

STOPAQ® MORTAR FR

Product Information

Product description: Stopaq® Mortar FR is an inorganic, non-shrinking, flame retardant, non-degradable, asbestos-free mortar. It is used as mechanical support and barrier for pipe- or cable wall penetrations filled with Stopaq® 2100 Aquastop, Stopaq® 4100 Putty or Stopaq® Paste CZ/CZH/CZHT in fire rated walls and floors. It has a low thermal conductivity and has flame retarding properties. The mortar bonds to concrete, brick, metals and plastics.

Features:

- Excellent adhesion
- Fast and easy to apply
- Easy to retrofit without the use of power tools
- Fibre reinforced
- Excellent flame retarding and heat sink properties

Benefits:

- Fire proof stable bonding
- No special application tools required
- Allows change in cable - and pipe configuration through wall inlet
- Provides permanent and optimal safety
- Allows axial movements of pipes & cables

Application examples

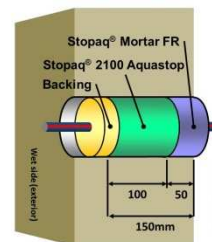
Basement walls: As fire retarding mechanical barrier in wall Inlets, sealed with Stopaq® 2100 Aquastop, Stopaq® 4100 Putty or Stopaq® Paste CZ/CZH/CZHT.

Product properties Stopaq® Mortar FR

Colour	Grey
Application temperature	Not below +10°C
Mixing ratio	0.6 – 0.8 liters of water with 1.0 kg of Mortar FR
Pot life	30 – 40 min at +20°C after mixing with water
Final curing time	Appr. 24 hours at +20°C
Chemical hardening	Appr. 25 days at +20°C
Cured Density	0.80 – 0.85 g/cm ³ after chemical hardening.
Shrinkage	None
Setting behaviour	Expansion of 0.4%
Hardness	80 shore A (after 48 hours curing at +20°C)
Thermal conductivity	0.26 W/mK

Properties of seal constructed with Stopaq® 2100 Aquastop and Stopaq® Mortar FR

Construction	– 2100 Aquastop 100 mm thickness – Mortar FR 50 mm thickness
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Maximum pressure	0.5 bar (i.e. 5 m of ground water pressure) <i>Tested by Deutsche Telekom AG: TS0307/96, april 2005 – "Abdichtelement ADE und Abdichtmassen ADM für mit Kabel belegte Züge"</i>
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General order information

Product	Stopaq® Mortar FR is available in different packing sizes
Art. Nr.	Packing size
1105	Pail 0.5 kg, 20 pails/box, 560pails/pallet
1115	Pail 25 kg, 24 pails/pallet
Handling	Handle with care, keep boxes upright. Consult safety data sheet for appropriate safety and health measures
Storage	Store indoor clean and dry, keep containers tightly sealed to prevent reaction with moisture. Hard or lumpy Mortar should not be used; this has most probably reacted with moisture from air and is not capable of creating an appropriate seal. Shelf life max. 2 years.

Application instruction: Preparation	
Tools, equipment and auxiliaries	<ul style="list-style-type: none"> – Personal protective gear like appropriate gloves, safety goggles, etc. – Mixing equipment with grout mixing paddles – Masonry tools like, pointing trowel, tuck pointer, etc. – Pencil size piece of wood, for compacting of mortar in narrow gaps
Additional materials	<ul style="list-style-type: none"> – Masking tape, width preferably 50 mm. – Clean water, free from visible and chemical contaminations, temperature $\geq 10^{\circ}\text{C}$. – Plastic sheet, e.g. PE-foil – Slip liner ("ceramic paper") in case of expanding pipes and cables during operation.
Ambient conditions	Ambient temperature should be between $+10$ and $+30^{\circ}\text{C}$ during application and curing.
Substrate conditions	Temperature of all substrates, (wall inlet, pipe- and cable surfaces) should be between $+10^{\circ}\text{C}$ and $+30^{\circ}\text{C}$ during application and curing.
Product conditions	Temperature of Stopaq® Mortar FR and mixtures thereof, should be between $+10^{\circ}\text{C}$ and $+30^{\circ}\text{C}$ during application and curing.
Surface preparation	All surfaces must be free of oil, grease, dirt, dust and poorly adhering matter, such as cement film, paint or other. Make sure eventually present Stopaq® 2100 Aquastop, 4100 Putty or Paste CZ/CZH/CZHT is removed completely from the conduit walls prior to application of Mortar FR.
Expanding pipes and cables	Pipes and cables might expand and shrink due to thermal fluctuations. To avoid cracking of Mortar FR, the surface of these pipes and cables should be covered with a slip liner (ceramic paper), allowing sliding of the pipes and cables through the layer of Mortar FR.
Masking	Mask surfaces not intended to be bonding with Mortar FR with masking tape (e.g. ends of penetrating pipes and cables).

Application instruction: Brief version	
Wetting	Wet the opening with water, using a spray bottle or a hand brush. This in order to prevent premature or excessive absorption of moisture from the freshly placed mortar.
Mixing process	Small portions of mixture may be prepared by kneading the mixture by hand (use gloves). Larger quantities should be prepared by using proper mixing equipment.
Mixing sequence	Sequence of mixing is critical for obtaining an homogenous and easy to apply mortar mixture. First add the required amount of water to the mixing vessel, then gently add the Mortar FR bit by bit while mixing. Incorrect mixing may lead to hard lumps in the mixture.
Mixing ratio	<p>By volume:</p> <ul style="list-style-type: none"> – 1 part of water to 2-4 parts of Mortar FR <p>By weight:</p> <ul style="list-style-type: none"> – 6-8 parts of water to 10 parts of Mortar FR <p>It is advised to keep the water content as low as possible to be able to create a rigid barrier. Higher water content will lead to a more fluid mixture, which can be used to fill narrow gaps.</p> <p>Mixing time is 3 – 5 minutes.</p>

Application	First fill the areas that are difficult to access, e.g. between cables and pipes. Squeeze the mixture towards the sides of the conduit (brick/concrete). Make sure to avoid air enclosures. Fill up with mixture towards the boundary of the conduit. Smooth the surface of the Mortar using little water and masonry tools.
Removal of masking tape	Immediately after finishing smoothing of the Mortar, remove the masking tape.
Controlled curing	In order to minimize the risks for cracking due to too fast curing, cover the fresh mortar surface with a sheet of plastic sheet.

Application instruction – Retrofit repair	
Retrofit	Cracks and holes should be reamed to a width of at least 10 mm to enable proper application of additional Mortar. Application should be done similar to the procedure described previously in this document

Stopaq® information and warranty	
Documentation	Extensive information is available on our web-site. Application instructions, "Stopaq® Technical Standard" and other documentation can be requested from our head office, from our local distributor or by email: info@stopaq.com
Certified staff	The application of Stopaq® sealing systems should always be carried out by certified personnel.
Reliable performance	Being more than 20 years in service, Stopaq® 2100 Aquastop combined with Stopaq® Mortar FR has proven that the sealing properties of the material are reliable and have excellent performance over a long period of time.



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