

Punching plates

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Punching plates

Punching check for plates according a code check. Various geometric configurations (column on angle, on the side, middle) are automatically detected and can be adapted manually. The user has the possibility to define holes in the plate and column heads. The program automatically determines the necessary critical parameters and performs each time a punching check. If necessary it is also possible to calculate and represent extra punching. The output can be configured by the user, from a very simple to a very detailed calculation note.



Datasheet Scia Engineer

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Punching shear check for selected cross-section types



Punching shear check

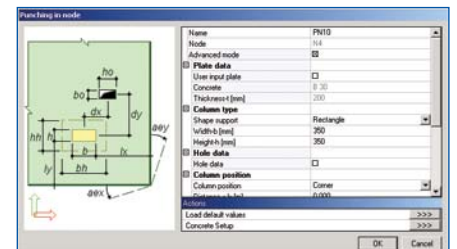
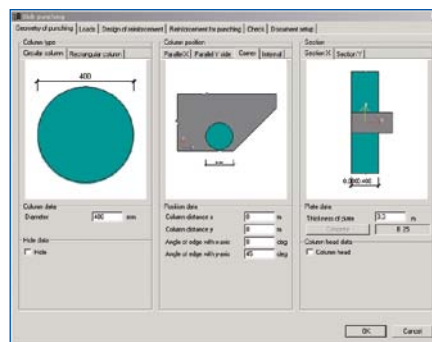
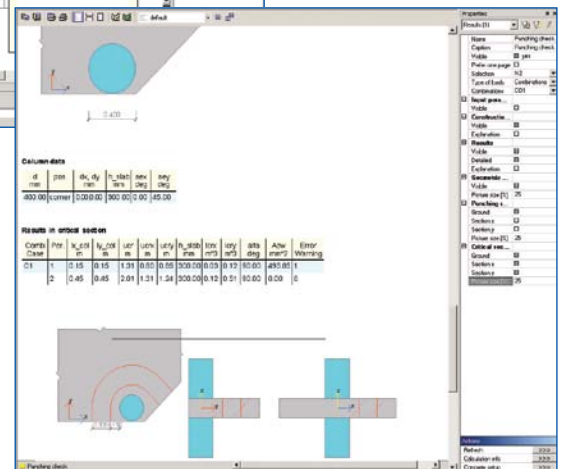
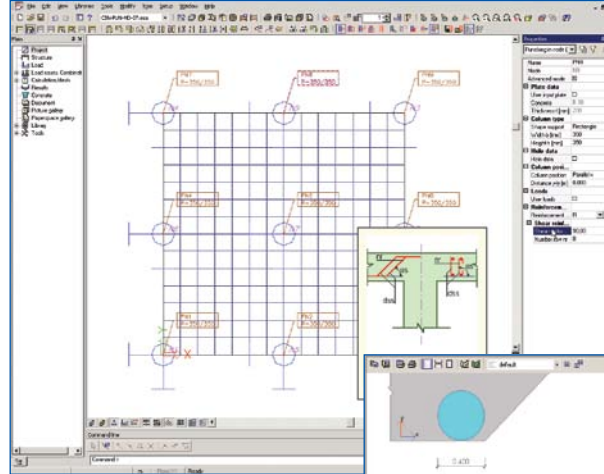
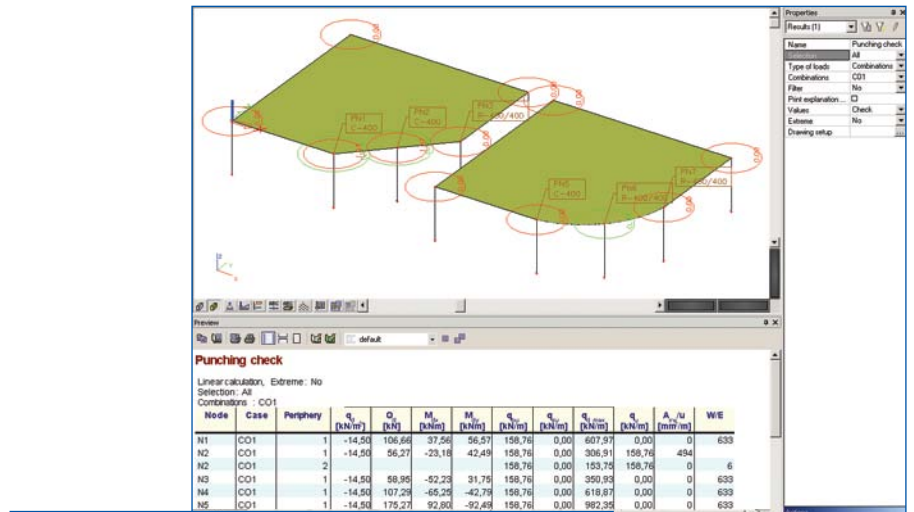
This module performs the punching shear check. It calculates the required reinforcement in critical sections and checks the resistance of a the plate against punching in these sections. It also determines shear stress in the critical section.

Description

- Circular and rectangular cross-sections can be analysed. Other cross-section shapes are automatically transformed to rectangles;
- The procedure of the check consists of several steps:
 - Set up - input of default values for parameters used in the assessment procedure;
 - Punching data - specification of check parameters for individual members;
 - Punching check - execution of the check itself.

Features and functions

- Design of required reinforcement in critical sections in accordance with EC2, CSN, STN, ÖNORM, NEN, BS, SIA, IS and DIN;
- Check of plate resistance against punching in critical sections according to technical standards (concentrated loads from columns or supports perpendicular to the lower surface of the plate) for selected load cases;
- Check of shear stress in the critical section;
- Definition of the geometry - support in a corner, along the edge, inside of the plate;
- Technological openings are taken into account in the calculation of the perimeter length of the critical section;
- Possibility to define square or prismatic column heads;
- Data for the punching shear check are taken from the calculation model of the analysed plate;
- Tensions can be taken from the results of the calculation of the model or defined manually by the user;
- Punching shear check can be performed for (i) an automatically calculated required amount of the main reinforcement in the slab or for (ii) a user-defined main reinforcement in the slab;
- Tool tips graphically describe properties in the punching data dialogue;
- New service for multi-punching (check of several points at the same time):
 - Three check points (none, node, global);
 - Unit check with graphical interpretation.
- New documents and tables for multi punching;
- New document for single check with clearer layout.



Highlights

- ▶ Check of plate resistance against punching.
- ▶ Check of shear stress in the critical section.
- ▶ Technological openings taken into account.