



Very  
High  
Durability  
Repair &  
Prevention  
System



Certified Quality System since **FEBRUARY 1993**

*From Project to Jobsite*

**BS 38/39-2,5 MuCis® sra**

**SHRINKO-tec®**

**MuCis®**

**FIB-energy®**

**FIBRE REINFORCED TWO-COMPONENT  
RHEOPLASTIC ANTI-SHRINKAGE ANTICORROSION  
SUPER ADHESIVE MORTAR,  
WITH HIGHEST PROTECTION AND DURABILITY,  
FOR STRUCTURAL REPAIRS ON DETERIORATED CONCRETES**

**R3**

**EN 1504-3**

**NORMA EUROPEA**

**CE approved – Certificate n. 1305 - CPD - 0808  
EN 1504-3 Class R3**

**Description** BS 38/39 -2,5 MuCis® is a specially modified cement based formulation consisting in the powder component with aggregate of max 2,5 mm, and the liquid RMB 2,5 (water dispersion of special non-toxic polymers). After mixing the two components a mortar with excellent workability is obtained, applied by trowel and other normal tools for rendering, including the spray rendering machine. Once applied and cured, this product will have excellent adhesion properties, be durable, with high impermeability to water and against carbon dioxide penetration, good water vapour permeability. The mortar has high physical-mechanical strengths, but low modulus of elasticity. Very high efficiency in the anticorrosion protection of steel bars. It contains MuCis® - Contact and Migrating Corrosion Inhibitors. On request of very high resistance against sulphate aggressions, the product can be formulated with special binders resistant to sulphates: **BS 38/39 RS- 2,5**. The mechanical and physical properties are unchanged.

**Advantages and characteristics**

- Being highly thixotropic means that the required number of layers can be applied in a short time, and that the repaired surface can be rapidly finished in all seasons.
- The thixotropic qualities of the product give excellent adhesion; make it easy to spread on vertical surfaces, the lower parts of beams, shelves or slabs. Often it can be applied to structures which are subject to dynamic stress from traffic.
- Solves the problem of difficult reconstructions or repair work, at a wide range of thicknesses: from a minimum of 3 mm to a maximum of 30 mm for each layer.
- For very thick layers and large areas it is advisable to use contrasting steel net supported on steel slump prefixed into the support.
- Does not require wetting or anti-evaporation protection after being applied, even when the layer is very thin and in dry, hot climates.
- Exceptionally strong adhesion to the support and maximum durability to carbonation and damaging acid rain.
- It has excellent waterproofing properties, but good permeability to watervapour
- The version BS 38/39-2,5 MuCis® guarantees optimal protection of the concrete reinforcement steel against corrosion.

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- Fields of use**
- For any type of repair or restoring of spalled concrete
  - General structural repairs, both of concrete and masonry
  - Interventions for structural restoration with reinforced renders on bricks, bricks, stones: **Systems for HFE-tec® mutatura** -High Fracture Energy Technologies: high-fracture Energy on masonry in general, but also ancient masonries through the implementation of strengthening by reinforced renders, nets and metal or glass-fibre connectors: higher capacity of energy dissipation in the fundamental event of an earthquake - an increase of ductility without changes in shear stiffness of the structure.
  - In the sealing of cracks and damages on bricks, blocks, stones.
  - Can also be used as a waterproof coating under conditions of negative pressure:

- Method of use**
- as waterproof skirting at the basis of plasters
  - for the leveling of diaphragms with interposed reinforcing mesh
  - on mixed masonry and on concrete

Please note: the adhesion to the substrate is the main characteristics for the durability and the structural cooperation of the repair mortars.

We recommend consulting the Data Sheet contained at the end of the Manual: *Assessment and preparation of substrates for better adhesion of the repair and renovation mortar - recommendations for the correct finish*"

- A decent substrate preparation by scabbling, sandblasting is essential to achieve maximum adhesion to the substrate. High pressure watercleaning is the most suitable method for optimal preparation. Eliminate spalling concrete, expose the rusted steel bars, remove rust by sandblasting and then apply MuCis® PROTEZIONE FERRO (see Technical Data Sheet) before applying any other product.
- Add the powder to the liquid, stirring until the required consistency is achieved. The pre-packed proportions (25 kg bag of powder and 4,25 kg can of liquid) give a medium consistency and workability of the mortar. Should the mixture need to be particularly thixotropic and cohesive, slightly reduce the quantity of liquid. If, on the other hand, it should be more fluid, the proportion of the liquid RMB-2,5 (RESINA PER MALTE BICOMPONENTI) may be slightly increased.
- Prepare the amount of mixture that can be used within 30 minutes. Do not re-use the product or thin with further liquid when it has already thickened.
- Apply the mortar directly on compact and consistent support. In the case the substrate is rather weak; it is advisable to install additional structural reinforcement to accommodate the dynamic and hydrothermal movements, before the application of the repair mortar. Fix stubs in specially drilled holes (fixed with the same mortar or in alternative MuCis® PROTEZIONE FERRO). Then fix suitable steel net to these stubs.
- Before applying the product to particularly incoherent surfaces, we recommend "brushing" the surface with a fluid version of the product using a hard brush. This will improve adhesion. Apply the mortar by trowel, or spray equipment, to the desired thickness, taking care not to create any voids.
- However, particularly cold temperatures, below +5 °C, should be avoided.
- It is not necessary to provide any curing membranes or protection against evaporation, nor wetting of the fresh application, even not at high temperature or high application thickness, provided that are followed the recommendations of the leaflet: *Assessment and preparation of substrates for better adhesion of the repair and renovation mortar - recommendations for the correct finish*"

**Remarks** Information according to 2003/53/CE:

**Storage:** The product can be kept for at least 12 months if stored in dry and protected conditions, in the original packaging, between +5 °C and + 35 °C.  
Do not use the content of opened bags if the powder is lumpy. Keep the liquid Component away from frost.

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**Packaging Powder Component:** bags of Kg 25 (BS 38/39-2,5 MuCis®)




**Liquid Component:** cans of Kg. 4,25 (RMB) with addition of **Shrinkage Reducing Agent SHRINKOtec® nano 4**

### Technical characteristic (typical values)

- Initial setting time : approx 1h at 20°C
- Resistance at short curing (typical 1 day at 20°C): compressive strength  $\geq 13 \text{ N/mm}^2$   
flexural strength  $\geq 3 \text{ N/mm}^2$

Compressive strength	N/mm <sup>2</sup>	40 (28 days.)
Flexural strength	N/mm <sup>2</sup>	10 (28 days.)
ELASTICITY MODULUS	N/mm <sup>2</sup>	18.000 (28 days.)
Adhesion to concrete	N/mm <sup>2</sup>	2,4 (28 days.)
Pull-out	N/mm <sup>2</sup>	> 15 (28 days.)
Bleeding		absent
Carbonation in time	8 years mm	0,8
	18 years mm	2,0
	25 years mm	3,9
Resistance to CO <sub>2</sub> penetration	μ	11.500
Water vapour permeability coeff.	μ	40
① Res. FREEZE/THAW with salt	gr/mq	~ 150
② Permeability to CHLORIDES	Coulomb	165
Water permeability with positive thrust	kPa	> 150
Water permeability with negative thrust	kPa	> 65
Type of mortar		thixo mortar
N. components		two
Advised layer thickness	mm	3÷35
Application		hand/spritz
Curing : wet		NO
Curing : protected		SE
Typical application		VHDRS/AED/MuCis
Setting time		normal
Hardening		normal
Shrinkage compensation		YES++++
Consumption	Kg/m <sup>2</sup> /mm	2,0

**Safety indications** Read carefully the safety indications on the packaging, or consult the relevant Material Safety Data Sheet of this product.

<p>① Freeze and thaw resistance in the presence of salt. SIA 162 11/91 (&lt; 600 gr/sm=very high freeze and thaw resistance)</p> <p>② Chlorides permeability. FH WA RD/81 (100÷1000 COULOMB = very low chlorides permeability )</p> <p>③ UNI 8148 restrained expansion</p>	<p><b>SE</b> Depending on the applicative conditions (rain, sun, hot temperatures, humidity)</p> <p> Very High Durability Repair &amp; Prevention Systems</p> <p> Very High Durability Reinforced Concretes</p>	<p> <b>Multiple Corrosion Inhibiting Synergies</b></p> <p><b>AED</b> Very High Deformation Energy</p>
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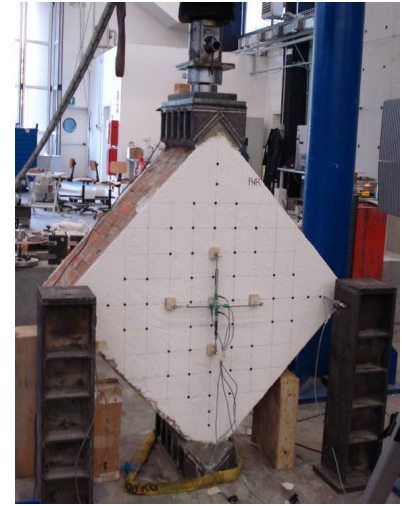
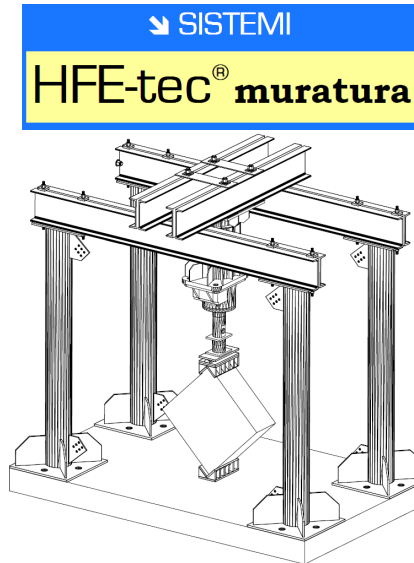


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Determination and measurement of diagonal compressive strength on masonry, reinforced with fibre-reinforced render with very high deformation energy **BS 38/39-2,5 MuCis® sra** reinforced with steel net or glass fibre mesh: System **HFE-tec® Muratura** (Dimension of sample tested : 100 cm x 100 cm x 40 cm) , thickness of rendering 3 cm.

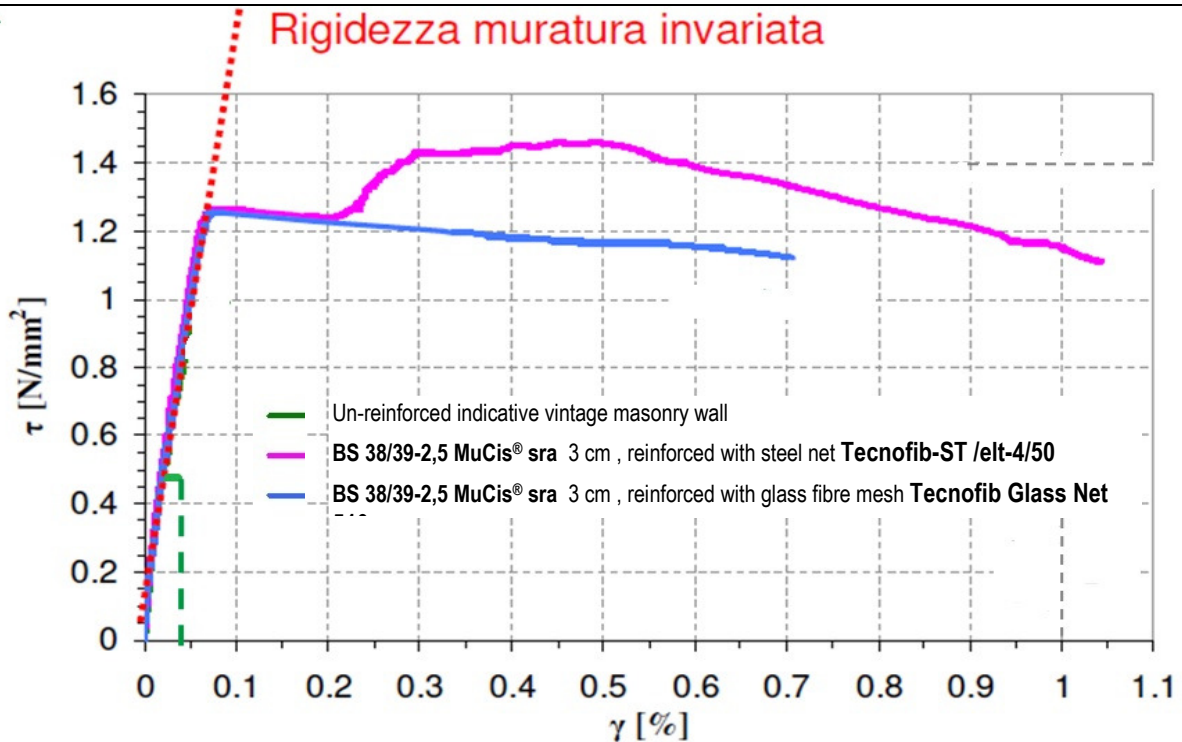


Diagram shear stress - shear deformation

The above data are based on our actual and most experienced practical and laboratory knowledge and the results are collected from application of the product in different situations. Tecnochem Italiana does not assume any responsibility regarding inadequate or negative performance as a result of improper use of the product or for defects deriving from factors or elements other than the quality of the product including improper storage. The technical characteristics and performance mentioned in this datasheet are updated periodically. The revision dates and number of revision of the datasheets are listed in the table below. Eventual variations are traceable on our website [www.tecnochem.it](http://www.tecnochem.it) where the most updated datasheets can be retrieved.

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