

MasterSeal[®] 470

High performance, elastomeric, polysulphide joint sealant available in non-sag or pourable grades

DESCRIPTION

MasterSeal 470 is a high grade, chemically curing, two component polysulphide based sealant that forms a tough, flexible, durable, rubber like material which adheres to most common construction surfaces and provides fully waterproof seals in joints subject to a high degree of deformation or continuous cyclic movement. The product is supplied in two version:

MasterSeal GG 470 is a non-sag, gun grade version supplied in a single 4 L composite pack for sealing vertical and overhead joints and for general application.

MasterSeal PG 470 is a pouring grade version supplied as 5 L units of base and catalyst for sealing horizontal joints.

TYPICAL APPLICATIONS

MasterSeal 470 is used in joints in critical situations in many types of buildings and structures:

- bridges, tunnels and other civil engineering structures
- precast concrete paneling, and high-rise buildings
- concrete and brick foundations, retaining walls and bridge abutments,
- reservoirs, water treatment works, sea walls and roads
- secondary containment areas
- wet areas such as kitchens, laundries, bathrooms and showers, beneath tiles
- terraces, decks and balconies
- floor joints subject to heavy usage and traffic
- industrial areas and those subject to chemical spillage
- remedial repairs to asphalt, concrete, fiber reinforced cement or similar slab surface
- as a bolt hole sealant for the **Waboflex REJ / Waboflex SR** expansion joints

ADVANTAGES

- Forms a tough, flexible, elastomeric, weatherproof and watertight seal
- Excellent resistance to deterioration due to weathering, ozone, U.V. light and high climatic and in-use temperatures
- Excellent chemical resistance

- Durable water and weather proof sealing even in joints with high levels of deformation (M.A.F. 25%) or repeated cyclic movement of compression and extension over a wide temperature range
- Excellent storage stability of base and curing agent ensures excellent shelf life
- Excellent adhesion to concrete, brickwork, metal, tiling, masonry, stone, steel and glass (check need for primer)
- Lead free curing compounds ensure that the product is safe for handling and application
- Gun grade has a unique, single container packaging eliminating mistakes in mix ratios, minimizing packaging waste and providing convenience to user
- ASTM C 920, Type M, Grade NS/P, Class 25, Use T, M, & O mainly for traffic grade
- Can be used with lubricating oils and Hydrocarbon as per BS 5212
- Suitable to be use in potable water

PACKAGING AND COLORS

MasterSeal GG 470 (gun grade): Pre-tinted grey or black color in 4 L composite pack containing PTA and PTB

MasterSeal PG 470 (pouring grade): Pre-tinted grey or black color in total 5 L units of PTA (base) and PTB (catalyst)

STANDARDS

ASTM C 920-02	Type M, Class 25
BS 5212: Part 1: 1990	Compliance
BS EN ISO 11600	Type F, Class 25LM
TT-S-00227E	General compliance

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TYPICAL PROPERTIES

	MasterSeal GG 470	MasterSeal PG 470
Colour	Grey & Black	
Cure mechanism	Chemical cure	
Density	1.60 ± 0.1 kg/L	
Viscosity	Thixotropic paste	Pourable liquid
Staining	Generally non-staining	
Slump	Nil	n/a
Shore A Hardness	>25	>15
Solid content	>99%	
Application temperature	Ambient temperature +5°C to 45°C	
Pot life	Min. 45 mins @ 25°C	
Initial cure time for light traffic	24 h @ 25°C 5 h @ 40°C	
Final cure for chemical attack or water immersion	14 days @ 20°C 7 days @ 45°C	

Recommended movement	±25% M.A.F. (Movement Accommodation Factor)
VOC content	<60 g/L
Chemical resistance (occasional spillages)	
Dilute acids	Resistant
Dilute alkalis	Resistant
Aviation fuel	Resistant
Kerosene	Resistant
Lubricants	Resistant
Skydrol	Resistant
White spirit	Resistant
Chlorinated Solvent	Not Resistant
Aromatic Solvent	Not Resistant
Dilute oxidizing acids	Not Resistant
Water immersion	Must be fully cured before permanent immersion in water

APPLICATION GUIDELINES

Joint design

Joint width, number of joints and spacings should be designed so total movement does not exceed the 25% M.A.F. related to the joint width.

Joint design recommendations:

- Sealant depth shall never exceed joint width.

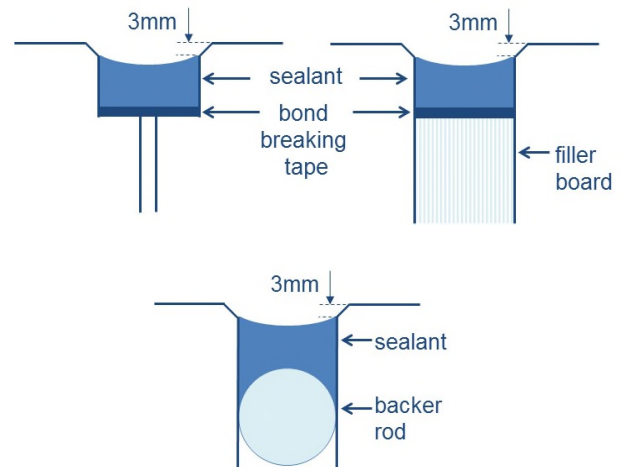
Joint width:

- Minimum 5mm for metals, glass and other impervious surfaces.

- Minimum 10mm for all porous surfaces.
- Minimum 20mm for joints exposed to hydrostatic pressure or permanent immersion. N.B. Joints subject to total immersion should have a 1:1 profile.
- Minimum 20mm for expansion or movement joints exposed to traffic with the sealant tooled to a depth of 3mm below flush.
- Minimum 12mm for non-moving construction floor joints.

Joint depth:

- For non-immersed expansion joints, subject to cyclic movement, and greater than 20mm wide, it is important that the depth should not exceed half the width to optimize the elastomeric properties of the joint sealant
- When using filler boards in expansion joints to achieve the correct depth, it is essential to use a backer rod or insert a bond breaking tape into the joint in order to prevent 3-point adhesion:



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Joint face preparation

To ensure optimum adhesion the joint faces must be sound, clean dry and free from any loosely adherent material which could prevent adequate bond to the substrate.

Concrete & Masonry	Joint faces must be clean and dry. Wire brush thoroughly and vacuum clean.
Metals	Remove corrosion or millscale by grit shotblast, wirebrush, grinder or chemical remover. Degrease the surfaces with solvent.
Wood (bare)	Wood surfaces must be clean and dry, cut back or abrade where necessary to sound timber.
Glass and glazed materials	Thoroughly solvent clean the surfaces
Coated surfaces	Coating should be removed, and the surfaces treated as above.

PRIMING

When installed on porous surfaces (e.g. concrete and masonry), or if joints are permanently immersed, **MasterSeal P 101** primer must always be used.

When applied on non-porous substrates (e.g. metal, glass and glazed surfaces), the need for a primer should be evaluated by testing adhesion before commencing full installation.

- Application of primer should not be carried out below 4°C.
- A single coat of primer should be applied by brush in accordance with the primer instructions. The primer must be allowed to dry to a tack free state before applying **MasterSeal GG 470**.
- **MasterSeal GG 470** should be applied within 3 hours of primer, otherwise re-priming will be necessary.
- Do not prime or puncture the backer rod as this may cause bubbling in the sealant.

Application Temperature

MasterSeal GG 470 should be applied when the ambient temperature is between 5°C and 45°C. When the temperature is below 10°C storage at room temperature for several hours will ease mixing and application.

MIXING

- Mix and use one complete unit at a time. Do not sub-divide.
- Gun grade is supplied with base & catalyst in the same single container.
- Pouring grade is supplied in separate base & catalyst units. Sometimes slight settlement may occur in the catalyst, mix well, before adding to the base component.
- Mix curing agent with base material for 5 - 10 minutes using a suitable paddle fitted to a 500 rpm electric drill moving the paddle completely through the mass of the material.
- The sides and base of the container should be periodically scraped down with a palette knife to ensure all of the catalyst is completely blended with the base component.
- Failure to mix correctly will result in uncured sealant.
- Once mixed **MasterSeal GG 470** should be used immediately.

APPLICATION

Gun Grade:

- **MasterSeal GG 470** is formulated to be applied using a sealant gun but may be applied by trowel if required.
- Sealant guns are fitted with conical nozzles which can be cut to suit the joint width.
- The sealant should be gunned into the joint using an even trigger pressure, cleaning the nozzle occasionally to avoid contamination. Deep joints should be filled in two or more runs, to prevent air entrapment.
- When applying the sealant to a vertical joint, start application at the bottom of the joint so as to continuously support the sealant.

Pouring Grade:

- **MasterSeal PG 470** has a suitable consistency to be poured directly from the container into the joint, when thoroughly mixed.
- For very narrow joints, it should be filled into a sealant gun.

Finishing

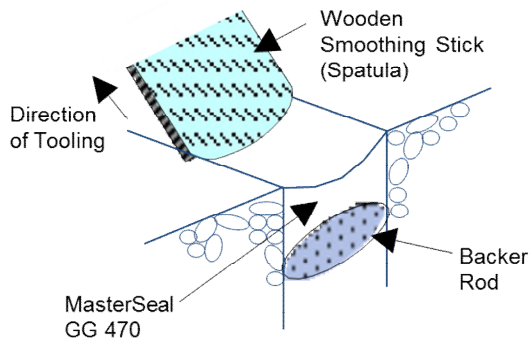
In order to displace any air bubbles present in the sealant caused by mixing and also as an aid to good adhesion, it is advisable, immediately after the **MasterSeal GG 470** has been installed, to

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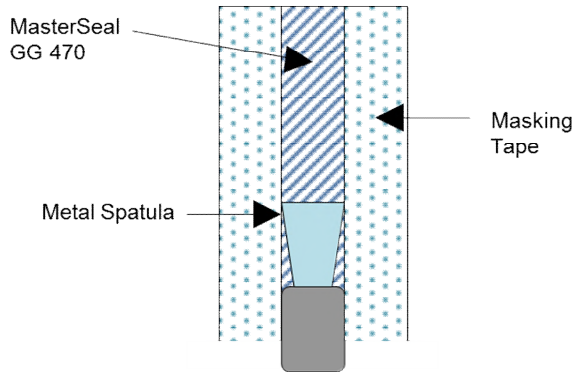
finish by tooling with a rounded spatula or similar object. The outermost surface of the sealant should be finished with a slightly concave profile. On no account must moistened fingers be used. Protect the finished seal from inclement weather until initial set has taken place and the surface skin is clearly visible.

Correct finishing techniques:

Horizontal Joint:



Vertical Joints:



CLEANING

Mixing and application equipment should be cleaned immediately.

COVERAGE / YIELD

MasterSeal GG 470 (length of joint in metres filled per 1 L of material)

Depth of joint 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

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 between 5°C and 35°C.

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HEALTH AND SAFETY

The components and mixed sealant should not be left in contact with skin for prolonged periods. Gloves should be worn, and the use of a barrier cream is strongly recommended. Solvent must not be used for cleaning the hands. Use an industrial cleaner and wash with soap and water. For further information including disposal instructions refer to the Material Safety Data Sheet.

QUALITY AND CARE

All products originating from Master Builders Solutions Dubai, UAE facility are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001 and ISO 14001.

* Properties listed are based on laboratory controlled tests.

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STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this Master Builders Solutions 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.

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