

# Method Statement

## MasterTop® XTC

### SCOPE

This method statement covers the preparation and application of 2mm thick **MasterTop XTC** a High Performance, Odorless, Self-Smoothing Flooring System based on **Xolutec™** technology

### INTRODUCTION

**MasterTop XTC** a high performance, odorless, self-smoothing & long-lasting flooring system based on Xolutec technology. These simple application techniques will allow a fast, efficient application, reduce the application defects and ensure optimum in-use performance.

### PLANNING

Before starting the application of **MasterTop XTC**, consideration must be given to the area being installed. Careful preparation and planning with enough manpower will ensure application efficiency and optimum final aesthetics.

### SYSTEM BUILD UP

**MasterTop XTC is composed of**

1. **Scratch Primer – MasterTop BC 920**  
– a 4 component, odorless flooring system based on Xolutec Technology
2. **Bodycoat – MasterTop BC 920** a 4 component, odorless flooring system based on Xolutec Technology

Built Up	Product
Scratch Primer	MasterTop BC 920
Body Coat	MasterTop BC 920

1. Total thickness approx. 2.0mm minimum

2. Consumption figures are a guide only and may be higher in rough or porous substrates.

### GENERAL APPLICATION GUIDELINES

**MasterTop BC 920** is a fast curing material with an open time of 12 minutes at 30°C. This reduces further at higher temperatures. If the material is reworked after the open time the appearance of the finished floor is likely to be impaired. It is advisable to lay the floor in bays with the bay width narrow enough that a single mix will reach the full width of the bay to maintain a wet edge throughout.

It is important that the application is planned so that the seams between the various bays of a large floor can be placed in the optimum locations to give the best aesthetic result. The seams can be hidden under plant or made to coincide with joints, for example. Having seams in main traffic aisles should be avoided since they will stand out. These should be discussed with the client prior to starting the job. Use battens wrapped in brown parcel tape, or similar, to provide a straight edge to the bay. Mask off all adjacent surfaces. Masking tapes should be removed after approximately ~ 1 hour.

There must be an anchor groove of the appropriate size around the edge of each bay as close to the edge as possible (maximum 100mm from the edge), around all columns, the feet of plant and equipment, to either side of any joints, around drainage and any other free edges.

If the mixer stops during the operation for more than 2 or 3 minutes for example because of a power failure, stop the application and finish to a neat straight line. Do not try and restart the front later as this will always be visible in the finished floor. Please wait until it is cured and leave a tidy seam between two bays in the finished floor.

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### SITE STORAGE

#### General

All of the components that are used to make **MasterTop XTC** flooring - and the ancillary products that are used in the substrate preparation and laying - must be stored under cover, above 5°C and below 30°C and out of direct sunlight. Materials must be raised off the floor and kept dry, this is especially important for Part 3 components to prevent them becoming hard and lumpy and unsuitable for use, especially under a humid environment.

The ideal storage temperature lies in the range 10°C - 25°C; this is also the preferred temperature range for mixing, laying and curing. Short term exposure to direct sunlight or other intense heat sources will cause uneven temperature gradients in the stored material; such product must not be used until the temperature has become uniform, otherwise application inconsistencies may arise.

#### Cold Temperatures

**MasterTop BC 920** will become more difficult to apply and consequently laying speed gets reduced. In practice, it is often necessary to warm up the material to aid application. When warming up is required, it is preferable to keep the material in a heated room until even temperatures are realised. If this is not practical, some form of portable heater is recommended at the mixing area. On large contracts a "tent" will help raising the temperature more efficiently. All components should be warmed up, with care being taken to keep temperatures uniform in the components.

#### Hot Temperatures

When temperatures during application are expected to be above 30°C, some form of air-conditioned storage is required. Keeping the

materials at 20-25°C will reduce the possibility of flash setting and other defects. Do not apply the **MasterTop BC 920** in direct sunlight or on very hot substrates.

#### Relative Humidity

If the relative humidity drops below 50%, this can increase the time to become tack free for **MasterTop BC 920**. If the humidity is below 30%, this can extend for several days. A portable humidifier might help in closed environments to cure faster.

#### Safety Notes

If moisture enters containers of Part B components, it will react chemically with the contents producing carbon dioxide gas. If this occurs, do not replace the lids, otherwise a dangerously excessive pressure can develop which may lead to rupture of the can.

For the full health and safety hazard information and how to safely handle and use this product, please make sure that you obtain a copy of the Master Builders Solutions Material Safety Data Sheet (MSDS) from our office or our website.

#### Suitable Substrates:

The following substrates are known to be suitable for receiving **MasterTop BC 920** flooring subject to correct preparation procedures:

- ✓ Concrete
- ✓ SBR or Acrylic Polymer-Modified Screeds
- ✓ Granolithic concrete
- ✓ Cementitious terrazzo surfaces

#### Substrate Quality

Concrete substrates should be visibly dry and have a minimum tensile strength of 1.5 MPa. The

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minimum compressive strength of the concrete floor shall be 25 MPa at 28 days. All joints in the substrate concrete subject to movement should be reflected through the MasterTop floor and sealed with a suitable sealant

### Expansion Joints

All expansion and crack propagation joints formed in the floor base must be carried through the **MasterTop BC 920** flooring and it is advisable, when forming expansion joints around columns and equipment set in the floor, to include radial corners to avoid stress-creating angles. A minimum 5cm radius is advised.

All joints must be filled with a suitable joint sealant. The best joint sealant for any application will depend upon the width of the joint and the amount of anticipated movement as well as the chemical nature and temperature of any spillages likely to impact upon the floor.

### Surface preparation

Any laitance present on the concrete surface must be removed by mechanical methods (see below) before **MasterTop BC 920** is applied, otherwise delamination will occur. Existing screeds may be contaminated with mould-release oils, chemical spillage or previously applied coatings. Contaminated concrete must be removed before the application of **MasterTop BC 920** if a good bond is to be obtained.

All substrates will require preparation. Cementitious substrates must be mechanically prepared so that the large aggregate of the concrete/ screed is exposed. Preferred methods of preparation are:

1. Vacuum shot blasting (Blastrac or similar)
2. Concrete surface planer

3. Grit blasting
4. Drum sander
5. Ultra-high-pressure water blasting followed by captive shot blasting
6. Flame spalling may be satisfactory in some situations

Acid etching is not reliable and should not be used. High impact preparation methods (scrabbling) may cause internal fracture of the concrete matrix and a subsequent reduction in strength and should not be used.

While ultra-high-pressure water blasting is very effective at removing old finishes and laitance and exposing the aggregate in a concrete, it can leave the aggregate smooth and polished and this can have a negative effect upon adhesion. For this reason, it must be followed by captive shot blasting

After treatment, all dust and loose particles should be removed from the whole surface, including grooves and cracks. Cleaning by Vacuum is the most effective method.

### Moisture

Standing water must be removed completely by using an industrial vacuum cleaner followed by drying with a hot-air blower, infra-red heater or flame gun. **MasterTop BC 920** is tolerant of residual moisture in the substrate concrete/screed, however, the surface must be visibly dry. The substrate temperature should be at least 3°C above the dew point during application. Do not apply when atmospheric condensation is occurring or likely to occur before full cure is obtained.

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Cracks in the substrate must be investigated and the appropriate remedial action taken. Smaller irregularities should be filled with the scratch coat primer, to ensure an even final finish. All repairs to the substrate must be completed in good time prior to the application of the **MasterTop BC 920**.

#### Tolerances

**MasterTop BC 920** should not be relied upon to improve the tolerances or flatness levels in the substrate. The substrate should be applied to the appropriate tolerances prior to the application of **MasterTop BC 920**. Tolerances can be corrected but this is a separate operation which must be completed before installing the **MasterTop BC 920**. **MasterTop BC 920** follows the contours of the substrate and have the same tolerances as the substrate to which it is applied. Applicators are advised to check the tolerances of the substrate before they begin with the preparation.

#### Anchor Grooves

Wherever a free edge of **MasterTop BC 920** flooring will occur, for example, around the perimeter of a bay, along channels or expansion joints, at doorways and around the feet of machinery, plinths and columns, anchorage must be provided to help distribute mechanical and thermal stresses arising from curing and heavy traffic. This is achieved by forming or cutting an anchor groove in the concrete, with a depth and width about twice the thickness (typically 4mm x 4mm) of **MasterTop BC 920**, using a diamond cutting wheel.

On a new floor, grooves may be formed by inserting polyethylene-film-coated timber strips into the concrete at the time of laying. Grooving has the additional important advantage of reducing the possibility of liquid seeping under the flooring and affecting the bond to the substrate. Extra anchor grooves can be used

around areas of heavy impact for example to help manage stress, especially on poorer substrates.

#### MIXING

##### General

**MasterTop BC 920** is supplied in four components; Part A, B, C & D with Part D being color component. All the four components being reactive. There are reactions that must take place in the mixer, and not on the floor, so it is important that the mixing regimes are strictly adhered to.

##### Equipment

The following types of mixing equipment are suitable for mixing **MasterTop BC 920**.

1. Slow speed drills, < 350 RPM
2. Twin headed mixing drills, < 350 RPM
3. Twin headed mixing drills, < 150 RPM
4. Creteangle
5. Collomatic XM2 650

Other mixers should be checked for efficiency before use.

#### IMPORTANT - DO NOT MIX BY HAND.

Ensure mixing paddles are properly adjusted and close to the bottom of the mixer. Some mixers have a dead spot and mixing regimes must be adjusted to allow for these to be raked out during every mix.

When using mixing drills use an appropriately sized bucket to ensure the mixing head is fully submerged to avoid entrapping too much air. If the bucket is too big for the volume of material, then mixing efficiency will be poor.

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THE DIAMETER OF THE MIXING HEAD SHOULD BE MORE THAN HALF THE DIAMETER OF THE MIXING BUCKET.

#### Mixing Procedure

- a. Position the mixer as near to the working area as possible. It is important to keep the mixing station clean and to avoid spilled materials being trafficked onto the substrate as this may lead to blistering.
- b. Ensure that the components are at the correct temperature, preferably 10 - 25°C. Open packaging while the previous mix is mixing.
- c. Part A of **MasterTop BC 920** is fillerized and may have some settlement during transit. BEFORE MIXING THE COMPONENTS, MIX PART A USING HIGH SPEED ELECTRIC DRILL FOR AT LEAST 1 MINUTE OR UNTIL MATERIAL BECOMES HOMOGENEOUS WITHOUT ANY LUMPS OR SETTLEMENT.
- d. Always mix in separate clean container, & Do not use the pails for mixing. Empty Part B into the mixing bucket.
- e. Whilst mixing continuously Add Part A & Part D and mix thoroughly using a slow speed drill with a suitable paddle, making sure to reach the bottom and sides of the can.
- f. Continue mixing for 1-2 minutes to produce a fully blended, uniform material without color streaks. It is important to maintain constant mixing times throughout to ensure consistent color and to avoid introducing excessive air into the system.
- g. For **Scratch Primer Applications** Gradually Add **1½ to 2 packs** of Part C whilst mixing continues; Mix until the filler is uniformly

dispersed, and the mix is uniform, typically 1½ - 2 minutes.

- h. For **Body Coat Application** Gradually Add **1 pack** of Part C whilst mixing continues; Mix until the filler is uniformly dispersed, and the mix is uniform, typically 1½ - 2 minutes.
- i. During mixing the components will generate heat; this is advantageous when the components are cold as this will help raise the material temperature on mixing, so improving workability.
- j. However, when the stored components are already warm, over mixing must be avoided as the chemical curing reaction will proceed at a faster rate, leading to decreased working time.
- k. The required mixing time may be judged with experience and will depend on the individual grade, the efficacy of the mixer and the number of units mixed.

#### Priming

For best performance of **MasterTop XTC** the substrate should be properly sealed. A scratch coat of **MasterTop BC 920** is recommended to ensure that the substrate is completely sealed. **MasterTop BC 920** shall be applied to a cured scratch coat of **MasterTop BC 920** of 0.5mm nominal thickness at a consumption rate of 0.8 to 0.1 kg/m<sup>2</sup>.



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It is important to note that all four components shall be used for scratch primer with the mixing procedure as mentioned above.

The scratch coat is applied to the prepared substrate using a Steel trowel, Pin rake trowel or Squeegee. The scratch coat shall be allowed to dry completely to achieve a tack free surface before overcoating with **MasterTop BC 920**. All anchor grooves should be filled with the mixed material to ensure they do not 'grin through' the finished floor.

Defects in the primed surface, such as blow holes in the surface because of air rising out of bleed run pores in the substrate, should be remedied prior to overlaying. Failure to do so may lead to surface defects in the finished floor and possible client rejection.

Ensure that scratch coat shall be allowed to dry completely to achieve a tack free surface before overcoating with **MasterTop BC 920**. Please take note of the overcoating times for scratch coat before applying the bodycoat. If the time between coats exceeds 48 hours, or if condensation or water impacts the surface, fully abrade the surface prior to overlaying.

#### Bodycoat

Before progressing further, ensure that substrate is fully sealed with scratch coat primer and if required apply another coat of scratch primer to ensure complete sealing of substrate.

Spread the mixed material over the dry scratch coat at a consumption of 2.7 to 3.0 Kgs/m<sup>2</sup> using pin rake. The pins of the pin rake adjusted to appropriate depth. Use steel trowel for edge work. Use a spiked roller to produce smooth even finish. The whole floor should spike rolled twice.

On the first pass the spike roller should be pushed right through the material to substrate to assist the flow, remove pin rake marks and to flatten the floor. Subsequent passes with the roller held lightly just upon the surface to bring the resin up to the surface and improve aesthetics. The roller should be carried no more than 10cm into the previous mix. To ensure an even finish, all troweling and spiked rolling should be completed **before the mix is 10 minutes old**.

#### ESTIMATING DATA

Actual consumption of **MasterTop BC 920** depends on the surface absorption, texture, loss and wastage. The following minimum consumption rates shall be strictly adhered to achieve designed performance properties.

Layer	Consumption
Scratch Coat	0.80 ~ 1.0 kgs /m <sup>2</sup>
Body Coat	2.70 ~ 3.0 kgs /m <sup>2</sup>

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### STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this Master Builders Solutions publication are based on the present state of our best scientific and practical knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by law. The user is responsible for checking the suitability of products for their intended use.

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### NOTE

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