



EN1992-1-1 CONCRETE DESIGN USING STRUT AND TIE (SAT)

Course Description

Strut and tie model can be developed for whole structural structure, structural elements, regions of elements, and even structural detailing. Usually starting point is trajectories of principal elastic stresses. Having in mind that in reinforced concrete elements tensile forces follow the reinforcement, and that tensile stresses in concrete causes cracking and plastic deformation followed by constant redistribution of internal forces it is reasonable to simplify trajectories to make them comply with specific requirements of reinforced concrete elements. Strut and tie model will give complete insight in the flow of the internal forces from the area of their application throughout the element until they are finally rested at the supports, so it minimises possibility of engineering mistakes.

Course Content

- Strut and tie modelling – principles and methodology
- Corbels
- Half joints
- Deep beams
- Indirect supports and indirectly supported elements.

Pre-requisites

- Basic knowledge of the theory of elasticity and reinforced concrete design

Target group

- This course is intended to provide the means by which the civil engineers can understand logic behind strut-and-tie analysis and create own strut and tie model.

Learning objectives

- Understanding of basic concepts and logic behind strut-and-tie modelling.
- Awareness of what type of problems can be solved by strut-and-tie modelling.
- Knowledge of how to create own strut and tie model by basic theoretical considerations and some worked examples.
- Knowledge of the way the strut and tie analysis is mentioned in EC2.



Teacher

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