



## 技术资料

## FULAFLEX FR – HYBRID POLYMER CONSTRUCTION SEALANT

### Description

Fulaflex FR is a high performance, elastomeric and intumescent low-modulus construction sealant for use in joint sealing applications where a fire resistance level (FRL) rating is required. It has been tested in accordance with AS1530.4-2014. Fulaflex FR cures chemically upon exposure to atmospheric moisture to form a durable, permanently flexible and highly weather resistant sealant, with excellent adhesion to a wide range of substrates. As the curing reaction does not produce carbon dioxide biproduct, the sealant eliminates the risk of bubble formation within the sealant under hot/humid climatic conditions or when applied to substrates high in moisture content. Fulaflex FR is free from isocyanates, water and solvents and exhibits minimal shrinkage during curing.

Fulaflex FR carries a non-hazardous classification and is low in VOC, satisfying the requirements of the Green Building Council of Australia (GBCA).

#### **Benefits**

- NCC compliant, tested to AS1530.4-2014
- Low modulus sealant with +/- 25% joint movement capability and excellent elastic recovery performance
- Suitable for sealing joints from 10mm to 50mm in width
- Excellent primer-free adhesion to both non-porous substrates and porous substrates such as cut-edge plasterboard and AAC

- Free from Isocyanate and Asbestos
- Free from acrylic, water and solvents, exhibiting minimal shrinkage during curing
- Excellent UV stability and weather resistance
- Unaffected by rain exposure early in the sealant cure phase
- Excellent cold weather gun-ability.
- Exhibits nil bubble formation during curing
- Low gloss surface finish
- Paintable
- Can be applied to damp surfaces
- Excellent acoustic properties
- Non-hazardous according to GHS regulations
- Low VOC (11g/ltr)
- Australian Made

#### Uses

- Sealing interior and exterior construction joints in concrete panel and solid block as well as plasterboard wall systems, that are subject to movement of up to ±25% of the original joint width
- Sealing joints in single layer and doublelayered plasterboard walls where a fire resistance level (FRL) rating is required
- As a high weathering performance, lowmodulus sealant for expansion joints

### **Compatible Substrates**

Concrete	Aluminium
Mortar	Plasterboard /
	Gypsum
Stainless Steel	Plastics (pre-test)
Galvanised Steel	Timber

Note: Not all substrates fire tested / rated – Refer to reports if a fire resistance level (FRL) is required.

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#### Performance Summary

Colour	Grey and Limestone
Skinning time	40-50 minutes @23°C
Working time	ca. 60 minutes
Hardness (Shore A)	30-35
- Full Cure	
Application	+5°C to + 35°C
Temperature	
Service temperature	-20°C to 100°C
Specific Gravity	ca. 1.60
Cure Rate	ca. 2-3mm/day @ 23°C
Shelf Life	12 months
Joint movement	+/-25%
capability	
Elastic recovery	>80%
Modulus – 50%	ca. 0.5MPa
(ISO-037)	
Modulus – 100%	ca. 0.6MPa
(ISO-037 DIN 53504)	
Modulus – Max	ca. 1.7MPa
(ISO-037 DIN 53504)	
Elongation –	ca. 300%*
(ISO-037 DIN 53504)	

\* Elongation % test methods record the maximum % tensile elongation of a sealant at specific defined dimensions and discrete from an installed joint. In a cyclic joint, for assessments that take sealant modulus, substrate adhesion performance, effective sealant depth/width and other in-field factors into consideration, always refer to the joint movement capability.

### **Standards Compliance**

Fulaflex FR achieves up to a four (4) hour fire rating when tested in accordance with AS1530.4 – 2014. With FRL's being subject to building element type, element thickness and orientation, advice should be sought concerning the suitability of Fulaflex FR in specific applications. Refer to hbfuller.com.au for test reports and assessments. Fulaflex FR meets the requirements of LEED Certification: Indoor Environmental Quality -Credit 4.1 (Low-Emitting Materials: Adhesives and Sealants).

Fulaflex FR meets the requirements of the Green Building Council Australia (GBCA) for low VOC construction sealants. In regions where applicators of fire rated sealants require certification or licences check local regulations to ensure compliance.

# Yield / Consumption indication – Refer to reports regarding tested joint dimensions

Joint Width mm	Joint Depth mm	Yield (600ml sausage (Linear metres)
10	10	6.0
15	10	4.0
20	10	3.0
30	15	1.5
40	20	0.8
50 (max)	25	0.5

### Joint Configurations – Depth vs width

Joint Width mm	Joint Depth mm
10 to 20mm	10mm
20 to 50mm	Half width

#### Joint Design

Effective joint design in the construction industry necessitates a joint width equal to 4 times the anticipated movement of building components. The 4:1 design factor accommodates both thermal movement and wide variations in tolerances of construction materials, fabrication and erection often found in the field.

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### **Surface Preparation**

All surfaces must be clean, dry, sound and free of dust, oil, old sealant or other contamination.

Lightly contaminated surfaces should be wiped with Isopropyl Alcohol (IPA) using the 2-rag wipe method. Apply IPA to a clean lintfree cloth and wipe onto the surface to be cleaned to solubilize and remove the majority of the contaminant. A clean drv cloth should then be applied to remove remaining contamination and dry the surface. Ensure wet cleaner is not allowed to dry on surface. For more heavily contaminated surfaces or where the IPA does not remove the contaminant, a generic wax and grease remover should be applied using the same 2rag wipe method. Once this has been completed the surface should be given a final clean with IPA using the 2-rag wipe method to ensure the surface is adequately prepared. Adhesion to metals and some surface finishes can be further improved by light abrasion prior to cleaning with IPA using the 2 rag-wipe method. Manufacturers of plastics should be consulted about suitable cleaning solvents. Adhesion to plastics should be pre-tested. Mask either side of joint to produce a neat finish. Use a suitable sized foam backing rod or polyethylene bond breaker tape to prevent three-sided joint contact impeding the free and even deformation of the sealant in a cyclic joint. Open-cell polyurethane foam is recommended. Use a size 25% wider than the joint width that will compress when inserted into the joint.

Fulaflex FR will adhere to moist surfaces but avoid wet surfaces. Areas adjacent to joints may be masked to provide a neat finish. Masking should be removed immediately after tooling.

### **Product Application**

Apply Fulaflex FR in ambient conditions between 5 and 35 degrees centigrade. Under higher temperatures the tooling/working time will be significantly reduced. Do not apply below 5 degrees centigrade. Insert the sausage into the applicator gun and cut off sausage clip at the extrusion end of the sausage. Fit the barrel end and nozzle, with the nozzle cut to deliver the appropriate bead size.

Gun Fulaflex FR by pressing the trigger to continuously fill the joint - while ensuring that air does not get trapped in the sealant/joint. After filling an appropriate length of joint, smooth the sealant with a spatula or trowel, pressing the sealant into the joint to form the required finish while ensuring the sealant fills the joint and is complete contact with the substrates. The application tool should contact the entire surface that is required to be tooled. Where wet tooling is required apply a solution of detergent/soap and water (max concentration 1:5 ratio), while ensuring that the solution does not get into the bonding areas

### Curing

The rate of cure depends on the air temperature and humidity, the cross-sectional area of the bead of sealant and the surface area of sealant exposed to the air. At 23°C and 50% relative humidity cure rate is approximately 2-3mm / 24 hours. In general, low humidity and/or low temperature will result in longer cure times. Thicker sections of sealant will have longer cure times. A small surface area in relation to the volume of sealant will also extend the cure time.

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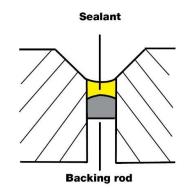




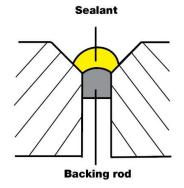


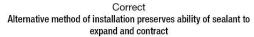
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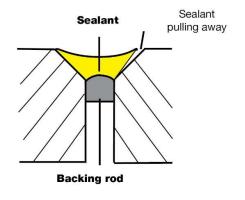
### Correct and incorrect joint designs

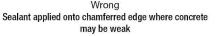


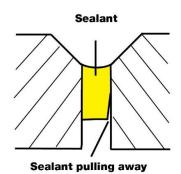
Correct Sealant applied on backing rod using correct sealant dimensions











Wrong Sealant extends too deep into joint leading to tearing away from sides or splitting

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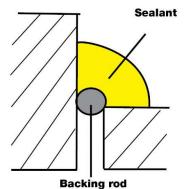
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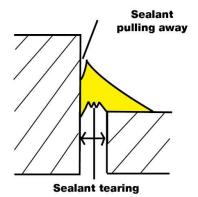


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Correct Sealant applied between two walls with backing rod to support movement



Wrong Sealant applied without backing rod. or where excessive movement occurs, allows sealant to split away from the wall edges and tear

#### **Clean Up**

Best results are obtained by masking prior to sealing to avoid the necessity for clean-up. However, if sealant is applied to areas where it is unwanted, clean up uncured sealant using IPA or methylated spirits and a cloth. Take precautions to avoid staining porous substrates when using solvents. Cured sealant should be removed by abrasion or trimmed with a sharp knife. Do not undercut seal.

#### Painting

Fulaflex FR may be painted with most water based paints and other paint systems including waterproof membranes, once a firm skin has developed. However, test if unsure, especially when industrial grade coatings are used, to ensure that:

• The coating bonds to Fulaflex FR satisfactorily

• The coating does not affect the curing of Fulaflex FR (e.g. allows moisture to reach the sealant surface if applied over a non -porous surface where the sealant is painted prior to full cure)

• That Fulaflex FR does not affect the cure of the coating (e.g. result in a sticky surface). Some solvent based coatings may remain sticky for extended periods of time.

 The coating does not craze after application over Fulaflex FR

Most coating systems are incapable of achieving similar rates of flexibility as Fulaflex FR. As such, surface coatings may crack as a result of cyclic joint movement. HB Fuller recommend the use of a premium quality acrylic emulsion paint over Fulaflex FR.

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### **Chemical Resistance**

Resistant to intermittent exposure to salt water, grease, oils, fuels, defrosting liquid, detergents, aliphatic fats, mildew, weak acids and bases (pre-testing required).

#### Shelf Life

12 months unopened packaging in a cool and dry storage area at temperatures between +5C and +25C.

### Limitations

- Fulaflex FR is not test or appraised for fire rated service penetration sealing applications (as at February 2020; Consult HB Fuller for further information.)
- Do not apply to wet surfaces (visible water) or underwater.
- Fulaflex FR is not suitable for use where pooling of water may occur.
- In regions where applicators of fire rated sealants require certification or licenses check local regulations to ensure compliance.
- Not for use in water retaining structures unless used in conjunction with waterproofing membrane.
- Fulaflex FR should not be applied to frostbearing surfaces or if temperature will fall below zero degrees celsius prior to the sealant fully curing
- When painted with oxidative drying paints disturbances in the drying of the paint may occur.
- Because of the diversity of paints available it is recommended to complete a compatibility test before application.
- Do not attempt to finish/tool the sealant in a joint using the chemicals described in the clean-up section, as they will

irreversibly affect the sealant. Only use these chemicals to clean up uncured sealant from tools and equipment.

- Not for use in joints contaminated with oil, grease, wax, dust, corrosion, tar, asphalt, loose aggregate, frost, dampness, formrelease agents or other such coatings impregnations.
- Not for exposure to harsh chemicals Fulaflex FR does provide a level of chemical resistance however pre-testing for contact with chemicals is recommended
- Not suitable for glazing with glass, acrylic or Polycarbonate sheets. Refer other comments with regard to glass in substrates and surface preparation sections.
- Not for use on Marble or other highly porous stone without pre-testing for staining.
- Not recommended for use on bituminous surfaces or on materials that bleed oils, plasticisers or solvents, as this will affect adhesion.
- Open cell backing rod is recommended. Always take care when handling closed cell polyethylene backer rod during installation, so as not to pierce the rod.
- The presence of other curing sealant technologies in the vicinity (such as some silicones), or exposure to alcohol during curing may prevent Fulaflex FR from curing.

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#### Safety Information

This product is not considered hazardous under the classification of GHS WHS Version 3. Further safety information is available on the product SDS. Avoid contact with skin and eyes. Store in a dry place below 30°C. Keep out of reach of children. An SDS is available from the H.B. Fuller nepresentative in your state, HB Fuller Australia customer service, or downloadable from the HB Fuller web site, www.hbfuller.com.au.

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> Version 7 TDS Date: 26/02/2020

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