

Target Fixings Ltd

Bar Flex

Masonry Repair Material

INTRODUCTION

Bar Flex is a Grade 304 austenitic stainless steel reinforcing material that has many unique properties. Being rolled from a plain round wire, the fins are work-hardened to a very high level whilst the core remains relatively soft. The subsequent tensioned, free-twisting process places the hardened fins in tension and the soft core into compression. The tensile strength of the base material is more than doubled during the manufacturing process. The deformation of the fins makes the bonding characteristics of Bar Flex far superior to alternative standard reinforcing materials.

TECHNICAL

The University of Bath School of Architecture and Civil Engineering has performed independent tests on the Bar Flex material to ascertain its tensile and shear loadings. A full report of this testing, including the methods employed, is available on request, but a summary is given in the table below. One of the properties of the Bar Flex material is that it performs in a similar manner to a coiled spring when it is stressed within its elastic limit. All of the load calculations for design are based within this elastic limit.

| Bar Flex | Tensile kN | Shear kN | Cross-Sectional Area mm ² |
|----------|---------------|-------------|---|
| 6 mm | 9.75 | 8.1 | > 8.2 |
| 8 mm | 11.67 | 9.2 | > 11.2 |
| 10 mm | 14.51 | 10.5 | > 14.2 |

SIZES

Bar Flex is available in four different diameters of 4.5 mm, 6 mm, 8 mm and 10 mm for use in different applications. Lengths are available up to 10 metres long.

The uses for Bar Flex are both wide and varied and it can be utilised in new build and for many specialised refurbishment requirements.

In general terms, the 6 mm Bar Flex is used for the

reinforcing of existing masonry structures. By combining the Bar Flex with Bond Flex XL cementitious grout, beams that can span over openings, as a lintel, or over soft areas of ground when footings have failed, can be installed into existing masonry with very little disturbance. Crack stitching can be achieved by using 1 m lengths of Bar Flex.

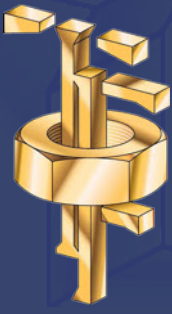
The 8 mm Bar Flex is used for new build masonry reinforcing. The larger dimensions gives it a far better bond into a standard building mortar than the alternative round section wire. The increase in the tensile strength during the manufacturing process also requires less overall material to be used.

For heavy duty applications, the 10 mm Bar Flex is in a class of its own. Very strong in tensile and shear, when combined with the bonding capabilities makes this a truly versatile, high strength product.



TECHNICAL

- Grade 304 austenitic stainless steel
- Excellent bonding capabilities
- Coiled spring properties within elastic limit
- High stress material
- No sudden or catastrophic failure point
- Lengths up to 10 m - less wastage
- Less intrusive than standard repairs



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Bond Flex

Cementitious grout

INTRODUCTION

Bond Flex XL cementitious grout is a non-shrink, pumpable, thixotropic, high-performance, cement-based grout suitable for injection with a hand applicator. Supplied in a 16 litre bucket, Bond Flex XL contains the dry powder to make either 3 or 6 litres of injectable grout.

The low liquid to powder ratio ensures a thixotropic grout, which develops its compressive strength rapidly. It is designed to fill all voids into which it is injected and the bond stress is greatly enhanced by its expansive properties.



TECHNICAL

Bond Flex XL is suitable for bonding metal components into most masonry substrates including concrete, brick, stone, blocks and most masonry materials. It is designed for use with the other Target products Bar Flex, Cem Flex, and Retro Flex as a bonding agent. Further details are given in those product brochures.

Bond Flex XL has been found to be an ideal alternative product to polyester resin and is particularly useful when fire risks are an issue - replacement wall ties on

high-rise structures is a good example. Being non-flammable and odourless, Bond Flex does not have the inherent drawbacks of many resin-based alternatives.

PACKAGING

The packaging of Bond Flex XL ensures that consistent results are obtained with every mix. There is nothing to leave out, and more importantly, nothing to add. Contractor error has been eliminated.

Although packaged in the same 16 litre bucket for a clean mix every time, for extra convenience Bond Flex XL is available in two different sizes. XL3 contains enough mixture for 3 litres of grout, whilst XL6 contains two packs of each XL3 component and hence produces 6 litres of usable grout.

STORAGE

Bond Flex XL buckets may be stacked up to 4 high and should be kept in dry conditions. A temperature range of 5°C to 35°C is ideal and should be maintained.

PERFORMANCE DATA

The typical compressive strength development at 20°C, 100 mm cubes under restraint and wet cured is given in the table below.

| 1 Day | 3 Days | 7 Days | 28 Days |
|----------------------|----------------------|----------------------|----------------------|
| 20 N/mm ² | 25 N/mm ² | 30 N/mm ² | 40 N/mm ² |

SPECIAL FEATURES

- Thixotropic. Will not drip when used overhead
- Non-shrink property increases bond stress
- Fully packaged for consistent mixing
- Easily pumpable over long distances
- Fills voids when injected
- Non-flammable material

