

Masterflow APS[®] 2800

High strength, self-levelling polymer construction grout



Description

MASTERFLOW APS 2800 is a fast setting three-component, polymer construction grout, formulated utilising a hybrid polymer (component A), an activator (component B, BS or BF), and an active filler (component C) based on the new APS polymer technology.

MASTERFLOW APS 2800 offers an easier, quicker, and environmentally friendlier application, in comparison with existing resin based products, as well as excellent resistance to impact, and to many chemicals.

MASTERFLOW APS 2800 is available in three versions for use under widely different temperature conditions:

Version	Temperature Range, °C
MASTERFLOW APS 2800 Normal (A+B+C)	+5°C to +25°C
MASTERFLOW APS 2800 Slow (A+BS+C)	+25°C to +35°C
MASTERFLOW APS 2800 Fast (A+BF+C)	-20°C to +5°C

The above mentioned temperatures refer to the substrate conditions.

Packaging, storage and shelf life

MASTERFLOW APS 2800 is available in 20,8 kg unit. The 20,8 kg unit comprises of:

Component A	- a hybrid polymer	2,4 kg
Component B/BS/BF	- an activator	0,4 kg
Component C	- a special active filler	18 kg

Packed separately:

Component A	in a plastic bottle
Component B/BS/BF	in a cartridge
Component C	in a bag

All components should be stored in a dry and sheltered environment between 0°C and +30°C. If stored under the above conditions, MASTERFLOW APS 2800 Component A has a shelf life of 6 months. Components B and C have a shelf life of 12 months.

Fields of application

MASTERFLOW APS 2800 is recommended for:

- Fast filling of holes and cavities in concrete, where a minimum down time is desired.
- Horizontal concrete repair in industrial environments.
- Resurfacing surfaces damaged by erosion and corrosion.
- For grouting bolts in place.
- Suitable for recoating metal bridge decks. In case of large surfaces, divide the surface in sections of ± 25 m² by cutting joints, width of joints ± 8 mm. Cut through the layer to the metal support and use PCI ELASTOPRIMER 145 to improve the adhesion on the sides. Then seal the joints with PCI ELRITAN 140.

MASTERFLOW APS 2800 is not recommended for precision grouting of bedplates supporting sensitive machinery and equipment.

Features and benefits

- Easier and safer to use.
- Packaged ready to use, only mixing is required.
- No priming required.
- No need for post curing treatment.
- Self-levelling.

- Hardening at low temperature up to -20 °C.
- Fast early and final strength development (compressive strength > 50 MPa after only 3 hours at 20°C).
- Rapid curing provides reduced down time for regrouting.
- High final compressive and flexural strength, excellent bond to concrete, and to steel.
- Wide range of application thicknesses.
- High resistance to many chemicals.

Chemical resistance

MASTERFLOW APS 2800 has an excellent resistance to the most common chemicals (mineral acids, alcohols, etc.) used in the fields of application described above. Contact your local BASF-CC representative for specific information about resistance to chemicals.

Not to be used on:

- fresh concrete
- standing water

Application

Preparation of concrete substrate

The concrete surface must be sufficiently roughened, by means of a scarifier, shotblasting, or other suitable equipment.

All laitance and deteriorated concrete should be removed.

New concrete must be cured for at least 28 days, before grouting with MASTERFLOW APS 2800.

The substrate must be clean, and free of grease, oil, paint, lime, dirt and dust when MASTERFLOW APS 2800 is poured.

Standing water and excessive surface moisture must be removed by means of vacuum cleaner, rags, compressed air or even with an open flame. Unlikely many common polymer systems, MASTERFLOW APS 2800 is tolerant to dampness but not to free surface moisture.

Preparation of steel surfaces

Base plates or rails and other metal surfaces to be grouted should be cleaned to obtain proper adhesion. This is preferably done just prior to grouting.

Sandblasting to "white metal" is preferred, but minimum preparation requires removal of all loose rust and scale by grinding or sanding followed by removal of all oil, grease, etc..

Surfaces where a bond is not desired should be protected with heavy coats of demoulding agent.

Mixing

Make sure enough material and the necessary equipment (mixer, pails, trowels, rags, etc.) are available and within reach. Only use entire units to ensure a correct dosage of the components and an optimum homogeneity.

Pour the full content of component A into the mixer followed by the bag of component C and mix for approximately 1 minute, to obtain a homogenous and lump-free mass. Then add the full contents of the component B, BF or BS cartridge to the mass and mix for at least 2 minutes (more depending upon the efficiency of the mixer being used), as soon as the colour of the mix is uniform, a homogenous mix has been obtained.

Consumption

One 20,8 kg unit of MASTERFLOW APS 2800 yields approx. 9 liters of flowable grout.

Please note that:

2,4 kg of MASTERFLOW APS 2800 = 1 liter of flowable grout.

Workability time

The workability time of MASTERFLOW APS 2800 is dependent on the temperature and type of the activator (B component) used; at 20°C the normal version (B) has workability longer than 70 minutes, while at 5°C the fast version (BF) shows a workability time longer than 50 minutes.

Formwork

MASTERFLOW APS 2800 is fluid and requires forms. Formwork, which is generally made of wood, should be sufficiently strong, anchored or braced to "withstand" pressure from the grout and must be "liquid tight". All formwork must be properly treated with demoulding agents to allow form removal after curing of the grout.

Depth of pour

MASTERFLOW APS 2800 can be poured in a wide thickness range, the minimum recommended pour depth is 8 mm.

Sections thicker than 100 mm should be poured in two or more layers, allowing curing between layers (approximately three hours at 20°C).

Pouring

MASTERFLOW APS 2800 does not require any priming prior to the application. For patching of holes MASTERFLOW APS 2800 is poured into a cavity and the surface is finished with a conventional trowel.

MASTERFLOW APS 2800 is handled in the same way as conventional polymer grouts. When grouting closed areas, start at one end of the formwork, and fill the cavity completely, by pouring only from one end, to prevent air entrapment.

Polymer Concrete Application

To obtain a polymer concrete for thick and large area repair, MASTERFLOW APS 2800 can be filled with clean, kiln dried round aggregates.

For this purpose it is possible to add to one 20,8 kg unit up to

- 10 kg of aggregate from 3 to 6 mm



The Chemical Company

- and 10 kg of aggregate from 8 to 16 mm

Finishing

For concrete repair application, in order to reduce the tack free time at temperatures below 5°C, or to achieve antislip finish, the surface should be broadcasted with MASTERTOP F1 sand 0.1-0.3 mm, when bulk curing has taken place. The excess sand should be removed after 30 minutes.

When MASTERFLOW APS 2800 is applied exposed to direct sunshine, the surface should be completely finished immediately in one pass, avoiding the retouching of the finished surface.

Curing

MASTERFLOW APS 2800 requires no curing procedure.

Depending upon environmental conditions, a repaired surface with MASTERFLOW APS 2800 can usually be opened for use just 4 to 6 hours after the application.

Cleaning of tools

After use and during application of MASTERFLOW APS 2800, all equipment must be thoroughly cleaned with soapy water and rags.

Old material which has already started to harden on tools and mixers can only be removed with the help of a solvent and laborious cleaning.

Hardened material on tools and mixers can be removed by scrapping and with the use of a hot air blower or blow torch.

Safety precautions

None of the three components of MASTERFLOW APS 2800 are hazardous in any way.

Neither the individual components, the fresh mix, nor the cured material is toxic, or hazardous.

However, it is advisable to wear protective rubber gloves while handling the material, according the local laws and regulations.

For further information refer to the product Material Safety Data Sheet.

Technical properties MASTERFLOW APS 2800

Compressive strength MPa (EN 196-1)	3 hours 1 day 7 days	> 50 N/mm ² > 65 N/mm ² > 70 N/mm ²
Flexural strength MPa (EN 196-1)	3 hours 1 day 7 days	> 20 N/mm ² > 25 N/mm ² > 25 N/mm ²
Tensile strength MPa (DIN 53 455)	7 days	> 10 N/mm ²
Bond strength on concrete MPa (ZTV-SIB)	1 day 7 days	> 3,5 N/mm ² concrete failure > 3,5 N/mm ² concrete failure
Bond strength on stainless steel (roughened surface) MPa	1 day 7 days	> 6 N/mm ² > 6 N/mm ²
Pull out test on deformed steel Reinforcement MPa RILEM CEB FIP RC6	7 days	> 25 N/mm ²
Workability (flow) (UNI 8997)	+ 20°C	> 600 mm
Density		2,4 g/cm ³
Colour	grey	

BASF Construction Chemicals (UK) Ltd
 PO Box 4
 Earl Road
 Cheadle Hulme
 Cheadle
 Cheshire
 SK8 6QG
 Tel: +44 (0) 161 485 6222
 Fax +44 (0) 161 488 5220
www.basf-cc.co.uk



Whilst all reasonable care is taken in compiling technical data on the company's products, all recommendations regarding the use of such products are made without guarantee, since the conditions of use are beyond the control of the company. It is the customer's responsibility to satisfy himself that each product is fit for the purpose of which he intends to use it and that the conditions of use are suitable