

SFL™ MORTAR FR

Product Information

Product description: SFL™ Mortar FR is an inorganic, non-shrinking, flame retardant, non-degradable, asbestos-free mortar. It is used as a mechanical barrier for pipe- and cable wall penetrations as required with installation of sealing materials manufactured by Seal For Life Industries, e.g. Stopaq® 2100 Aquastop or Sealtaq® Aquablock. The material is well-suited for application in fire rated walls and floors. It has a low thermal conductivity and bonds to concrete, brick, metals, and plastics.

Features:

- Excellent adhesion to many substrates
- Fast and easy to apply
- Easy to retrofit without the use of power tools
- 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

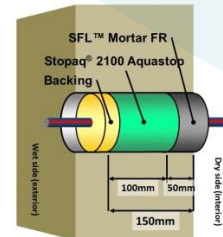
Cable and pipe wall penetrations: As fire retarding mechanical barrier in wall Inlets filled with Seal For Life sealing materials, e.g. Stopaq® 2100 Aquastop, or Sealtaq® Aquablock

Product properties of SFL™ 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	Approx. 30 min at +20°C after mixing with water
Final curing time	Approx. 24 hours at +20°C
Chemical hardening	Approx. 25 days at +20°C
Cured Density	Approx. 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/m.K

Properties of sealing system comprising Stopaq® 2100 Aquastop and SFL™ Mortar FR

Construction	– Stopaq® 2100 Aquastop: 100 mm
	– SFL™ Mortar FR: 50 mm



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>
-------------------------	--

General order information

Product	SFL™ Mortar FR is available in different packing sizes: <u>Art. Nr.:</u> <u>Packing size:</u> 1105 Pail 0.5 kg, 20 pails/box, 480 pails/pallet 1113 Pail 5 kg, 72 pails/pallet 1115 Pail 25 kg, 24 pails/pallet
Handling	Handle with care, keep boxes and pails 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. Keep from freezing. 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 - Job preparation	
Pipe and cable fixation	Pipes and cables must be fastened to avoid lateral movements. Excessive lateral forces exerted to the SFL™ Mortar FR barrier may cause cracking.
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, for mixing large quantities - Masonry tools like trowels, tuck-pointing tools, 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 ≥ 10°C. - Plastic sheet, e.g. PE-foil - Slip liner in case axial movement occurs due to thermal expansion of pipes or cables.
Ambient conditions	Ambient temperature should be between +10 and +30°C during application and curing. Special measures for working in winter conditions with cement-like materials should be adopted.
Substrate conditions	Temperature of all substrates, (wall inlet, pipe- and cable surfaces) should be between +10°C and +30°C during application and curing.
Product conditions	Temperature of SFL™ Mortar FR, and mixtures thereof, should be between +10°C and +30°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 sealing materials are removed completely from the conduit walls prior to application of SFL™ Mortar FR.
Axial pipe or cable movements	Pipes or cables might expand and shrink due to temperature fluctuations, causing slight axial movements. To avoid cracking of the SFL™ Mortar FR barrier, the surface of these pipes and cables should be covered with a slip liner, allowing axial sliding of the pipes and cables through the layer of SFL™ Mortar FR.
Masking	Mask surfaces not intended to be bonded with SFL™ Mortar FR with masking tape, e.g. sections of pipes and cables protruding from the mortar barrier.

Application instruction - Brief version	
Wetting	Wet the wall opening with water, using a spray bottle or a brush, such 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 SFL™ 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 SFL™ Mortar FR <p>By weight:</p> <ul style="list-style-type: none"> - 6-8 parts of water to 10 parts of SFL™ Mortar FR <p>Mixing time is 3 – 5 minutes.</p> <p>After mixing the mortar should have a pasty consistency.</p> <p>It is advised to keep the water content as low as possible in order to create a rigid barrier. Higher water content will lead to a more fluid mixture, which can be used to fill narrow gaps.</p>
Application	<p>First fill the areas that are difficult to access, e.g. between cables and pipes. Push 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. Smoothen the surface of the Mortar using small amount of water and masonry tools.</p>
Removal of masking tape	Remove applied masking tape immediately after finishing application of the mortar.
Controlled curing	In order to minimize the risks of improper curing or cracking - which might occur at higher ambient temperatures - cover the fresh mortar surface with a sheet of plastic to minimize water evaporation.

Application instruction - Repair	
Cracks and holes	Cracks and holes should be reamed to a width of at least 10 mm to enable proper application of additional SFL™ Mortar FR. Application should be done according to the procedure described in this document.

Information	
Documentation	Extensive information is available on our web-site. Application instructions and other documentation can be obtained by contacting our head office, from our local distributor or by sending email to info@sealforlife.com
Certified staff	Application of the described materials should be carried out by certified personnel.