

# SikaWrap®-231C

## Carbon Fiber Fabric for Structural Strengthening

### Description

- Unidirectional, woven, carbon fiber fabric for the dry application process
- Equipped with weft fibers that keep the fabric stable (heat-set process)



### Uses

- Strengthening of reinforced concrete structures, brickwork and timber in case of flexural and shear load due to:
- Increase of loading capacity
  - Changes of building utilisation
  - Repair of defects
  - Prevention of defects caused by earthquakes
  - Meeting of changed standards or specifications

### Advantages

- Multifunctional use as bending or shear reinforcement
- Flexibility of surface geometry (Beams, columns, chimneys, piles, walls)
- Resistance against chemicals and environmental conditions (no corrosion)
- Fabric available in 2 widths for optimum utilisation
- Fiber orientation tailor-made

### Technical Data

**Fiber type** High strength carbon fibers

**Fiber orientation** 0° (unidirectional)

**Construction** Warp: Carbon fibers (98 % of total areal weight)  
Weft: Thermoplastic heat-set fibers (2 % of total areal weight)

**Areal weight** 230 g/m<sup>2</sup> ± 5 %

**Fiber Density** 1.80 g/cm<sup>3</sup>

**Fabric design thickness** 0.13 mm (based on total carbon content)

**Tensile strength of fibers** 4'900 N/mm<sup>2</sup> (nominal)

**Tensile E-modulus of fibers** 230'000 N/mm<sup>2</sup> (nominal)



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**Strain at break of fibers** 2.1 % (nominal)

**Fabric length/ roll**  $\geq 50$  m

**Fabric width** 300 / 600 mm

**Shelf life** 2 years from date of production

**Package** 1 roll in card board box

**The achievable laminate properties in the tensile test are depending on impregnating resin used and the type of laminate testing method. A loss of up to 30 % for the measured actual strength compared to the theoretical values is possible. Apply material reduction factors according to the standard used for design.**

## Application

**SikaWrap-231C is usually applied with the impregnating resin Sikadur-330 in the dry application process. Sikadur-330 is a high quality mid-viscosity resin that requires no prior use of a primer to the prepared substrate.**

**For detailed resin properties and application details see Product Data Sheet Sikadur-330.**

**Resin Consumption** Depending on the roughness of the substrate.  
 – First layer: approx. 0.7..1.2 kg/m<sup>2</sup> (Sikadur-330)  
 – Following layers: approx. 0.5 kg/m<sup>2</sup> (Sikadur-330)

**Important information**

- The fabric can be cut with special scissors or a very sharp knife, but may never be folded.
- In fiber direction, overlapping of the fabric must be at least 100 mm or as per the project specifications. Overlapping sections of additional layers should be distributed over the column circumference.

## Safety Instructions

### SikaWrap-231C

Sika Wrap-231C is non-reactive. However, caution must be used when handling since a fine carbon dust may be present on the surface. Gloves must therefore be worn to protect against skin irritation.  
 Caution must also be used when cutting Sika Wrap-231C to protect against airborne carbon dust generated by the cutting procedure. Use of an appropriate approved respirator is recommended.



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