

Cologno Monzese (Milan, Italy)

IN'S DISCOUNT STORE

FRP-BASED MAPEWRAP SYSTEM FOR AN EFFECTIVE, QUICK AND COST-EFFECTIVE STRUCTURAL STRENGTHENING PACKAGE



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1. Priming the surfaces where work is to be carried out with MAPEWRAP PRIMER 1.
2. First coat of MAPEWRAP 31 impregnator applied "wet-on-wet" over the levelling layer of MAPEWRAP 11.
3. Application of MAPEWRAP C UNI-AX 600/40 unidirectional carbon fibre fabric.



iN's Mercato SpA is a discount store belonging to Gruppo PAM, which has more than 450 stores across northern and central Italy. The first iN's discount store opened its doors to the public in 1994 and was an immediate success, quickly developing its own structure. Today, it is the fifth largest chain amongst the Italian groups operating in this sector. Inaugurated in March 2018, the store in Cologno Monzese (in the outskirts of Milan) underwent structural strengthening work in 2019 to bring the structure in line with the high safety standards required by the Group. The work was carried out with the FRP technology (Fibre Reinforced Polymers) by positioning MAPEWRAP C UNI-AX SYSTEM, made of high-strength, high modulus of elasticity, unidirectional carbon fibre fabrics – in this case of 600 g/m² - im-

pregnated and bonded with epoxy resin along the beams, pillars and predalles slab roof of the structure. All this work brought the load-bearing capacity of the roof, where the heavy pallets containing all the goods on sale are deposited, to more than 800 kg/m². The intervention also ensured that the rooms used for the discount store's administration offices below the roof are particularly safe.

All the advantages of MAPEWRAP C UNI-AX System

In this specific case, the structural strengthening package chosen by the design studio was MAPEWRAP C UNI-AX SYSTEM. Compared with the cladding technique using metal plates (beton plaquè), which would previously have been one of the options for this type of work, the MAPEWRAP C UNI-AX SYSTEM may be modelled to suit any shape of element or structure requiring repair, it does not require temporary supports during application and there is no risk of corrosion to the strengthening system. Economic factors were also decisive when opting for the Mapei system: unlike work carried out using conventional techniques, thanks to the extremely low weight of the fabrics used in the strengthening package, MAPEWRAP C UNI-AX SYSTEM may be installed by a smaller team of workers. Application time is very

short and, as in the case of this iN's store, there was no need to interrupt activities normally carried out inside the structure. Once all the surfaces had been impregnated with MAPEWRAP PRIMER 1, work proceeded by applying a layer around 1 mm thick of MAPEWRAP 11 epoxy grout for levelling the support with a notched trowel while the primer was still wet. Then, while the MAPEWRAP 11 layer was still wet, the first layer around 0.5 mm thick of MAPEWRAP 31 epoxy adhesive for impregnation and bonding was applied, followed by immediately applying MAPEWRAP C UNI-AX 600/40 uni-directional continuous carbon fibre fabric.

Problems and solutions

The building needed a structural strengthening intervention for its pillars, beams and floor slabs. The intervention and the products chosen allowed to bring the load-bearing capacity of the roof, where the heavy pallets containing all the goods on sale are deposited, to more than 800 kg/m².

MAPEWRAP C UNI-AX SYSTEM

Structural strengthening system consisting of high-strength, high-modulus unidirectional carbon fibre fabric and epoxy resins to impregnate and bond the fabric, covered by certificate of technical assessment (CVT) n. 206/2019 class 210C.

FIND OUT MORE



TECHNICAL DATA

iN's discount store,
Cologno Monzese (Milan, Italy)
Design: SFRE Services For Real Estate Srl
Year of the intervention: 2019

Client: iN's Mercato SpA
Intervention by Mapei: supplying products for the structural strengthening of beams, pillars and floor slabs
Main contractor: LB Group Srl

Works direction: SFRE Services For Real Estate Srl
Mapei coordinators: Vincenzo Minardi, Andrea Peli, Giuseppe Melcangi and Luca Albertario, Mapei SpA (Italy)

MAPEI PRODUCTS

Structural strengthening: MapeWrap C UNI-AX 600/40, MapeWrap Primer 1, MapeWrap 11, MapeWrap 31

For further information on products see mapei.com