

# CAPTAIN

ANALYSIS AND DESIGN OF PRE-STRESSED  
REINFORCED CONCRETE CONTINUOUS BEAMS AND  
SLABS

ANALYSIS | DESIGN | DETAILING | **CO3**

## Summary

**Captain** (Computer Aided Post Tensioning Analysis Instrument) designs most types of continuous prestressed beam and slab systems from single span to twenty-spans, encountered in typical building projects. Cross sections can include a mixture of rectangular, I, T and L-sections as well as user defined sections and tapered sections.

The module automatically applies pattern loading to entered dead and live loads. At ultimate limit state, moments and shears are redistributed to a specified percentage.

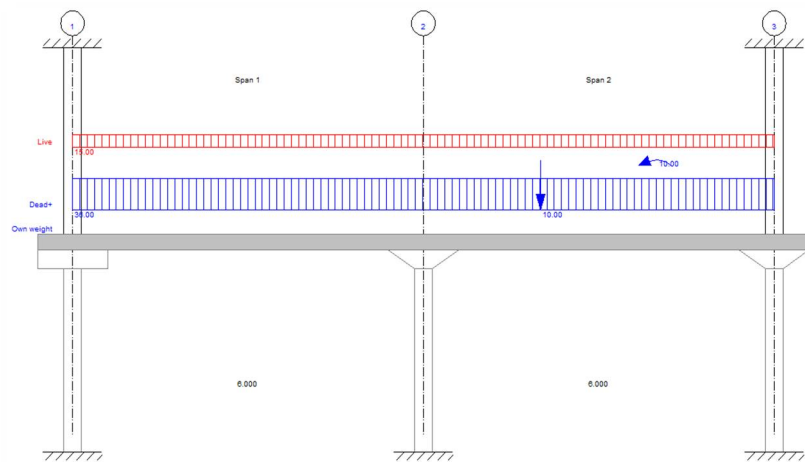
Captain can calculate estimates for quantities and tendon profile schedules can be generated for use with **Padds**. Schedules can be edited and printed using **Padds**.

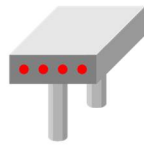
## What makes this module special?

- Automatic pattern loading and moment redistribution
- Complex cross sections
- Quantities and schedules output

## Detailed Description

Most types of continuous prestressed beam and slab systems, encountered in typical building projects, can be designed with **PROKON®'s Captain** module. The workings of **Captain** are similar to that of **Continuous Beam**, but it adds additional design features such as bonded systems, e.g., bridge decks, and unbounded systems, e.g., flat slabs.





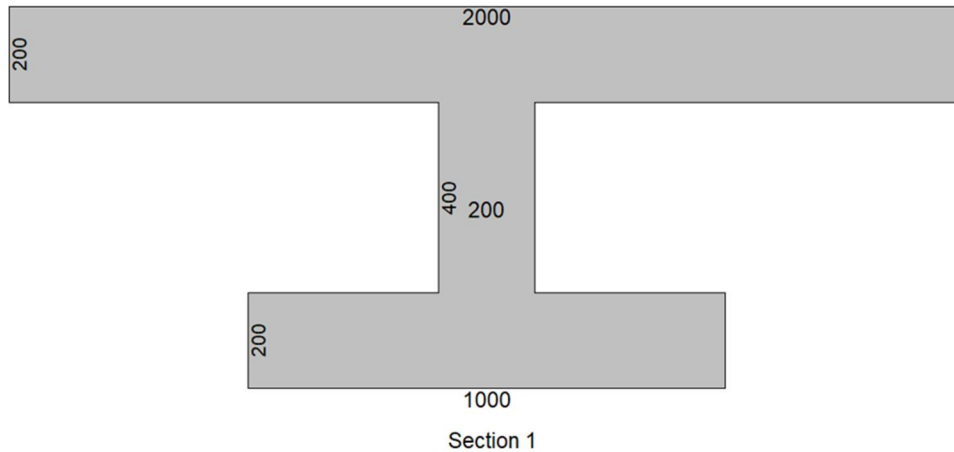
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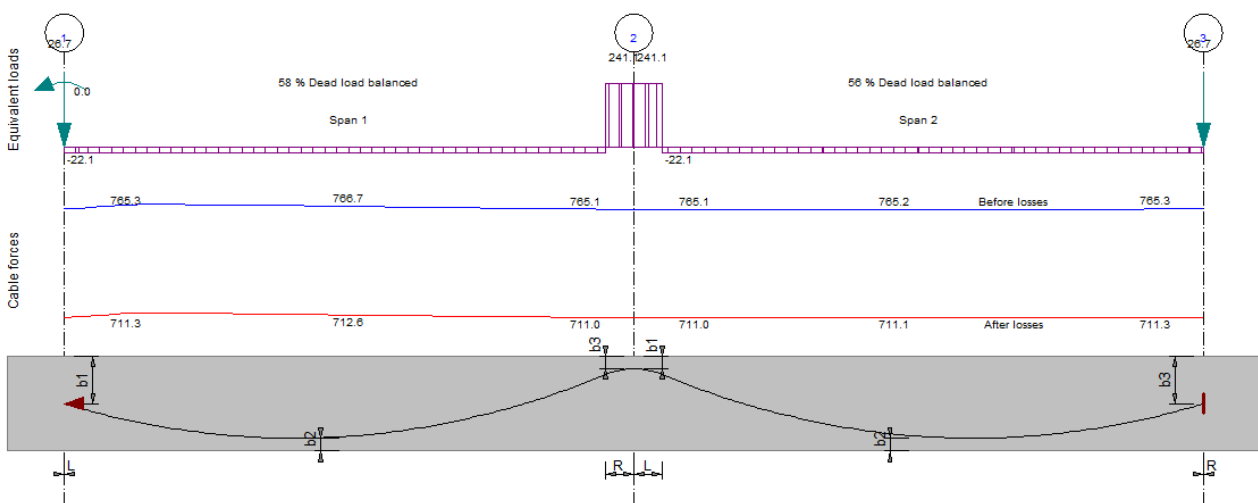
It also automatically applies pattern loading to entered dead and live loads. At ultimate limit state, moments and shears are redistributed to a specified percentage.

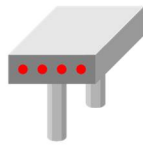
Cross-sections can include a mixture of rectangular, I, T, and L-sections. More complex sections, e.g., box bridge decks, can be modelled with the aid of the section properties calculation module, **Prosec**. Spans can also have constant or tapered sections.



The module allows you to specify the characteristics of the prestressing tendons/cables and use parabolic or harped shaped profiles. It includes a function for automatic generation of tendon profiles that are based on balancing a specified percentage of dead load.

You can also place additional (conventional) steel reinforcement to contain cracking, control long-term deflection, and increase flexural or shear capacity at ULS. The module can also perform punching shear design checks for slabs and include the ability to use column heads (drop panels).





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## Key Features

- Automatic pattern loading and moment redistribution.
- Complex cross-sections.
- Quantities and schedules.

## Supported Design Codes

### Design Codes

- ACI 318 - 1999
- ACI 318 - 2005
- ACI 318 - 2011
- ACI 318 - 2014
- ACI 318 - 2019
- BS 8110 - 1985
- BS 8110 - 1997
- CP 65 - 1999
- Eurocode 2 - 2004
- HK Concrete - 2004
- HK Concrete - 2013
- NZ 3101 - 2006
- SABS 0100 - 2000