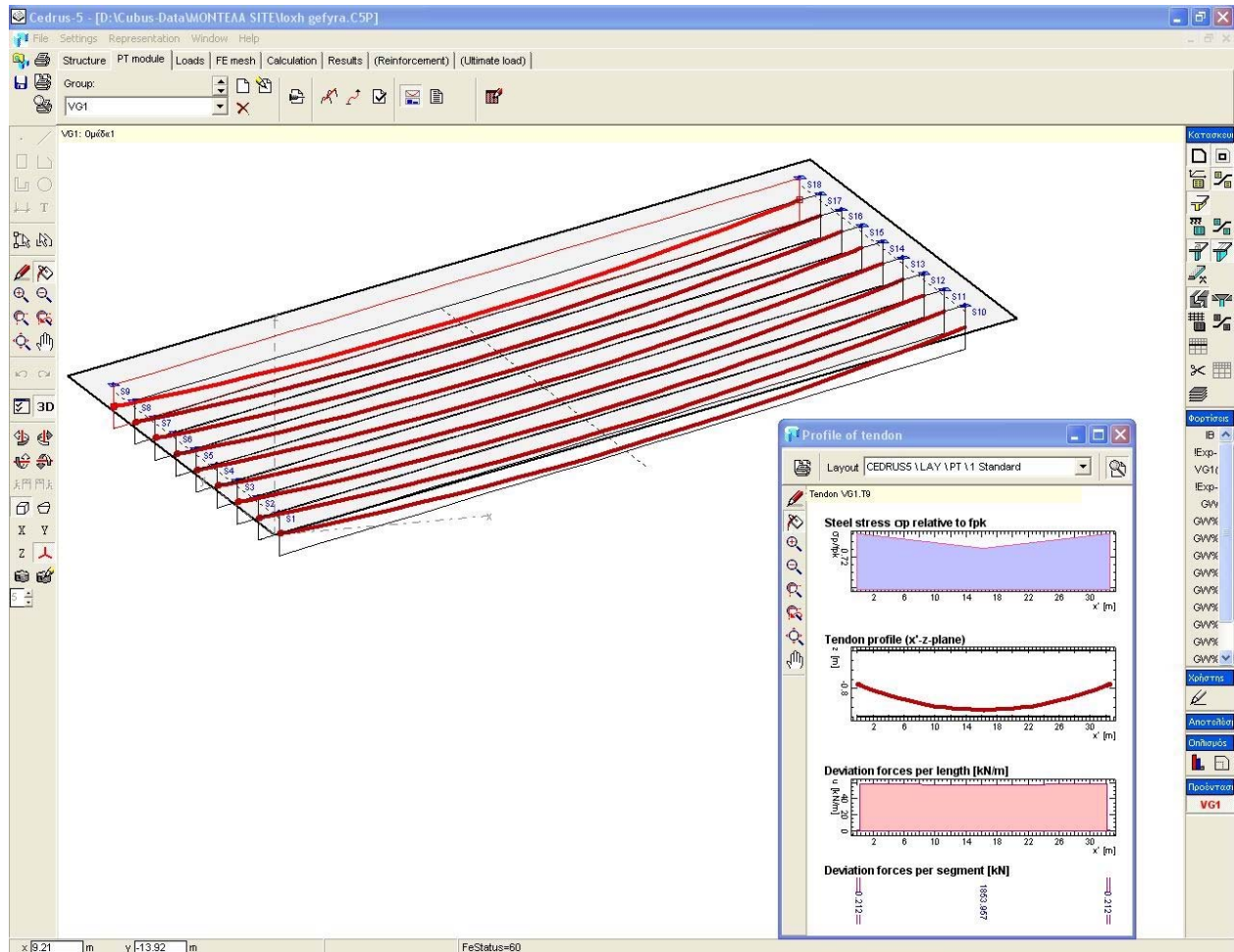


CEDRUS-5V

Prestressing Design Verification



The optional Prestressing - module to CEDRUS-5 allows the calculation and design of prestressed slabs of arbitrary geometry. The action of prestressing can be considered either as external load or as resistance. Thanks to its simple and praxis-oriented input procedure of the tendons and the integrated design tools, which offer a comprehensive predimensioning based on a few input parameters, the prestressing module is also useful to occasional users.

Input of the tendons

- Interactive input by use of the comprehensive capabilities of the graphic editor
- Straight or arbitrary curved tendon shape in the plan view
- Description of the vertical shape in the side view through supports
- 3D-view in any projection
- Grouping of tendons

Tendon Attributes

- Steel quality
- With / without bonding
- Friction losses
- Area and amount of strands
- Minimum radius of curvature
- Prestressing procedure with several stressing and releasing steps on both ends of tendon

Support attributes

- High, low and inflexion points
- Distance to upper / lower edge of slab
- Slope
- Minimum radius of curvature

Design tools for flat slabs

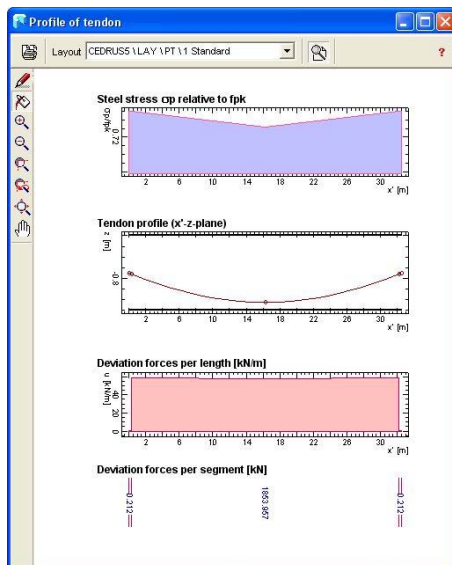
- Comprehensive predimensioning based on three input parameters: span, live load and prestressing system
- Proposal for minimum slab thickness and required degree of prestressing
- Estimation of stresses, deformations and vibration behaviour
- Printout of predimensioning report

Calculation

- Automatic generation of anchor and deviation forces
- Estimation of the plastic resistance under consideration of normal force
- Dimensioning of non-prestressed reinforcement based on max permissible steel-stress (Prestressing as external action)
- Dimensioning of non-prestressed reinforcement based on ultimate strength (Prestressing as resistance)

Results

- Section along a tendon
- Force distribution according to the described prestressing procedure
- Deviation forces



Step	Direction	Value	Unit
Step 1	←	0.750	*ftk
Step 2	→	0.750	*ftk
Step 3	↔	0.000	
Step 4	↔	0.000	
Step 5	↔	0.000	
Step 6	↔	0.000	
Step 7	↔	0.000	
Step 8	↔	0.000	
Step 9	↔	0.000	
Step 10	↔	0.000	
Step 11	↔	0.000	
Step 12	↔	0.000	