

# **fisufor<sup>®</sup> plug**

Masonry reinforcement with overlap  
without manipulation

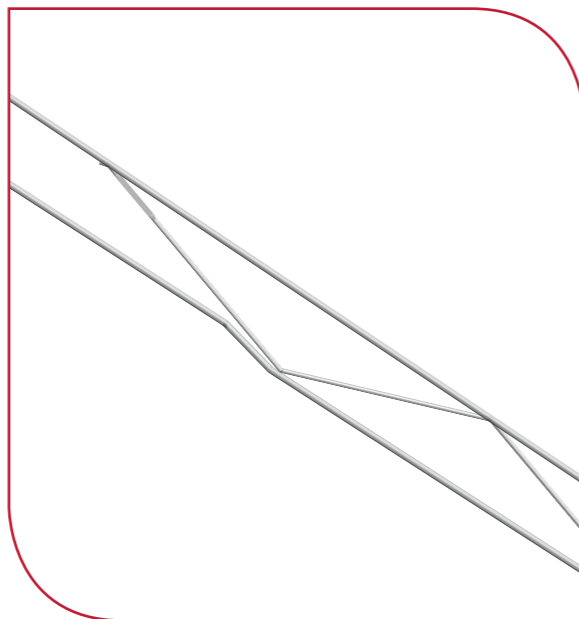


## DESCRIPTION

**fisufor® plug** is a prefabricated reinforcement formed by two parallel longitudinal wires that are joined by a central wire. The central wire forms a truss structure and is soldered in the same plane of the structure along the inner side of the longitudinal wires. Therefore, there is no overlap of the longitudinal and transverse wires and the maximum reinforcement thickness is equal to the diameter of the longitudinal wires.

The steel used in its manufacture is in accordance with standard EN 10020.

**fisufor® plug** comes with the CE marking in accordance with the specifications of the standard 845-3;2006 A1:2008.

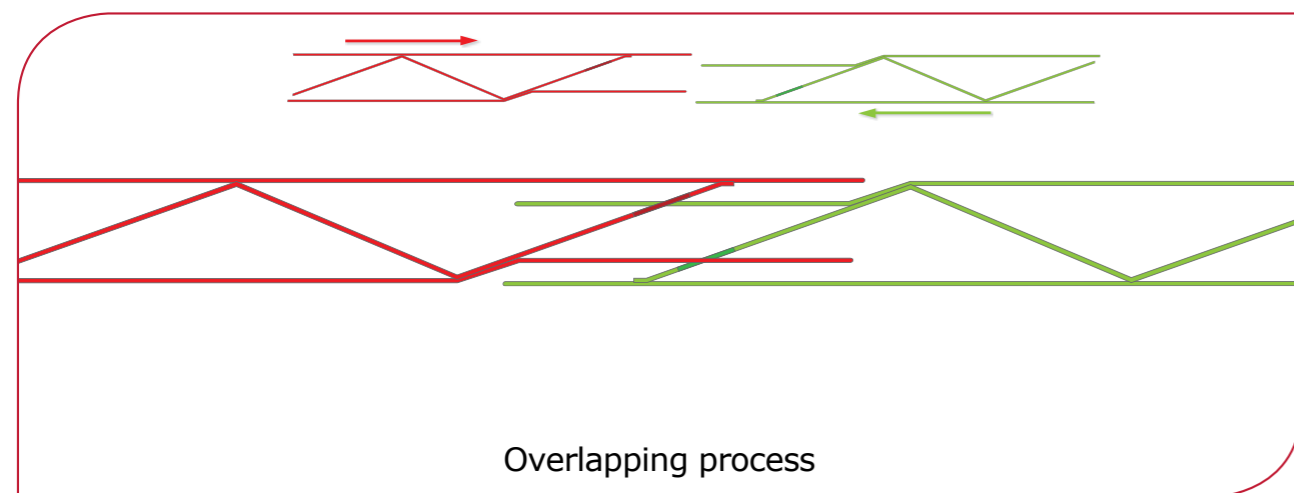


**fisufor® plug** has an innovative design that makes it possible to achieve the overlap between reinforcement without the need for manipulation, keeping the area of the overlap the same nominal width of the reinforcement.

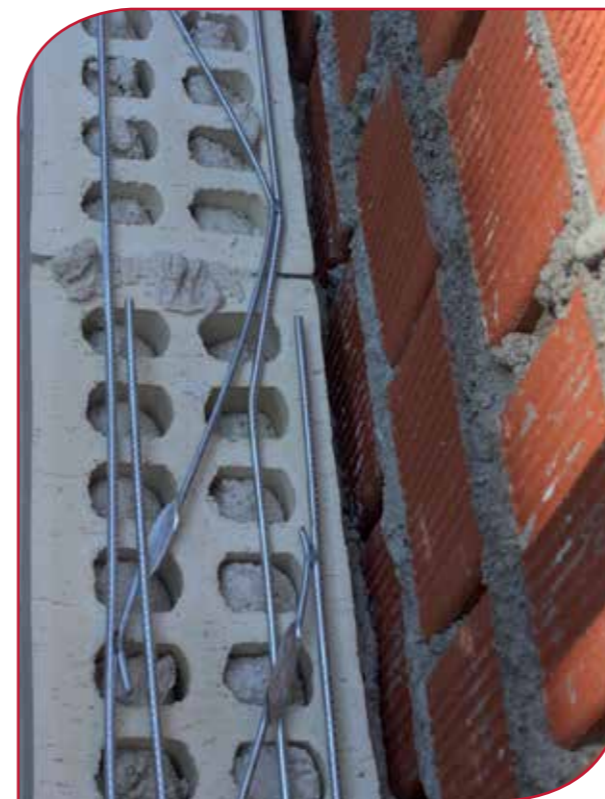
The ends of the **fisufor® plug** pieces have a special geometric configuration in the form of a plug that allows the overlap of 250mm without having to cut any wire.

Also, the transverse wire in this area is flattened in order to guarantee the minimum coating of mortar.

## ADVANTAGES



- Increases resistance to bending in the wall.
- Overlap without any manipulation.
- Guarantees the correct transmission of forces.



## TYPES

### I. ACCORDING TO THE TYPE OF WIRE



Smooth



Corrugated (upon request)

### II. ACCORDING TO TYPE OF PROTECTION AGAINST CORROSION

■ **fisufor® plug Z**, manufactured with steel wire with a heated zinc galvanized coating with a minimum of 70 gr/m<sup>2</sup> in accordance with standard EN 10244.

■ **fisufor® plug I**, manufactured with stainless steel according to the standard EN 10088.

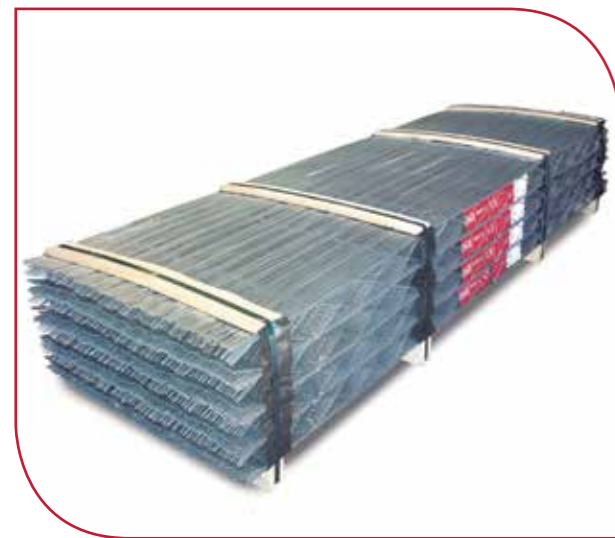
■ **fisufor® plug E**, manufactured with steel wire in galvanized zinc coating with a minimum hot dip galvanized of 70 gr/m<sup>2</sup> according to the standards of EN 1022 and subsequent epoxy coating of at least 80 µm according to the standard of EN 10245.

## DIMENSIONS

TYPES <b>fisufor® plug</b>						
NAME/NUMBER	WIDTH (mm)	Ø Longitudinal wire (mm)	Ø Cross wire (mm)	CROSS-SECTION (mm <sup>2</sup> )	WEIGHT (kg)	LENGTH (mm)
FISUFOR PLUG Z 4055/Z	55	3,7	3	28,56	0,689	3050
FISUFOR PLUG Z 4075/Z	75	3,7	3	28,56	0,694	3050
FISUFOR PLUG Z 4100/Z	100	3,7	3	28,56	0,702	3050
FISUFOR PLUG Z 4160/Z	160	3,7	3	28,56	0,729	3050
FISUFOR PLUG Z 4200/Z	200	3,7	3	28,56	0,751	3050
FISUFOR PLUG E 4055/E	55	3,7	3	28,56	0,700	3050
FISUFOR PLUG E 4075/E	75	3,7	3	28,56	0,705	3050
FISUFOR PLUG E 4100/E	100	3,7	3	28,56	0,713	3050
FISUFOR PLUG E 4160/E	160	3,7	3	28,56	0,750	3050
FISUFOR PLUG E 4200/E	200	3,7	3	28,56	0,762	3050
FISUFOR PLUG I 4055/I	55	3,7	3	28,56	0,698	3050
FISUFOR PLUG I 4075/I	75	3,7	3	28,56	0,703	3050
FISUFOR PLUG I 4100/I	100	3,7	3	28,56	0,711	3050
FISUFOR PLUG I 4160/I	160	3,7	3	28,56	0,738	3050
FISUFOR PLUG I 4200/I	200	3,7	3	28,56	0,751	3050

- Other widths available upon request.
- Corrugated reinforcement available upon request.

## PRESENTATION



- 3050 mm pieces.
- Packets of 25 units.
- Pallets of 52 packages (1300 units of 3050 mm).
- Each package contains an ID label with the description of product, its barcode and batch number.

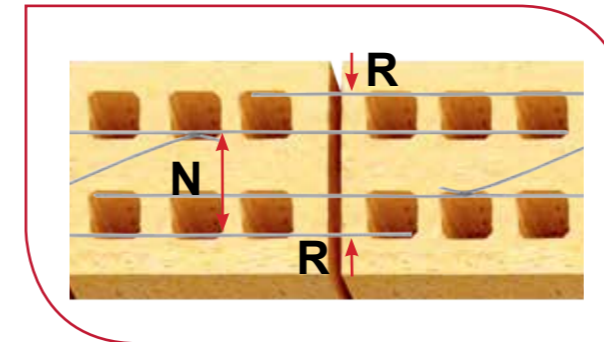
## TECHNICAL BENEFITS

### INCREASED RESISTANCE TO BENDING IN THE WALL

Unlike what occurs with all the existing reinforcement on the market, in which the overlap is performed on the outside of each reinforcement piece,

**fisufor® plug** is the only reinforcement that overlaps in its interior, thanks to the "plug structure" that characterizes it.

### TRADITIONAL MASONRY REINFORCEMENT

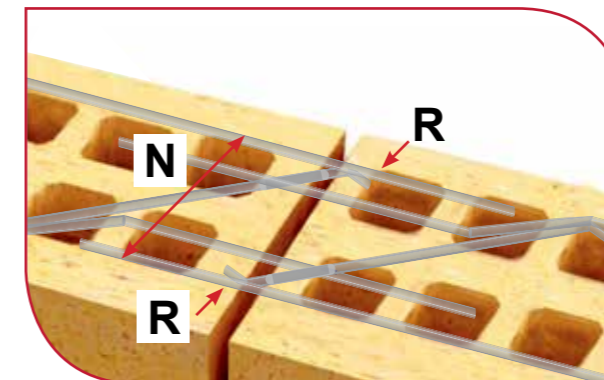


N - NOMINAL WIDTH OF THE REINFORCEMENT  
 R - REAL WIDTH OF THE REINFORCEMENT = N + 20 mm + Ø OF THE LONGITUDINAL WIRE

To choose the reinforcement that is more appropriate for the wall, you should choose the wider reinforcement that meets this formula:

Total width of the mortar ≥ that of R + 30 mm.

### MASONRY REINFORCEMENT **fisufor® plug**



N - NOMINAL WIDTH OF THE REINFORCEMENT  
 R - REAL WIDTH OF THE REINFORCEMENT = N

To choose the reinforcement that is more appropriate for the wall, you should choose the wider reinforcement that meets this formula:

Total width of the mortar ≥ that of N+30 mm.

This means that, for an equal width of reinforcement, using **fisufor® plug** allows you to use greater widths, which means a greater mechanical arm of the section and consequently, a proportional increase in the resistance capacity in the bending of the wall. This effect may increase the mechanical strength of the reinforced wall by up to 20 %, without increasing the amount of steel and therefore, without increasing the cost of construction.

In effect, the resistance to bending capacity that corresponds to the section of compound material, as is the case in the reinforced wall, it is essentially obtained as the product of two parameters: the area of the section of the longitudinal wires

(that represents the strength of steel) and the separation between them (which represents the strength of steel):

$$M_{Rd} = U_s \cdot z_s = A_s \cdot f_{yd} \cdot a_s$$

being:

$M_{Rd}$  resistance to bending capacity  
 $A_s$  the area of steel on each face  
 $f_{yd}$  resistance of steel  
 $a_s$  the width of the reinforcement

As you can see in the above formula, an increase in the width of reinforcement, assumes an increase of the same proportion in the resistance of the wall, while keeping the same section of wires.



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Pol. Ind. El Saco, Parcela, 10  
E-50172 Alfajarín. Zaragoza (Spain)  
Tel. +34 976 790 640 · Fax: +34 976 100 597  
e-mail: [export@steelfb.com](mailto:export@steelfb.com)

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