

PRO-FLEX 50FC

Polyurethane Sealant

DESCRIPTION

PRO- FLEX 50FC is a one component, fast cure high performance construction joint, thixotropic moisture curing Polyurethane sealant /adhesive with high mechanical strength and excellent resistance to weathering.

- Paintable – see notes.
- Does not support fungal growth.

APPLICATIONS

PRO-FLEX 50FC is designed for use on:

- Construction joints
- Expansion joints on heavy and light precast concrete panels
- Expansion joints in buildings
- Joints in precast & tilt up concrete panels
- Perimeter sealing around window and door frames
- Curtain walls
- Sealing of penetrations in walls or floors
- Retaining walls
- Brick work, ceramics, stone, granite & marble
- Sanitary applications
- Other substrates including, anodised aluminium, steel, glass, dry timbers, some tiles
- Adhering Aluminium Composite Panel to Cement Sheet, concrete or masonry
- Trafficable-stairs, roads ,runways and pavements

(Always test adhesion to substrate before starting project)

ADVANTAGES / FEATURES

- Class A Sealant – Total Joint movement total 50% ($\pm 25\%$)
- Non Hazardous – classification (NOHSC & ADG code / Aust Safety and compensation council)
- Low VOC.
- Good adhesion on both porous and non-porous substrates.
- Excellent durability.
- Good weathering resistance.
- Non-sag on vertical and expansion joints up to 30 mm width.
- Short skinning time.

TYPICAL PROPERTIES

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Appearance	Paste
Specific gravity	Black: 1.16 ± 0.05 All others colours 1.18 ± 0.05
Shore A hardness (ISO 868 – 3 seconds)	45-50
Skin formation, superficial curing at +23°C and 50% RH	45 to 90 minutes
Curing at + 23°C and 50% RH	4mm / 24 hours
Modulus at 100% elongation (ISO 8339)	44 psi - (0.3 MPa)
Elongation at break (ASTM D 412)	> 600%
Movement Capability Percentage	$\pm 25\%$
Total Joint Movement	50%
Temperature Range, °C	-40°C to +80°C
Application temperature	+5°C to +35°C
VOC Rating – g/L	35
Sagging (ISO 7390)	None
Resistance to UV radiation	Good
Compatibility with paints	Water based: yes Solvent based: carry out compatibility test.

CLEANING PREPARATION

All substrates should be clean, sound, dry, dust, wax, oil and grease free. In most cases, no primer is required on most substrates. (Preliminary tests recommended). Any loose particles should be removed prior to application. If necessary, rub down metal surfaces beforehand. Clean the substrates after rubbing down. Allow the substrate to dry after cleaning / degreasing.

Masonry/Brick/Concrete: Any loose particles or laitance should be removed by hand or mechanical wire brush followed by blowing down with oil free compressed air. Use Aftek® cementitious or epoxy mortars / coatings to repair any damaged joints.

Metals: Surfaces must be free of rust, scale or oxide films and should clean the substrate with, methyl ethyl ketone (MEK), acetone or grease remover. Apply Aftek® primer if necessary.

Check the compatibility of the solvent used with the substrates. When using solvents, extinguish all sources of ignition and carefully follow the safety and handling instructions given by the manufacturer or supplier.

APPLICATION INSTRUCTIONS

Apply at a minimum temperature of +5°C to +35°C Aftek PRO- FLEX 50FC can be applied by means of a hand or air operated cartridge or sausage gun. When tooling the Aftek PRO- FLEX 50FC ensure a concave finish.

(For easier use we recommend the material is stored between +10°C and <+30°C prior to use.)

Aftek PRO- FLEX 50FC Sausage 600ml - Place in applicator gun, then cut just behind the aluminium clip (removing clip) to open sealant in foil. Fit the application gun with a suitable nozzle that has been cut to deliver the right bead size. If primers are used on joints, (which is generally applied after backer rods are in place) must not exceeded the open time and it must be thoroughly dry, otherwise in conditions of rising temperatures trapped solvent can blow bubbles in the uncured sealant.

Some porous substrates must have their porous area surfaces thoroughly sealed to avoid the possibility of air bubbles being trapped in the uncured sealant if the substrate temperature rises quickly.

Extrude the Aftek PRO- FLEX 50FC into the joint ensuring that no air is trapped in the joint. Wide joints will require more than one pass of the application gun to make sure that sealant is in full contact with the sides and bottom of the joint.

Tooling-off the sealant will assist by forcing the sealant into the joint against its sides and back up material, this will also break any air bubbles and expose any air pockets. Finally tooling of the joint surface can be done effectively with a tooling of spatula.

When masking tape is used for neatness make sure the tape is removed from sides of joints before the sealant starts to skin over or cures.

Always allow sufficient surface exposed to moisture. In conditions of low atmospheric humidity, it is advisable to spray the surface with a fine mist of water to promote early skinning once joint is finished.

JOINT DESIGN

Joints up to 12 mm wide, width to depth ratio = 1:1
 Joints over 12 mm wide, width to depth ratio = 2:1
 (Minimum joint depth 7mm: maximum joint width 35mm).

An approximate rule of thumb for joints in pre-cast concrete

Joint height (in metres) up to 2.0m / 2.0-3.5m / 3.5-5.0m / 5.0-6.5m / 6.5-8.0m

Joint width (mm) 10 15 20 25 30

To ensure that the correct joint width to depth ratio is achieved and also to prevent the sealant from adhering to the bottom of the joint, it is highly recommend to use a tight fitting, non-absorbent backing material such as an open cell polyurethane or closed cell polyethylene backer rod. Open cell polyurethane backer rod has the advantage of allowing ambient moisture access to the front and back of the joint simultaneously allowing faster curing. Caution – if using closed cell polyethylene backer rod, it can cause bubbling in uncured sealant as the temperature rises if it's outer skin is punctured. Do not use oil or tar impregnated backing materials.

ESTIMATING

One Aftek PRO- FLEX 50FC 600ml sausage will give the following.

Approximate - volume in linear meters.

Joint in mm	Approx. Linear Meters
12mm x 12mm	3.9
15mm x 7mm	4.1
20mm x 10mm	3.0
30mm x 15mm	1.3

(Figures given can change due to wastage).

Refer to ITLS-TWA Australia for correct joint designs relating to any projects.

For any specific project warranty full testing must be carried out on substrate testing first and placed in writing by ITLS-TWA Aust before project commences.

PAINTABILITY

Aftek PRO- FLEX 50FC can be painted after fully cured. Paints and coatings containing solvents may cause the sealant to react and become tacky. Some coatings may crack or craze as a direct result of the environmental cyclical movement. It is always recommended to conduct field tests to ensure compatibility with the desired coating.

CLEAN UP

Clean up uncured sealant from tools after first scraping excess off with scraper then by rag or paper towel. Acetone can be used to remove thin film from tools, (if need). Cured material can only be removed by mechanical clean up.

PRECAUTIONS / LIMITATIONS

Do not use Aftek PRO- FLEX 50FC

- In structural bonding or transparent surfaces when the bond line is directly exposed to UV.
- In chlorinated water such as swimming pools, spa's etc.
- Where it is constantly immersed in salt water
- Any material containing bitumen.
- For Structural glazing applications
- To cement based substrates within 28 days of initial pour or set.
- In trafficable joints greater than 7mm in width
- At temperatures below +5°C or above +35°C.
- Exposed to water or alcohol before it has completely cured.
- Using wet tooling techniques, such as soapy water
- Don't applied less than 7mm in width and depth
- Composite metallic façade systems can be subject to significant daily cyclical movement due to temperature variations. Crimping and bulging of installed sealant before full cure may permanently deform the sealant finish prior to full cure, especially on northern & western elevations in full sunlight.
- For best results use opened cartridge or sausage the same day otherwise sealant in the nozzle will cure and have to be removed.
- When applying sealant, avoid air

entrapment.

- Minimum joint width for caulking around window frames is 10mm.
- White colour material may yellow with age.
- In some cases sealant can be stained by interaction with other components used in the structure and finishes. (Test is always recommend first)
- Joints in low humidity environments should be sprayed with a mist of water as soon as tooling off is complete to accelerate the curing process and minimise the risk of early movement cracks.
- For specific chemical resistance please contact our Aftek@Technical Service Department.
- Conduct a simple paint test first for compatibility.
- Where possible backer rod should be placed in a joint before it is primed.
- Do not puncture closed cell polyethylene backer rod during installation, this can lead to "out gassing".
- Open cell backer rod allows moist air access to the bottom of the joint so that the sealant can cure simultaneously from the front and back of the joint.
- Make sure you clean any old joint containing silicones sealants – removing all before applying Aftek PRO- FLEX 50FC sealant. Consult our Aftek@ Technical Department.
- Alcohol containing solvents should not be used as a tooling aid, as these will inhibit the cure of polyurethane adhesives / sealants.
- Epoxy resin coatings should be fully cured prior to the application of the adhesive / sealant as the uncured coatings could inhibit the cure of polyurethane adhesives / sealants.
- Do not apply to damp or wet surfaces or joints.
- Do not apply if rain is eminent.
- Do not over work sealant surface.

Always check with ITLS-TWA Australia Technical department to confirm any questions relating to limitations / precautions before using product. ITLS-TWA Australia always recommends substrate and product testing prior to using on any project.

STORAGE / SHELF LIFE.

Store sealant in original unopened sausage / cartridges in a dry location, temperature should not exceed 25°C for prolonged periods or lower than +5°C. Shelf life of product is 24 months from date of manufacturing.

HEALTH AND SAFETY

Not classified as hazardous, Read the material safety data sheet before use.

FIRST AID: In case of contact with eyes, rinse with plenty of water and contact Doctor or Poisons Information Centre. Phone Australia 131126: New Zealand 0800 764 766).

READ THE MATERIAL SAFETY DATA SHEET BEFORE USING THIS PRODUCT FOR ADDITIONAL SAFETY INFORMATION.

TECHNICAL SUPPORT

ITLS-TWA manufactures and supplies a comprehensive range of high quality, high performance construction & industrial products. In addition, ITLS-TWA Australia offers technical support and on-site advice to architects,

engineers, trades people, contractors and end users.

Co-operative testing program is offered for major projects, including warranties.

Please contact your ITLS-TWA sales representative or ITLS-TWA Head Office or sealants@aftek.com.au for this service

ALLIED PRODUCTS

ITLS-TWA manufactures and supplies a broad range of products under the Aftek® brand, which are used in the construction industry, industrial and OEM manufacturing, including:

Grouts

Coatings

Admixtures

Adhesives

Sealants –Silicones / PU's / Acrylic's / Butyl

Floor Toppings

Floor Levelling Compounds

Concrete Repair

Concrete Curing

The information and any recommendations relating to the application and end-use of all ITLS products are provided in good faith based on ITLS's knowledge and experience of the products. In applications, the differences in materials, and variances of substrates and actual site conditions can vary such that no warranty in respect of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be taken as inferred either from this information, or from any written recommendations, or from any other advice offered by ITLS. The proprietary rights of third parties must be observed. All orders are accepted subject to our sale terms and conditions. All users should always refer to the most recent and up to date issue of the Technical Data Sheet for the product concerned, which is available on request. It is recommended that products should always be properly stored, handled and applied under tested and recommended conditions.
PLEASE CONSULT OUR TECHNICAL DEPARTMENT FOR FURTHER INFORMATION.



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