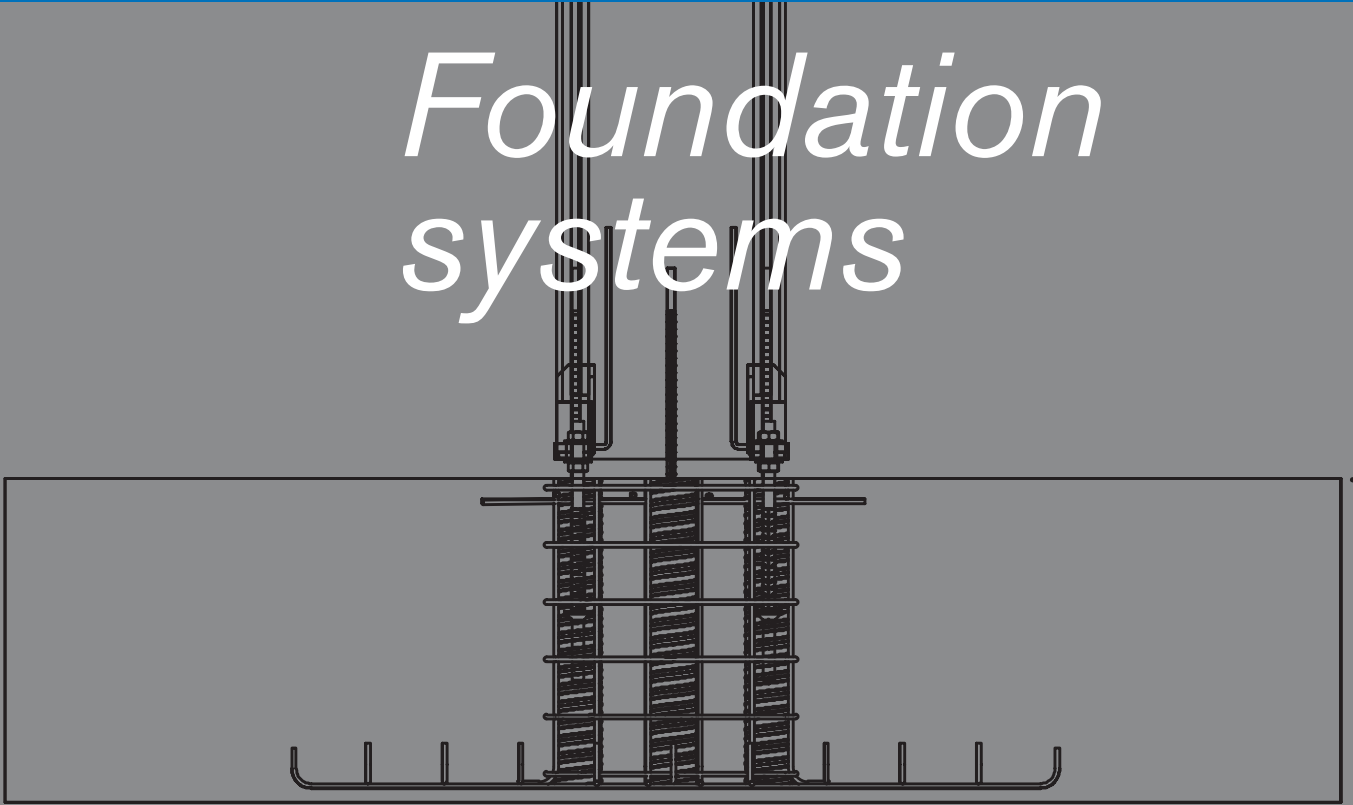


noxifer[®]

global building solutions

*Foundation
systems*



SLEEVES

Standard and mixed systems



Foundation systems

with STANDARD SLEEVES

The **sleeve Noxifer** is a tubular ribbed profile (circular or rectangular) used to connect the precast column with the foundation.

Its principal function is to make structural connections between concrete elements where, at least, one of them is a precast element.

With the **sleeve Noxifer**, it is achieved to leave a free space inside the formwork to insert the reinforcement of the element to anchor.

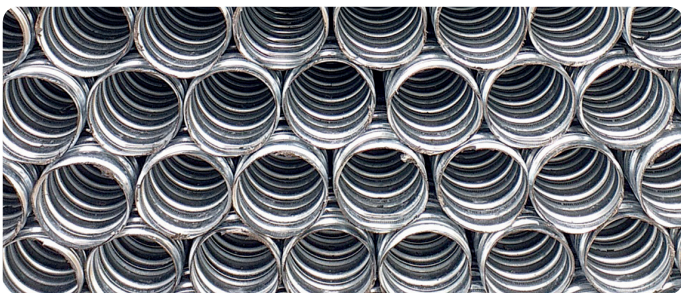
This **sleeves Noxifer** can be used in foundations or other unions such as heavy machinery, traffic signals, or fences.



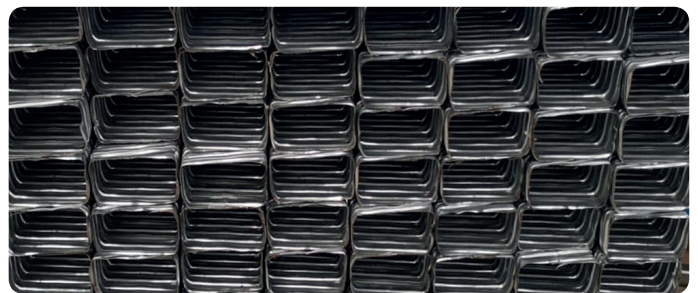
Basic characteristics

- Galvanized ribbed steel from 0,3-0,4mm.
- Circular or rectangular section.
- Variable length.
- Circular diameters from 51 mm to 160mm.
- Rectangular sectionr from 60/40 to 170/100.

Principal options



Circular section.



Rectangular section.

Other options



Folded sleeves / Special folding according to the client's requirements.

Circular or Rectangular options



Sleeve placing.



Reinforcement fixing.



Concrete pouring.



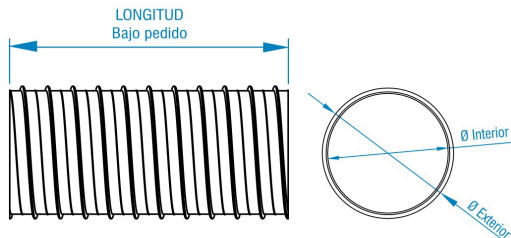
Prepared support for placing the column.



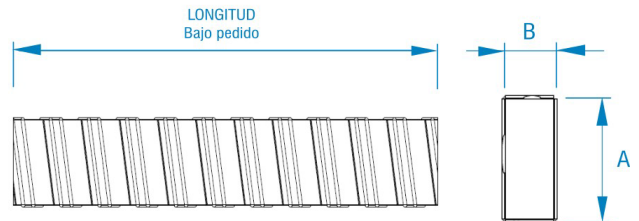
Reinforcement placed inside the sleeves.



Preparation for filling the joint with GROUT mortar.

**Sleeve with circular section**

Code	Interior/exterior Diameter
SLEEVE 51	51/57
SLEEVE 63	63/69
SLEEVE 75	75/81
SLEEVE 81	81/87
SLEEVE 90	90/99
SLEEVE 100	100/109
SLEEVE 120	120/129
SLEEVE 130	130/139
SLEEVE 140	140/149
SLEEVE 160	160/169

**Sleeve with rectangular section**

Code	A/B Section
SLEEVE 60-40	60/40
SLEEVE 80-40	80/40
SLEEVE 80-50	80/50
SLEEVE 90-40	90/40
SLEEVE 100-60	100/60
SLEEVE 120-80	120/80
SLEEVE 140-70	140/70
SLEEVE 130-80	130/80
SLEEVE 140-90	140/90
SLEEVE 150-80	150/80
SLEEVE 160-100	160/100
SLEEVE 170-100	170/100

Standard length: 3 metros. - Cutting option: under request.

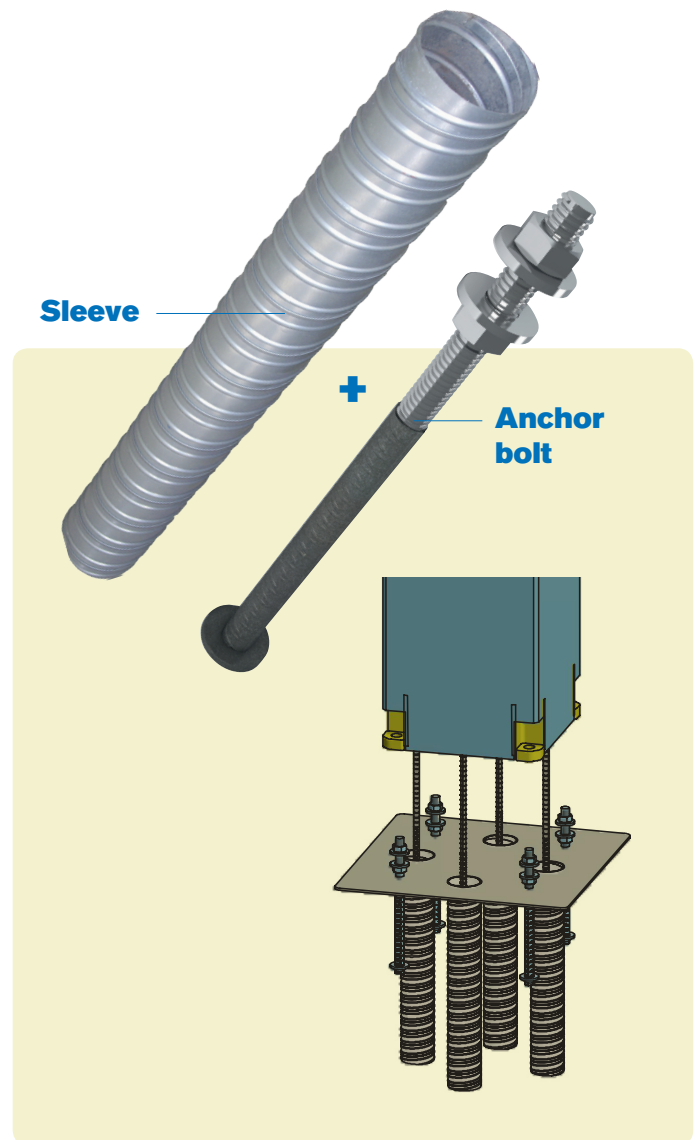
Circular sleeves can be supplied with inner or outer caps.

Foundation system

The mixed system that combines the Sleeve and the TN Anchor Bolts makes the most of the advantages of the bolted system together with the sleeved system.

Noxifer offers the possibility to advise in the scenarios where it is needed to size the connection in a special way. Furthermore, the templates where TN and sleeves are placed can be provided by Noxifer.

MIXED:



Preparation through templates



Template.



Prepared template for the concrete pouring in the construction site.

Sleeve + Anchor bolt



Sleeves and TN anchor bolts placement.



Sleeve with cap - bolt - template detail.



Concrete pouring.



Column prepared for the assembly.



Column placement and screwed.



Joint filled with GROUT mortar.

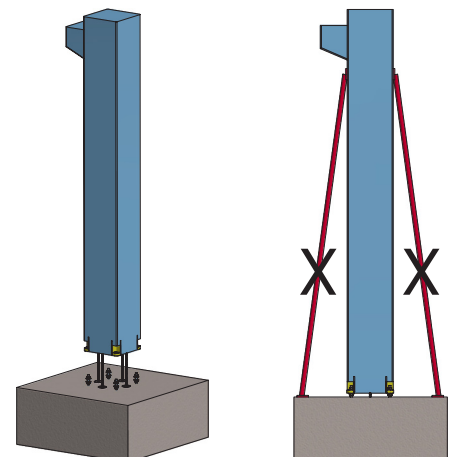
Advantages

Greater speed of assembly and plumbing by means of the screws in the assembly phase.

Better safety in the assembly phase of the structures while waiting for the filling of the joints and sleeves in the service phase.

• Substantial cost reduction due

- To the reduction in the diameters used of the connection elements (column shoe + bolts).
- Reduction of essential extra costs in the work, as well as the reduction of time in use of cranes and assembly staff.



Propping during the construction phase it is not needed

Recommendations for the user

Width

It is recommended a minimum width for concrete pouring and for a execution tolerance when assembling. In general cases is leaved 50-60mm more than the rebar's diametre or the equivalent diametre of a group of bars.

$$\varnothing_{\text{sleeve}} \min = \varnothing_{\text{(bar or group of bars)}} + 50 \text{ mm}$$

Length

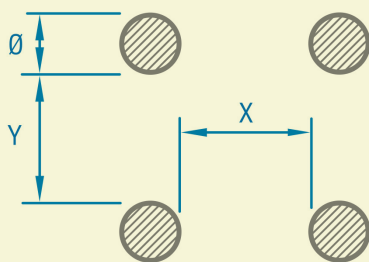
It is recommended that the sleeves's length should be 100mm longer than the steel rebars inserted.

$$L_{\text{sleeve}} \min = L_{\text{(bar or group of bars)}} + 100 \text{ mm}$$

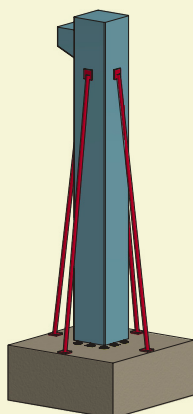
Placement in the construction site

The correct separation between sleeves permits the ideal colocation and compaction of the concrete and guarantees the adherence according to the articles 70.2.2.3 and 70.2.2.4 of the standard EHE-08.

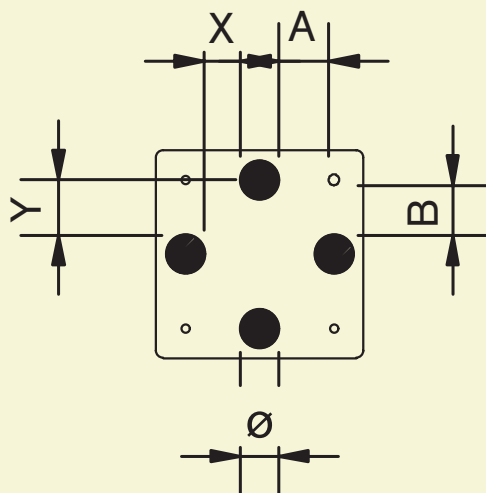
Standard system



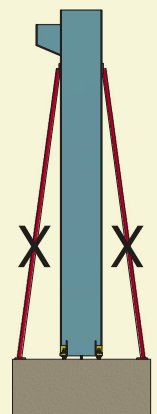
It is necessary to prop the column during the concrete pouring.



Mixed system



The mixed system eliminates the use of propping during the concrete pouring.



Installation instructions

- 1** Sleeve placement through a template.
- 2** Cover the sleeve edges through caps to avoid the concrete filling.
- 3** Fix the sleeves using spacers and the reinforcement to avoid movements and guarantee the verticality during the concrete pouring.
- 4** Concrete the footing or the concrete element where the sleeves are inserted.
- 5** Once the concrete is hardened, remove the template.
- 6** Connect the concrete element with the sleeves. Insert the reinforcement of the precast element inside the sleeves. In case of using the mixed system, insert the rebars in the sleeves and screw the anchor bolts with the column shoes.
- 7** Make a small formwork and fill the joint with GROUT mortar.



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The company has extensive experience in manufacturing of steel parts and metallic structures for the precast concrete industry and industrialized construction.

This experience allows us to dialogue with customers and provide specific solutions to any development of product that arises.

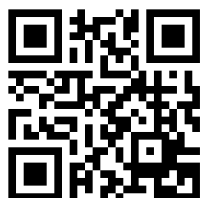
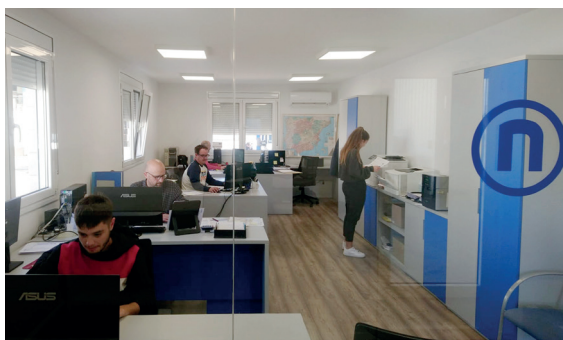
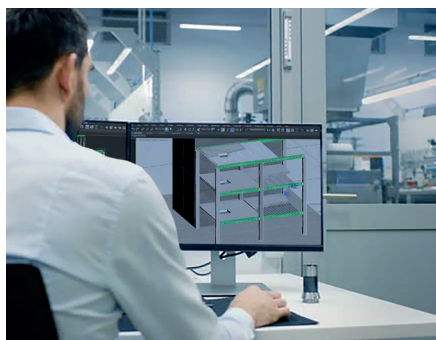
The constant innovation in production systems and the provision of the most modern technological tools place Noxifer at the forefront of new development of products completely adapted to the customer needs.

The high demands on certified quality that Noxifer applies at the time of product development, as well as the internal organization in the productive aspects and logistics, have allowed the company to gain customers' trust, serving them with the most high construction safety requirements, fast and efficient.

Noxifer's technical team constantly communicates with development centres and innovation in the construction sector.

Architects, engineers and construction companies are our referents. Together, we develop the new products they need in each of their projects.

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