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SOFTWARE

Concise Beam

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Concise Beam

Precast/Prestressed Beam Design

A state-of-the-art, easy-to-use Windows based program for the analysis and design check of precast concrete beams, prestressed or not, to American, Canadian, Australian, and New Zealand design standards.

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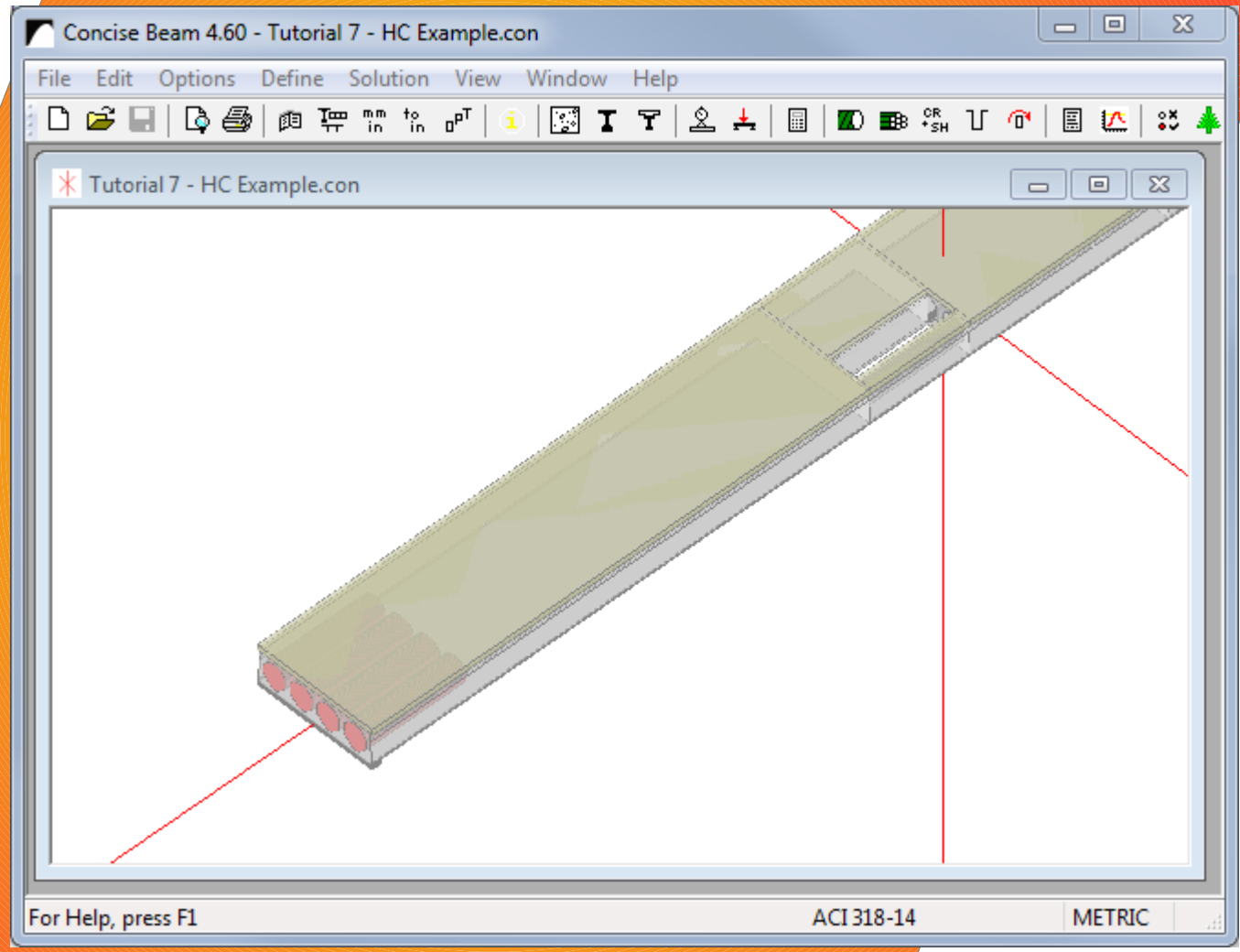
Main Window



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Beam Layouts

- Simply supported precast beams
- Cantilever at either end
- Composite topping/slab with optional haunch
- Shored construction optional
- Hollow-core fill
- Automatic generation of openings

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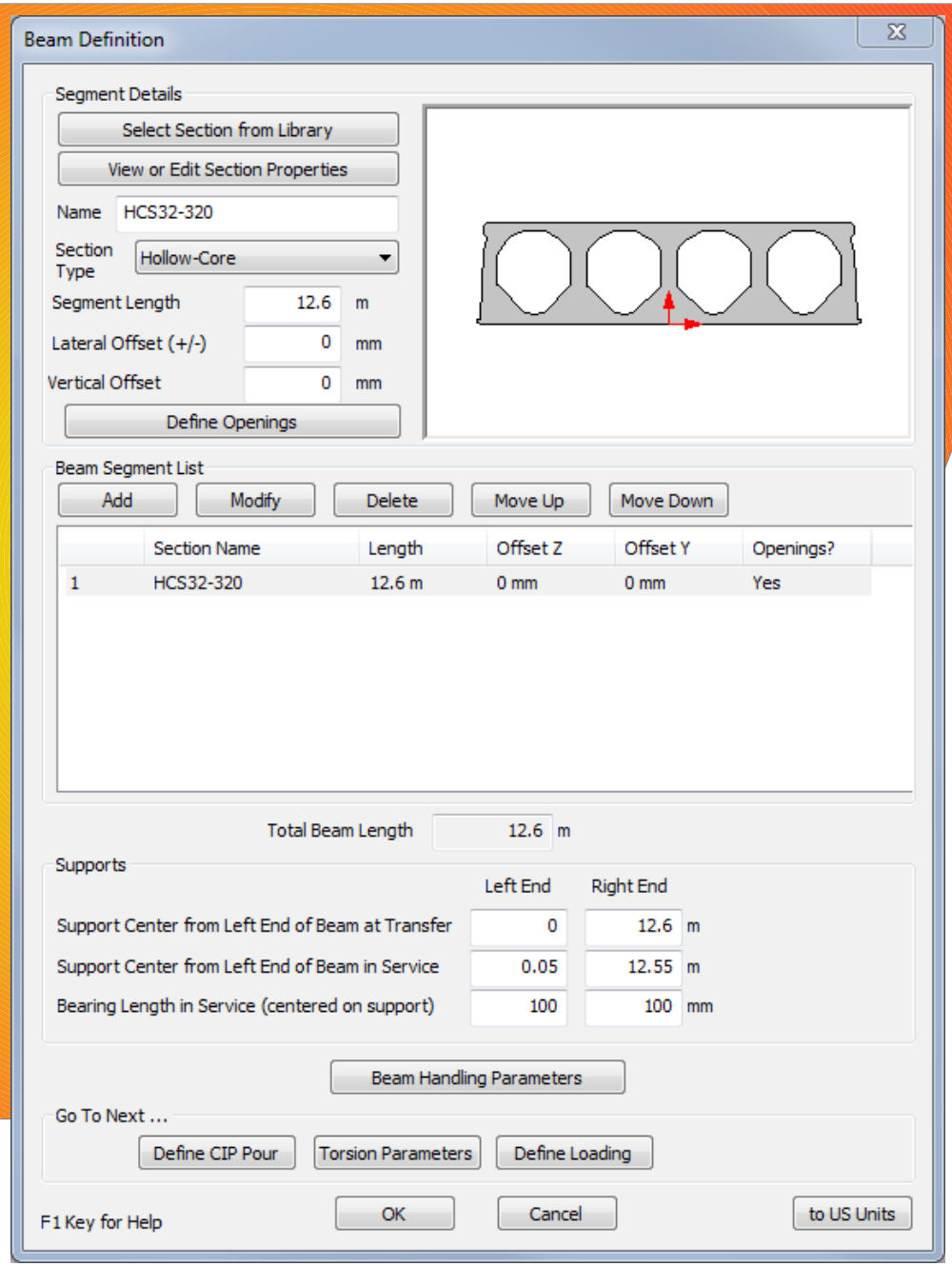
Beam Definition



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Beam Cross-Sections

- Model any user defined cross-section
- Select from a library of standard sections
- Use the section editor to create your own section, or modify a standard section
- Vary the section prismatically over the length of the beam

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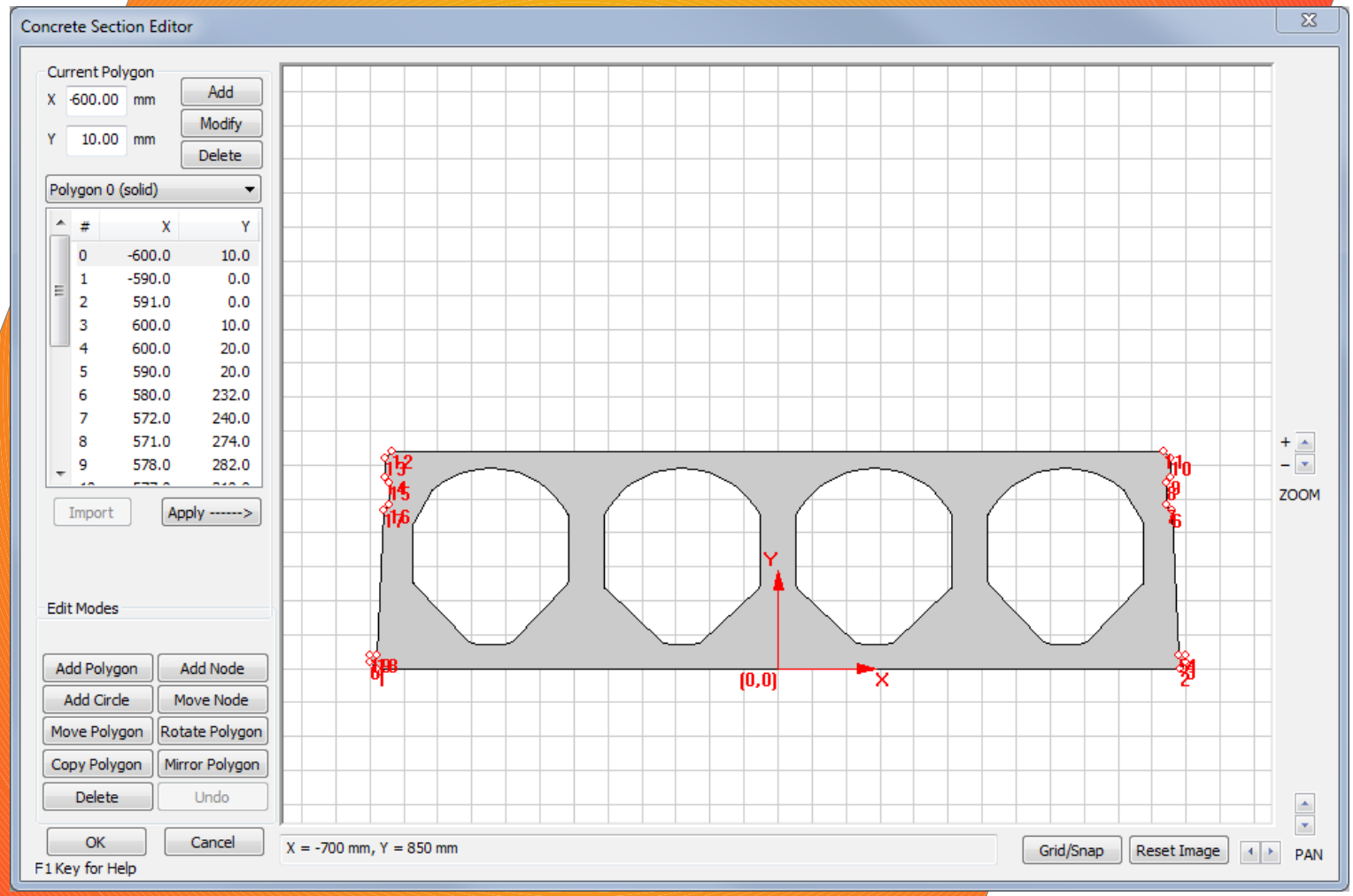
Section Editor



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Reinforcement Options

- Reinforced, partial or fully-prestressed, precast beams
- Mix of rebar, wire, and strand
- Deflected and debonded strands
- Fully developed or hooked rebar and strand ends available
- Epoxy coated reinforcing bar available

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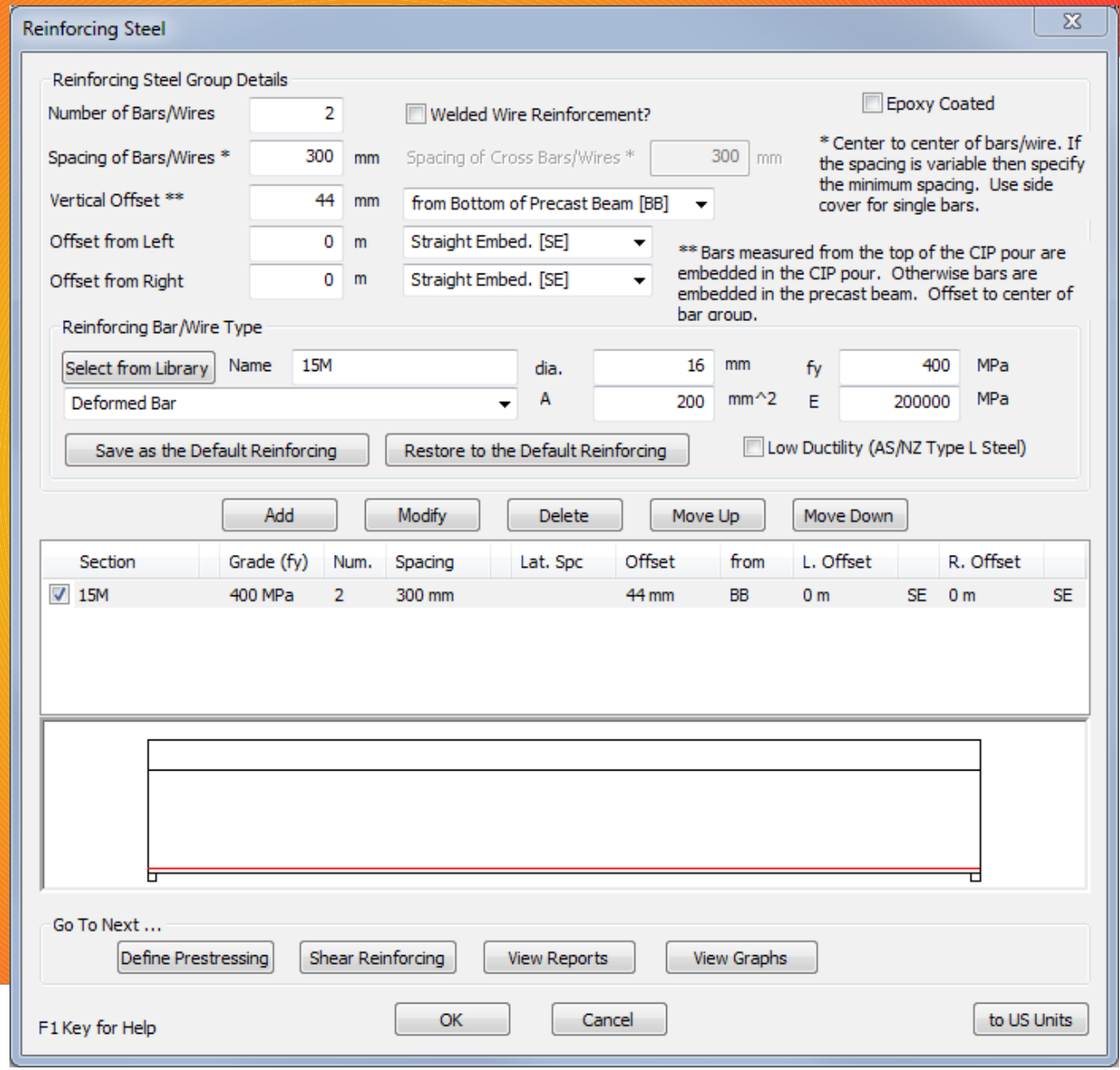
Rebar



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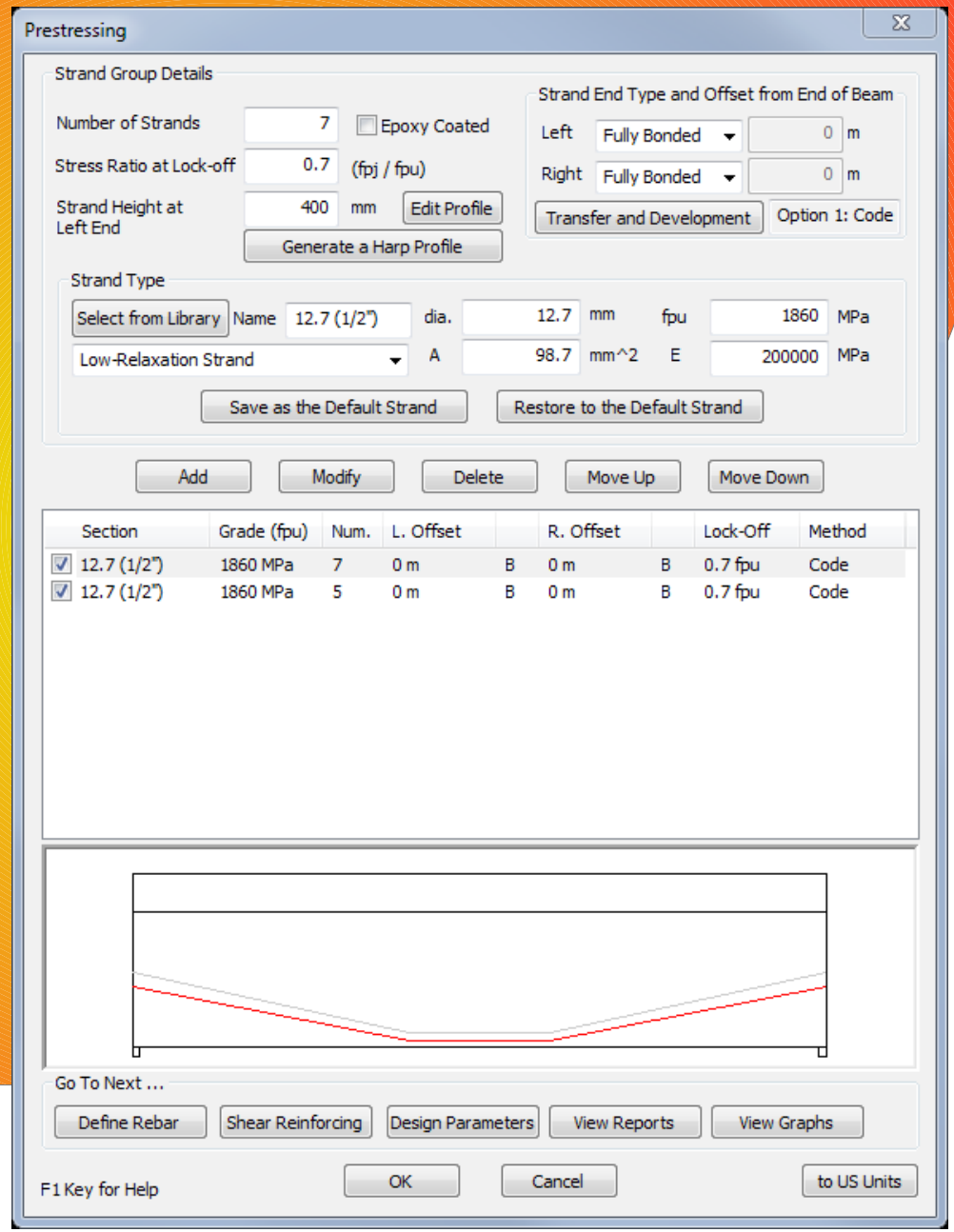
Prestressing



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Section, Material and Loading Libraries

- Libraries of standard beam cross-sections
- Libraries of standard materials
  - reinforcing steel sizes and material
  - prestressing strand sizes and material
- Libraries of Moving Loads
- Create your own libraries

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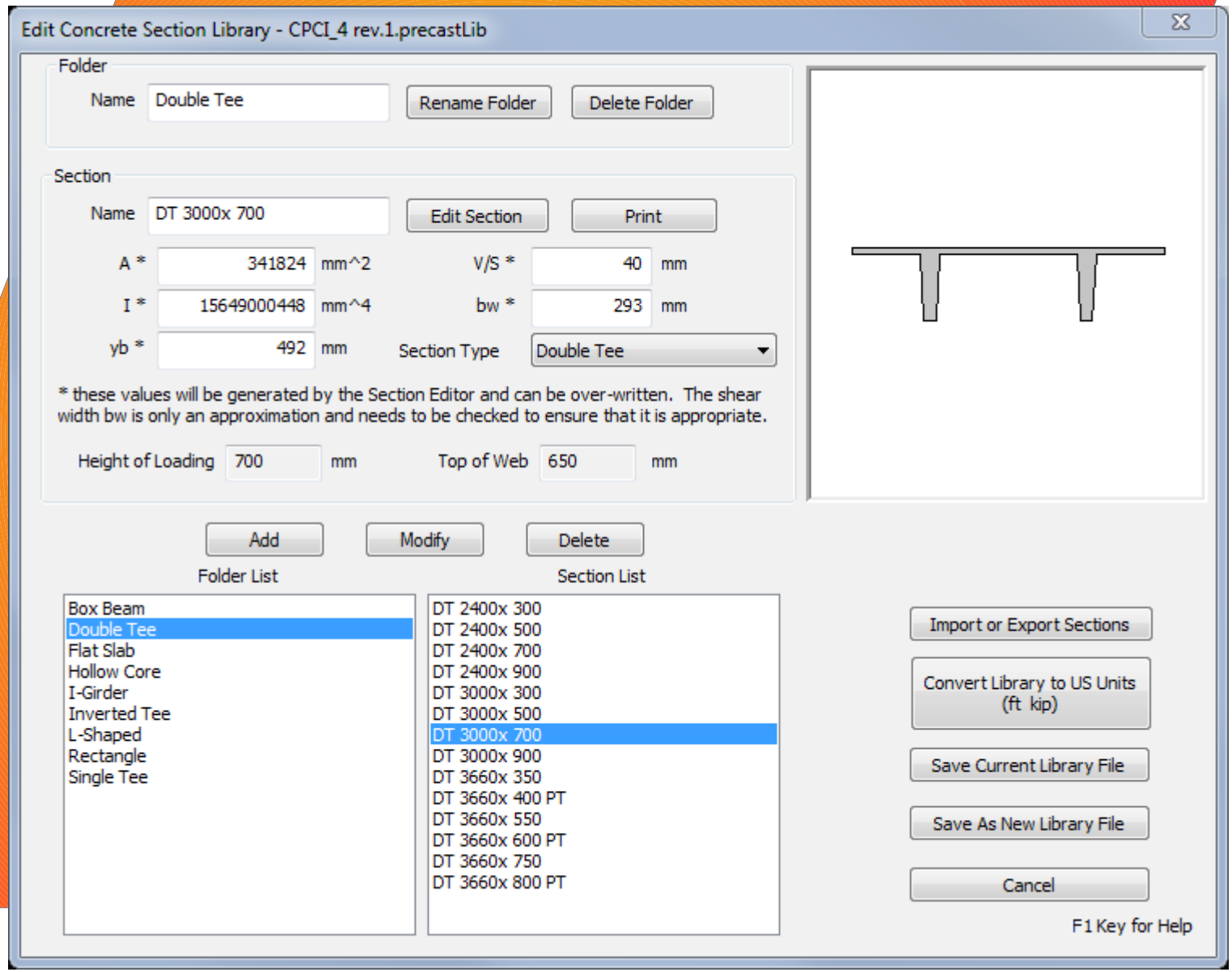
Section Library



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Applied Loads

- Automatic beam and topping self-weight
- Static Point loads, moments or torques
- Uniform, or linearly varying, distributed loads or torques
- Moving Loads including Highway Live Loads

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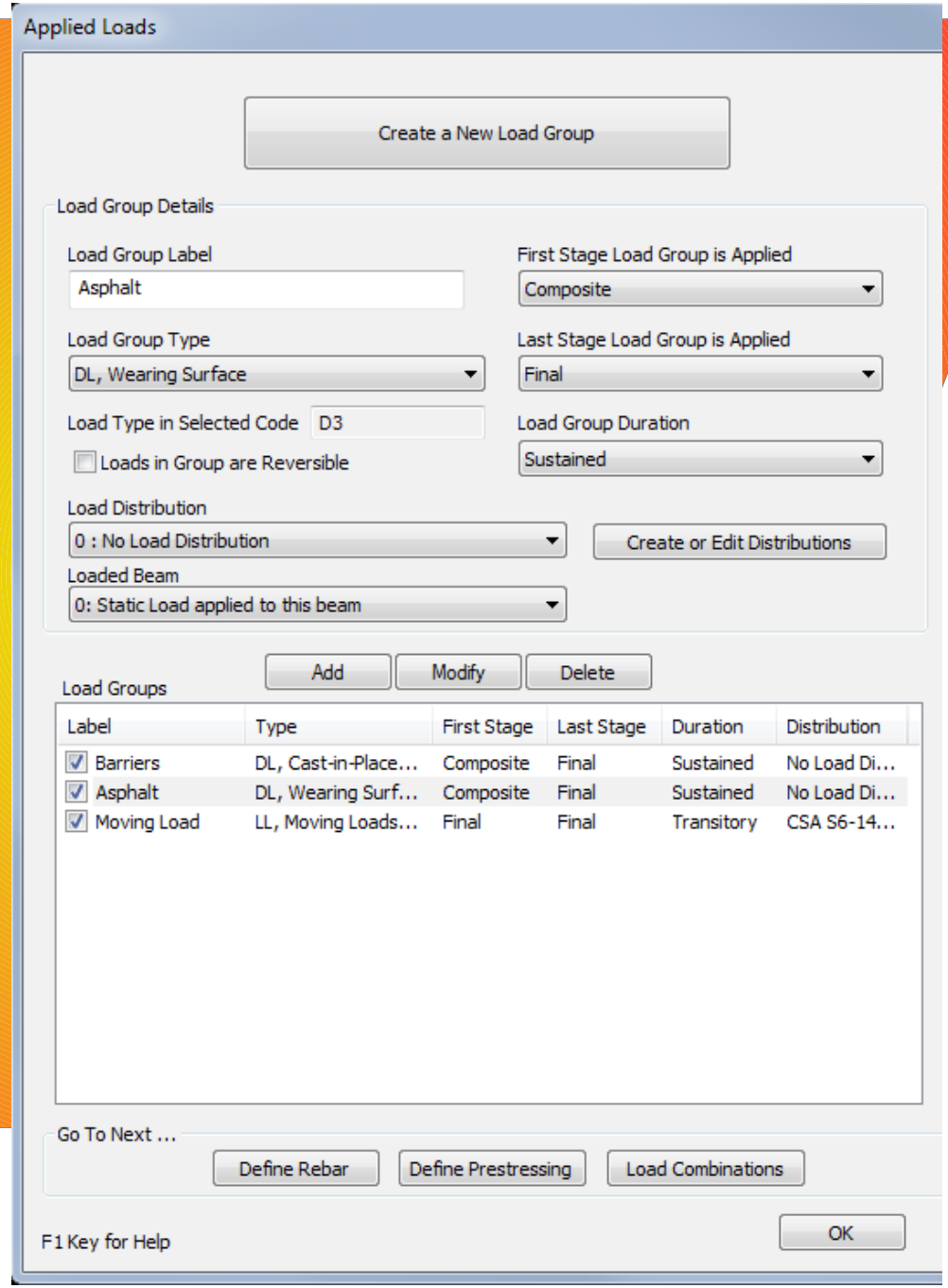
Flexible Load Groups



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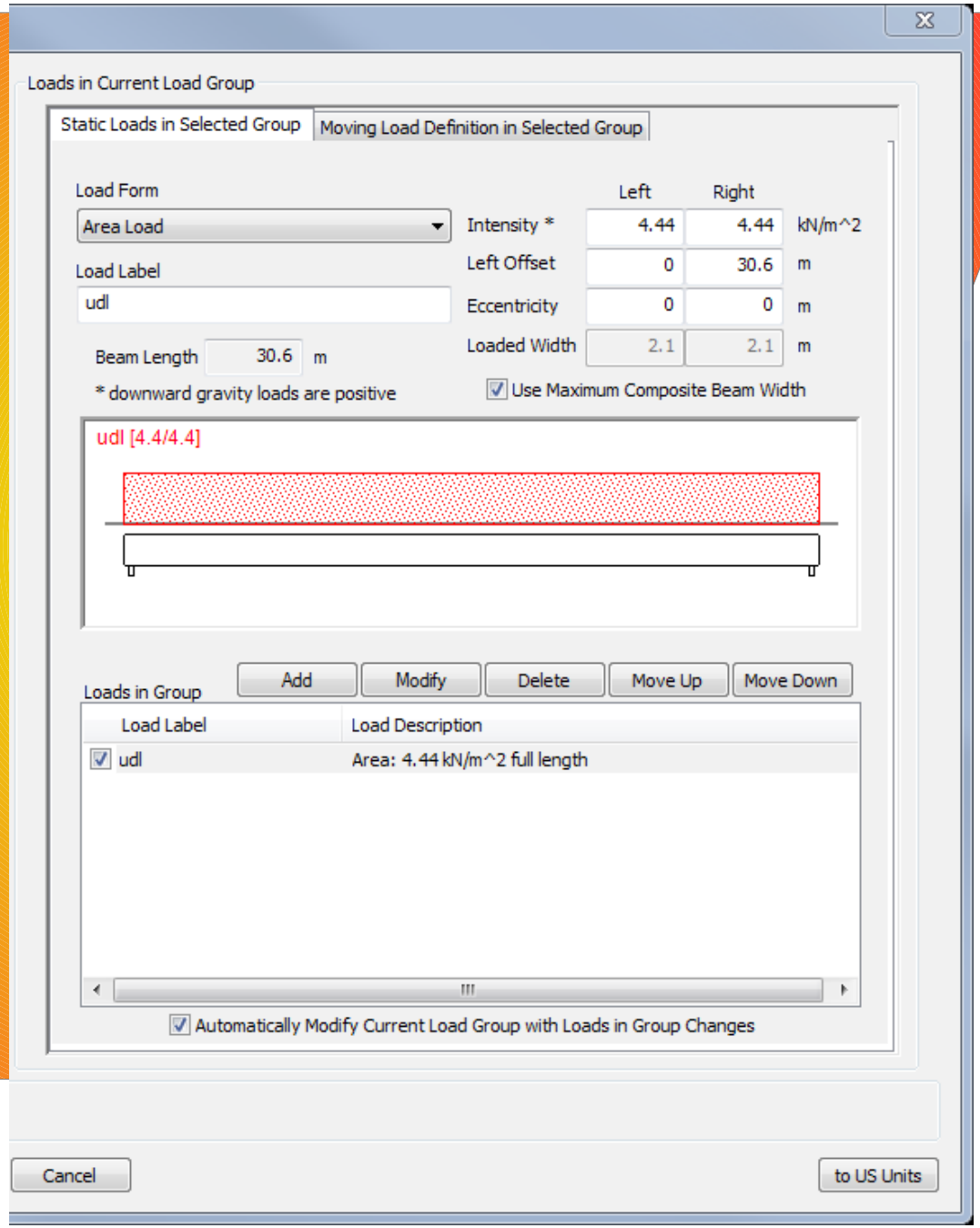
Static Applied Loads



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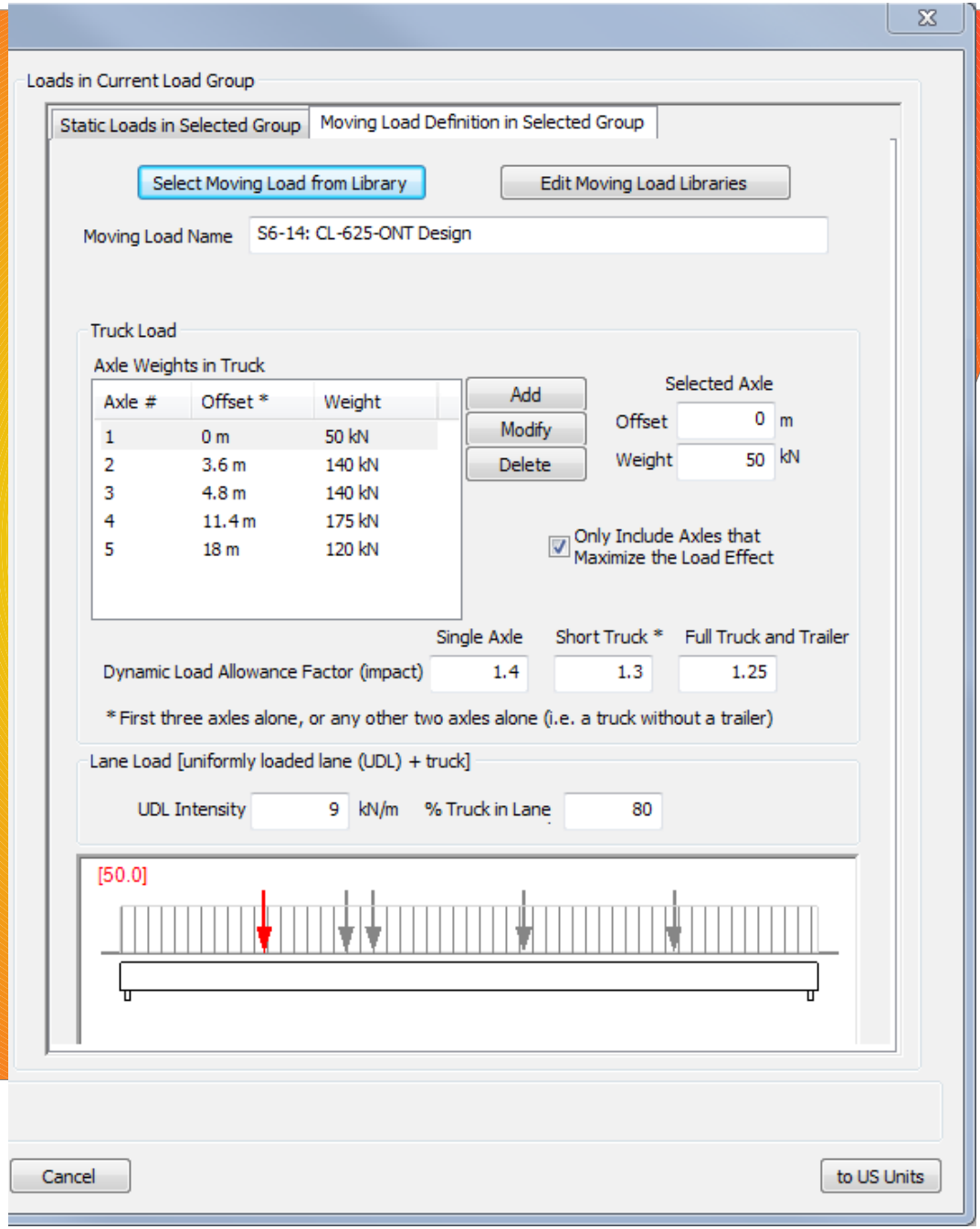
Moving Loads



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Design Codes

- American standard ACI 318-99 through ACI 318-14
- Canadian standard CSA A23.3-94 through CSA A23.3-14, CSA S6-06S-10 and CSA S6-14
- Australian standard AS 3600-2001 and 2009
- New Zealand standard NZS 3101:2006
- Customize select code parameters

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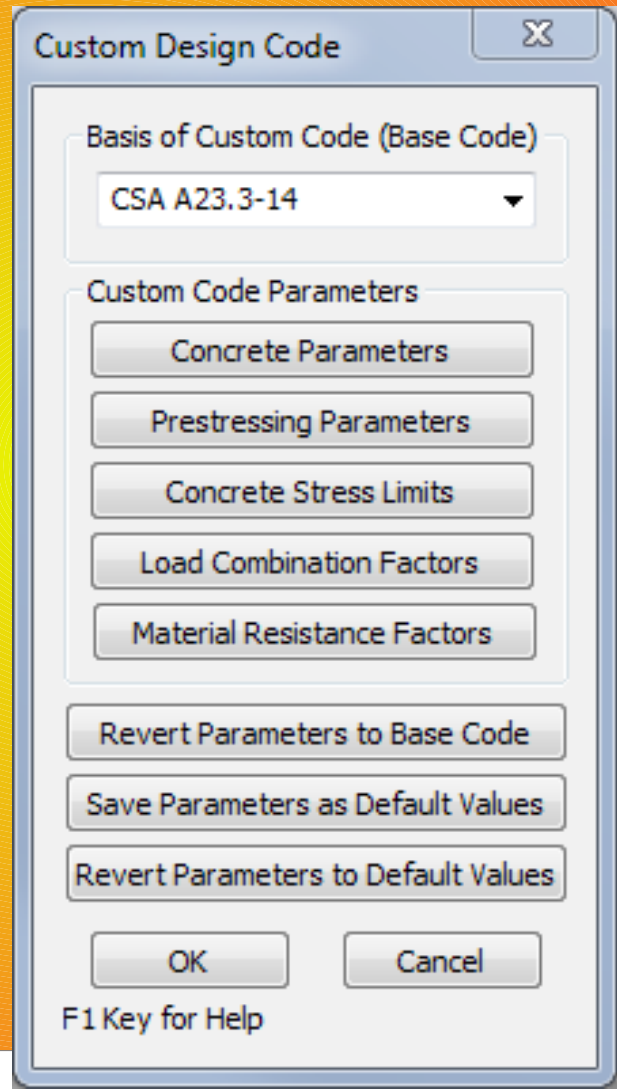
Customized Code Parameters



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Units of Measure

- Work in metric or U.S. Customary (Imperial) units
- Switch back and forth at any time
- Select specific unit of measure (m, cm, mm, in, ft, etc.)
- Save your selection for future use

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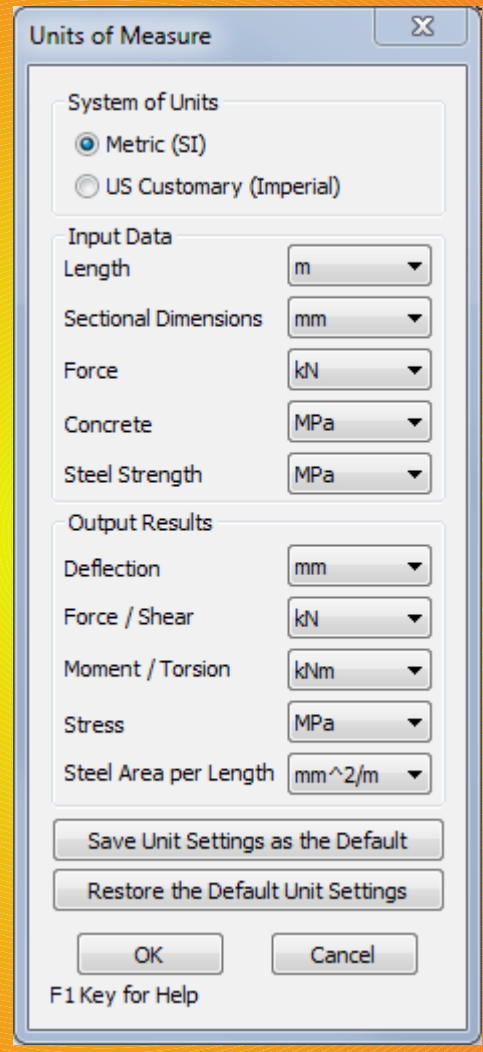
Flexible Units of Measure



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Advanced Engineering Capability

- Uses detailed methods whenever appropriate
- Provides select alternative methods
- Cracked section analysis
- Strain compatibility analysis including slippage of reinforcement
- Lateral stability check during lifting and transport
- Shear check of hollow-core with filled cores

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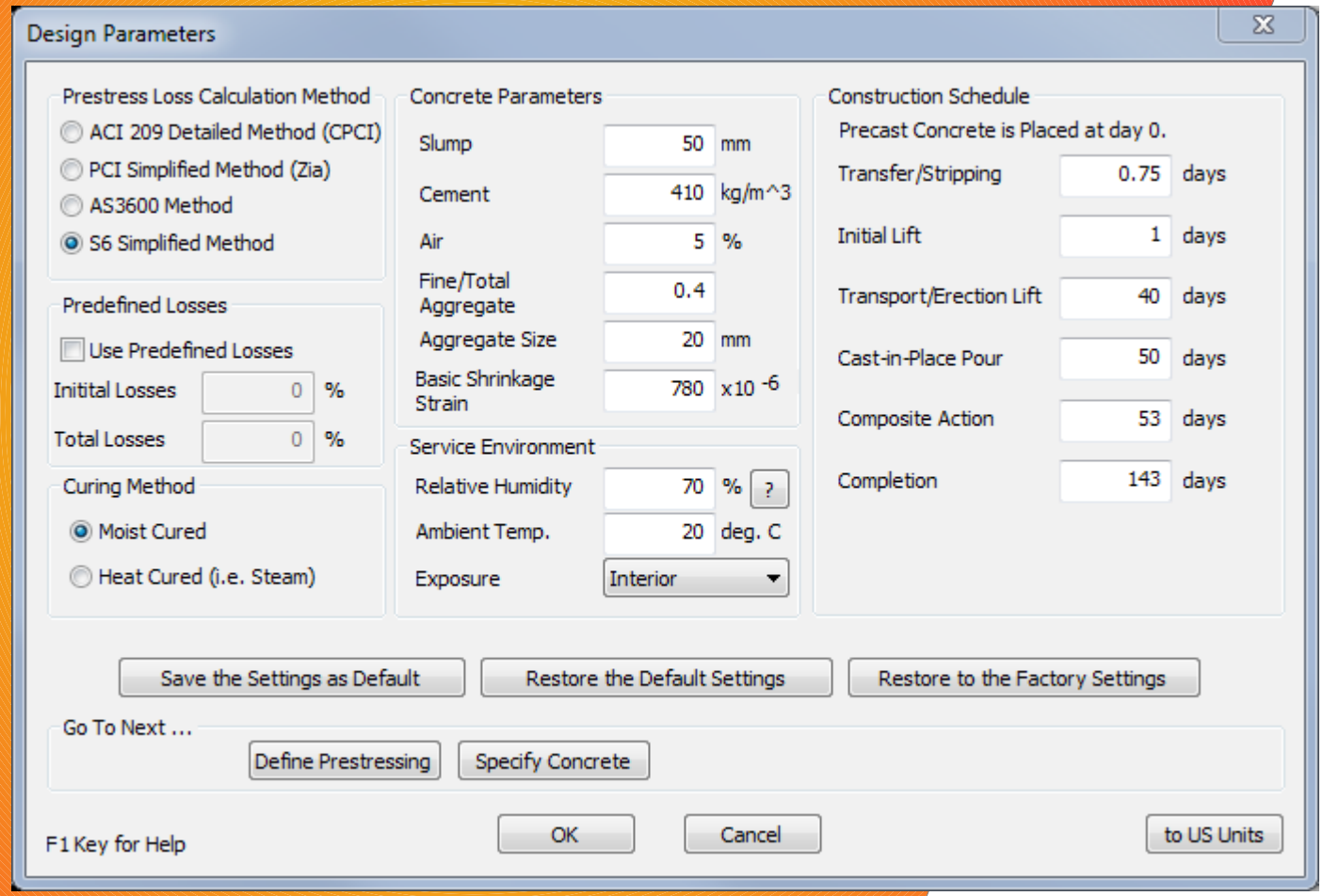
Loss and Design Parameters



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Analysis and Design Features

- Serviceability and Ultimate State Analyses
- Automatic design code checks
- Shear and torsion steel design
- Interface shear design for deck/topping
- Follows recognized methods as used in the PCI Design Handbook, CPCI Metric Design Manual, and the NPCAA Precast Concrete Handbook

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Ease of Use

- Standard Microsoft Windows desktop interface
- Easy-to-read on-screen user's manual and context-sensitive help
- Design tutorial and examples
- Full technical support
- Regular program upgrades

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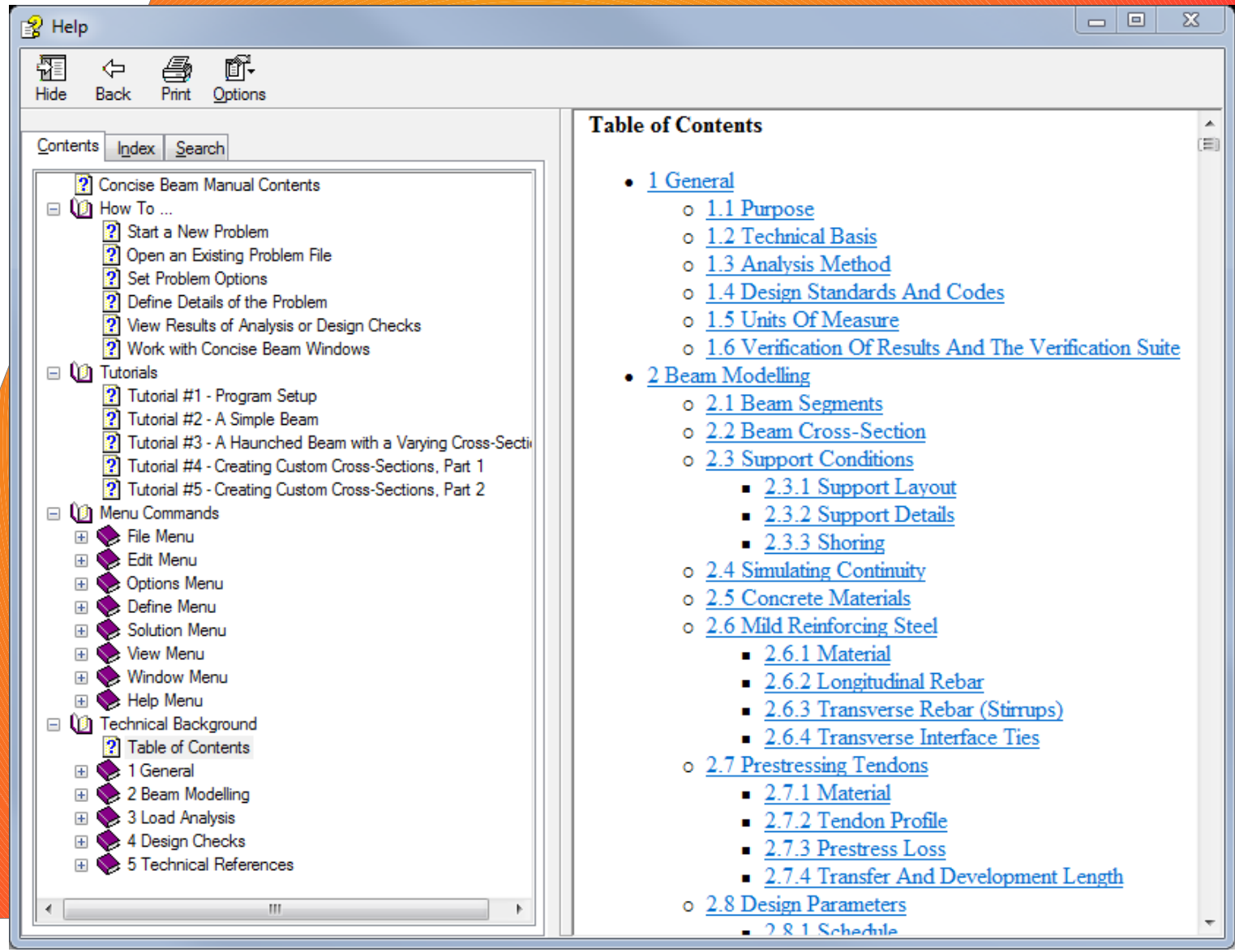
On-Line Help



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Text Output

- Summary text report of input and output
- Detailed text reports of analysis and design check results for:
  - Flexure, shear, and torsion analysis
  - Prestress loss and force
  - Concrete stresses and cracking estimate
  - Deflection and camber estimates
  - Flexural, shear, and torsion design checks
  - Stirrup, interface tie and hollow-core fill design checks

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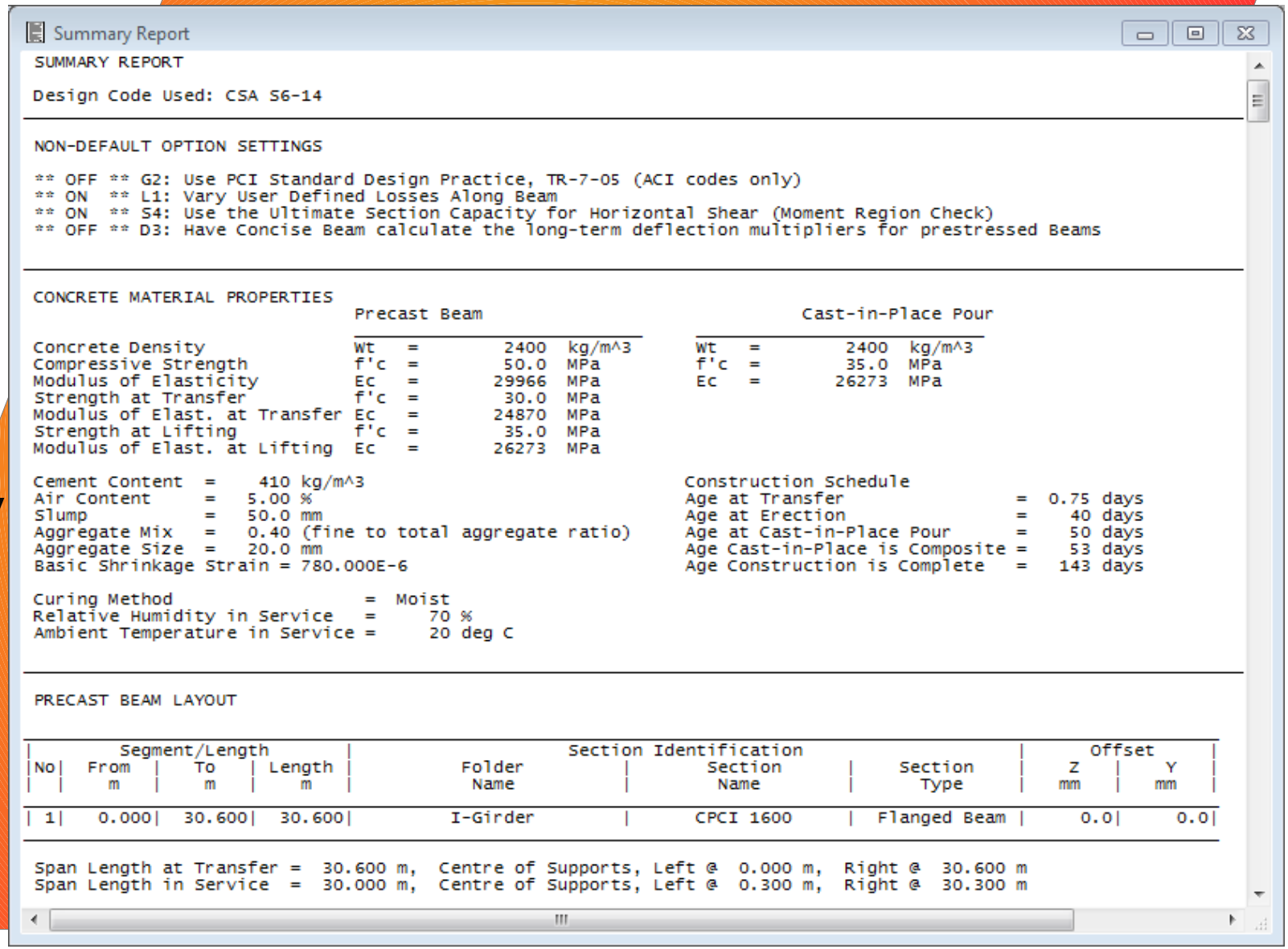
Summary Text Report



Summary Report

SUMMARY REPORT

Design Code Used: CSA S6-14

NON-DEFAULT OPTION SETTINGS

** OFF ** G2: Use PCI Standard Design Practice, TR-7-05 (ACI codes only)
** ON ** L1: Vary User Defined Losses Along Beam
** ON ** S4: Use the Ultimate Section Capacity for Horizontal Shear (Moment Region Check)
** OFF ** D3: Have Concise Beam calculate the long-term deflection multipliers for prestressed Beams

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CONCRETE MATERIAL PROPERTIES

		Precast Beam		Cast-in-Place Pour	
Concrete Density	Wt =	2400	kg/m^3	Wt = 2400	kg/m^3
Compressive Strength	f'c =	50.0	MPa	f'c = 35.0	MPa
Modulus of Elasticity	Ec =	29966	MPa	Ec = 26273	MPa
Strength at Transfer	f'c =	30.0	MPa		
Modulus of Elast. at Transfer	Ec =	24870	MPa		
Strength at Lifting	f'c =	35.0	MPa		
Modulus of Elast. at Lifting	Ec =	26273	MPa		

Cement Content = 410 kg/m^3
Air Content = 5.00 %
Slump = 50.0 mm
Aggregate Mix = 0.40 (fine to total aggregate ratio)
Aggregate Size = 20.0 mm
Basic Shrinkage Strain = 780.000E-6

Curing Method = Moist
Relative Humidity in Service = 70 %
Ambient Temperature in Service = 20 deg C

Construction Schedule
Age at Transfer = 0.75 days
Age at Erection = 40 days
Age at Cast-in-Place Pour = 50 days
Age Cast-in-Place is Composite = 53 days
Age Construction is Complete = 143 days

PRECAST BEAM LAYOUT

Segment/Length				Section Identification			Offset	
No	From m	To m	Length m	Folder Name	Section Name	Section Type	Z mm	Y mm
1	0.000	30.600	30.600	I-Girder	CPCI 1600	Flanged Beam	0.0	0.0

Span Length at Transfer = 30.600 m, Centre of Supports, Left @ 0.000 m, Right @ 30.600 m
Span Length in Service = 30.000 m, Centre of Supports, Left @ 0.300 m, Right @ 30.300 m

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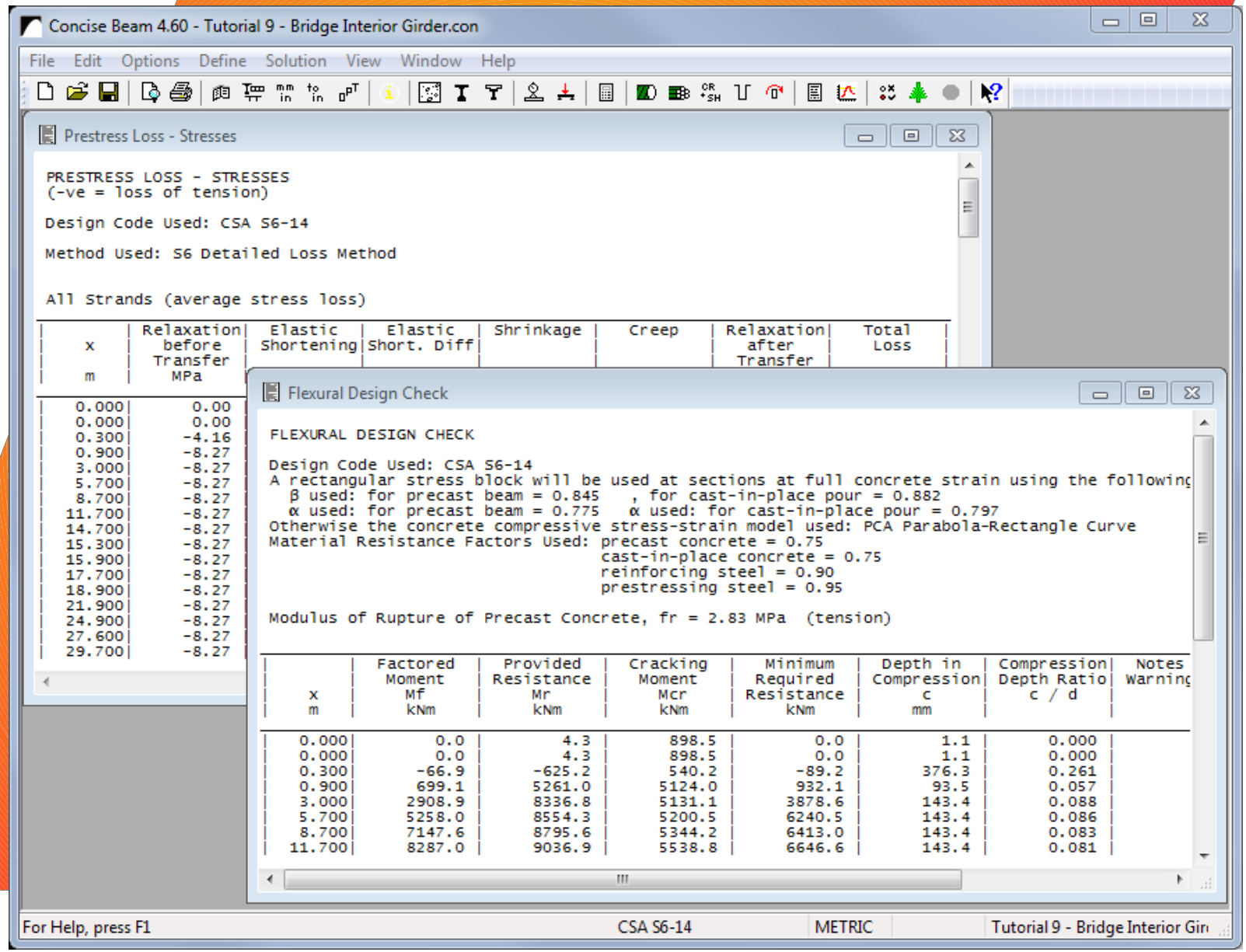
Detailed Text Reports



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Graph Output

- Graphs of analysis and design check results for:
  - Flexure, shear, and torsion analysis
  - Prestress forces
  - Concrete stresses
  - Deflection and camber estimates
  - Flexural and shear design checks
  - Stirrup, hollow-core fill and interface tie design checks

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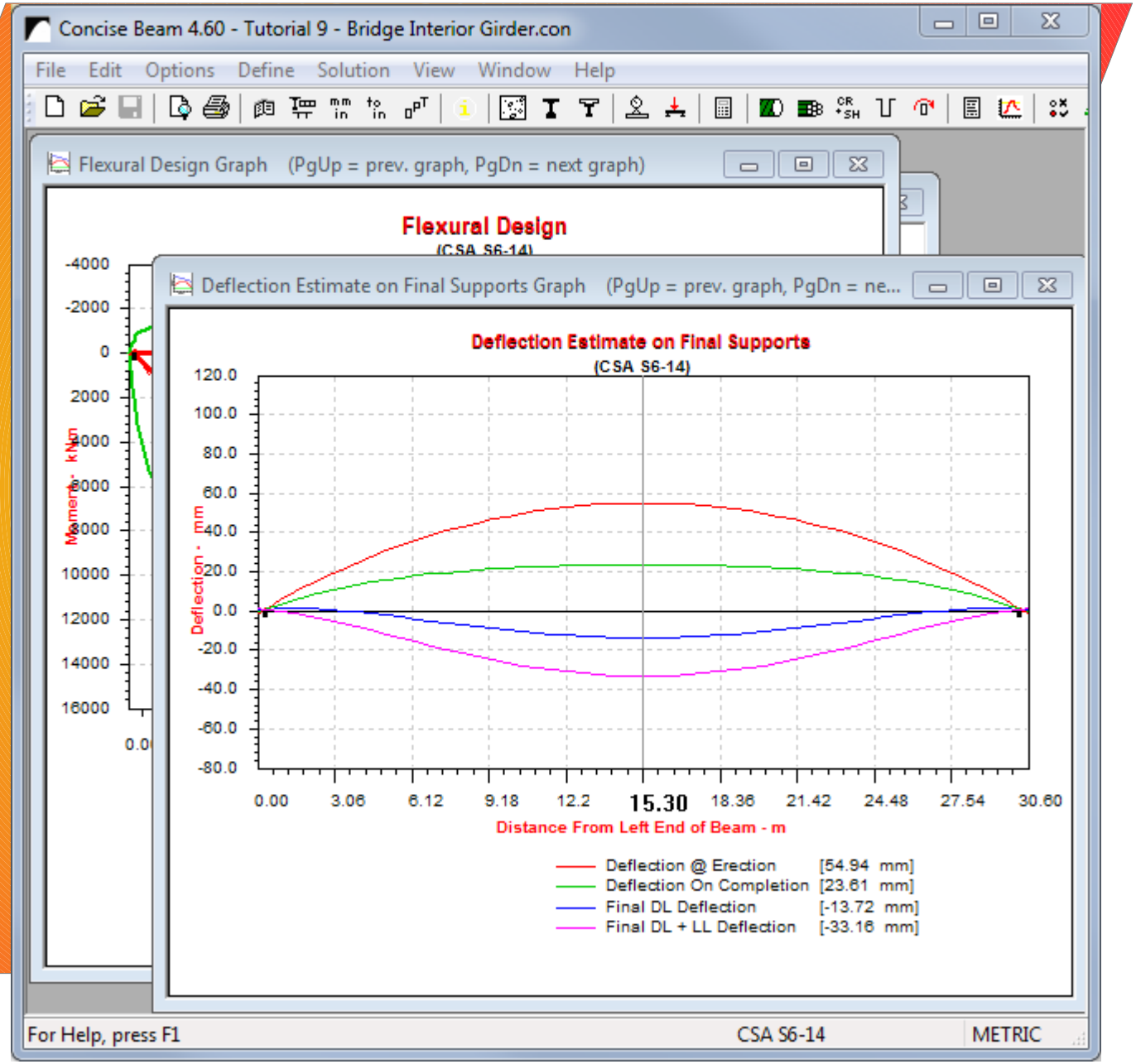
Graphs



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Computer Requirements

- Simply, any computer capable of running Microsoft Windows XP or later, including Windows 10
- Supports any Windows installed printer or PDF printer
- Internet access and e-mail address for program distribution, updates, announcements, and technical support

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How to Obtain Concise Beam

- Visit Black Mint Software's web site at www.BlackMint.com to download a free 30 day, fully-functional, evaluation copy of the program
- Current pricing, ordering, and payment options are available on the web site
- Black Mint Software can also be reached through the web site to answer any of your questions

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Visit Us at
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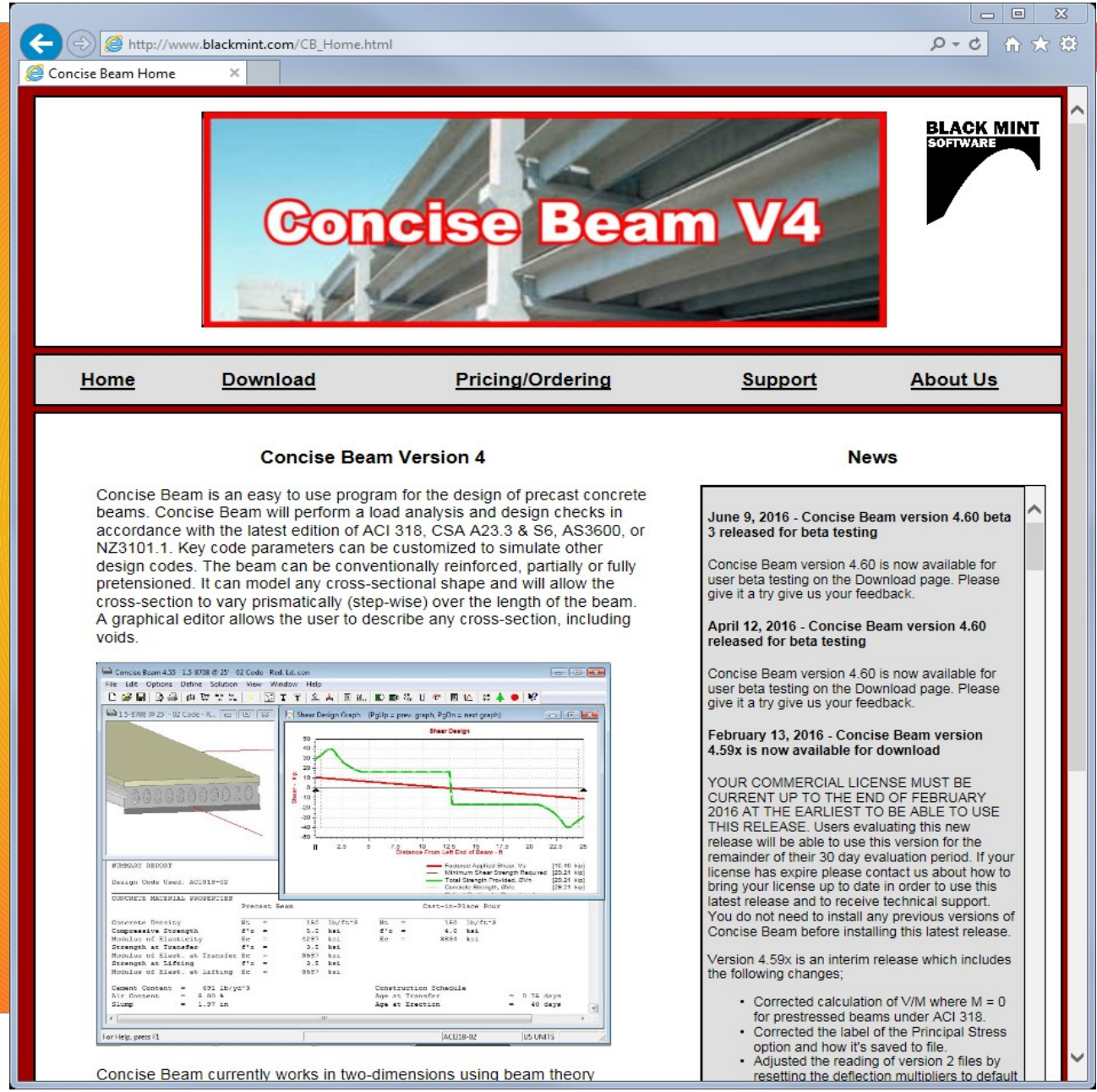
Contact Us at
ConciseBeam@BlackMint.com



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