

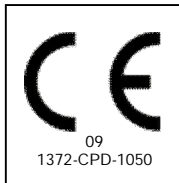
## WIRAND® FIBRE FF1

### DESCRIPTION:

Wirand cold drawn steel wire fibre FF1, for structural concrete reinforcement

### NOMINAL DIMENSIONS:

- Diameter D: 1.00 mm
- Length L: 50 mm
- Aspect ratio L/D: 50
- Number of fibre/Kg 3200



### MECHANICAL PROPERTIES

$R_m$  (Tensile strength of the wire): > 1100 MPa  
 $D_i$  (ultimate strain) < 4%

### SHAPE

The double end hooks of WIRAND® FF1 fibres ensure perfect anchorage in concrete.

Effect on strength of concrete: 25kg/m<sup>3</sup> to obtain 1,5 n/mm<sup>2</sup> at CMOD=0,5mm and 1N/mm<sup>2</sup> at CMOD=3,5mm.

Effect on consistence with 25kg/m<sup>3</sup> of fibre: vebe time: 8 s

### REFERENCE STANDARDS

- EN 14889-1: 2006 - Fibres for concrete ¼ Part 1: Steel fibres ¼ Definition, specifications and conformity;
- UNI EN 14845-2:2007 - Test method for fibres concrete ¼ Part II: Effect on concrete;
- EN 14651-2005 - Test method for metallic fibre concrete - Measuring the flexural tensile strength (limit of proportionality (LOP), residual)
- UNI 11037: 2003 ½ Fibre d'acciaio da impiegare nel confezionamento di conglomerato cementizio rinforzato;
- UNI 11039: 2003 ½ Steel fibre-reinforced concrete ¼ Part 1: definitions, classifications, specifics and conformity; Part II: Test method used to determine the early crack strength and ductility indexes;
- ASTM A820: 2001 - 1Standard Specification for Steel Fibers for Fiber-Reinforced Concrete;
- CNR ½ DT 204/2006 ½ Istruzioni per la progettazione, l'Esecuzione ed il Controllo di Strutture di Calcestruzzo Fibrorinforzato;
- RILEM, 2001 - 1Test and design methods for steel fibre reinforced: uniaxial tension test for steel fibre reinforced concrete<sup>a</sup>, RILEM TC 162-TDF Recommendations, Materials and Structures.

### PACKAGING

WIRAND® FF1 fibre are delivered in big bags of 600, 750, 950 kg or in carton boxes of 20 kg.

### STORAGE

Preserve the pallets from atmospheric corrosion.



Fig. 1

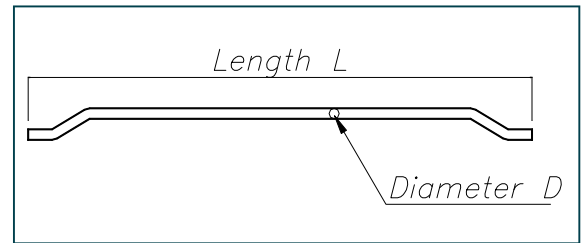


Fig. 2



Fig. 3

The producer, for his optimisation and improving process of the product's technical characteristics, has the faculty to modify the standards and the characteristics of the product without any pre-advise. All the information are given in base to our experience; in any case no responsibility for an incorrect use could be referred to the producer or one of his distributors.

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Bureau Veritas Certified Quality System Company  
with SINCERT's and UKAS' s accreditation.