

MASTERFLEX™ 610

Hydro-swelling waterbar for joints

Description

MASTERFLEX 610 is a hydro-swelling waterbar, ready for installation in construction joints to render the joints leak proof. It is based on a specially designed polymer composite that acts by undergoing reversible swelling on exposure to water to form an effective seal.

MASTERFLEX 610 is available in standard rectangular shape of 20mm x 10mm and in other sizes on demand.

Uses

MASTERFLEX 610 is recommended for all construction joints exposed to hydrostatic pressure. Application areas include joints between:

- The abutments of concrete and rock, masonry, etc.
- The rafts and walls in tunnels and basements.
- Steel and concrete pipes, precast elements, etc.
- Segment rings.

Advantages

- Swells in contact with water by up to 160%, effectively seals the joint.
- Effective even in salt water or brackish water.
- Resistant to wide range of chemicals – advantage in subsoil structures.
- Water molecules held by molecular attraction not by vacuum.
- Controlled swelling – does not affect concrete.
- Does not generate foam or gas with water
- Prevents water ingress even when the joint width varies.
- Captured water does not get transported through its matrix. No wicking effect.
- Reverts to original volume on drying – eliminates chances of pores forming in the matrix upon drying.
- Elastomeric. Keeps swelling and reverting to original volume throughout the life of structure.

Typical Properties

Basis	: Polymer composite
Density	: ~1.5 gm/cm ³
Resistance to micro-organisms	: Resistant
Water pressure resistance	: 5 bar (50 metre head)
Service temperatures	: - 30°C to 50°C
Setting time of Adhesive	: 4 - 6 hours

Water pressure

The seal formed by MASTERFLEX 610 has been tested to a pressure of 5 bars (50m water column), by STUVA.

Chemical resistance:

Test Liquid	Stability	Swelling
Unleaded fuel	Resistant / discolouring	~ 45%
Gasoline	Resistant / discolouring	~ 2%
Toluene	Resistant	~ 140%
Xylene	Resistant	~ 85%
Methanol 50%	Resistant	~ 400%
Isopropanol 50%	Resistant	~ 500%
N-methylpyrrolidone	Ltd resistant/ discolouring	~ 615%
Ethylacetate	Resistant	~ 195%
Methylisobutylketone	Resistant	~ 85%
Acetic acid 10%	limited resistant	~ 150%
Formal 36%	resistant	~ 500%
Sulphuric acid 10%	resistant	~ 190%
Sulphuric acid 2%	resistant	~ 210%
Sulphuric acid 26	resistant	~ 25%

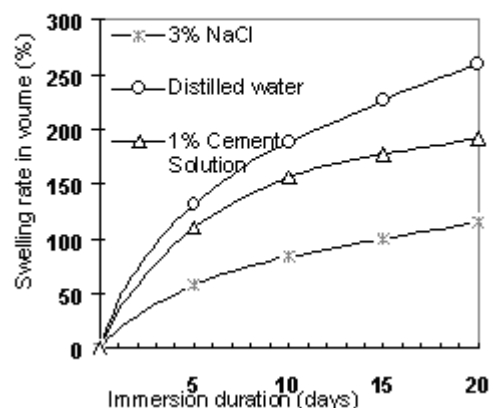
Swelling: The degrees of swelling of MASTERFLEX 610 when exposed to different solutions are illustrated in the chart below. In very high salt concentration (20%), the swelling will be about 20%.

The swelling action is designed to exert adequate pressure to profile the waterbar exactly onto the joint faces, filling all crevices to provide a tight seal even against high hydrostatic pressures.

The swelling action does not change the homogeneous structure of the polymer matrix and confined to the part exposed to water - it will not to transport the captured water through its matrix.

Typical swelling of MASTERFLEX 610:

Shape : Rectangular
Size : 20 mm x 10 mm x 20 mm
Temperature : 25°C



Safety of drinking water in contact with the water bar:

MASTERFLEX 610 water bar has been approved for drinking water installations by 'Hiegiene-Institut' Gelsenkirchen (Germany).

Specification Clause

All construction joints shall be installed with MASTERFLEX 610, 20mm x 10mm cross-sectional sized hydro-swelling water bar based on advance vinyl-acrylate polymers. The waterbar shall be formulated to exhibit low pre-mature swelling (less than 50% with in 12 hours) and shall not be based on super absorbents. The water bar shall have low swelling pressure; not exceeding 0.25 MPa at full swelling capacity. The waterbar shall be installed with special adhesive, MASTERFLEX 610 glue and not to be fixed using nails.

Directions for use

Surface preparation

Correct preparation is critical for optimum performance. Joint surfaces should be structurally sound, clean, and free from loose particles and sharp protrusions, oil, grease, or any other contaminant.

Repair any honeycombs and such other defects with EMACO S88C T or EMACO S48C T (refer separate data sheets). Clear any standing water on the surface.

Fixing Adhesive

Caulk the joint surface along a strip using MASTERFLEX 610 Adhesive Glue to a width slightly larger than the waterbar to provide adhesion to the waterbar.

On uneven surfaces, apply MASTERFLEX 612, the gun grade hydro swelling sealant to level out the unevenness and provide adhesion to the waterbar.

Placing

Lay the waterbar preferably along the middle of the slab. On wide joint surfaces (greater than 100 cm), two parallel waterbars may be laid for added safety. It is important to leave a minimum of 5cm from both the edges of concrete to provide sufficient concrete cover to absorb the swelling stresses.

Do not butt the joints of MASTERFLEX 610. Always lay the waterbar with a 5 cm overlap at the ends.

After installation, protect MASTERFLEX 610 and the joint area from loose dirt, mould releasing agent, sand, stones, rain, water and other liquids.

Coverage

The length of MASTERFLEX 610 required is dependent on the length of the joint face. One 310 ml cartridge of MASTERFLEX 610 adhesive shall enable 8 running

metres of waterbar fixing on levelled concrete substrate.

Packaging

MASTERFLEX 610 is available in (3 nos X 10m Roll) pack of 20mm x 10mm cross-sectional size.

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 12 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 advice please 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

Whilst any information contained herein is true, accurate and represents our best knowledge and experience, no warranty is given or implied with any recommendations made by us, our representatives or distributors, as the conditions of use and the competence of any labour involved in the application are beyond our control.

TDS Ref. no.: Mfxxx610/05/0811

BASF India Limited

Construction Chemicals Division

Plot No.37, Chandivali Farm Road, Chandivali ,Andheri(East)

Mumbai – 400072 India

Tel: +91 22 28580200, Fax: +91 22 28478381

e-mail: basfcc@vsnl.net www.basf-cc.co.in Page 2 of 2

