

**MasterProtect 190** is supplied in 13.5 kg units.

**MasterProtect 190SP** (Sprayable version) is supplied in 13.5 kg units.

## STANDARDS

ANSI/ASTM: C881: Type 111: Grade 2: Class C  
BS 5493.

## TYPICAL PROPERTIES

Pot life @30°C	30 min
Tack free time @40°C	approx. 6 h
Initial cure @30°C	12 h
Final cure @30°C	4 days
Water Absorption ASTM C413-88	Nil
Linear shrinkage ASTM C531-85	0.48 mm (1.65%)
Modulus of elasticity (psi)	1.18 x 10 <sup>5</sup>
Solids	100%
Tensile Strength ASTM D638	23 N/mm <sup>2</sup>
Elongation at break ASTM D638	>10%
Adhesion strength	2.2 N/mm <sup>2</sup>
Specific gravity @25°C	1.45 - 1.7kg/L
Pull off bond strength ASTM D4541	4 N/mm <sup>2</sup>

## APPLICATION GUIDELINES

### SURFACE PREPARATION

The substrate should be a smooth or semi-smooth sound surface such as concrete or metal. It is most important to ensure that thorough surface preparation is undertaken prior to application of the **MasterProtect 190 / 190SP** coating.

### Concrete

Ensure concrete is free from excessive laitance, grease, oil, curing compound, etc. Ensure concrete is sound, cutting back where necessary and making good using suitable Master Builders Solutions **MasterEmaco** or **MasterBrace** repair systems. Ensure all blow holes and surface imperfections are made good prior to application of the **MasterProtect 190 / 190SP** coating.

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Ensure concrete is at least 28 days old. Contamination by oil, grease, fats etc. must be removed before other forms of preparation begin. Remove laitance to expose blow holes, by light grit blasting.

## Steel

All previous surface treatments should be removed taking the surface back to base metal. The base metal should be abraded and preferably shot blasted with grit, steel shot or proprietary abrasive. Where shot blasting is impractical pre-treatment may be carried out with pneumatic de-scaling guns, tap hammers, rotary wire brushes or by flame scaling. Cleaning with solvent or a strong detergent is advisable to ensure surface is free from grease etc. Do not allow surface to re-oxidise before application of **MasterProtect 190 / 190SP**.

## MIXING

**MasterProtect 190 / 190SP** is supplied in two pre-weighed components, base and reactor. No additions or omissions are required. Add reactor contents to the base component and mix thoroughly for using a slow speed drill fitted with a suitable mixing paddle until a uniform streak free colour is achieved.

## PLACING / APPLICATION

**MasterProtect 190 / 190SP** coating can be applied using good quality rollers or short haired brushes or by airless spray. It is recommended that **MasterProtect 190 / 190SP** coating be applied in two coats of contrasting colours to ensure complete coverage.

Prior to the application of each coat the surface should be examined for signs of pin-holing, etc. Where pin-holing is evident these should be filled using **MasterBrace ADH 2200** thixotropic epoxy resin filler.

If the application is delayed more than 16 hours at 40°C or 36 hours at 20°C after the previous coat (the higher the ambient temperature, the shorter the maximum period), then the previous coat must be thoroughly abraded to give an adequate mechanical key and solvent wiped.

## Airless spray (MasterProtect 190SP)

For application by airless spray, use a 45:1 or higher ratio pump, minimum 9mm dia. hoses and HD tip 19-23 thou.

## Overcoating

Where areas need to be overcoated due to damage etc. it is important that the areas to be treated are well abraded using a stiff rotary wire brush or coarse sandpaper to give an adequate key. Completely strip off any unsound coating and proceed with overcoating as for new work.

## Chemical resistance

**MasterProtect 190 / 190SP** 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

Tests were carried out in accordance with ASTM D1308 conducted at room temperature and specimens were soaked in the solution for a period of 7 days.

## CLEANING

All equipment must be cleaned immediately after use with a suitable Xylene thinner. Similar cleaning procedures should be adopted for break periods exceeding 15 minutes duration.

## COVERAGE / YIELD

0.30-0.40 kg / m<sup>2</sup> / coat. Two coats recommended.  
Dry film thickness: 180 - 240 microns / coat.

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## STORAGE

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. Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice consult Master Builders Solutions Technical Services Department.

## HEALTH AND SAFETY

As with all chemical products, care should be taken during use and storage to avoid contact with eyes mouth, skin and foodstuffs. Treat splashes to eyes and skin immediately. If accidentally ingested, seek immediate medical attention. Keep away from children and animals. Reseal containers after use. For further information, refer to material safety data sheet.

## QUALITY AND CARE

All Master Builders Solutions Products are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health and safety standards of ISO 9001 and ISO 14001.

\* Properties listed are based on laboratory controlled tests.

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### NOTE

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