

## Masonry Repair Material



### Introduction

Bar Flex is a Grade 304 austenitic stainless steel reinforcing material that has many unique properties. Being rolled from 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 <sup>2</sup>
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.



### Special Features

- 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