

## Installing THRELDA® Anchor Plates

### INSTALL THE PRODUCT – PRECAST FACTORY or CONSTRUCTION SITE

#### Identification of the product

THRELDA® Anchoring Plates are produced in various models using 5 types of bolts (16, 20, 24, 30, 39). The model of anchoring plate can be identified by the name on the label on the product.

#### Installation instructions:

1. Attach anchor plate by nails (protection tape must not be perforated or removed before attaching to formwork) or by other appropriate method (e.g., bolts) to formwork.



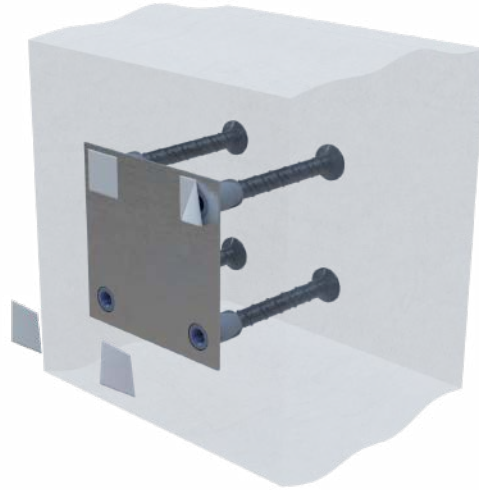
2. To secure position of headed anchor bars, they must be wire-tied to the main longitudinal reinforcement. It is not allowed to bend or cut the headed studs or anchors to make the plate fit the reinforcement.



3. During pouring the concrete into the formwork, ensure that the position of the anchor plates remains unchanged.

## INSTALLING

- Remove the protection tapes.



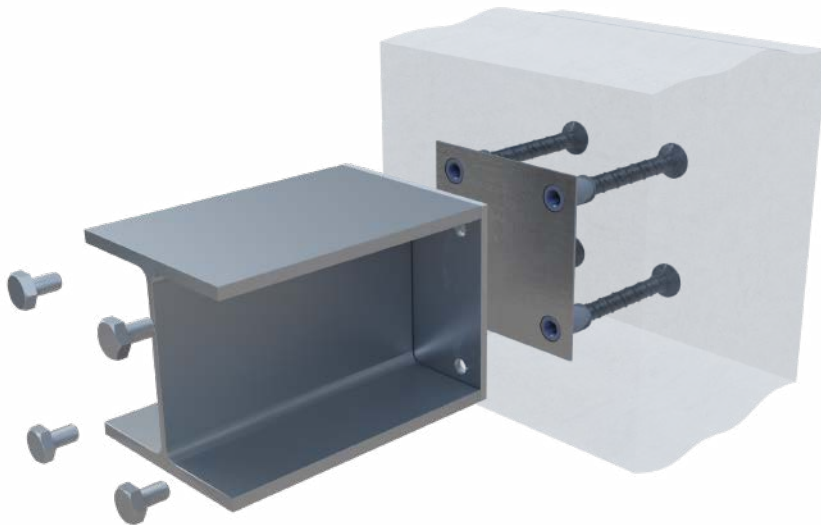
- When concrete has enough capacity attach the steel element.

The nuts are tightened to the recommended torque given in the table below. Adequate torque can be achieved typically by 10 – 15 impacts of a slogging ring wrench (DIN 7444) or open-ended slogging wrench (DIN 133) and a 1.5 kg sledgehammer.

Table 13. Recommended  $T_{rec}$  torque values of nuts.

| Bolt | $T_{rec}$<br>[Nm] | Size of the slogging wrench<br>[mm] |
|------|-------------------|-------------------------------------|
| M16  | 120               | 24                                  |
| M20  | 150               | 30                                  |
| M24  | 200               | 36                                  |
| M30  | 250               | 46                                  |
| M39  | 350               | 60                                  |

- Effective screw depth  $m_{eff}$  must be observed from Table 7. Installation parameters for THRELDA®.



- The size of holes in the end plate designed by customer is recommended to have a dimension of the particular thread size +4 mm. It means that the designer has to calculate the resistance of the bolts for oversized holes according to EN 1993-1-8 - Table 3.4.

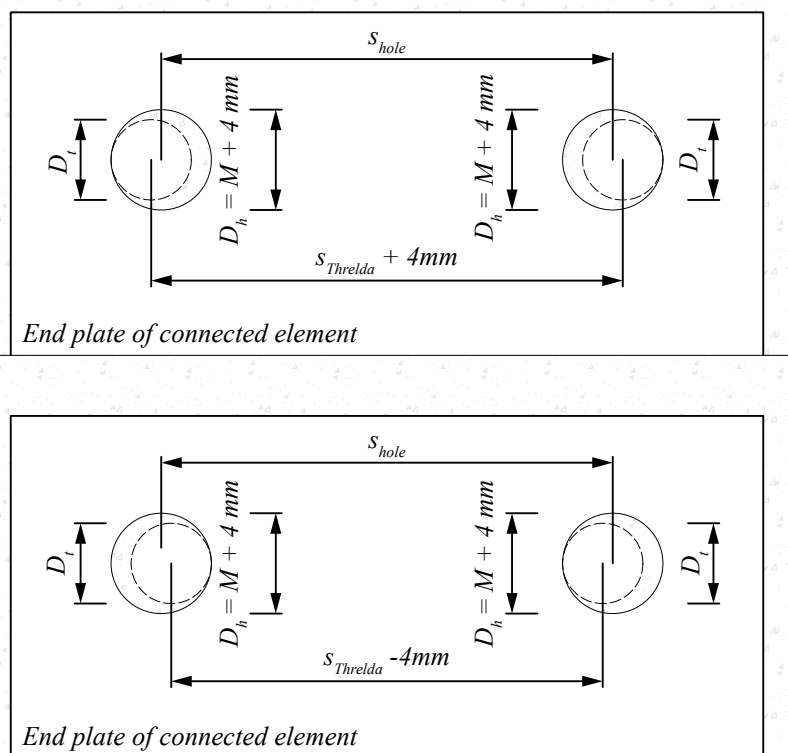


Figure 15. Tolerances for holes for bolts on connected end plate.

where:

$D_t$  diameter of the selected thread size (bolt)

$D_h$  diameter of the hole in customer-designed connected plate

$S_{hole}$  axis distance of two holes in customer-designed connected plate, defined in Table 2., Table 3. and Table 4.

$S_{Threllda}$  axis distance of THRELDA® couplers defined in Table 2., Table 3. and Table 4. with consideration of possible manufacturing inaccuracies.

The calculation of resistances of bolts has to follow the design method given in EN 1993-1-8 while taking into account the classification of the hole-size according to EN 1090.

The maximum tolerable gap in the joint between THRELDA® Anchoring Plate and the connected plate is 2 mm, and 4 mm on the edge of the plates.

**Note:** The design of THRELDA® Anchoring Plates considers installation tolerances (position of the force) of 15 mm only in the “x” and in the “y” direction.

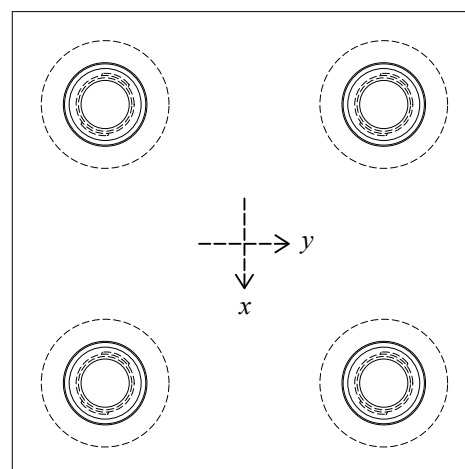


Figure 16. Direction of considered possible eccentricity of the forces.