

Application Guide for MasterProtect[®] 1812

MasterProtect 1812; this product is used for a variety of coating applications in clean and dirty water retaining structures.

Packaging

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| MasterEmaco 2525 | Primer for horizontal or damp surfaces | 5L and 20L |
| MasterBrace 1444 | Primer for vertical surfaces | 1kg |
| MasterProtect 1812 Curtain Call | Chemically resistant protective coating | 6Kg |
| MasterProtect 1812 Silver Grey | Chemically resistant protective coating | 6Kg |

Surface Preparation (Concrete substrate requiring additional concrete repairs)

Preparation of the concrete substrate for the **MasterProtect 1812** may involve concrete repairs generally involves a couple of steps. The removal of the cracked and affected concrete to create a suitable profile and the cleaning of the reinforcing steel.

- For the best results a CSP profile of 5 or greater is required and to achieve this you need an aggressive surface preparation technique.
- The choice of technique will be determined by the size and depth of the patch.
- Suitable techniques
 - Hammer and cold Chisel
 - Kango style impact hammer
 - Machine mounted impact hammer
 - Hydro demolition
- All loose material should be removed and the reinforcing steel exposed to the point where there is no visible rust and it has a grey surface colour.
- This indicates that the steel at this point is still passivated and thus you are out of the current corrosion zone.
- The reinforcing steel should be exposed on all sides so that you are able to fit a gloved finger behind the bar.
- In the event that the reinforcing steel has lost a significant amount of its cross-sectional area (approximately 20% is seen as significant) it may need to be replaced or additional steel installed.
- The replacement should be determined by the engineer especially in structural applications.
- The steel should be cleaned to an SA 2.5 grade and all rust removed.
- For small patches this can be done by wire brush and on larger jobs a needle gun, captive grit blasting will be effective.
- The action of the hydro demolition will clean the steel well and no further preparation would be necessary.
- The edges of the patch should be square cut to a depth of 10-20mm or as specified in the individual product datasheet to prevent any of the repair mortar from being feather edged.
- Patches should be regular in shape and it may be necessary to join a number of small irregular patches to make a single regular patch.
- This will reduce the risk of cracking in the patch and the premature failure of the patch.

Priming

Steel

- Once the steel has been cleaned it may be necessary to prime the steel. This is to stop the flash rusting resulting from the contact with the moisture in the air.
- The **MasterEmaco P 5000AP** is an acrylic modified cementitious coating with active corrosion inhibition which you just mix with water and coat the cleaned reinforcing steel.
- It is an orange colour to make a simple visual evaluation of the steel that has been coated. This should be allowed to dry for a few hours before application of repair mortars or shotcrete.
- If application of shotcrete was to proceed directly after the hydro demolition preparation of the substrate the need for the **MasterEmaco P 5000AP** is reduced and could be eliminated without creating any issues with the longevity of the repair.
- Note: although BASF does not sell a zinc rich steel primer the use of one is entirely compatible with any of the MasterEmaco repair mortars.

Concrete

- The concrete substrate should be at least saturated surface dry to take the repair mortars as a dry substrate will pull the moisture out of the repair mortar which can lead to surface cracking and poor bond to the substrate. Most hand applied mortars benefit from bonding of the repair mortars to the concrete with additional bonding agents.
- **MasterEmaco P 5000AP** can be used as a bonding agent for the repair mortar to the concrete.
 - The repair mortar should be applied whilst the MasterEmaco P 5000AP is still wet and if it dries out should be reapplied.
- **MasterEmaco P 157** this SBR bonding agent can be used when wetting is impractical and should be diluted 1:1 with water and applied generously by brush to the concrete.
 - Apply the repair mortar whilst the MasterEmaco P 157 is still tacky.
- **Slurry coat of the repair mortar** is another technique to provide a bonding bridge for the repair mortar.
 - This is achieved by making a slurry coat of the repair mortar being used and often a mix of one-part water and one-part mixed repair mortar (this can be adjusted to give the consistency required).
 - Apply this to a wetted substrate with a brush and apply the repair mortar whilst slurry coat is still wet.
 - The benefit of this is that the materials are all on site and more can be simply made up as required.

Surface Preparation (Concrete substrate requiring minimal concrete repairs)

In many cases the substrate will be in a suitable condition to receive the **MasterProtect 1812** directly.

- Remove oils, grease, curing compounds and laitance to give a CSP profile of 2-3. This may be achieved using grinders or needle guns.
- Blow holes, bug holes, erosion etc should be repaired using **MasterEmaco N 5100**, **N 5200CI** or **S 5300CI** depending on the size of defects and roughness of the surface.
- A wood or foam float finish will give a CSP of the 2-3 required.
- Allow the repair to cure for 2-3 days before starting the application of the **MasterProtect 1812**.

Mixing

- **MasterProtect 1812** is supplied in pre-proportioned kits for complete mixing and both parts contain some filler.
- Properly stir each component separately before mixing together to ensure uniform consistency.
- Add the Part B to the Part A container and mix for 3 minutes with slow speed (300-600rpm) drill until homogeneous colour scraping the sides of the container to ensure a complete mixing.
- Keep the paddle below the surface to avoid entrapping air.
- Do not mix by hand.
- The **MasterProtect 1812** Part A is provided in two colours to ensure that application thickness is achieved and a visual on-site QA is possible.
- Other than colour both are the same and can be used interchangeably and it is the applicators choice as to which to use first.

Application

- **MasterProtect 1812** can be applied using short nap roller, shorthaired brushes or by airless spray.
- For damp substrates the material maybe diluted with 10% MasterSeal 955 to give a better key or use **MasterBrace 1444**.
- Apply next coat within 24 hours or when tack free.
- Apply in two coats, each at a W.F.T. of 250 microns, the second coat applied after the first coat has dried (4-6 hours at 25°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 **MasterSeal 955** before the application.
- If a delay is anticipated, then a light broadcast of fine sand will provide a suitable key for the subsequent coat.
- Depending on the final look of the tank choose either the Silver Grey or the Curtain Call as the first coat.
- Try to apply as the concrete is cooling in hot conditions or before the sun gets on the concrete to reduce the risk of pin holes forming.
- In very hot conditions the use of a primer (**MasterBrace 1444**) should be considered to give a suitable substrate to eliminate the potential for pin holes.

Curing

No specific curing is required and the material can be returned to service after 48 hours.



Figure 1 - Cleaned out settlement tank



Figure 2 - Application of primer/first coat.



Figure 3 - Preparation of aeration tank.



Figure 4 - Spraying final coat on walls.



Figure 5 - Applying final coat on floor.

Caution

For information on personnel protective equipment, first aid and emergency procedures, and water disposal methods, refer to the product bag or Safety Data

STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this BASF 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.

NOTE

Field service where provided does not constitute supervisory responsibility. Suggestions made by BASF either orally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, and not BASF, are responsible for carrying out procedures appropriate to a specific application.

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