

# MASTERTOP™ 1770i AS

**Anti static, conductive, self-smoothing, Matt finish, water based epoxy flooring system**

## Description

MASTERTOP 1770i AS is a joint less, water based, conductive epoxy flooring system consisting of a primer, a conductive primer and a conductive topcoat. The cured system exhibits excellent conductive properties and finishes to a smooth, matt, seamless surface with an attractive appearance that can easily be maintained clean.

## Uses

MASTERTOP 1770i AS is recommended for floors in environments where static electricity and stray currents produced by friction could pose risks of explosions or interference with the working of precision electronic instruments.

Typical application areas include:

- Electronic component manufacturing
- Dry powder filling and handling facility
- Flammable gas handling location
- Pharmaceutical, Solvent handling areas
- Operation Theatre
- Laboratories
- Aerospace and defence
- Automobile assembly
- IT server & data storage rooms
- Tele-communication control rooms

MASTERTOP 1770i AS floor has excellent mechanical properties and offer good abrasion and wear resistance for areas subject to light to medium duty industrial traffic.

## Advantages

- Water based – no fire hazard nor toxic fumes
- Breathable – excellent adhesion and finish despite raising dampness
- Can be laid on green concrete – avoids waiting time for concrete to cure
- Protects sensitive electronic parts from the effects of static charges by dissipating them away.
- Prevents explosions due to sparks of accumulated static charges by effectively conducting it away.
- Avoid errors in readings recorded by sensitive electronic instruments monitoring vital parameters.
- Improves the working environment by its pleasant aesthetics

## Typical properties

Primer: MASTERTOP 1700 Primer

Mixed density	: 1.07 g/cm <sup>3</sup> at 25°C
Mxing ratio, by weight	: 100 (Base): 270(Hardener)
Volume solids	: 46 ± 3%
Overcoating times	: 12 Hours (minimum)

Adhesion bond strength to concrete (ASTM D4541)	: 48 Hours (maximum) : > 1.5 MPa (concrete failure)
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Conductive Primer: MASTERTOP AS Primer:

Base	: Water based Epoxy
Colour	: Black
Mixed density	: 1.28 kg/litre at 25°C
Mixing ratio, by weight	: 1(Base) : 5 (Hardener)
Pot life	: 60 minutes at 25°C 25 minutes at 40°C

Body coat: MASTERTOP 1770i AS

Grade	: Conductive
Mix density	: 1.6 kg/litre
Pot life	: 40 minutes at 25°C 25 minutes at 40°C
Compressive strength,( ASTM C579)	: 40 MPa at 28 days
Flexural strength, (BS 6319 Part 3)	: 10 MPa at 28 days
Foot traffic	: 3 days
Full cure	: 28 days
Surface resistance, Ohms	: 2.5x10 <sup>4</sup> ~ 1x10 <sup>6</sup>
ASTM F150/ DIN-EN:1081/BS:2050	
Abrasion Resistance H22 wheel	: < 300 mg
(ASTM D4060, 1000 cycle) CS17 wheel	: < 60 mg
Hardness, Shore D (ASTM D 2240)	: > 70

## Specification Clause

The conductive resin flooring shall be MASTERTOP 1770i AS system, consisting of MASTERTOP 1700 PRIMER, water based epoxy primer; MASTERTOP AS PRIMER, water-based conductive epoxy primer; MASTERTOP 1770i AS, water based conductive epoxy top coat. The system shall offer surface resistance in the range of 2.5x10<sup>4</sup> to 1x10<sup>6</sup> ohms and shall comply with ASTM F150, DIN-EN: 1081 & BS: 2050 requirements. The system shall offer high abrasion resistance, wear of <0.60 mg/cycle when subjected to ASTM C501, H22 wheel. The system shall have Shore D hardness exceeding 70.

## Direction for use

### 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.

### Surface preparation

Correct substrate preparation is critical for optimum performance. Substrate should be structurally sound, clean, and free from loose particles, oil, grease, or any other contaminants. Concrete should be minimum 7 days old.

Ensure that the compressive strength of floor concrete is at least 25MPa.

Remove cement laitance, loose particles, mould release agent, curing membrane, and other contaminants from the substrate by shot blasting, scarifying or grinding followed by vacuum cleaning.

If pronounced irregularities exist, apply MASTERTOP 1730 a water based underlayment to a thickness of minimum 2mm in one layer. Existing expansion joints in the floor should be continued through the surface of levelling layer (if applied) and MASTERTOP 1770i AS system. Design the joint dimension to allow for anticipated movement.

### Primer

Prime the substrate with MASTERTOP 1700 Primer when the substrate temperature is at least 3°C above the local dew point. Mix the two parts of the primer for about two minutes using a low speed (300 rpm) electric drill fitted with a paint mixer or 'wing' type paddle, ensuring that the mixing head is well below the top surface of the priming liquid.

Apply the primer immediately after mixing, using a mohair roller or paint brush at the rate of approximately 5 - 8m<sup>2</sup>/kg, depending on the surface condition. Cure the primer for 12-16 hours depending upon the temperature.

### Conductive Primer

Use MASTERTOP AS Primer as the Conductive Primer. Use the same mixing equipment for the conductive primer and mix the two parts of the conductive primer in the same manner. Apply MASTERTOP AS Primer by roller on the cured primed surface. Apply 2 coats of MASTERTOP AS Primer to get a total thickness of 80-100 microns in 2 coats. Time Interval between the two coats should be 4-12 hours depending on Temperature & Humidity. After application of first coat place self adhesive Copper tape (3 M, collector grid) of 12-20 mm width & 70 to 100 micron thick at the periphery of the primed substrate.

### Earth Linkage

A multi strand piece of copper wire is connected to the earth at one end and opened out to a fan shape at the other.

Self adhesive copper tape is then used to fix the fan of copper wire to the floor. The strips of copper tape (on primed Surface), which will extend in to the main floor, are then placed over this area. Ensure good contact is made between the copper tape and the multi strand wire.

Earth linkage cable must be provided by the site electrical contractor. Each area of floor should have two earth connections. Earthing cables must be protected from mechanical damage during construction and in service.

After fixing of copper tape & earth linkage in position apply the second coat of MASTERTOP AS primer on copper conductor & earth linkage as well as on surface.

### Top coat

24hr after the application of 2<sup>nd</sup> coat of Conductive Primer, apply MASTERTOP 1770i AS as conductive Top Coat. Pour the Resin & hardener into the container, add the colour pack and mix using a drill and spiral mixing head (300 to 400 rpm) until a uniform colour is obtained (for a minimum of 1 minute).

Add MASTERTOP 1770i AS filler (contains carbon fibres), continue mixing for a further two minutes or until it can be seen that the mixed material is lump free.

Over-mixing or extending the time of mixing, when fillers containing carbon fibres has been added, will lead to an increase in the resistance of the floor and may no longer comply with the specification for antistatic floors in ASTM F150 OR BS:2050 OR DIN-EN:1081.

Pour the mixed Top coat onto the cured Conductive primer coat, spread it uniformly to the specified thickness (1.5 – 2.0 mm) using a notched trowel then roller in both directions using a spiked roller to expel air.

### Curing

MASTERTOP 1770i AS is self curing. Protect the applied surface from damage by following trade, insects, animal's movements, dust and spillage for at least 24 hours.

### Cleaning

Remove uncured MASTERTOP 1770i AS from tools equipment using water before it sets.

### Packaging

MASTERTOP 1700 Primer: 1 & 5 Kg

MASTERTOP AS Primer: 5 kg pack

MASTERTOP 1770i AS: Four components, 10kg pack.

### Components

Base	1.12 Kg
Hardener	2.93 Kg
Aggregate	5.6 Kg
Colour pack	0.35 Kg

distributors, as the conditions of use and the competence of any labour involved in the application are beyond our control.

### Coverage

MASTERTOP 1700 Primer: 0.12 - 0.20 kg/m<sup>2</sup> for approximately 100 microns DFT.

MASTERTOP AS Primer: Minimum 2 coats, consumption: 0.20-0.24 kg/m<sup>2</sup>/2 coats  
Thickness in 2 coats: DFT 80-100 microns

MASTERTOP 1770i AS: 3.2 kg/m<sup>2</sup> for 2.0 mm thickness

### 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 4 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 advices 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

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