

INTRASODAL OR EXTRADOSAL REINFORCEMENT OF VAULTS AND DOMES WITH FRCM BAND

Reinforcement of arches and vaults

APPLICATION DATA SHEET

Structural reinforcement by gluing and impregnating galvanized steel fabrics on reinforced concrete structures using:

1. cleaning and regularizing the substrate;
2. priming;
3. Drilling of the holes and preparation of connectors;
4. laying the first layer of matrix;
5. application of the tissue;
6. application of embedding layer;
7. skimming

1) CLEANING AND REGULARIZING THE SUBSTRATE

Remove any plaster and all the flimsy or detaching parts, until obtaining a healthy, compact and mechanically resistant substrate that does not lead to the detachment of the subsequent applications.

Prepare the substrate and hoover the surface to be restored in order to eliminate any fragment present

If necessary, proceed with the reconstruction of the material continuity and regularization of the masonry surface with natural hydraulic lime-based mortar from the Basic or Limepor range. Wait for any regularization strips to dry (at least 48 hours) before proceeding with the subsequent priming phase.

2) PRIMING

On substrates that require pre-consolidation, apply on the treated surface two-component synthetic resin primer in water dispersion Kimicover Fix with a minimum consumption of 0.3 kg / m².

3) DRILLING OF THE HOLES AND PREPARATION OF CONNECTORS

Creation of a hole with a minimum diameter of 20 mm and

its thorough cleaning with compressed air; insertion of the connector made with the Kimisteel GLV 650 galvanized steel fabric, rolled longitudinally on itself so as to form a sort of rod with improved adhesion and appropriately bent with a Kimisteel BENDER bender or other suitable equipment (in the event that the use of the Kimisteel IC TASSELLO locking dowel is not foreseen).

To make the connector, cut the Kimisteel GLV 650 galvanized steel fiber band to size according to the design specifications using a flexible hose or sheet metal cutting equipment.

Mark the sections of the band where the bending is to be carried out; plan for a length of the part to be unraveled of at least 15 cm. If the connector is a through-type, it will be necessary to make two bends, taking care to measure the length of the hole precisely.

Place the Kimisteel BENDER folder on a stable work surface and fix it to it using clamps or screws; insert the cut fabric strip into the folder and fold the tissue at 90°, applying adequate pressure on the folder lever after positioning the fixing bar.

The fixing bar has two sides: one with a 60° tilt angle and the other with a 40° angle: the first is specific for folding the Kimisteel GLV 650.

Cut the steel threads that make up the weft of the part of the fabric to be unraveled and proceed with rolling up the part that will be inserted into the perforation.

4) LAYING THE FIRST LAYER OF MATRIX

Spreading of:

Basic MALTA M15 / F with a consumption of 1.5 Kg / m² / mm. Make a maximum thickness of 5 mm per coat. (The total thickness of the intervention must not be less than 10 mm).

5) APPLICATION OF THE TISSUE AND ANCHORING OF CONNECTORS

While the product is still fresh, lay out the unidirectional fabric made of Kimisteel GLV 650 galvanized steel filaments, previously cut to size (with simple pliers or a whisk), with a metal spatula and/or trowel, applying light pressure on it. This operation will serve to completely drown the fabric inside the matrix.

Fringe the ends of the previously inserted staple, possibly block the connector with a special Kimisteel IC TASSELLO plug if it has not been folded, grout with Limepor 100 GEL anti-shrinkage cement mortar with pseudoplastic behavior. Cover the connector with more mortar.

6) APPLICATION OF EMBEDDING LAYER

Fresh on fresh, apply on the tessue, with a metal spatula and/or trowel, a further coat of the same matrix previously used as a gluing layer for the armor tessue, making sure that the tessue does not remain uncovered in any area, for an overall thickness of the reinforcement system of 10 mm.

7) SKIMMING

Skimming should be carried out after the plaster's curing (wait at least 1 week for each centimetre of thickness, and not less than 3 weeks) by applying a ready-to-use white skimming mortar, natural-hydraulic-lime-based Limepor EDO.

POSSIBLE ALTERNATIVES

As an alternative to Kimisteel GLV 650 for reinforcement and connections it is possible to use: Kimisteel INOX 800, stainless steel fiber fabric.