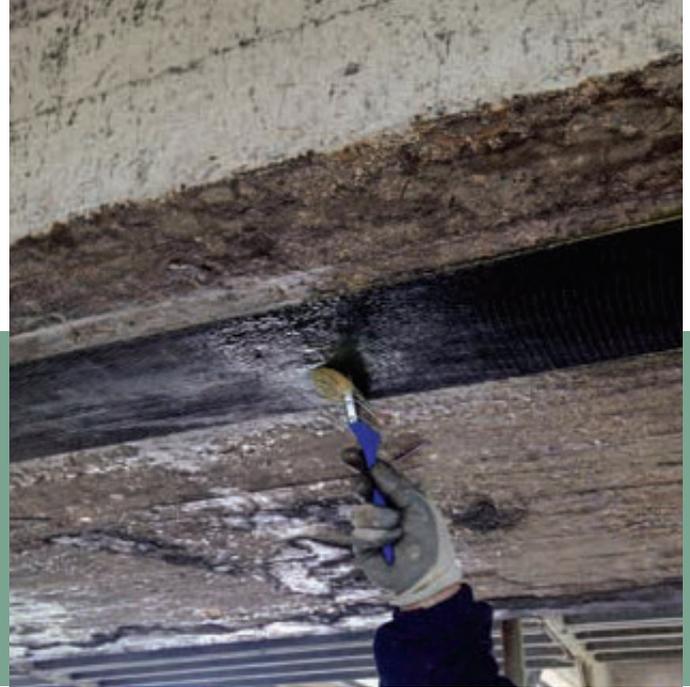


C-WRAP

fka Ruredil X Wrap

Unidirectional carbon fabric for FRP strengthening system with epoxy resin



C-WRAP is a connection system made of unidirectional carbon fibers for the construction of FRP structural strengthening systems.

The reinforcement is to be carried out on site and provides for the application of the primer on the appropriately prepared support, before proceeding with the impregnation of the fabric with the epoxy resin.

FIELDS OF APPLICATION

- ▶ Structural reinforcement of concrete elements to bending, shear, and torsion;
- ▶ Confinement of columns subject to bending and compression with small and large eccentricity;
- ▶ Improvement of the rigidity of the beam-column joints;
- ▶ Anti-seismic reinforcement of undersized or damaged elements.

PROPERTIES OF THE SYSTEM

- ▶ High mechanical strength even on supports with a complex morphology;
- ▶ Minimum overloads especially on severely damaged structures;
- ▶ Applicability on any type of structure: concrete, masonry, wood or steel;
- ▶ Maximum versatility and adaptability to the geometries of the structures;
- ▶ Extremely reduced thickness, minimal space needed.



▶ C-WRAP

Unidirectional carbon fiber fabric available in the following versions:

- 200 g/m² (h 25/50 cm and length 50 m)
- 310 g/m² (h 20/25/50 cm and length 26 m)
- 400 g/m² (h 25 cm and length 26 m)
- 600 g/m² (h 20/25/50 cm and length 26 m).



▶ C-PRIMER WRAP

Special epoxy primer with high impregnating power for the application of C-WRAP.



▶ C-RESIN WRAP

Special epoxy resin with high adhesive power for the application of C-WRAP.



TECHNICAL CHARACTERISTICS

PROPERTIES OF THE CARBON FABRIC (according to Guidelines) CLASS 210C				
Elastic modulus of the fabric (referring to the net area of the fibers) 2:1	210 GPa			
Resistance of the fabric (referring to the net area of the fibers)	2700 MPa			
C-WRAP GEOMETRIC AND PHYSICAL PROPERTIES	200 g/m ²	310 g/m ²	400 g/m ²	600 g/m ²
Density of the fibers [g/cm ³]	1,80	1,80	1,80	1,80
Mass of fabric per unit area [g/m ²]	200	310	400	600
Density of the resin [g/cm ³]	1,10 (± 0,05)	1,10 (± 0,05)	1,10 (± 0,05)	1,10 (± 0,05)
Equivalent area [mm ² /m]	111,60	167,03	222,53	339,33
Equivalent thickness [mm]	0,112	0,167	0,223	0,339
Fraction by weight of the fibers in the composite	0,340	0,286	0,345	0,430
Fraction in volume of the fibers in the composite	0,240	0,200	0,244	0,550
Primer glass transition temperature [°C]	+58	+58	+58	+58
Resin glass transition temperature [°C]	+67	+67	+67	+67
Limit temperatures, minimum and maximum, of use [°C]	-10/+43	-10/+43	-10/+43	-10/+43
Reaction to fire [Euroclass]	E	E	E	E
C-WRAP MECHANICAL PROPERTIES (single layer)	200 g/m ²	310 g/m ²	400 g/m ²	600 g/m ²
Elastic modulus of the fabric referring to the net area of the fibers - average value (GPa)	232	246	247	221
Resistance of the fabric referring to the net area of the fibers - characteristic value (MPa)	2.712	3.253	2.916	2.900
Deformation at rupture - calculated in the event of elastic linear behavior (%)	1,17	1,32	1,18	1,31
SPECIFICATIONS FOR THE SUPPLY				
Package	Various sizes (see price list)			
Consumption	Overlap of about 10 cm at the junctions			
C-WRAP MECHANICAL PROPERTIES (triple layer)	200 g/m ²	310 g/m ²	400 g/m ²	600 g/m ²
Elastic modulus of the fabric referring to the net area of the fibers - average value (GPa)	233	245	252	227
Resistance of the fabric referring to the net area of the fibers - characteristic value (MPa)	2.843	3.469	3.201	2.808
Deformation at rupture - calculated in the event of elastic linear behavior (%)	1,22	1,42	1,27	1,24
SPECIFICATIONS FOR THE SUPPLY				
Package	Various sizes (see price list)			
Consumption	Overlap of about 10 cm at the junctions			
PROPERTIES OF RESINS	C-PRIMER WRAP	C-RESIN WRAP		
Catalysis ratio (A:B)	2:1	2:1		
Specific weight (A + B) at 17°C	1,00 - 1,10 kg/liters	1,05 - 1,15 kg/liters		
Workability (EN ISO 9514) at 23°C	45 - 60 minutes	45 - 60 minutes		
Compressive strength (ASTM D965)	≥ 60 MPa	≥ 60 MPa		
Adherence/bond strength EN 12188	≥ 14 MPa	≥ 14 MPa		
Reaction to fire (EN 13501-1)	Euroclass E	Euroclass E		
Glass transition temperature (DSC ISO 11357-2)	+58 °C	+67 °C		
SPECIFICATIONS FOR THE SUPPLY				
Package	Buckets of 4 + 2 kg	Buckets of 4 + 2 kg		
Consumption	~ 0,25 Kg/m ²	1° layer ~ 0,5 kg/m ² after the 2° layer ~ 0,25 kg/m ²		