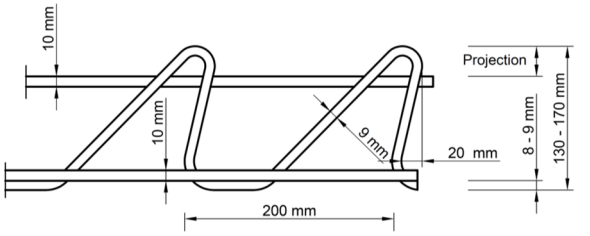
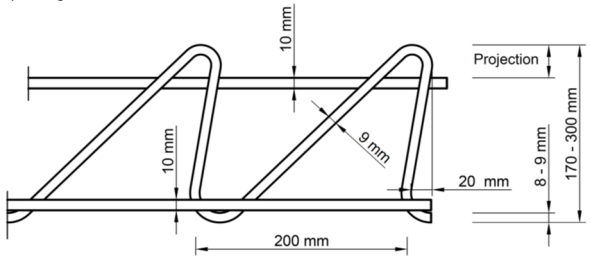
FILIGRAN Punching Shear Reinforcement FDB

Installation Instructions precast plants



a) Heights from 17 cm



b) Heights to 17 cm

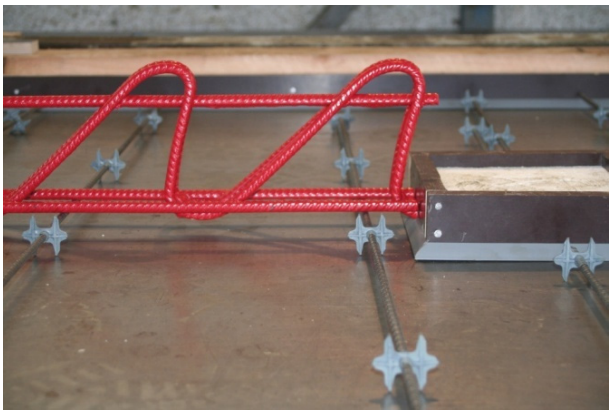
Designation:
FDB height (cm) / p_t (cm) - length (cm)
Example: **FDB 16 / 4 – 60**
Installation height: 16 cm
Top loop projection: 4 cm
Element length 60 cm

The overall height of FDB-elements equals slab thickness reduced by upper and lower concrete cover. The diagonal loop at the lower chord is approximately 9mm. For thick diameters of lower transverse bending reinforcement >12mm (e.g. in situ concrete) it is recommended to reduce the height of the elements by 1 cm.

Figure 1: Filigran punching shear reinforcement FDB

During the production of precast concrete slabs with lattice girders, the crossbars (∅ 6mm to ∅ 8mm) fitted with spacers are usually first inserted into the formwork. In the area of the Filigran FDB punching shear reinforcement, the **distances between these crossbars** should be so narrow that **short elements (40 cm)** can also be positioned on them. Owing to the projection of the loops on the lower chord, these grip sufficiently into the position of the crossbars.

The **reinforcement elements located close to the column** are arranged **directly on the edge** (Figure 2).



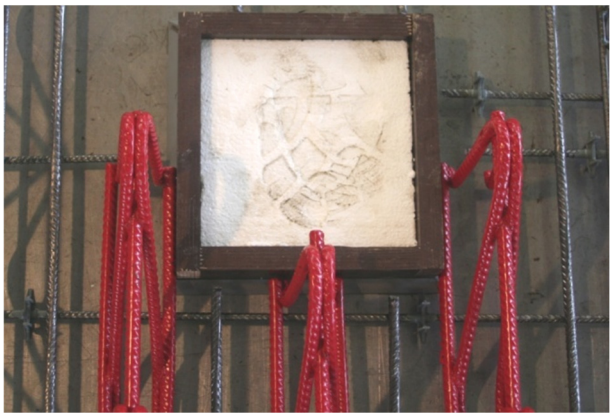
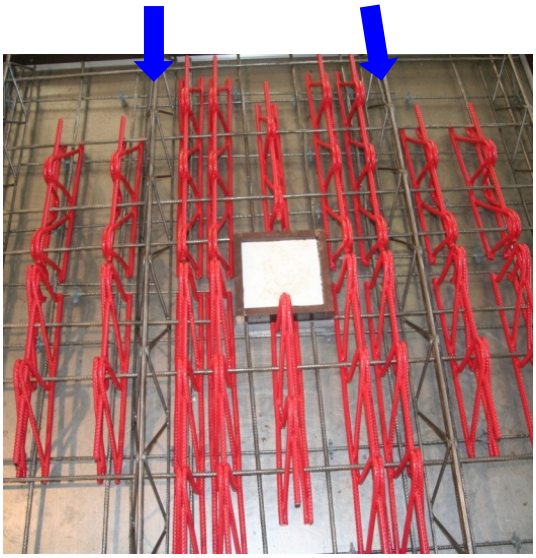


Figure 2: Installation of the FDB directly on the edge of the column

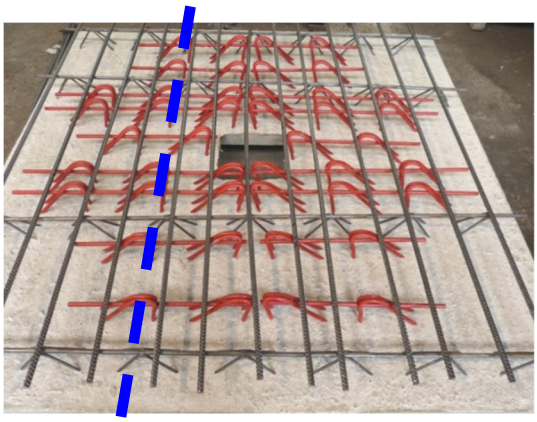
The **arrangement** of the FDB in the precast concrete slabs is **parallel to the assembly lattice girders** in accordance with the **specification of the dimensioning process.** The individual lengths (40 cm, 60 cm or 80 cm) and distances of the elements from one another are shown in a drawing**.**

Figure 3: Installation of the FDB



The **struts** of the Filigran punching shear reinforcement FDB must be arranged **ascending towards the column** or in the direction of the axis (Figures 3 and 4). An assembly lattice girder can be installed between the first two FDB elements close to the column and the third FDB element (Figure 4).

Figure 4: Struts of the FDB ascend in the direction of the column



On the construction site, the upper reinforcement is placed directly on the upper chord of the punching shear reinforcement. Therefore, during the installation of the punching shear reinforcement in the prefabricated structure, it must be ensured that the **loops** are positioned **in one** axis (Figure 5). An axis that is offset by 20 cm should not occur more than once.

Figure 5: Alignment of the loops

Technical changes reserved.