Mastix system : technical file C01

Waterproofing of joints

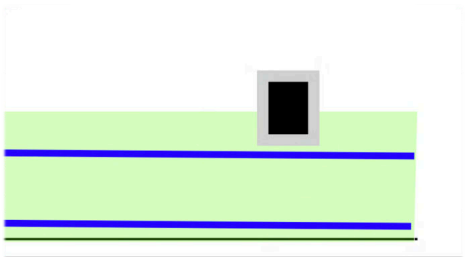
Waterstops BFL-Mastix

Type R4

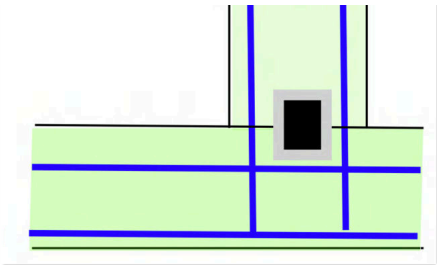
BFL-Mastix waterstops are used to realize a waterproof and not-flow round barrier between two concreting stages of a concrete structure.

The liaison ordinary gravel/cement paste/fine crushed gravel is therefore "**coherent**". ***It combines materials of the same kind and properties.***

The liaison fine crushed gravel/soft and deformable band core is "**coherent**". The mechanically applied fine crushed gravel is an ***interface between band core and the concrete***.



Incorporation of a band type R4 in the fresh concrete of the 1st concreting stage.



Covering a waterstop band type R4 with concrete of the 2nd concreting stage.

Technical sheet 501
- Description
- An absorbent material
- Resistance
- Behaviour

Technical sheet 502
- Utilization of waterstops type R4

Technical sheet 503
- Choice of a profile type R4

Technical sheet 504
- The work on the job site
- Control

Technical sheet 505
- Precaution measures

The Mastix system is simple to work with and naturally compatible and coherent with concrete and concrete structures

Mastix system : specifications sheet 501

Waterproofing of joints

Waterstops BFL-Mastix

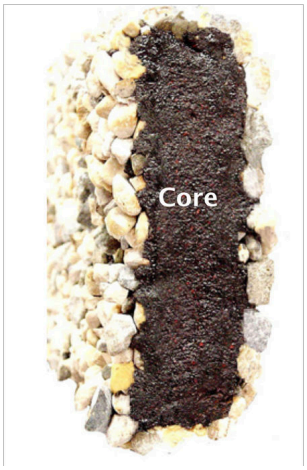
Presentation of waterstop band type R4

Description of waterstop type R4

BFL-Mastix waterstops type R4 are composed of a totally gravel covered core.

The core consists of a soft and waterproof rubber/bitumen elastomer material.

The fine gravel coating, covering the profile R4, is a rough and porous non alkali-reactive material of grain size 4/8 mm.
The fine gravel is mechanically tightly anchored on the core material.



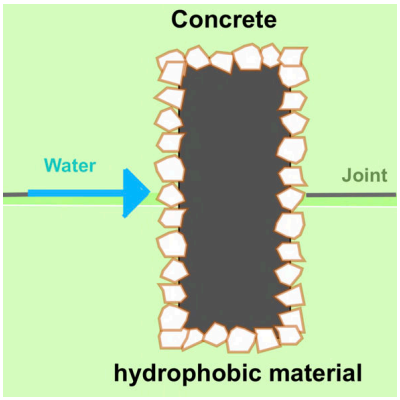
An absorbent material

The band type R4 is an absorbent material

An **absorbent** Material absorbs water.

An **absorbent** material can combine itself with fresh concrete, because a physical-chemical connection is built up.
Cement paste is then penetrating the pores of the absorbent material.

Fresh concrete is adhering on **absorbent** materials, such as bricks, hard concrete, limestone gravel, and others.
Cement paste is then penetrating the pores of the absorbent material.



Resistance against chemical aggressions

The core presents an excellent resistance against:
- water charged with deicing salts
- purine
- sulphated water
- chloric water
- ammonium sulphate 10 g/l
- ammonium chloride 10 g/l
- caustic soda
- ammonia 25%
- pure sulphuric acid
- pure olein acid
- ethylic alcohol

Behaviour on the job site

Properties and durability of waterstops BFL-Mastix type R4 are in no way modified, if exposed for a longer time to rain, snow or ice, neither in a raft concrete nor in a waiting position of a wall concreting stage.

The Mastix system is simple to work with and naturally compatible and coherent with concrete and concrete structures

Mastix system : specifications sheet 502

Waterproofing of joints

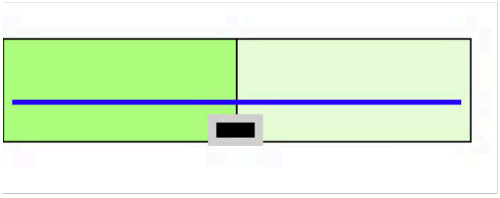
Waterstops BFL-Mastix

The use of waterstops type R4

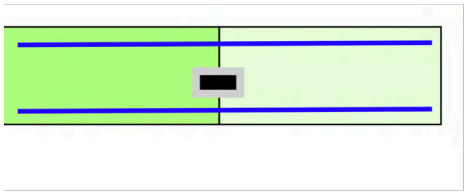
BFL-Mastix waterstops type R4 are used for waterproofing work- or construction joints with connection reinforcement between concrete elements.

BFL-Mastix waterstops type R4 are used against rain- or underground water.

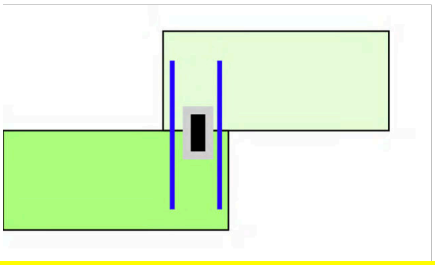
1 Raft/Raft



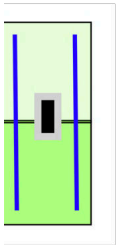
4 Wall/Wall



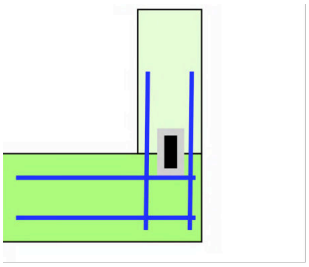
2 Raft/Raft



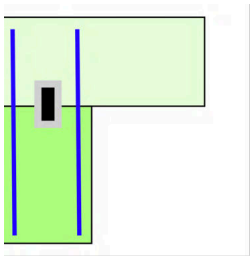
5 Wall/Wall

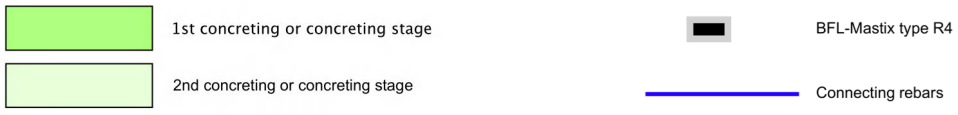


3 Raft/Wall



6 Wall/Slab





The Mastix system is simple to work with and naturally compatible and coherent with concrete and concrete structures

Mastix system : specifications sheet 503

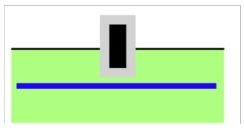
Waterproofing of joints

Waterstops BFL-Mastix

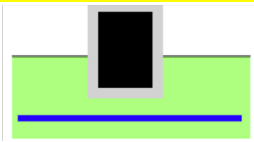
Choice of a profile type R4

Profile types of waterstops BFL-Mastix R4

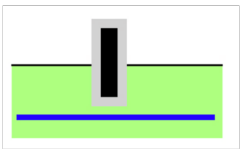
Consult the Mastix catalogue over www.mastix.ch



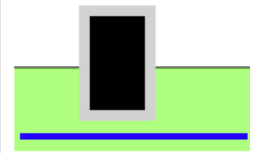
20/40 R4
30x50 mm
Total waterproofing



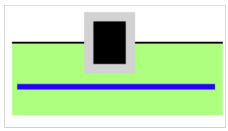
40/50 R4
50x60 mm
Total waterproofing



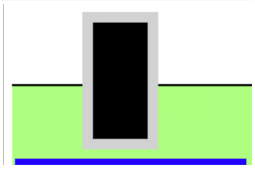
20/70 R4
30x80 mm
Total waterproofing



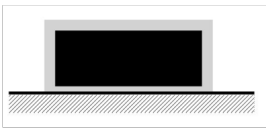
40/70 R4
50x80 mm
Total waterproofing



30/40 R4
40x50 mm
Total waterproofing



40/100 R4
50x110 mm
Total waterproofing



20/120 R4
30x130 mm
Total waterproofing

Choice criteria

1 In constructions with rain water drainage,
are used profiles **20/40 R4 - 20/70 R4 - 30/40 R4**

2 In underground structures with water (ditch – channel - basin – reservoir – hydro-barrage, etc.) the profiles **40/50 R4 - 40/70 R4 - 40/100 R4** are used

3 The profile 20/120 R4 is used for waterproofing joints for raft concreting stages.

Information on the Mastix technology is available under www.mastix.ch

The Mastix system is simple to work with and naturally compatible and coherent with concrete and concrete structures

Mastix system : specifications sheet 504

Waterproofing of joints

Waterstops BFL-Mastix

Placing of bands type R4

Waterstops of type R4 form with the concrete a compatible and coherent waterproof barrier in the structure.

Procedure

1 BFL-Mastix waterstops type R4 are put into the fresh concrete during or after concreting a raft, according to its consistency.

2 Connection between bands is made through a some-seconds-heating of the ends with a small propane gas pistol.

3 In general, BFL-Mastix waterstops type R4 are put into fresh concrete with half their height, the other one remains in “waiting position”.

4 Connection of horizontal and vertical BFL-Mastix waterstops are always made “black on black”. That is just scratch off the gravel skin with a heated spatula.

5 Control of a good connection.

Consult videos Mastix over www.mastix.ch

The Mastix system is simple to work with and naturally compatible and coherent with concrete and concrete structures

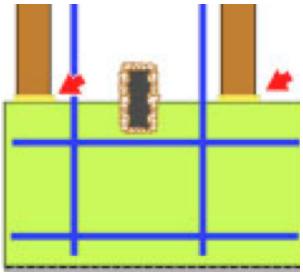
Mastix system : specifications sheet 505

Waterproofing of joints

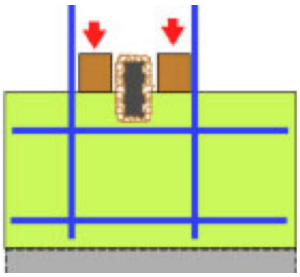
Waterstops BFL-Mastix

Precaution measures

The foot of the formwork must be waterproof, to avoid a loss of cement milk, which leads to gravel holes and a loss of concrete resistance.



The waterstops BFL-Mastix are to be protected where people could walk.



To avoid squeezing the BFL-Mastix bands by metallic formwork, a space should be formed with some wood profiles.

Washing the work joint is done before placing the formwork and the next concreting.
The surface of the work joint must be well watered if it is windy. This is to avoid a porous surface through water absorption from the fresh concrete through the dry raft concrete.