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MASTERFLEX™ 700i

High performance, elastomeric polysulphide joint sealant

Description

MASTERFLEX 700i is a two-part polysulphide sealant, consisting of a polysulphide polymer with selected additives and a curing agent, which when mixed homogeneously cure to a tough, durable, flexible rubber like material with strong adhesion to common construction materials. MASTERFLEX 700i has outstanding resistance to deterioration due to weathering, ozone, ultra-violet light and attack by chemicals present in industrial atmospheres. It has ability to withstand repeated cycles of compression and extension over a wide temperature range, and has excellent adhesion properties to all materials commonly employed in building construction work.

MASTERFLEX 700i is available in pouring grade(PG) and gun grade(GG) for sealing horizontal and vertical joints where movement is expected, or where the performance specification is too rigorous for most common mastic and joint sealants. It is ideal for use in expansion joints in reinforced concrete structures.

Uses

- Residential and commercial buildings.
- Curtain walls, precast concrete panelling.
- Factories and warehouses.
- Dams, reservoirs and water treatment plants.
- Subways, bridges, culverts and rigid pavements of Highways, airport runways etc

Advantages

- Resistant to UV and weathering – durable in exposed conditions.
- High movement accommodation.
- Tough and flexible – withstands traffic.
- Excellent adhesion to a variety of substrates.
- Forms watertight seal

Typical Properties

| | | | | |
|--------------------------------|------------------------|--------|--------|--------|
| Aspect | : Grey viscous paste | | | |
| Solid content | : > 99% | | | |
| Mixed density | : 1.6 to 1.65 kg/litre | | | |
| Movement Accommodation Factor | : ± 25% | | | |
| Shore A hardness (full cure) | : 25 at 25°C | | | |
| Application temperature range, | : 5°C to 40°C | | | |
| Pot life | : > 60 Minutes at 25°C | | | |
| Resistance to ozone | : non-crack | | | |
| Service temperature | : -30 to 80°C | | | |
| Curing times | | | | |
| | 5°C | 10°C | 25°C | 40°C |
| Pot life | 24 hrs | 18 hrs | 2 hrs | 1 hr |
| Initial set | 5 days | 72 hrs | 24 hrs | 5 hrs |
| Full cure | 8 wks | 5 wks | 2 wks | 7 days |

Standards Compliance

- IS:12118
- BS 4254
- BS 5212
- ASTM C920

Specification Clause

The elastomeric joint sealant shall be MASTERFLEX 700i, two-component, high performance polysulfide formulation having weathering resistance to ultra-violet rays. The product shall exhibit shore A hardness of 25 and have movement accommodation factor of 25%. The sealant must comply with the performance specifications as laid in BS:4254 and ASTM C 920. All the joints must be primed using compatible primer for the substrate from the MASTERFLEX PRIMER range. Sealant application shall be carried out, strictly in accordance with Manufacturer's recommendations.

Directions for use

Joint Sizes

Joint size may range from a minimum of 5mm to a maximum of 40mm wide. Joints with cyclic movements should have a width: depth ratio of 2:1 and designed so total movement does not exceed the 25% M.A.F. related to the joint width. Sealant depth shall not exceed joint width.

Minimum sealant depth recommended:

- 5mm for metals, glass and other impervious surfaces.
- 10mm for all porous surfaces.
- 20mm for joints exposed to hydrostatic pressures.
- 5mm below flush for joints exposed to traffic.

Design to appropriate width based on the purpose of joint provision, anticipated movements, the traffic and other mechanical loads the sealant is likely to be subject to. Movement joints should be formed through the entire thickness of the substrate with minimum 10mm width.

Joint surface preparation

Ensure joint is of uniform width through out its length and its faces, flat. Joints should ideally be pre-formed or cut to the required width using a diamond saw to the full thickness of the substrate. Where necessary, re-profile the joint faces to obtain an even edge and a consistent joint width. As with all surface coating and sealants, proper surface preparation is vital to ensure the successful application and performance of MASTERFLEX 700i. For practical reasons surface preparation methods will be limited to sandblasting and grinding. Wire brushing can be used but only where other methods are impracticable. Whatever



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method is used, it is vital to ensure that all surface contamination is removed. Clean the joint faces free of curing membrane, oil, grease, dust and such other contaminants and allow drying. Ensure that metallic substrates are also being free from oxide films and protective lacquers. Insert closed cell polyethylene backer rod or strip snugly into the joint, taking care not to twist or deform it, to support the sealant. If any other type of backing has to be used, apply a bond breaker tape over its exposed surface. In existing joints, rake out the sealant and any backing material to the required depth. Mask the substrate surface adjacent to the joint using a masking tape for a neat and clean finish.

Priming

Prime joint faces using appropriate primer from MASTERFLEX PRIMER range. Use MASTERFLEX PRIMER NO. 1 for porous substrates such as concrete, masonry and MASTERFLEX PRIMER NO. 2 for non-porous substrates such as Metal, Glass, etc.

Mixing

MASTERFLEX 700i must be mixed mechanically, using a heavy-duty, slow speed drilling machine fitted with a sealant paddle. Transfer the entire curing agent into the polymer container and mix thoroughly for about 5 minutes, scraping the sides periodically, until a homogeneous mix free from grey or white streaks is obtained. Improper mixing results in patches of uncured sealant.

Application

Place the sealant preferably when the temperature is in the middle of the range for the day, within 3 hours after priming but after the primer is tack free. Re-prime if placing is delayed.

Gun grade: Fill the mixed sealant into gun barrel using a follower plate, avoiding air pockets. Place a paper or a polythene disc separator between the mixed sealant and the follower plate. With the mouth of the barrel positioned over its central hole, press the follower plate down while withdrawing the plunger of the gun.

Pouring grade: Form a pouring spout at the mouth of the container to enable pouring neatly. With the nozzle just above the backing strip, gently and continually squeeze the trigger depositing an even and continuous sealant bead to fill the joint. Avoid entrapment of air in the sealant by matching the rate of advance of the gun nozzle with the rate of deposition. Pour the sealant into the prepared joint.

Tooling

Compact the sealant in the joint and finish the sealant surface slightly concave using a spatula dipped in soap water.

Coverage

The table below gives the coverage in running metres per litre of sealant.

| Depth of sealant in mm | Width of joint mm | | | | |
|---------------------------|-------------------|------|------|------|------|
| | 10 | 15 | 20 | 25 | 30 |
| 10 | 10 | 6.7 | 5 | 4 | 3.33 |
| 15 | | 4.45 | 3.33 | 2.67 | 2.23 |
| 20 | | | 2.5 | 2 | 1.67 |
| 25 | | | | 1.6 | 1.33 |

MASTERFLEX PRIMER shall have coverage of 12 to 25 running meter of sealing per 250 ml can. Actual coverage depends upon substrate porosity and depth of joints.

Packaging

MASTERFLEX 700i is supplied in 1kg (0.6L) and 4kg (2.5L) packs

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

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