

# re-bar

## Strengthening of reinforced concrete

### Description

re-bar is a prestressing steel made of memory-steel in the form of a ripped steel. The product is an efficient and easy to install strengthening measure, especially for the strengthening of buildings. The material is prestretched by re-fer in the factory to a permanent deformation and delivered to the construction site according to the parts list. After roughening the substrate, or after making milling

cuts, re-bar is fixed to the concrete. The tested mortar is then applied to the anchoring area. After hardening, re-bar is heated with gas to  $>220\text{ }^{\circ}\text{C}$  and is pre-stressed. The area between the anchors is now poured out. The applied ribbed steel acts as an embedded system in the composite.

### Uses

#### Increase of load capacity

- > in the event of increases in the payload or traffic load
- > for the conversion of buildings
- > for changes to the load-bearing system
- > for damaged structural parts

#### Increase of usability

- > by reduction of deflection
- > by closing or reducing cracks

#### Seismic strengthening

- > thanks to enormous ductility

#### Shear reinforcement

- > thanks to overpressing of shear cracks

### Advantages

Prestressing of new or existing reinforced concrete beams and plates

- > very good corrosion resistance (CRC 1)
- > meets requirements against stress corrosion cracking
- > easy handling, fast application
- > simple and efficient prestressing

### Product data



re-bar:

Diameter	Cross-section	Prestressing force $F_{p,0}$	Breaking force $F_{s,u}$
12 mm	105 mm <sup>2</sup>	35 kN	68 kN
Tensile strength $f_{s,u}$	Elongation at break $\varepsilon_{s,u}$	Prestressing $\sigma_{p,0}^*$	Relaxation
650 N/mm <sup>2</sup>	>10%	340 N/mm <sup>2</sup>	15% after $t_{\infty}$

\* Reduced prestress can be achieved at lower heating temperatures

#### General designation

re-bar

#### Appearance

Stainless ribbed steel

#### Form of delivery

Cut to length according to parts list

#### Storage

Dry, up to max.  $+50\text{ }^{\circ}\text{C}$

## Information

### Condition of the substrate

The re-bar reinforcement is for reinforced concrete and concrete structures. The substrate must be able to take loads. Any damaged or chloride-contaminated concrete shall be removed and cleaned hydromechanically by hammering and sandblasting (minimum required roughness depth 5-10 mm / minimum required tensile strength 2 N/mm<sup>2</sup> EN1542). Milling cuts according to the re-fer application instructions.

### Application of re-bar

Handling and installation of re-bar is carried out according to the application instructions of re-fer. For horizontal applications, the memory-steel ribbed steel can be placed in MonoTop-452 N reprofiling mortar or cast in milling cuts with SikaGrout-311. For vertical or overhead applications, re-bar is used in Sika MonoTop-422 PCC spray mortar.

### Activation

The heating of the memory-steel is done with the re-fer infrared heater. Alternatively electrical heating is possible on request. For electrical heating, it must be ensured that there are no contact points between the re-bar and the existing reinforcement. Upon request, re-fer provides all processing equipment with application technicians on a rental basis.

Reprofiling, spraying or grouting mortar:



- > Sika MonoTop-452 N
- > SikaGrout-311
- > Sika MonoTop-422 PCC

### Notes

All technical values in this product data sheet are subject to the re-fer quality assurance. Current measured values may deviate from the product specifications.

For dimensioning, re-fer provides engineering support and advice. For further information please visit us at [www.re-fer.e](http://www.re-fer.e) (references, technical data sheet, application and safety regulations, tender texts, test reports and publications) or contact our technical service directly.

The information in this product data sheet is valid for the corresponding product by delivered re-fer AG Switzerland and re-fer GmbH Germany. Please note that the data may differ in other countries and please refer to the local product data sheet abroad. The information and data in this technical data sheet are intended to ensure that the product is intended for normal use and is based on our knowledge and experience. However, they do not release the user from the obligation to check de suitability and use of the product on his own responsibility.

Product specifications are subject to change without notice. In all other respects our terms and conditions of sale and delivery shall apply. The latest product data sheet shall apply, which should be requested from us.

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