Presentation - composite beam

Demonstration example

Internal document – training of distributors, 06/2014

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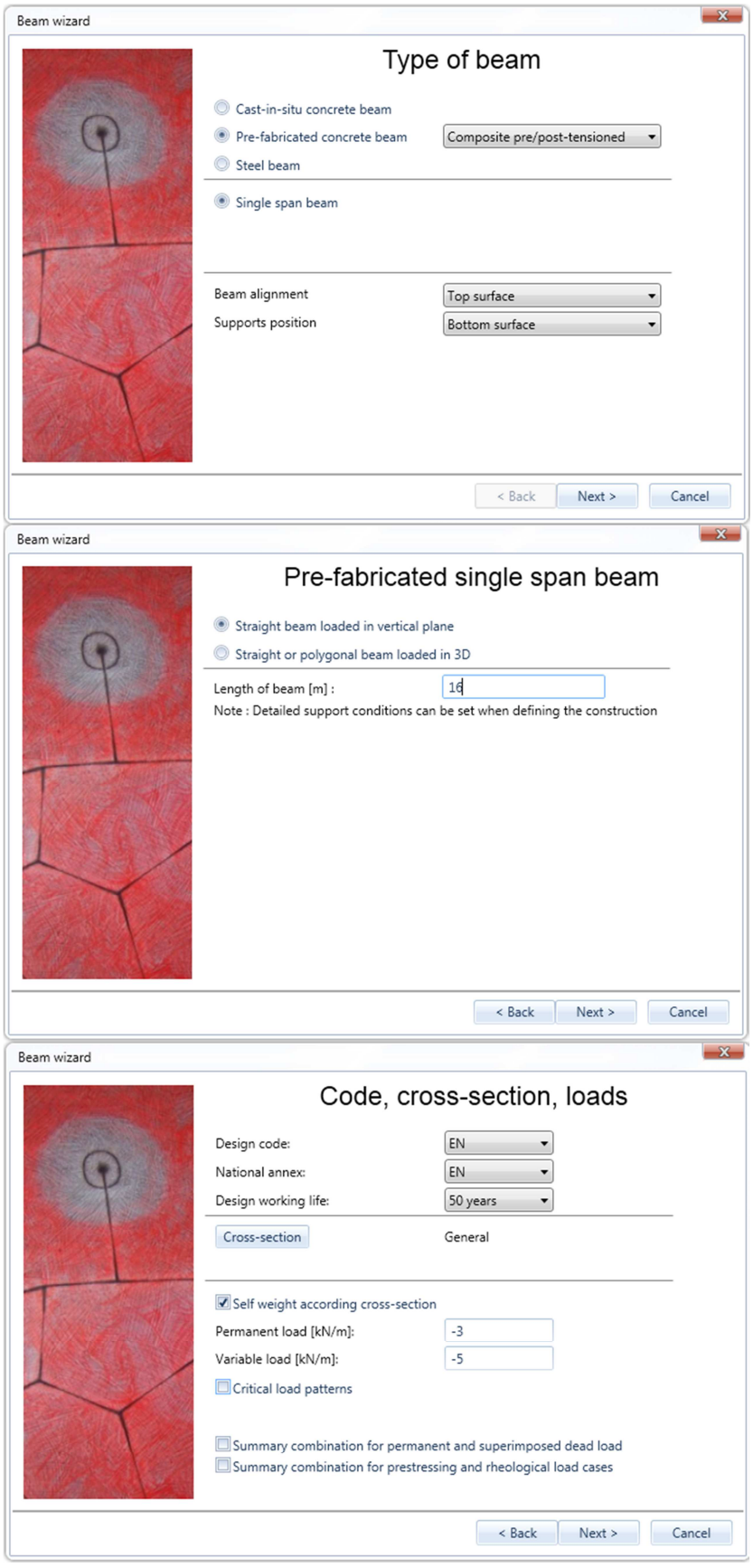
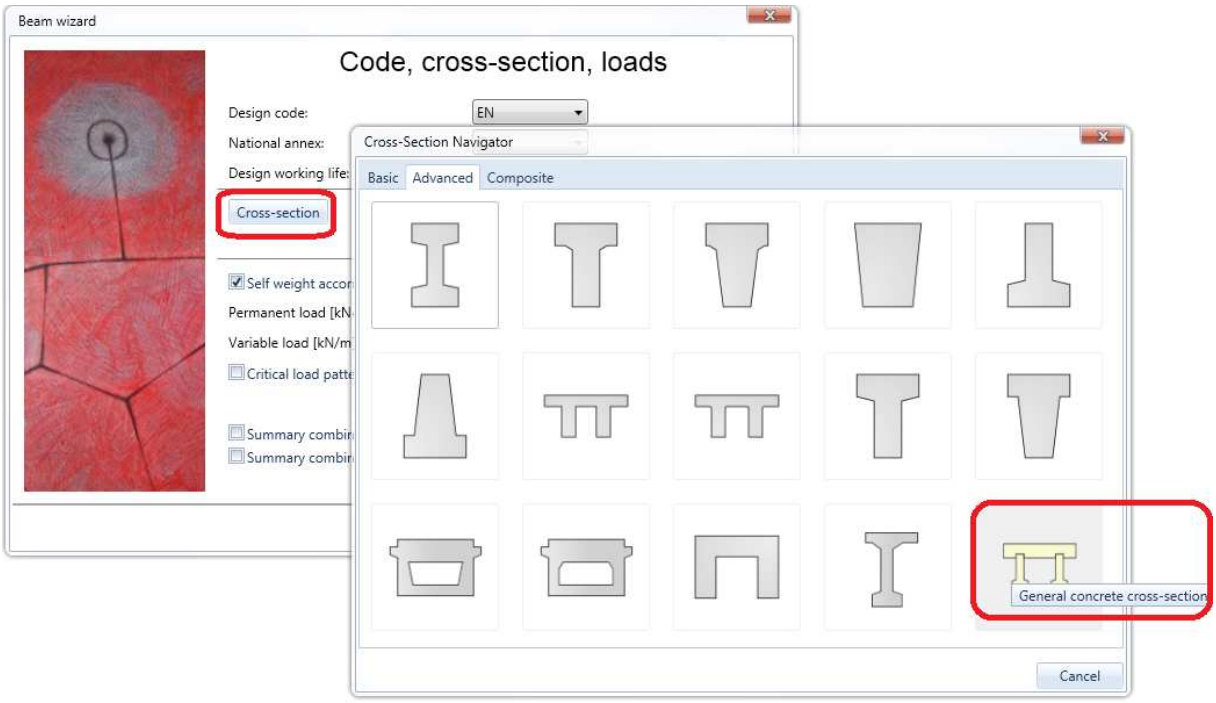
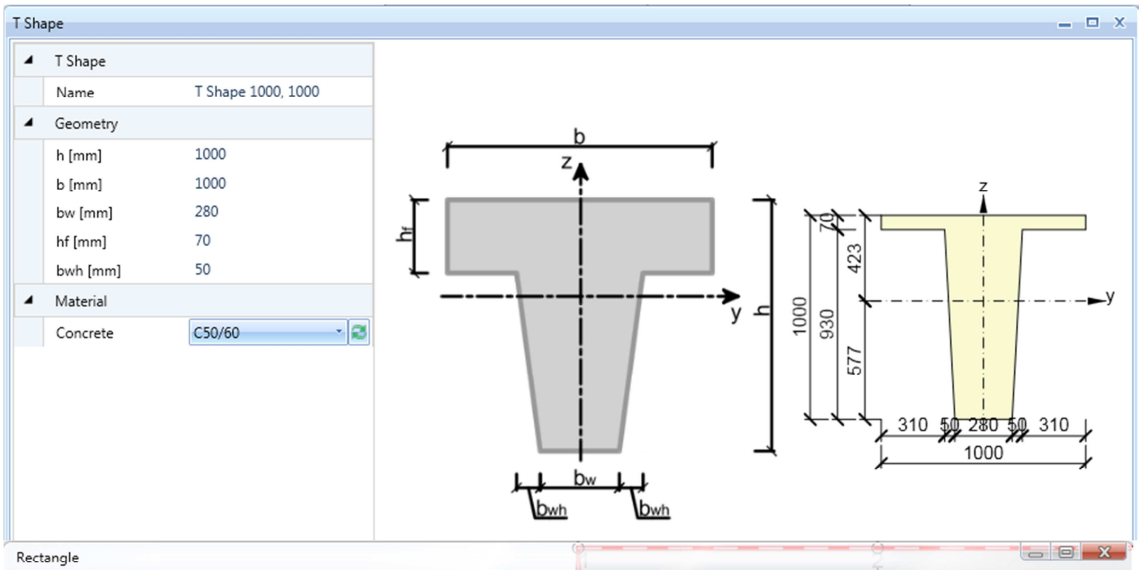
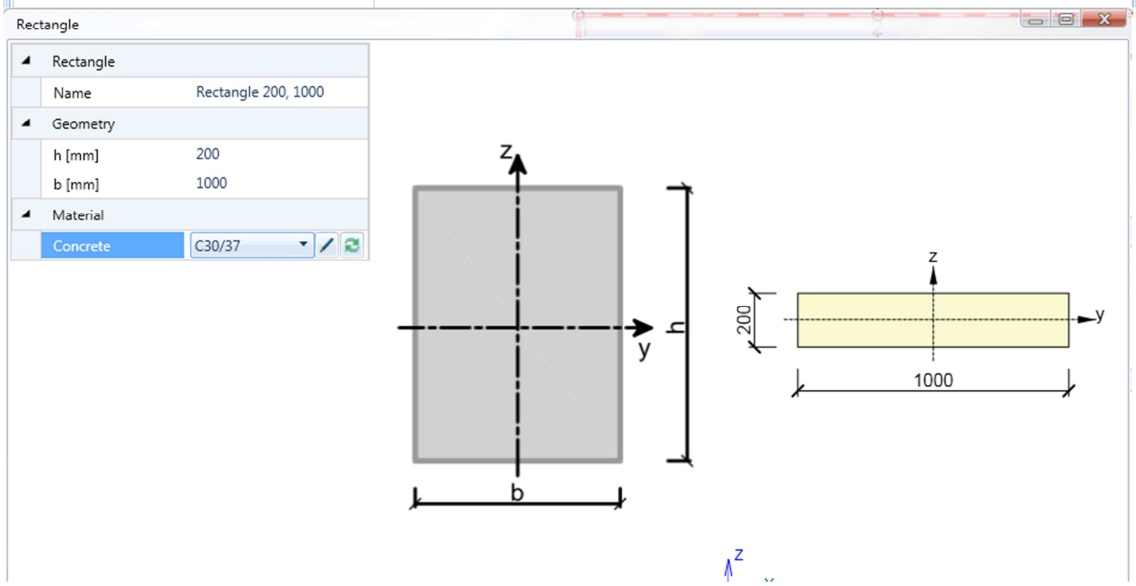
Content

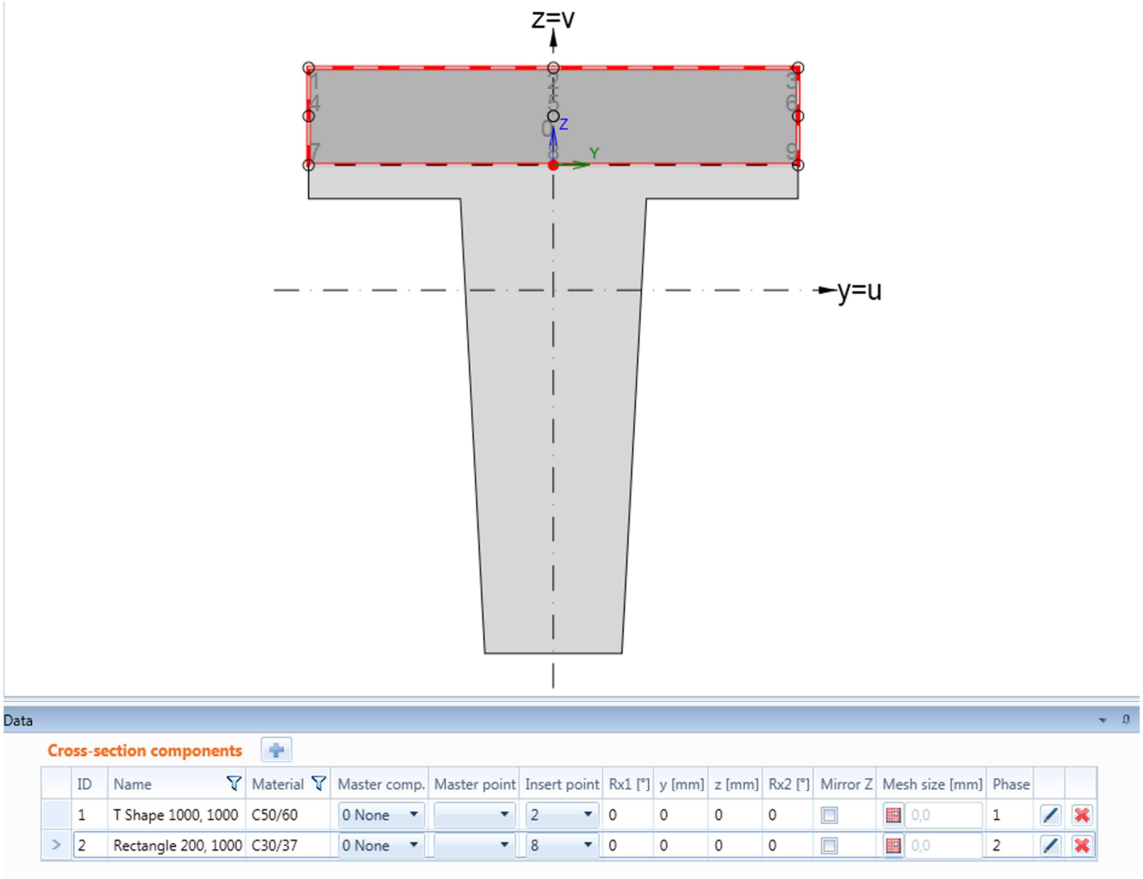
1. Wizard


Beam wizard
Type of beam
Cast-in-situ concrete beam
Pre-fabricated concrete beam
Composite pre/post-tensioned
Steel beam
Single span beam
Beam alignment
Top surface
Supports position
Bottom surface
< Back
Next >
Cancel
Beam wizard
Pre-fabricated single span beam
Straight beam loaded in vertical plane
Straight or polygonal beam loaded in 3D
Length of beam [m] :
16
Note : Detailed support conditions can be set when defining the construction
< Back
Next >
Cancel
Beam wizard
Code, cross-section, loads
Design code:
EN
National annex:
EN
Design working life:
50 years
Cross-section
General
Self weight according cross-section
Permanent load [kN/m]:
-3
Variable load [kN/m]:
-5
Critical load patterns
Summary combination for permanent and superimposed dead load
Summary combination for prestressing and rheological load cases
< Back
Next >
Cancel


Beam wizard
Code, cross-section, loads
Design code:
EN
National annex:
Design working life:
Cross-section
Self weight accor
Permanent load [kN
Variable load [kN/m
Critical load patte
Summary combi
Summary combi
Cross-Section Navigator
Basic
Advanced
Composite
General concrete cross-section
Cancel


T Shape
T Shape
Name
T Shape 1000, 1000
Geometry
h [mm]
1000
b [mm]
1000
bw [mm]
280
hf [mm]
70
bwh [mm]
50
Material
Concrete
C50/60
b
z
hf
y
h
bw
bwh
bwh
z
70
423
y
1000
930
577
310
50
280
50
310
1000

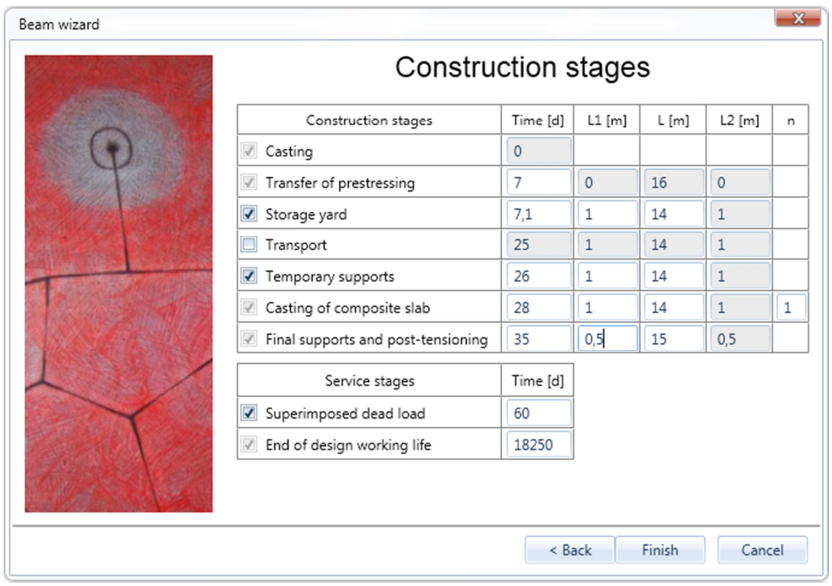

Rectangle
Rectangle
Name
Rectangle 200, 1000
Geometry
h [mm]
200
b [mm]
1000
Material
Concrete
C30/37
z
y
h
b
z
200
y
1000
z



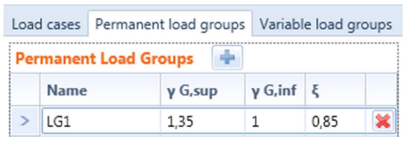
Data

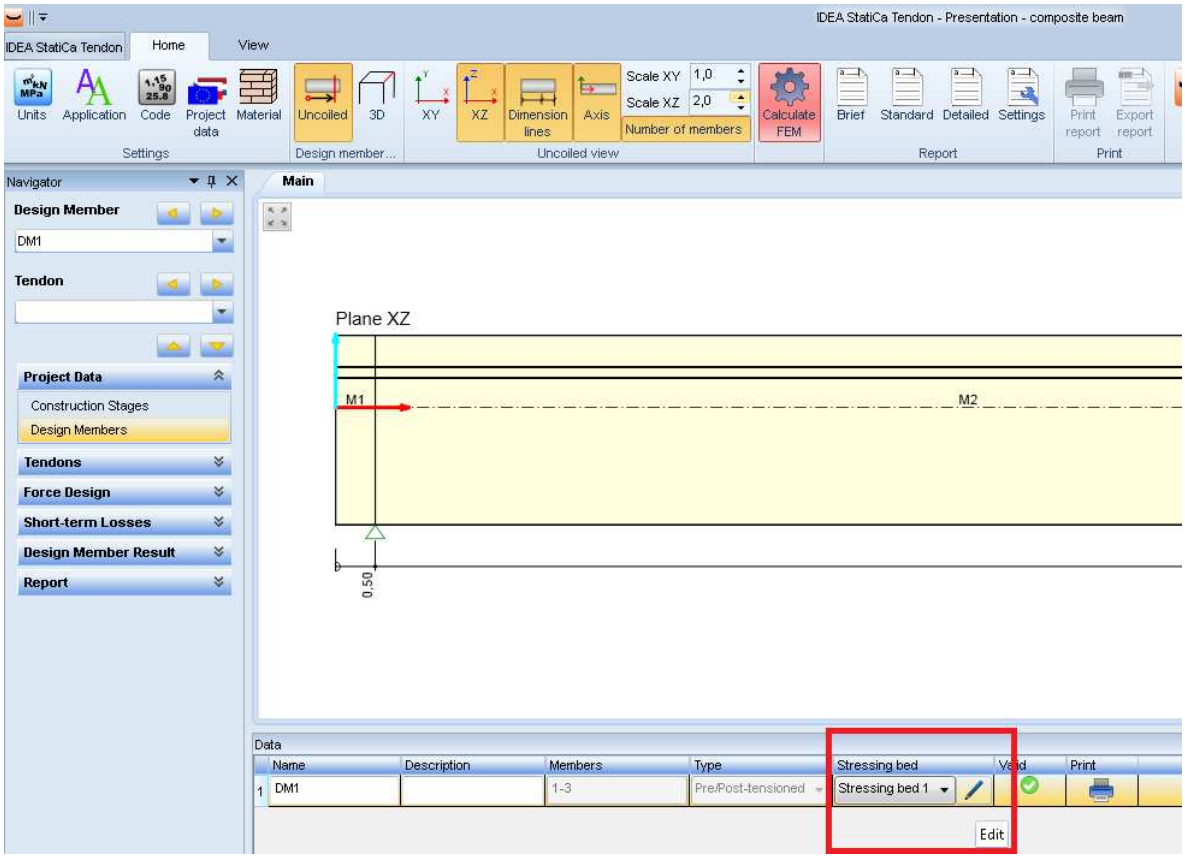
Cross-section components

ID	Name	Material	Master comp.	Master point	Insert point	Rx1 [°]	y [mm]	z [mm]	Rx2 [°]	Mirror Z	Mesh size [mm]	Phase
1	T Shape 1000, 1000	C50/60	0 None		2	0	0	0	0		0,0	1
2	Rectangle 200, 1000	C30/37	0 None		8	0	0	0	0		0,0	2

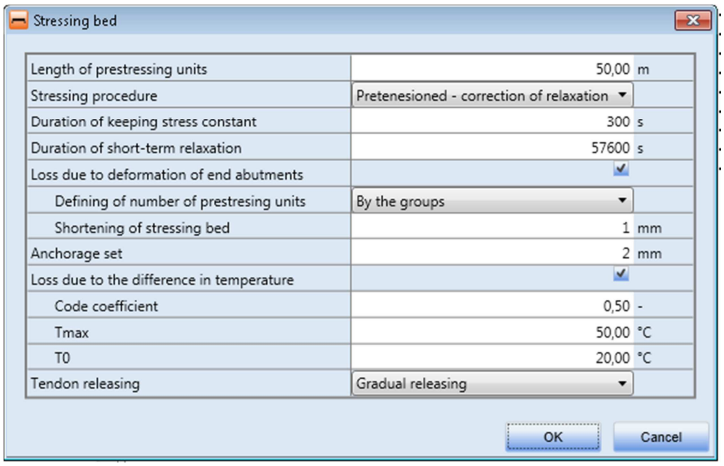


2. Adaptation of beam input

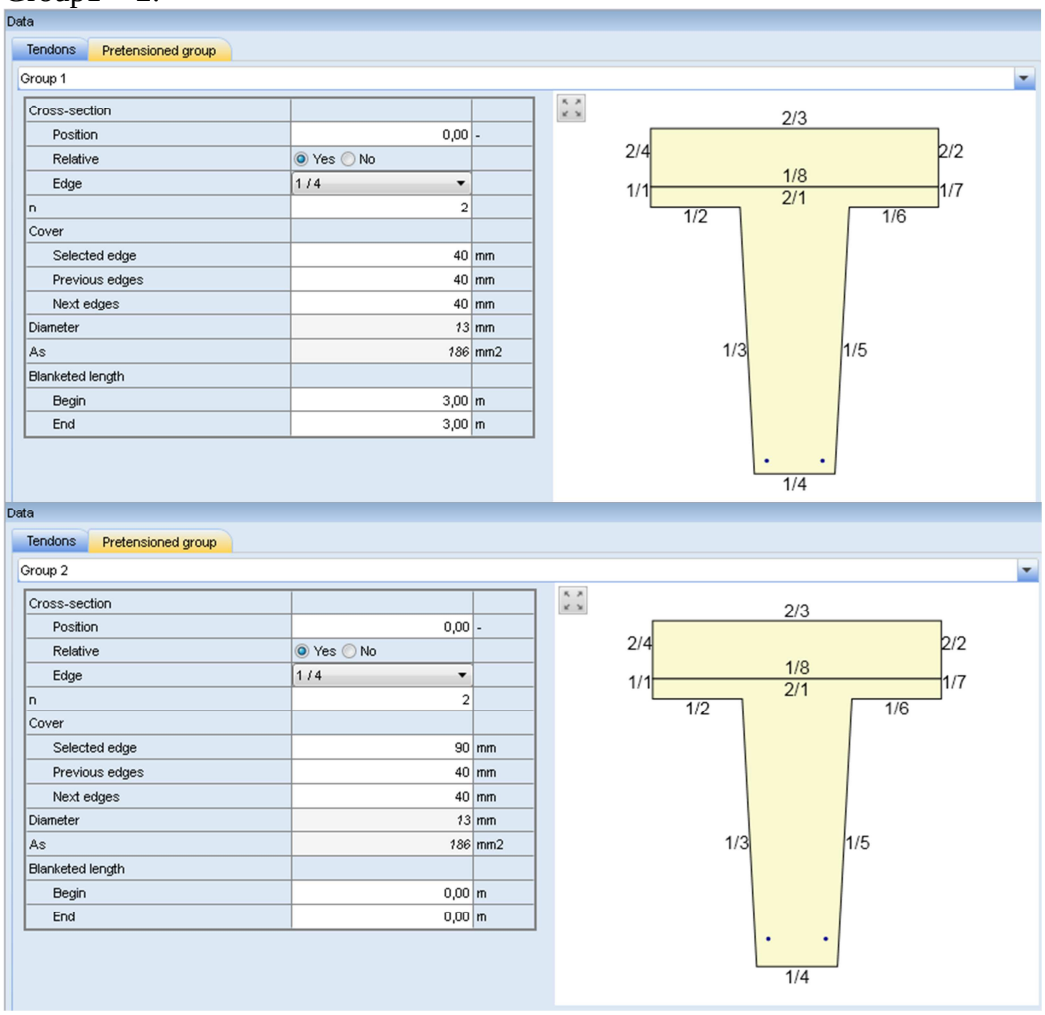




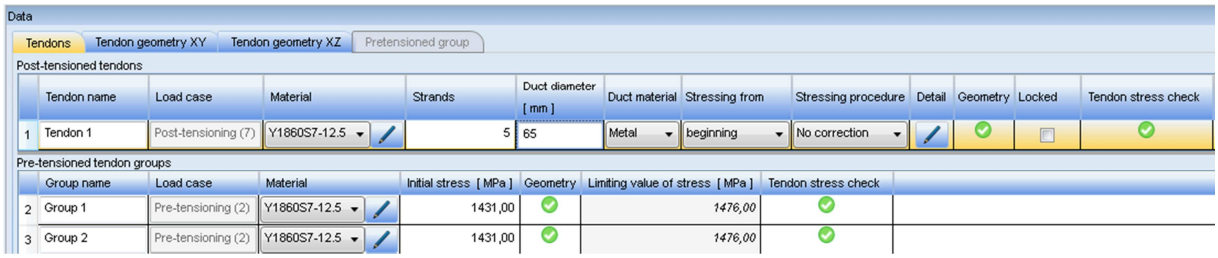
3. Tendon design



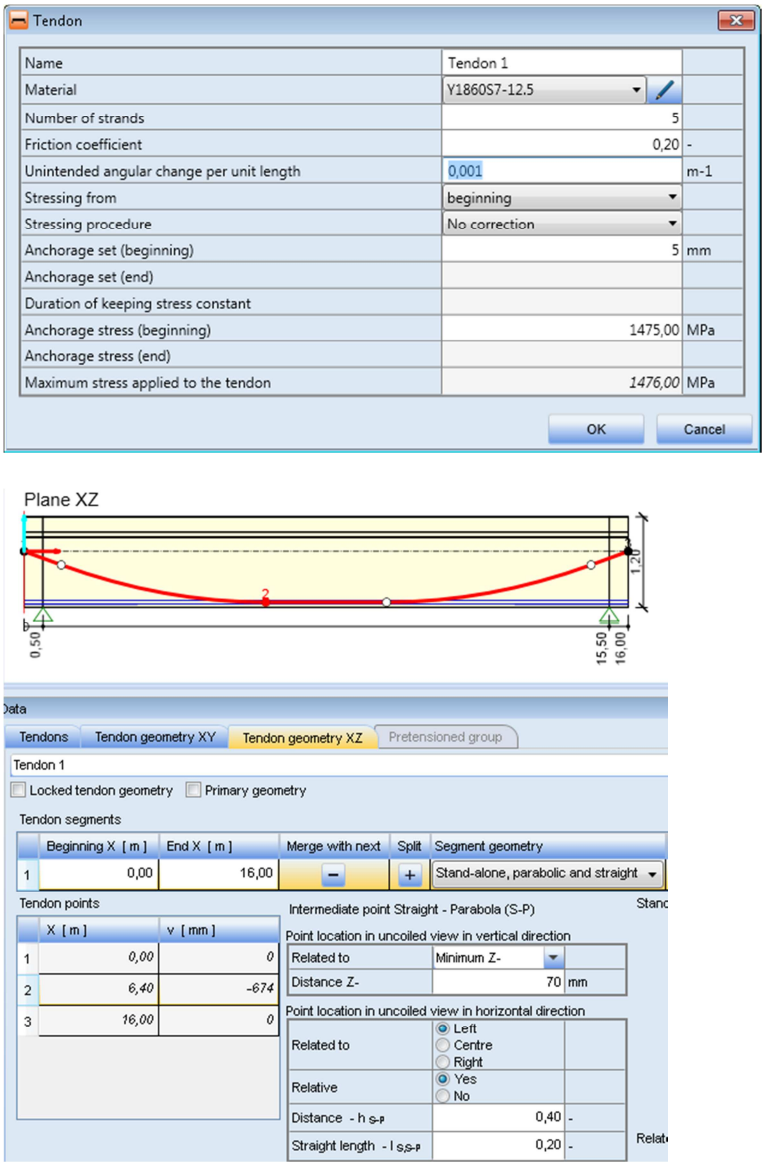
Pretensioned on edge, Y1860S7-12,5
Group1 + 2:



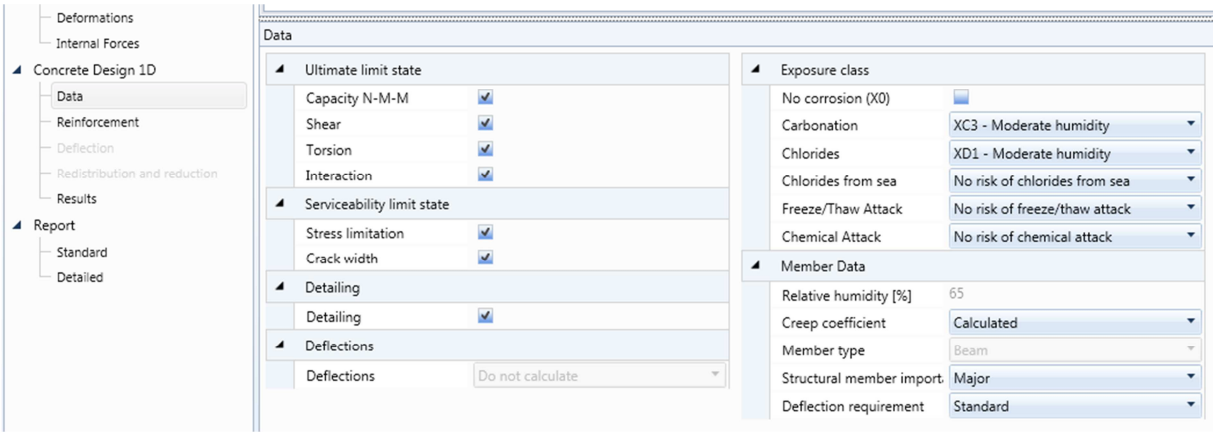
New Post-tensioned, segment, do NOT take supports into account

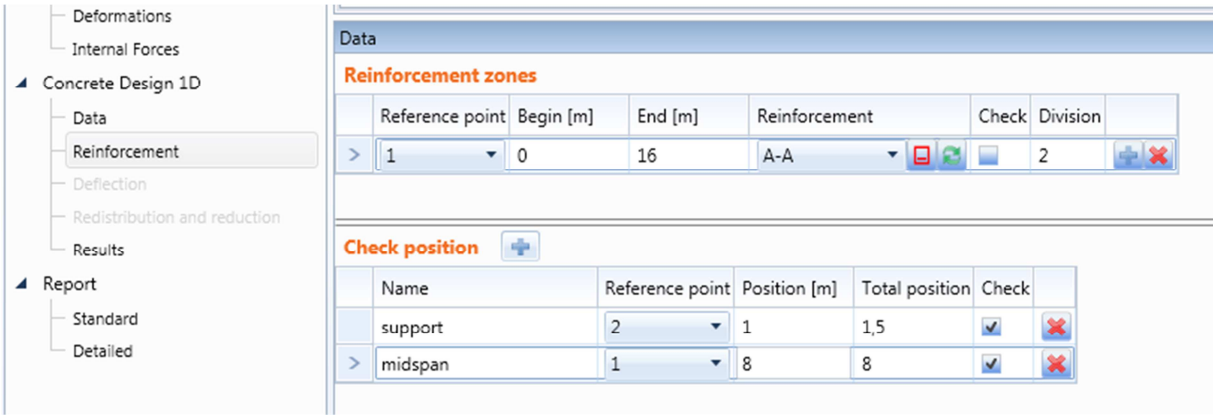


Detail (Tendon):



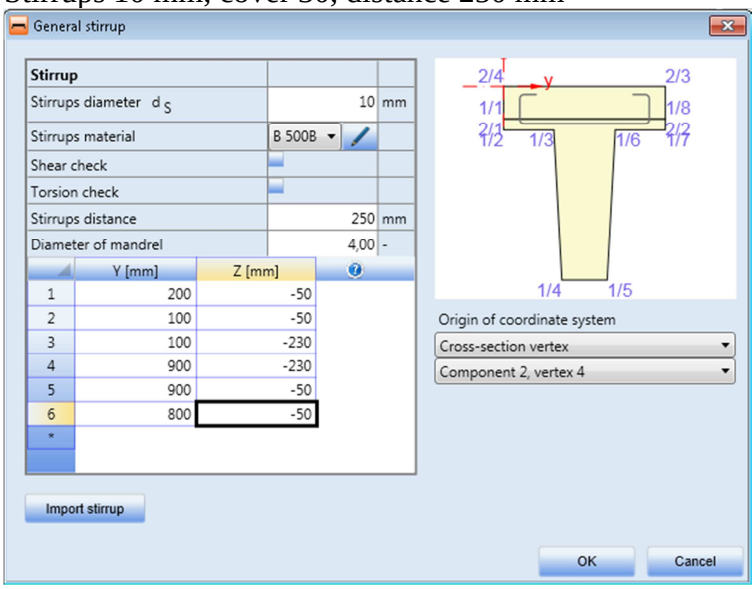
4. Sectional design



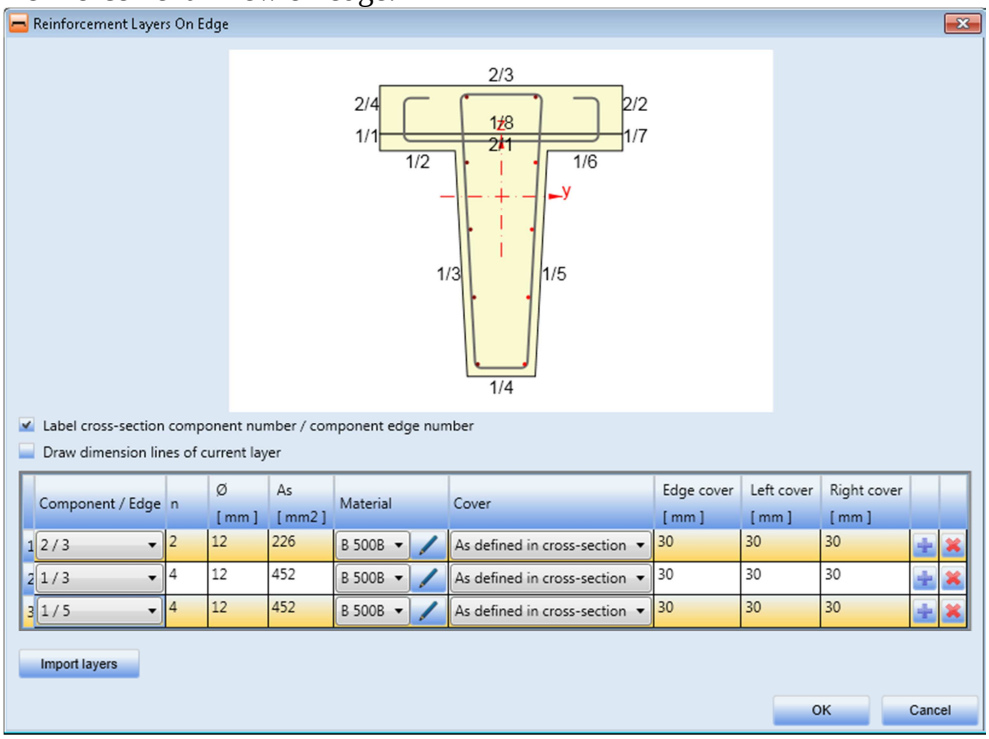


RCS (Detailed)
Check all, it is satisfactory with prestressing reinforcement only

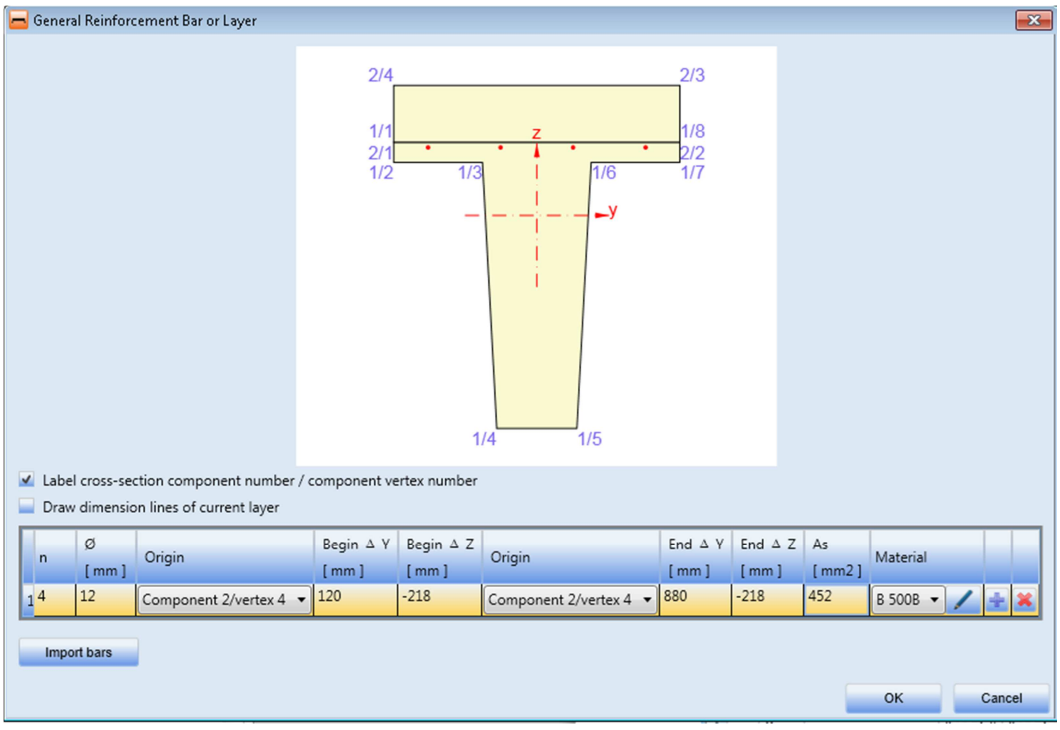
Set cover … 30 mm
Stirrups – new from points … closed stirrup in the web
Stirrups 10 mm, cover 30, distance 250 mm



Reinforcement – new on edge:



Reinforcement – new in line



Export, import of reinforcement

5. Literature, references

1. IDEA StatiCa Prestressing, *IDEA Tendon 4, User guide*, IDEA RS s.r.o., U Vodárny 2a, 616 00 BRNO, www.idea-rs.com
2. IDEA StatiCa Prestressing, *IDEA Beam, IDEA Tendon, IDEA RCS, Tutorial*, IDEA RS s.r.o., U Vodárny 2a, 616 00 BRNO, www.idea-rs.com
3. IDEA StatiCa Prestressing, *Import/Export of tendons in module StatiCa Tendon, Tutorial*, IDEA RS s.r.o., U Vodárny 2a, 616 00 BRNO