



Tutorial for creation and analysis of a simple frame and result visualization

Educational Version 3.00

August 2012

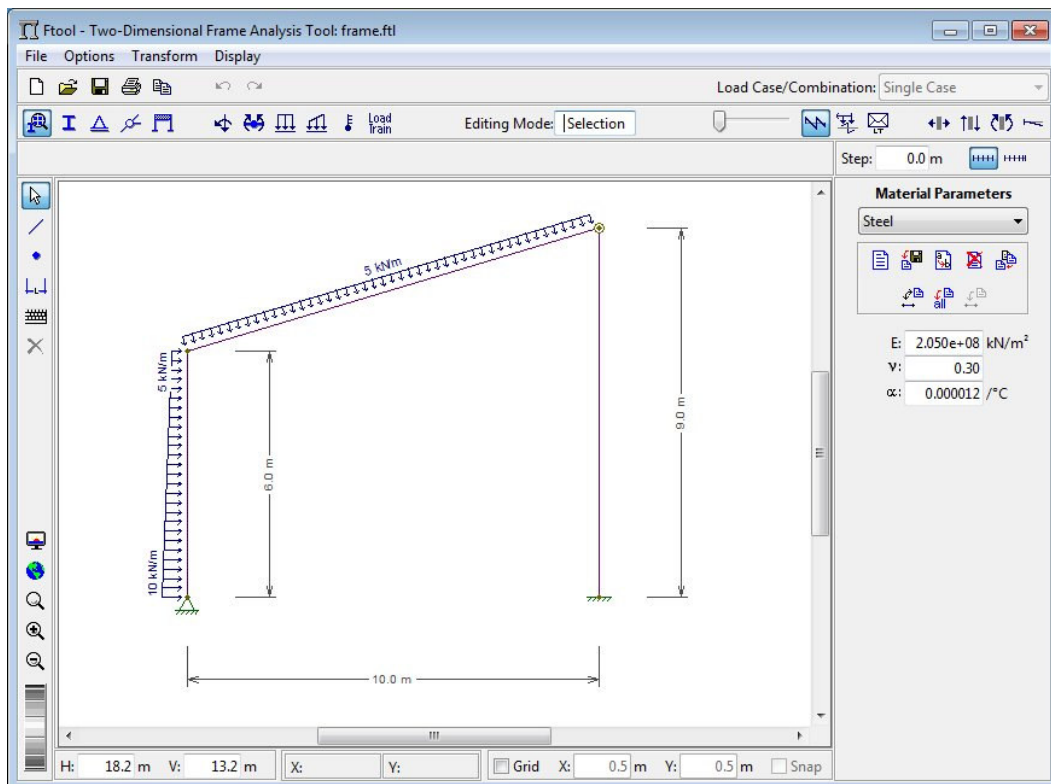
<http://www.tecgraf.puc-rio.br/ftool>

This file:

http://www.tecgraf.puc-rio.br/ftp_pub/lfm/ftool300tutorialframe.pdf

FTOOL model:

http://www.tecgraf.puc-rio.br/ftp_pub/lfm/ftool300frame.ftl





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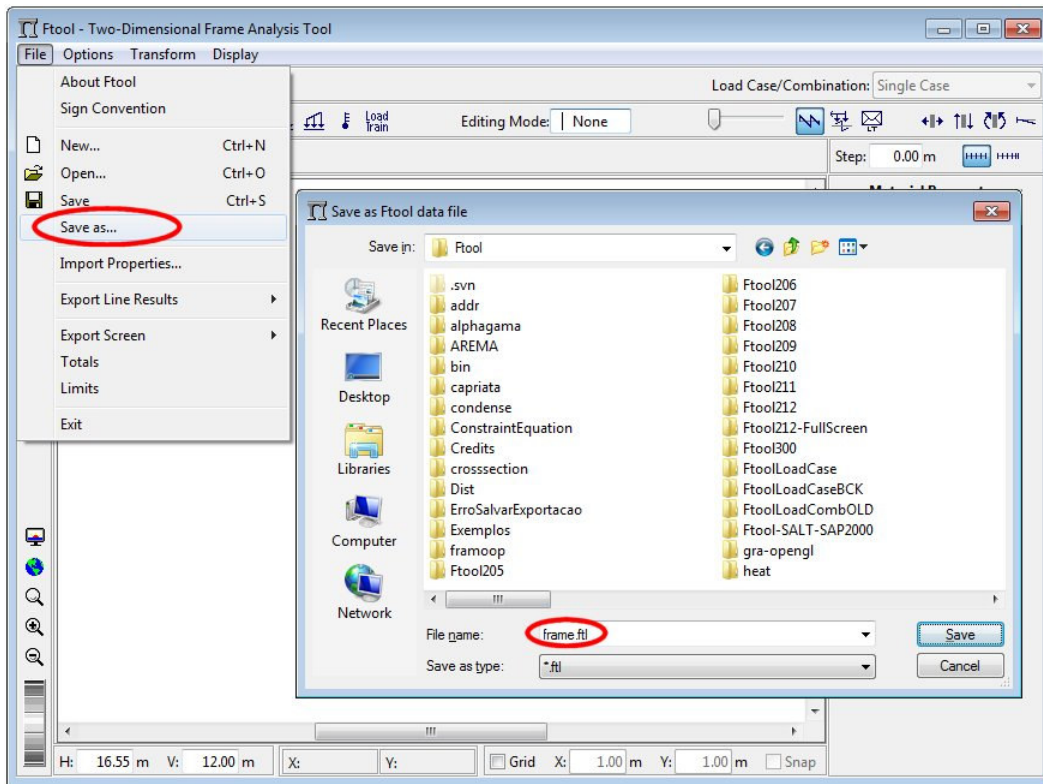


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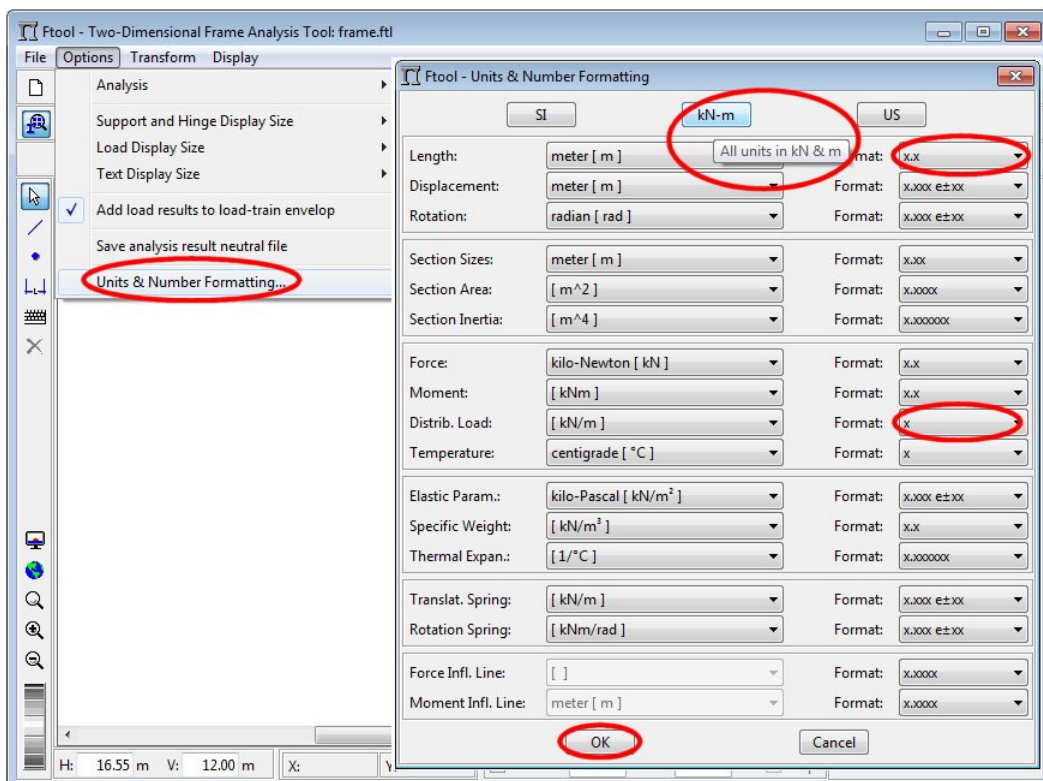
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Create a file for plane frame model (command "Save as... ")

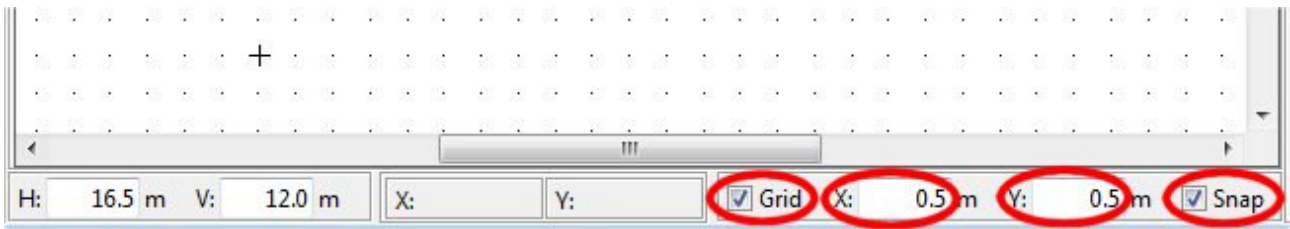


Specification of units and number formatting

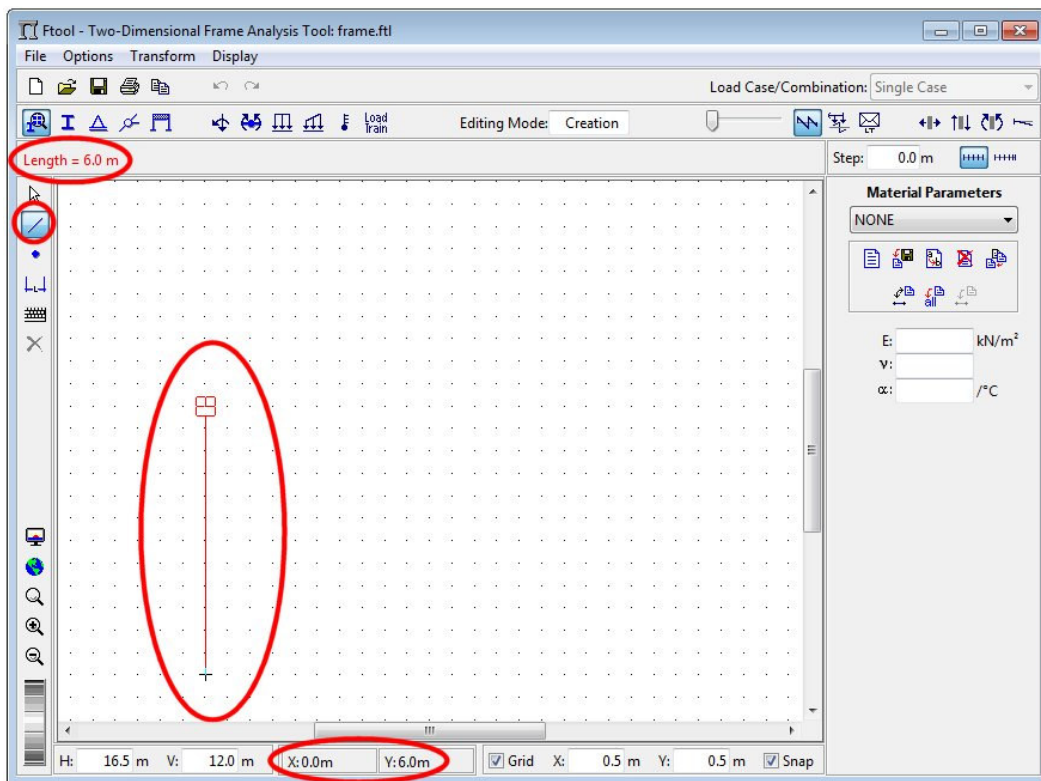




Grid of coordinates and grid point spacing with attraction (*snap*)

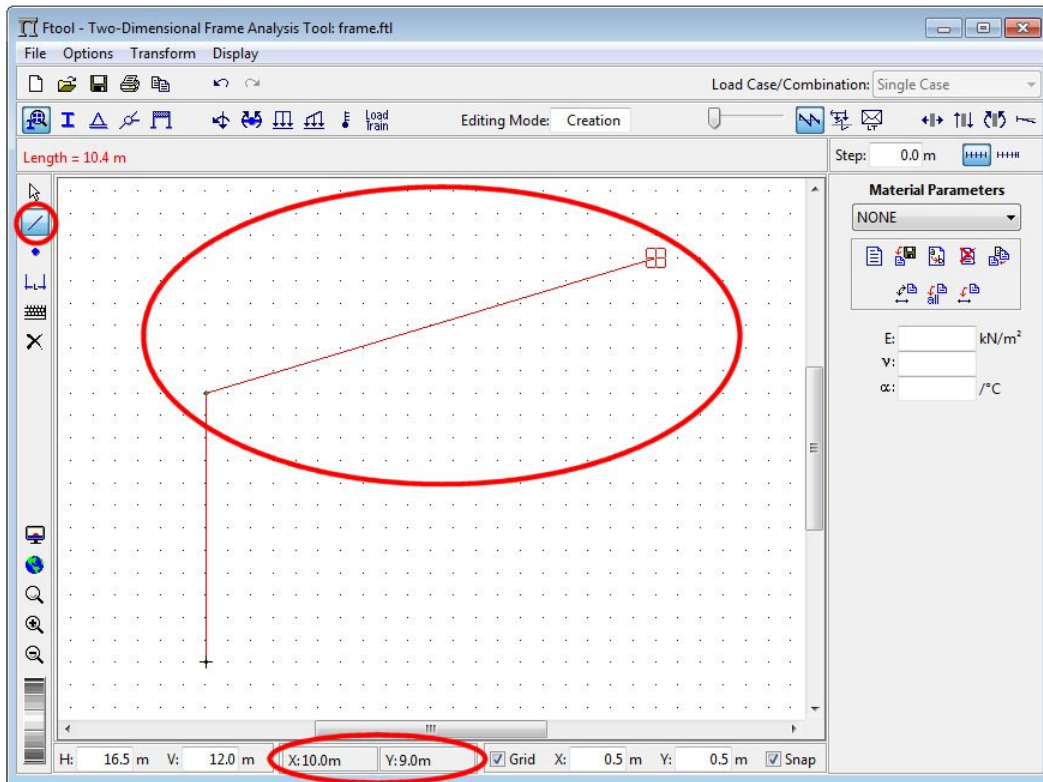


Insertion of first member

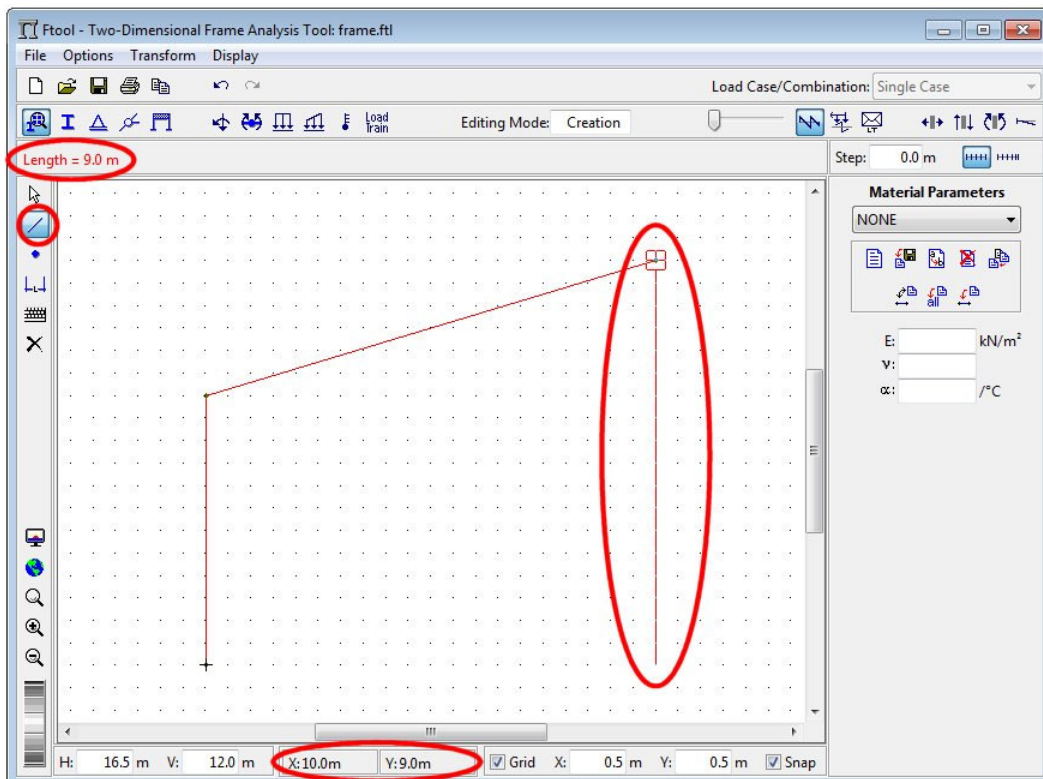




Insertion of second member

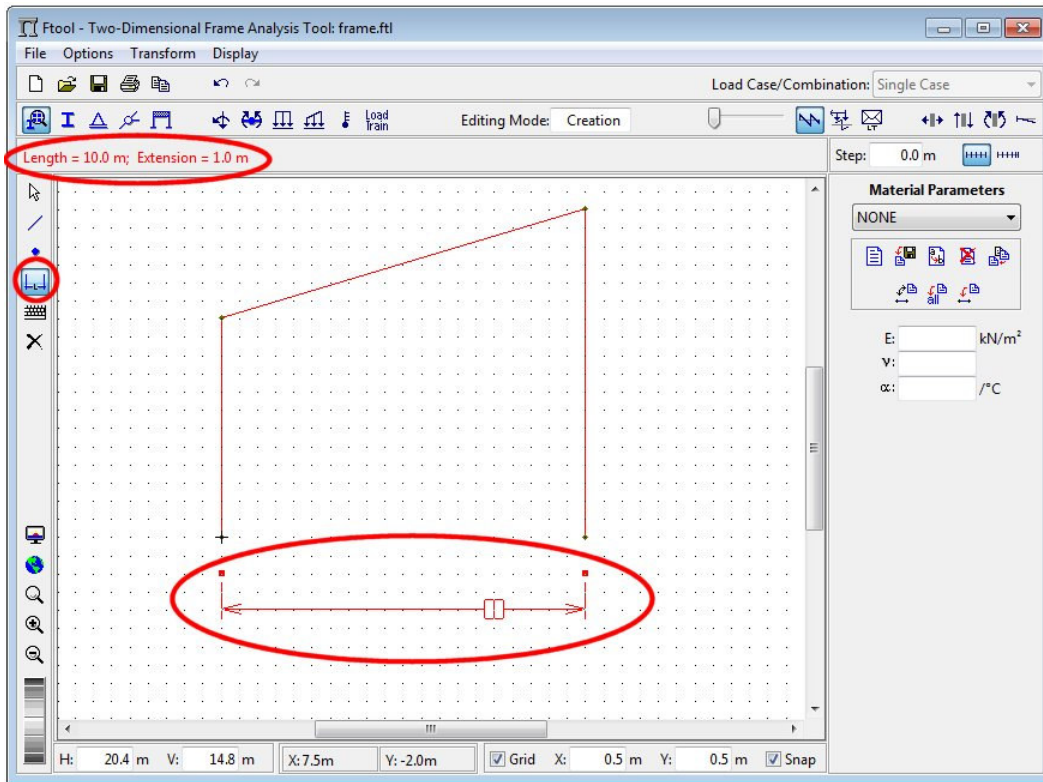


Insertion of third member

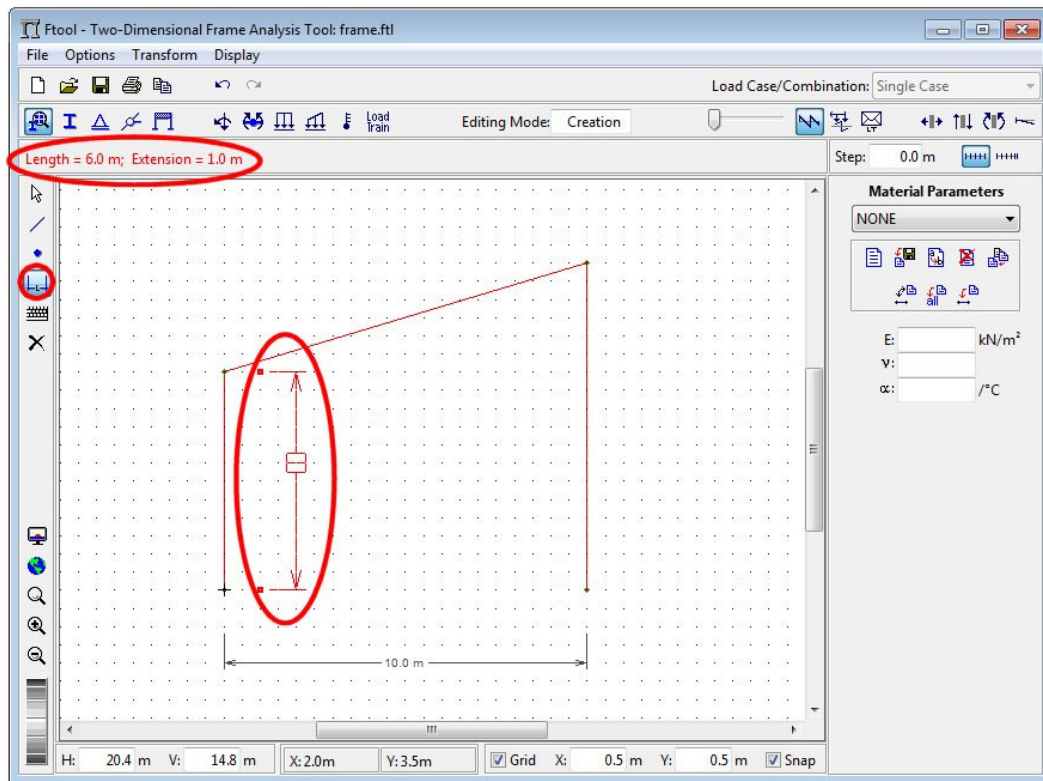




Insertion of horizontal dimension line

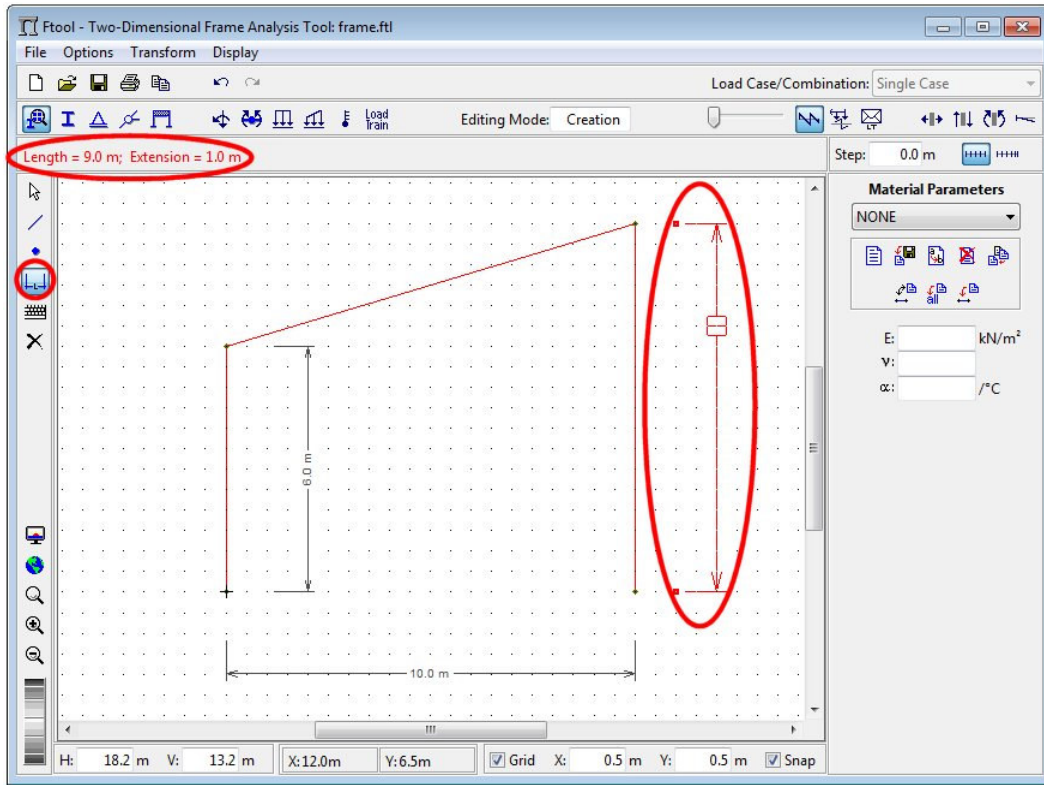


Insertion of left vertical dimension line

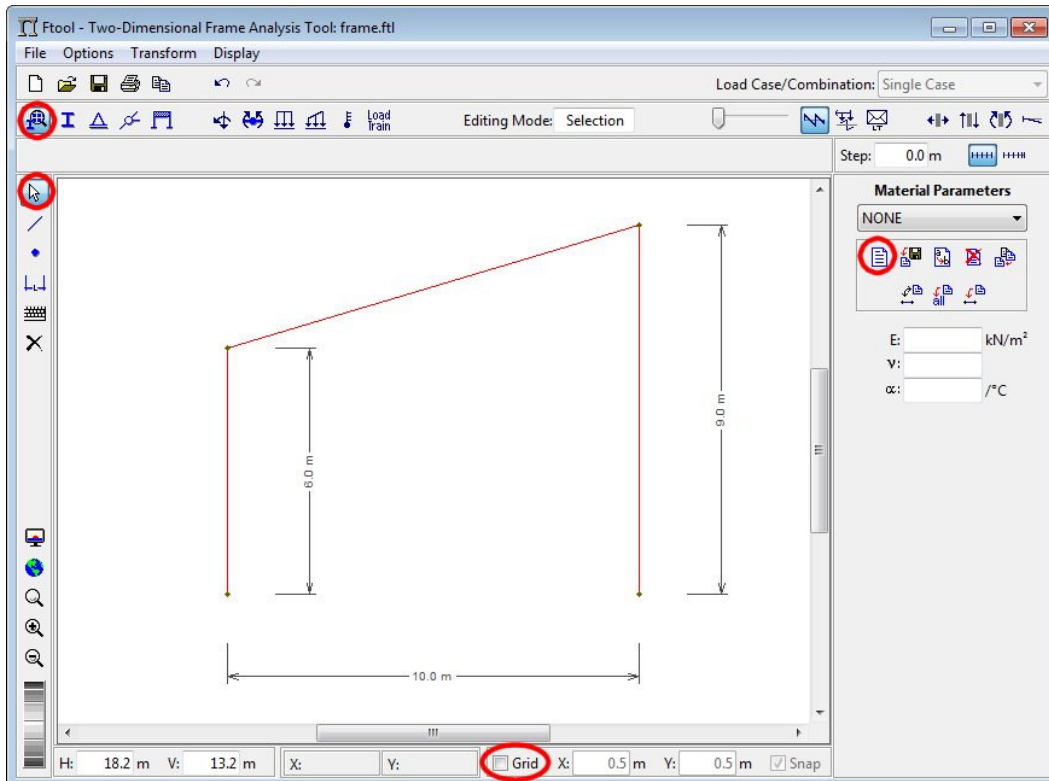




Insertion of right vertical dimension line

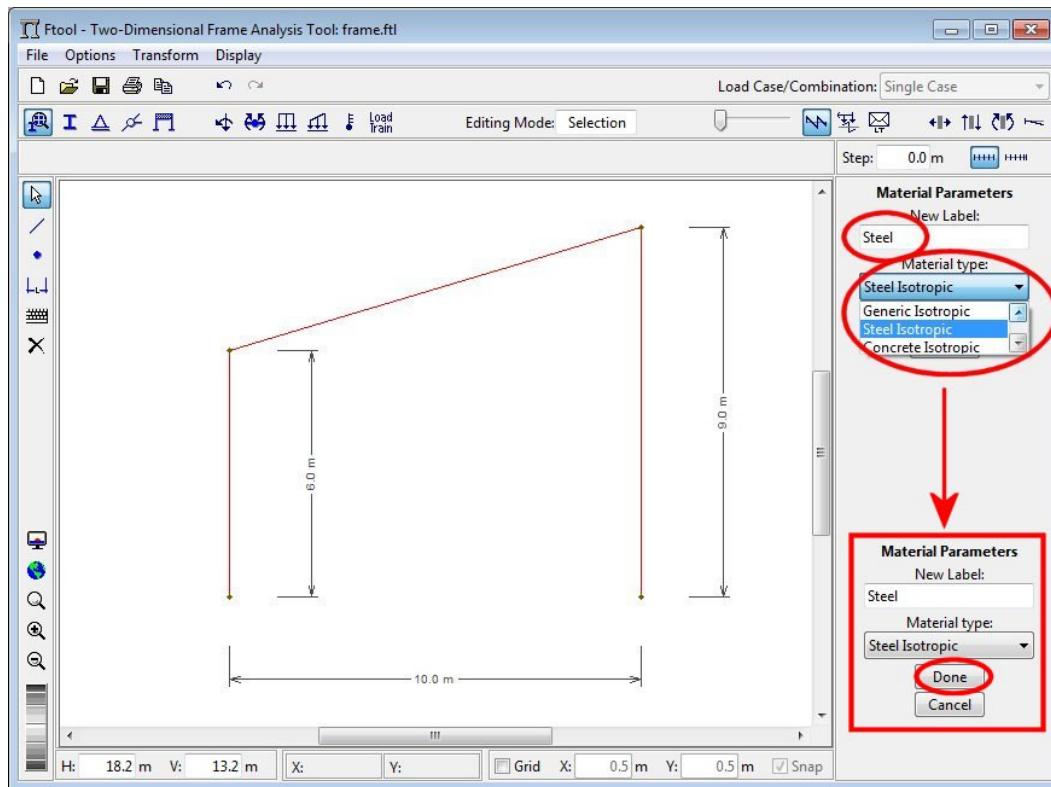


Creation of new material

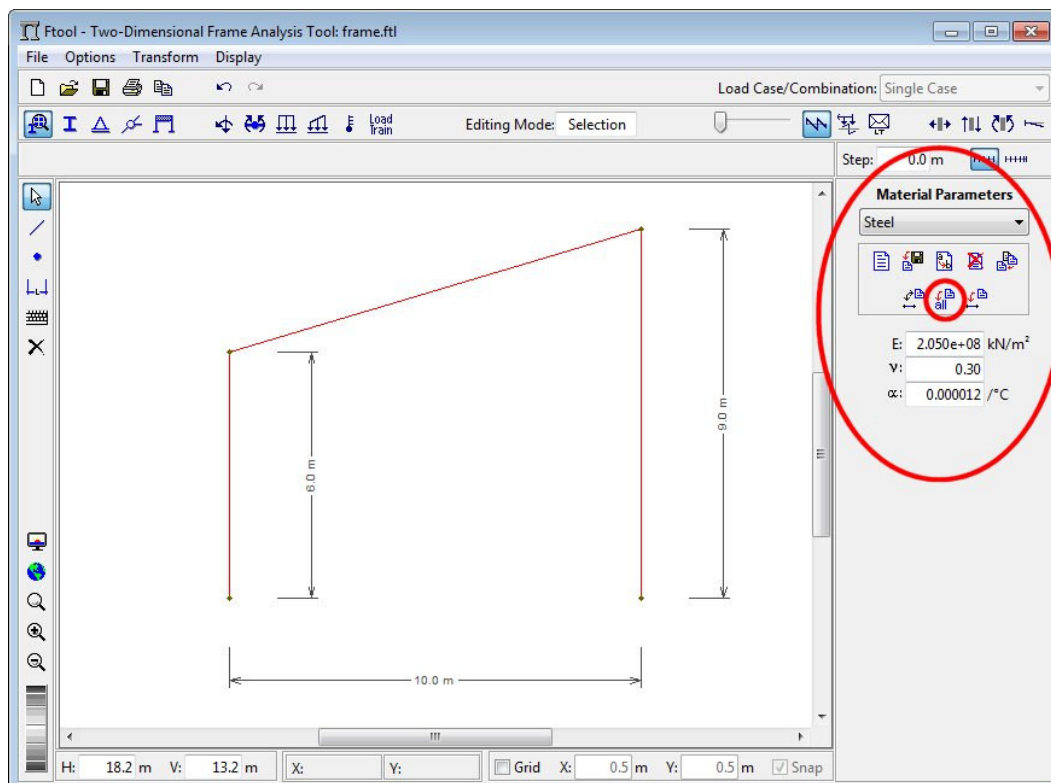




Selection of material type and name

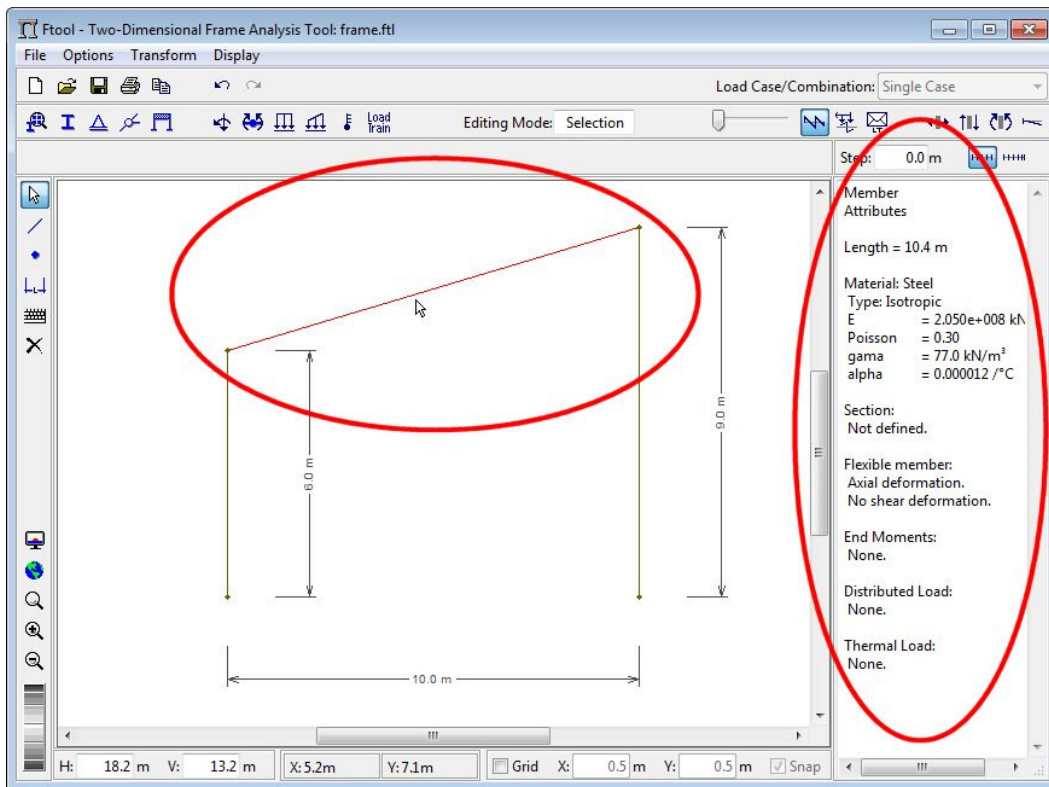


Assignment of created material to all members

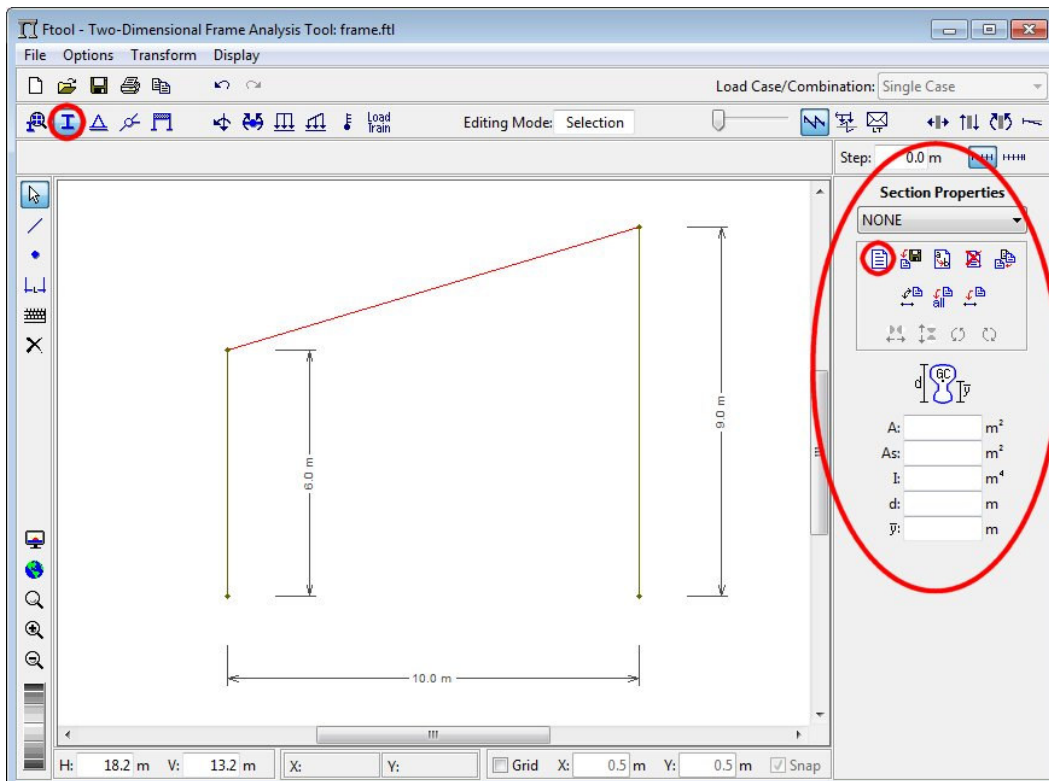




Verification of member parameters and attributes using mouse right button

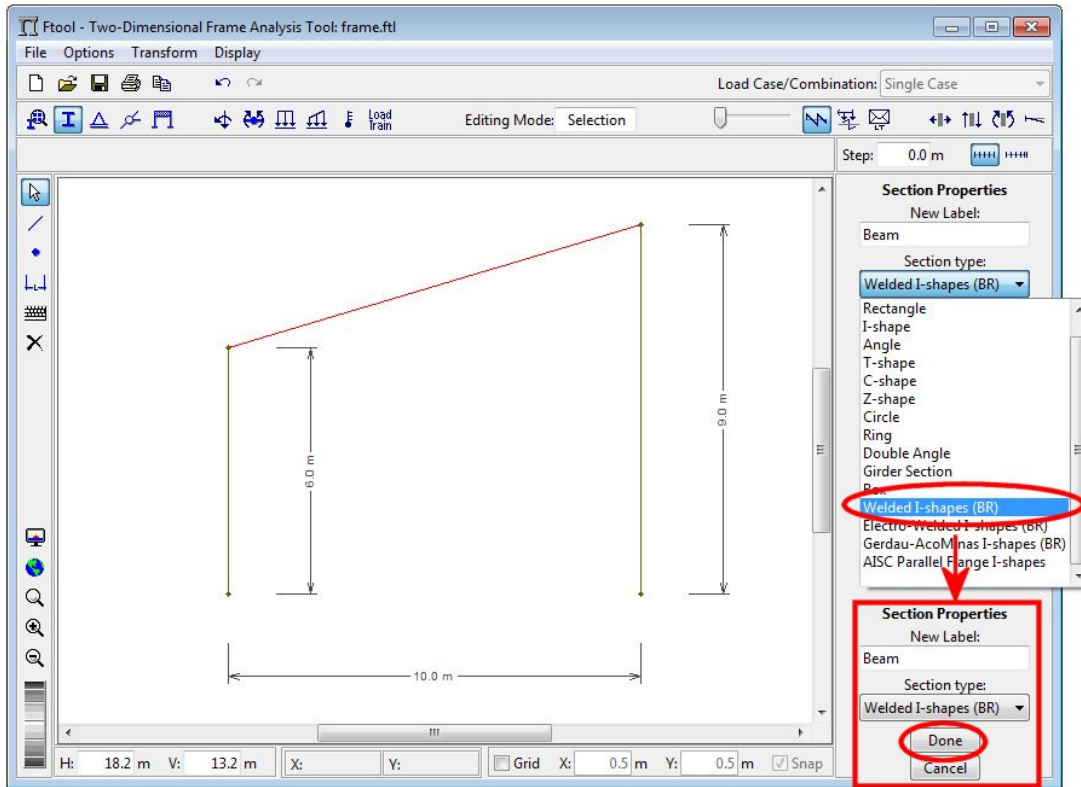


Creation of new cross-section for beam member

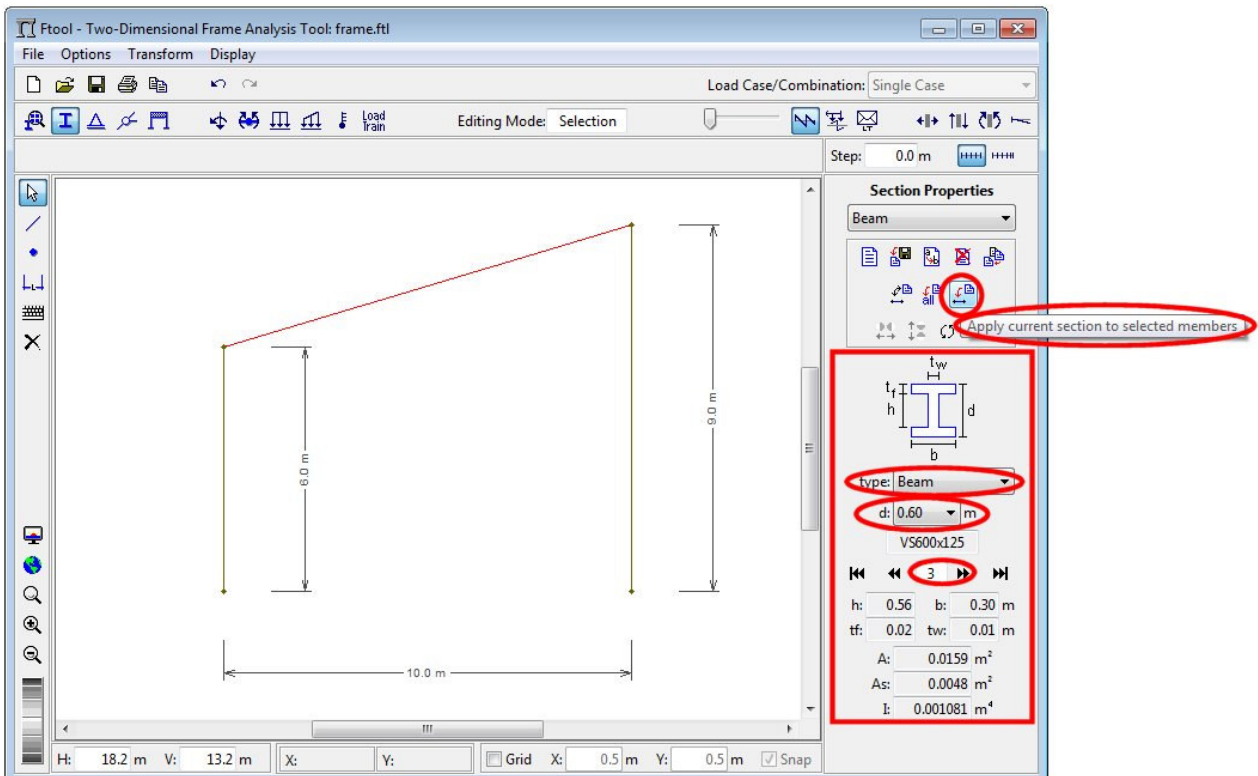




Selection of welded I-shape (NBR standard) for beam member

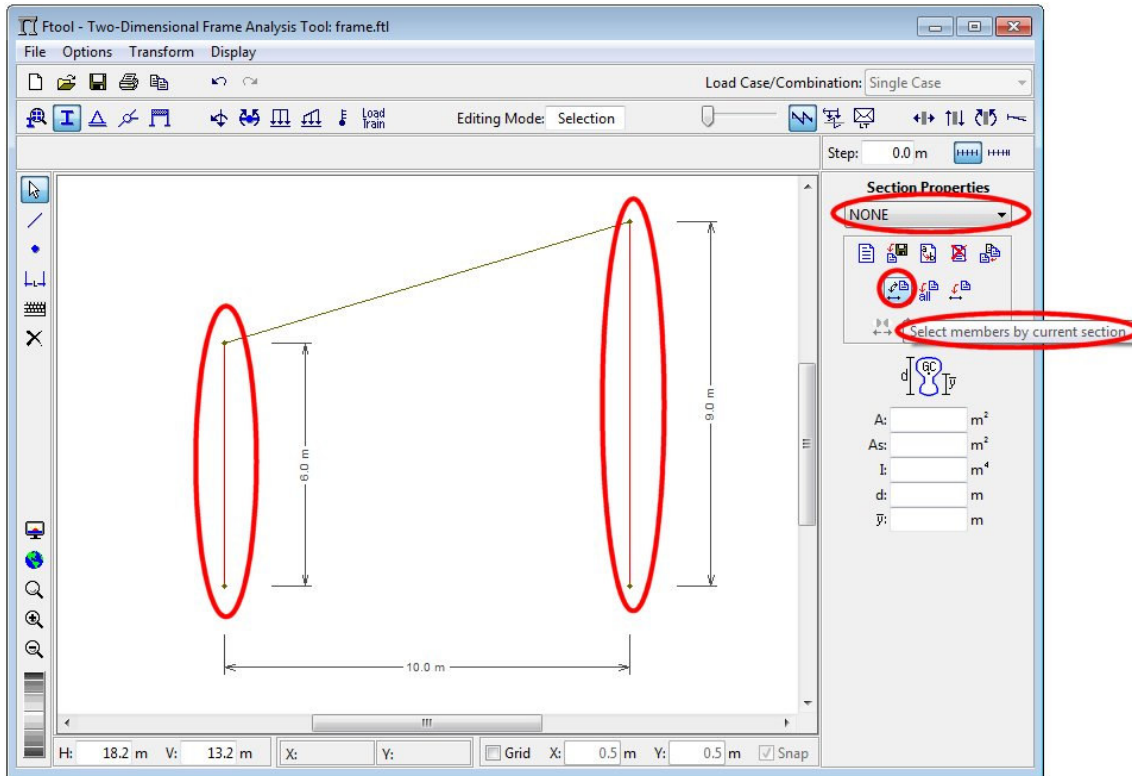


Definition of specific welded I-shape and assignment to beam member

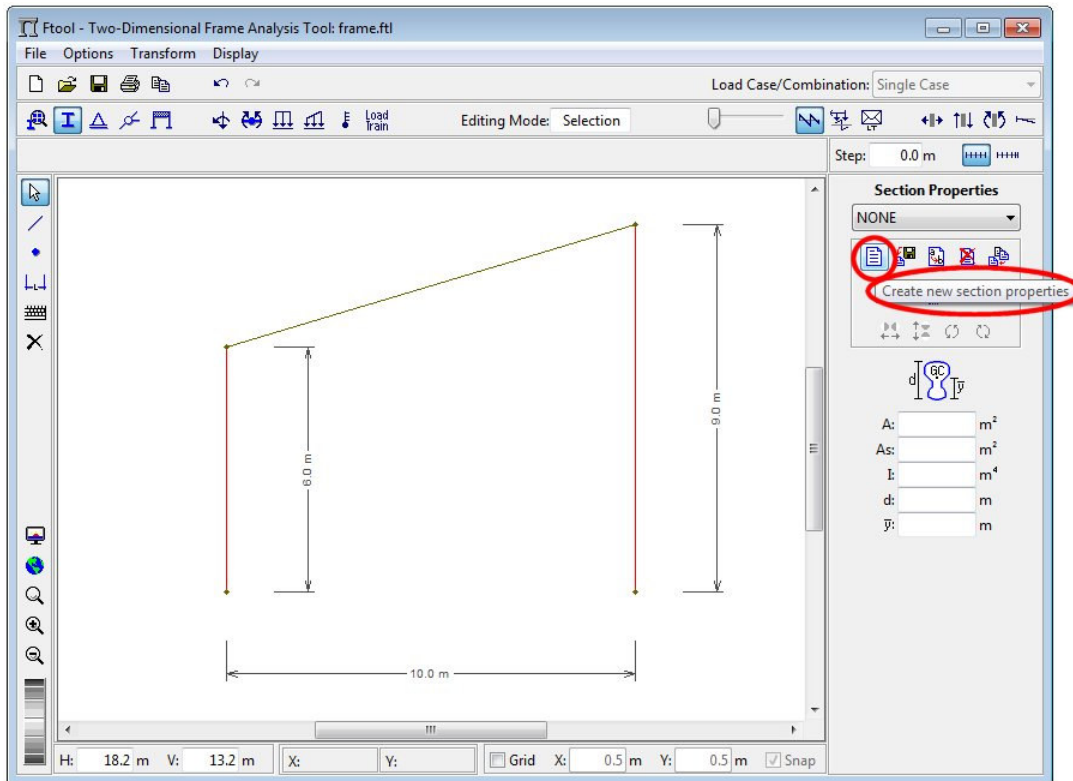




Selection of members by empty cross-section property set (*NONE*)

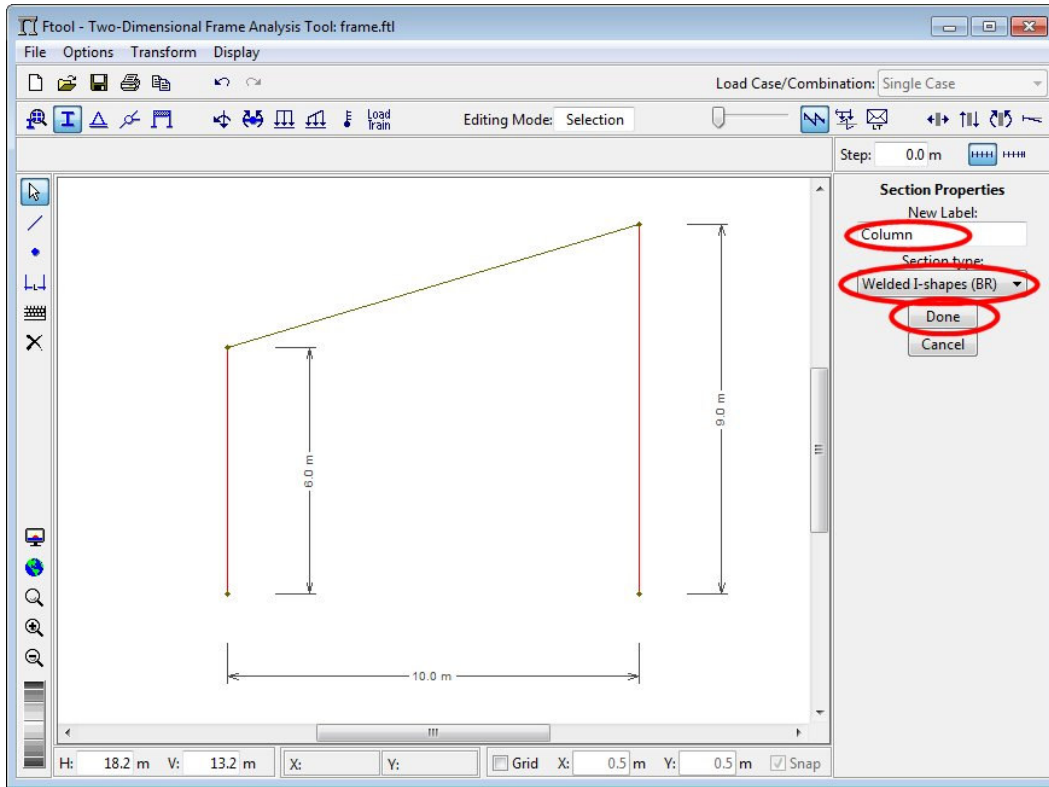


Creation of new cross-section for column members

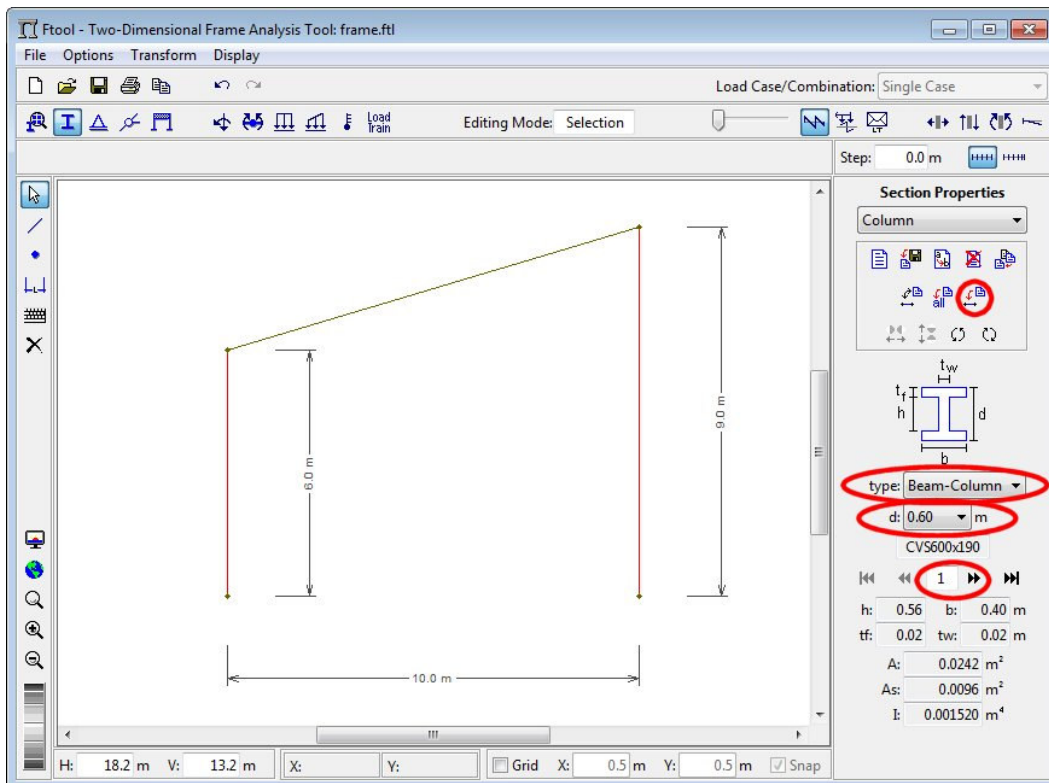




Selection of welded I-shape (NBR standard) for column members

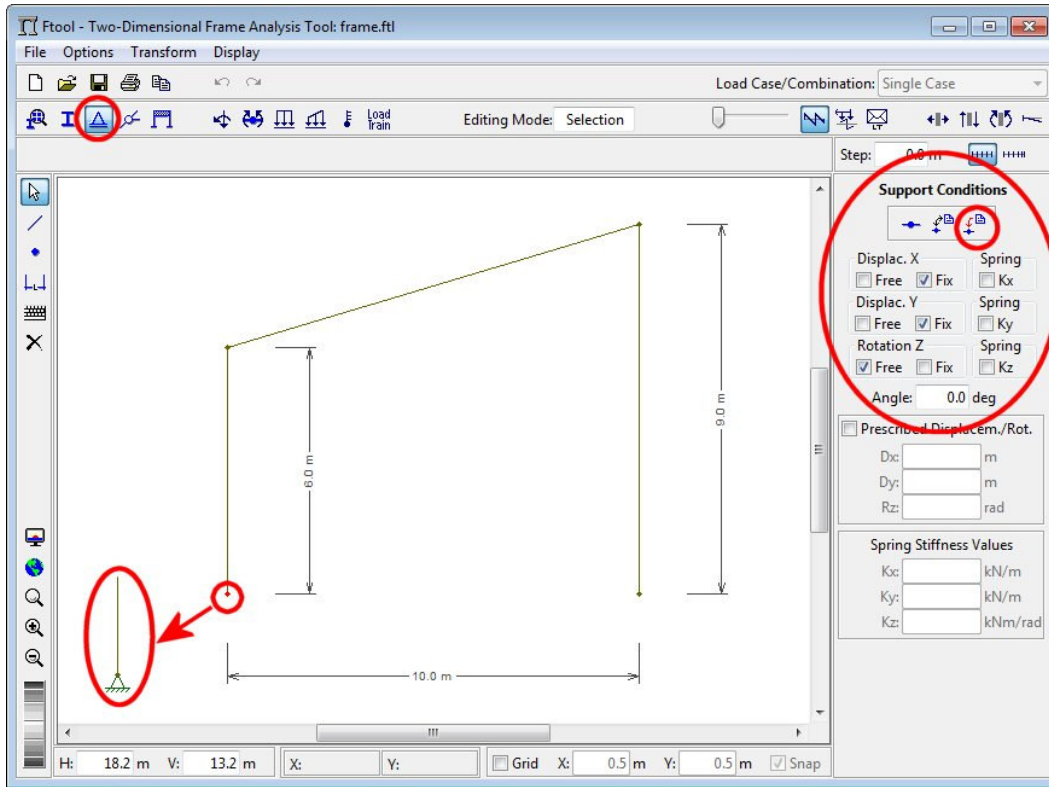


Definition of specific welded I-shape and assignment to column members

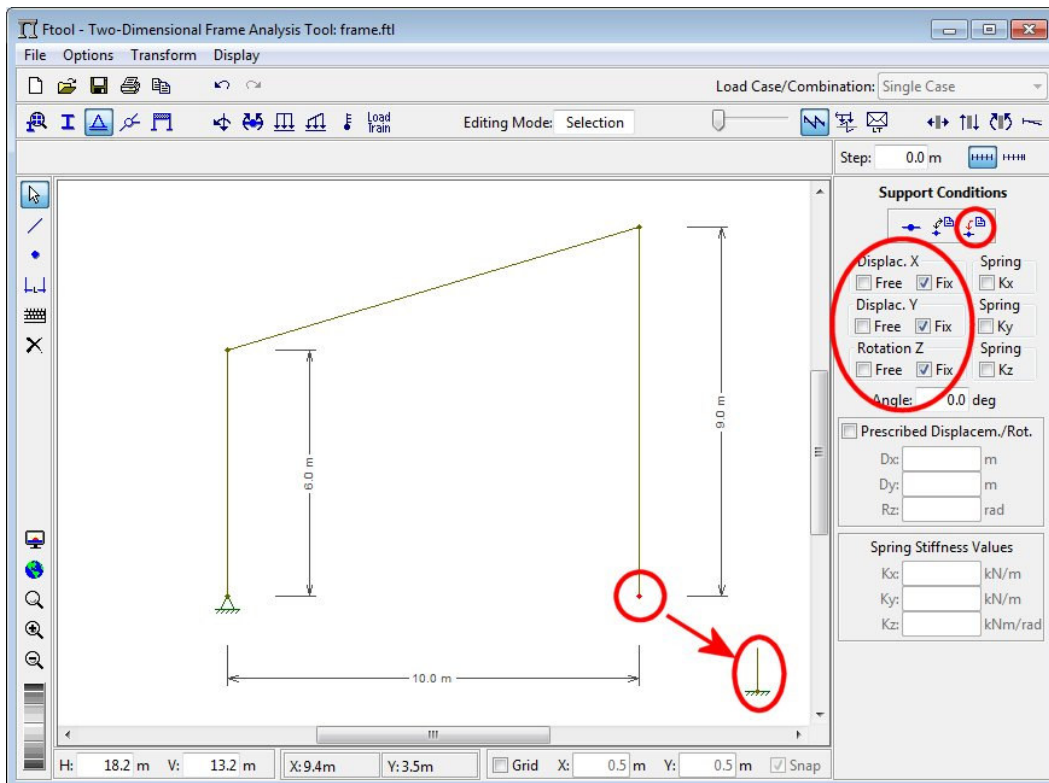




Definition of pin support and assignment to left inferior node

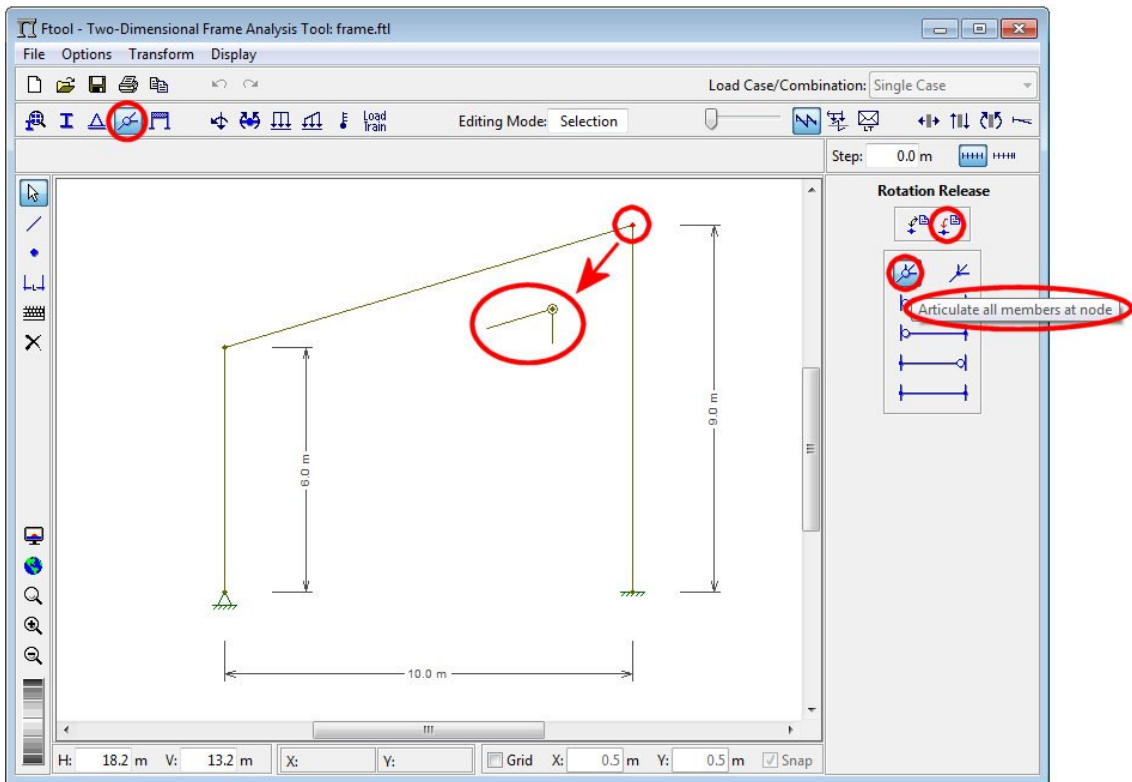


Definition of fixed support and assignment to right inferior node

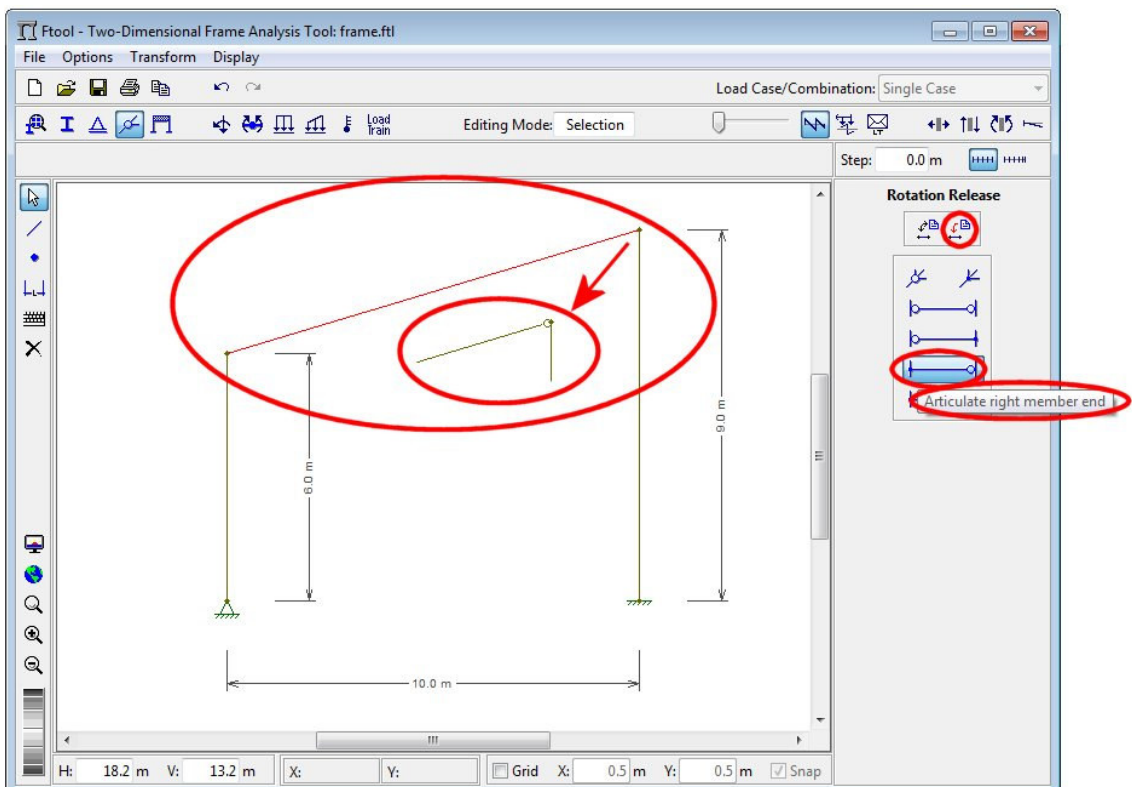




Insertion of a hinge at right top node

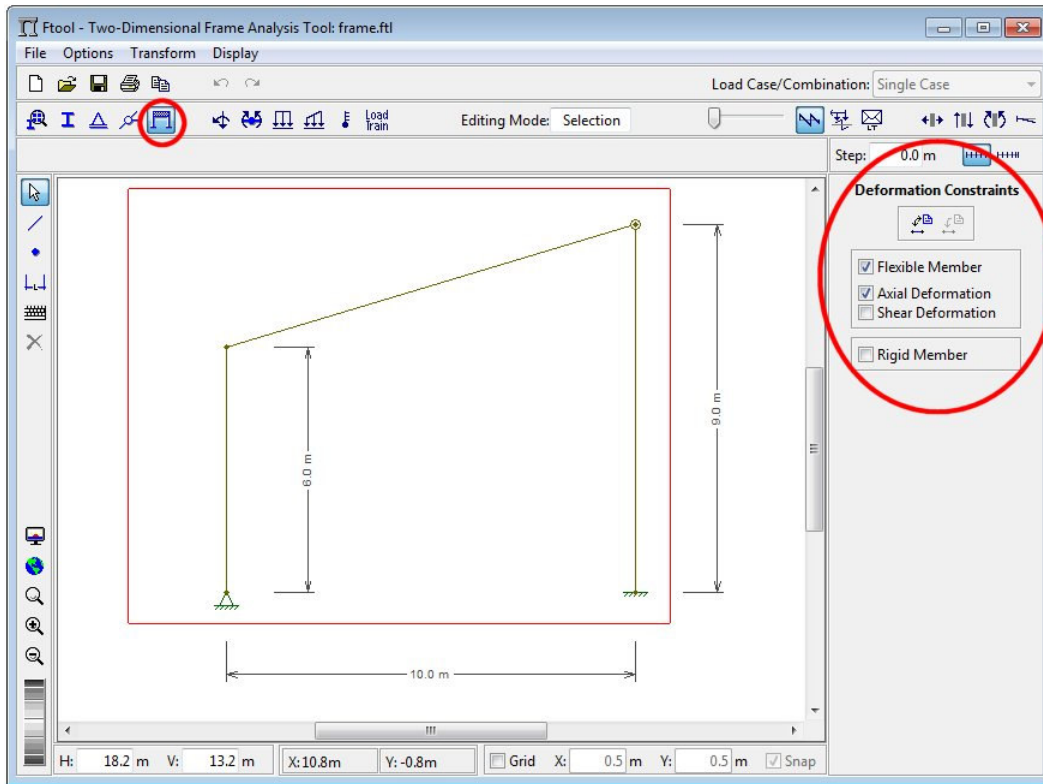


Alternative: insertion of hinge at right end of beam member

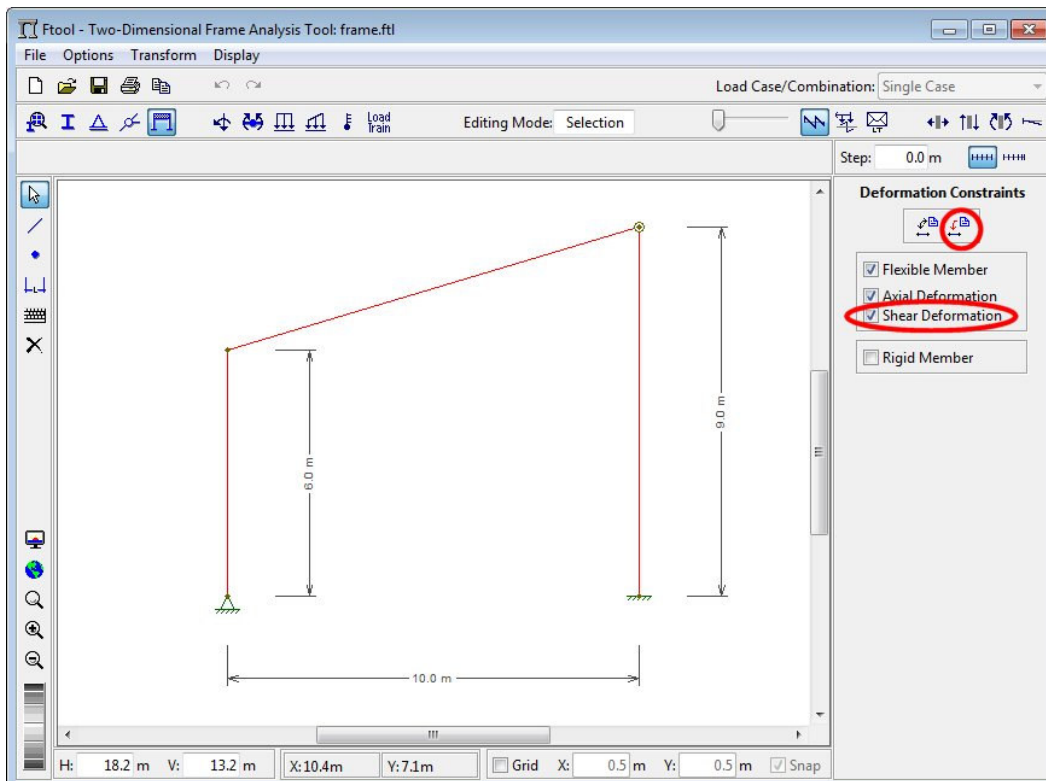




Member deformation constraints menu and fence selection of all members

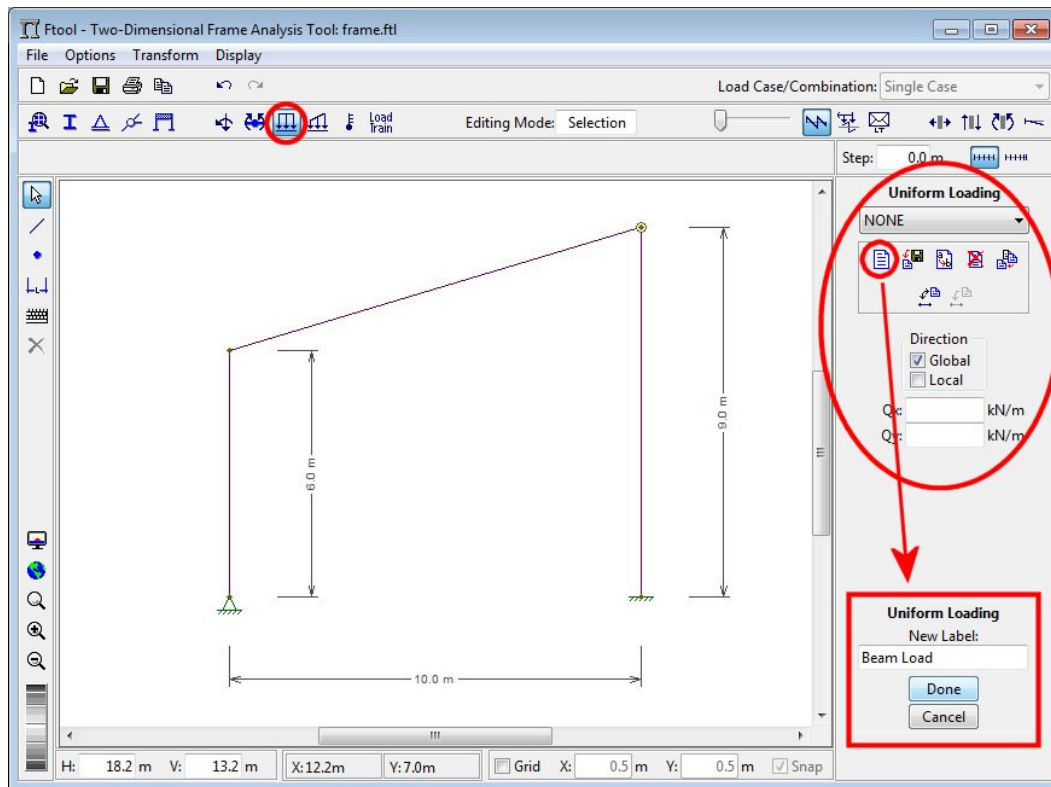


Turn on shear deformation and assignment to selected members

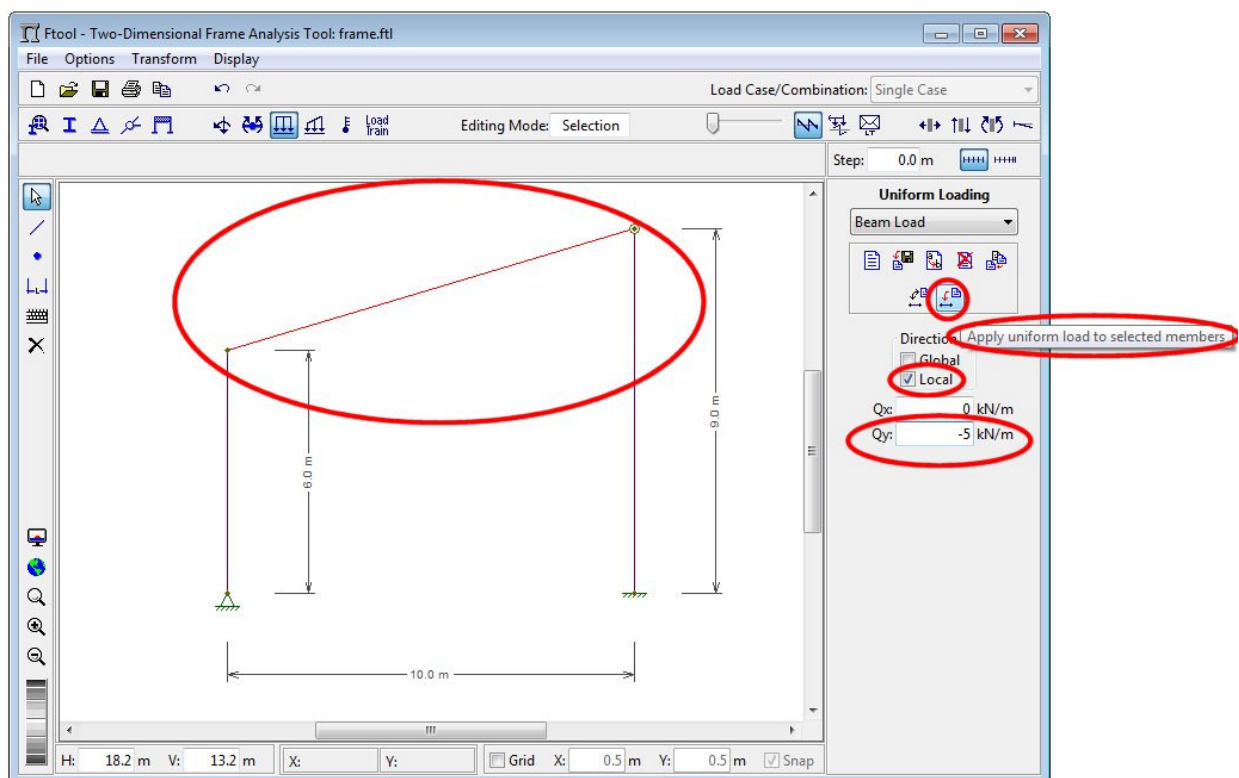




Creation of uniformly distributed force load for beam member

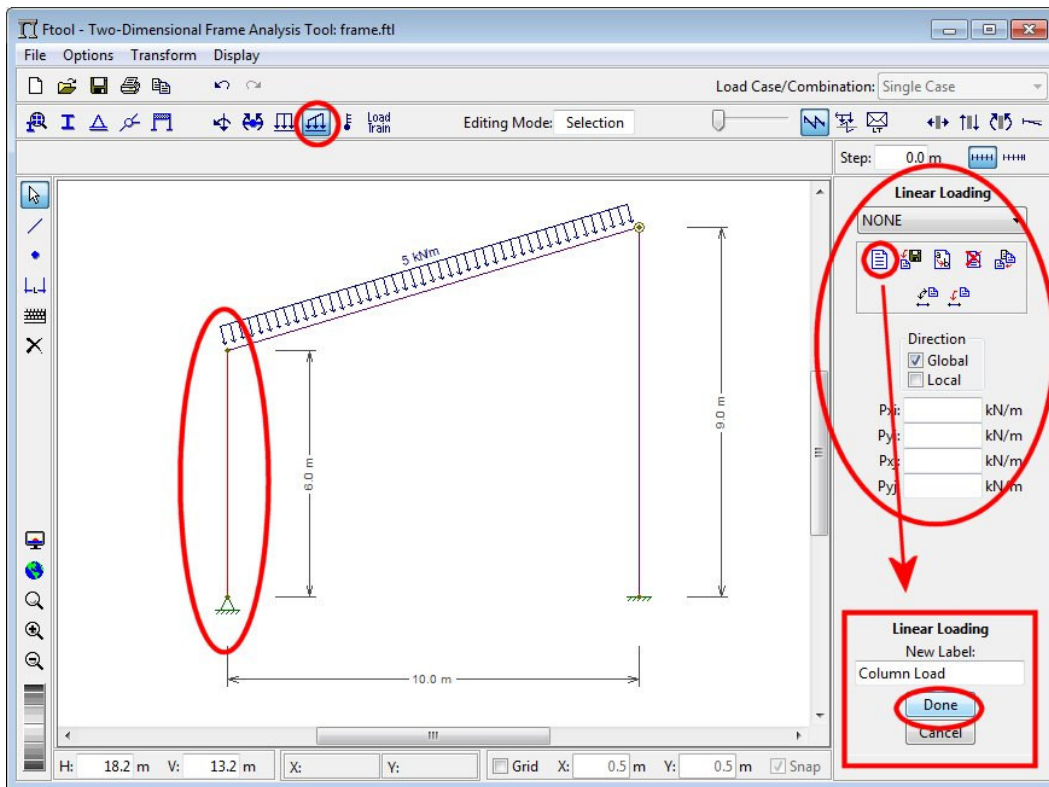


Definition of value of uniformly distributed force load and assignment to beam member in local system

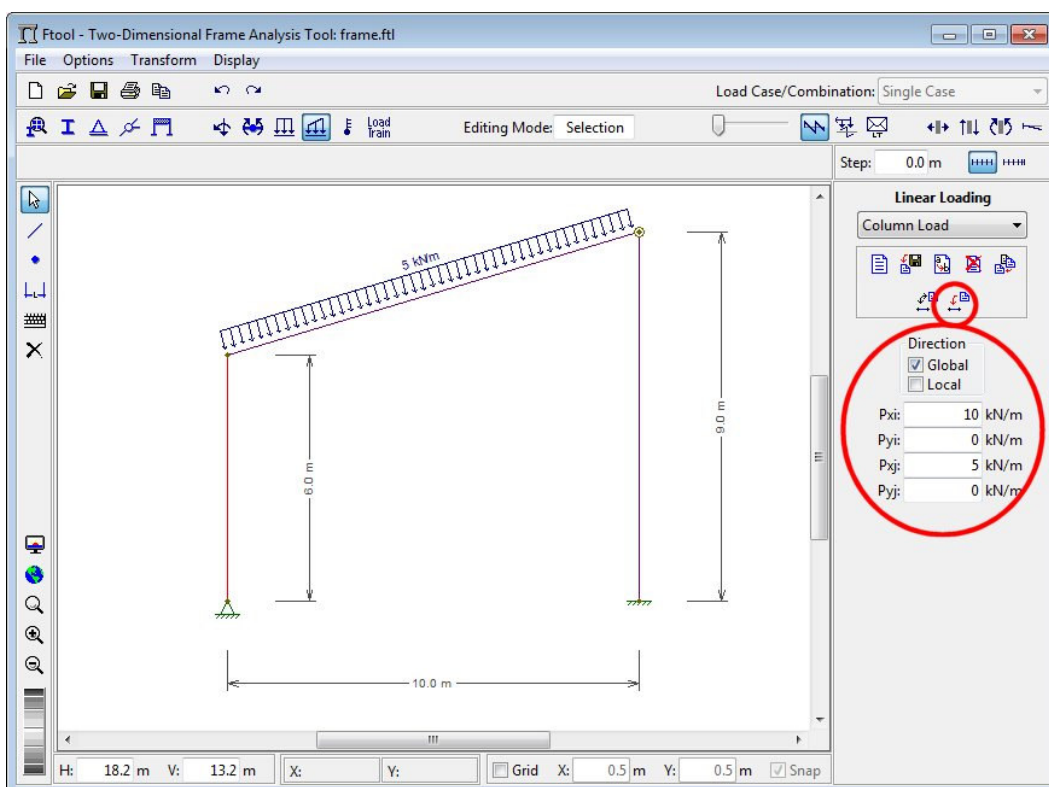




Creation of linearly distributed force load for left column

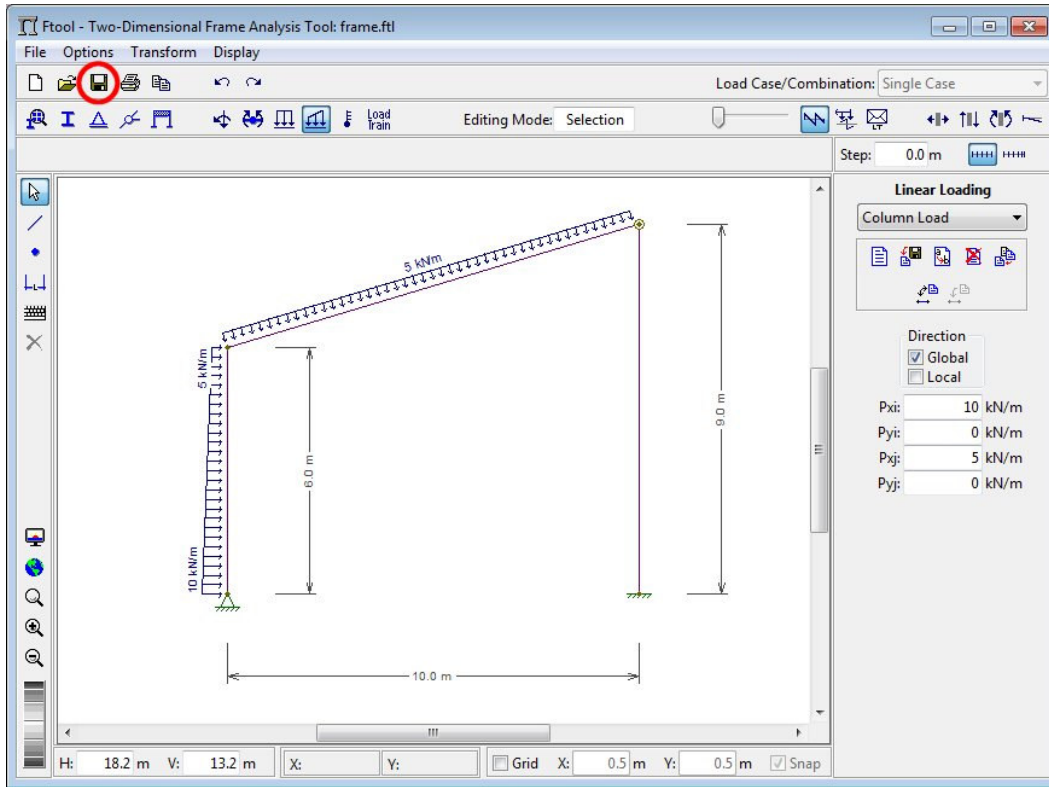


Definition of values of linearly distributed force load and assignment to right column member in global system

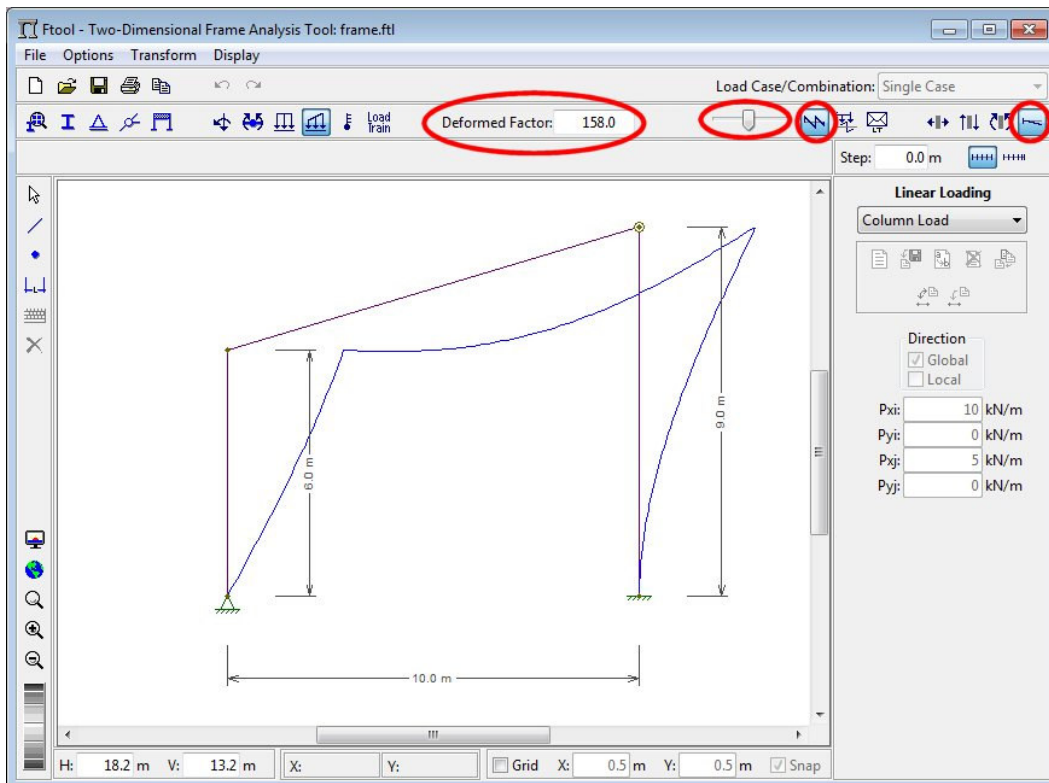




Salve complete model in the same created file (command "Save")

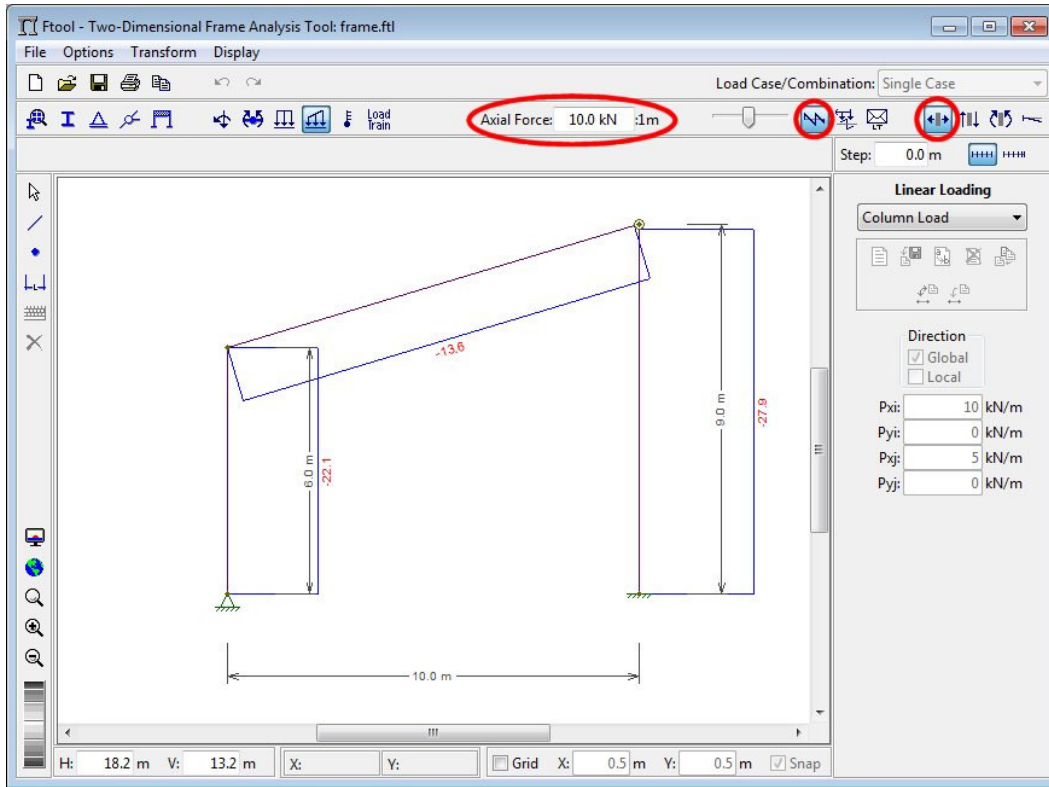


Visualization of model deformed configuration response

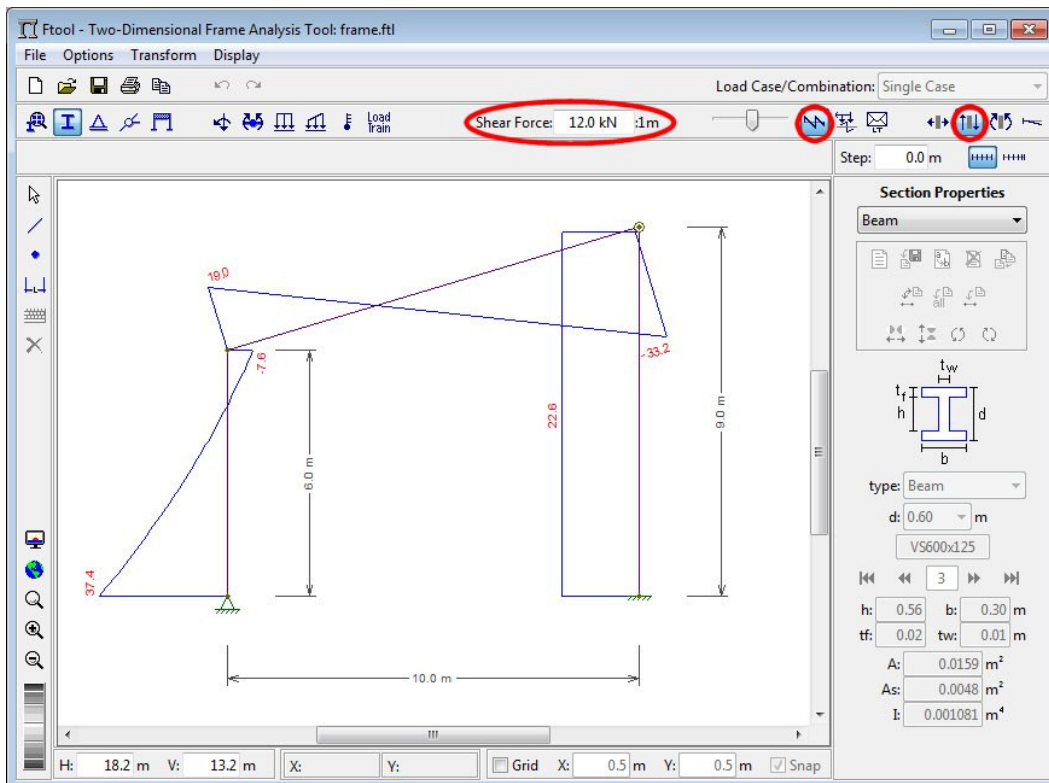




Visualization of model axial force diagram response

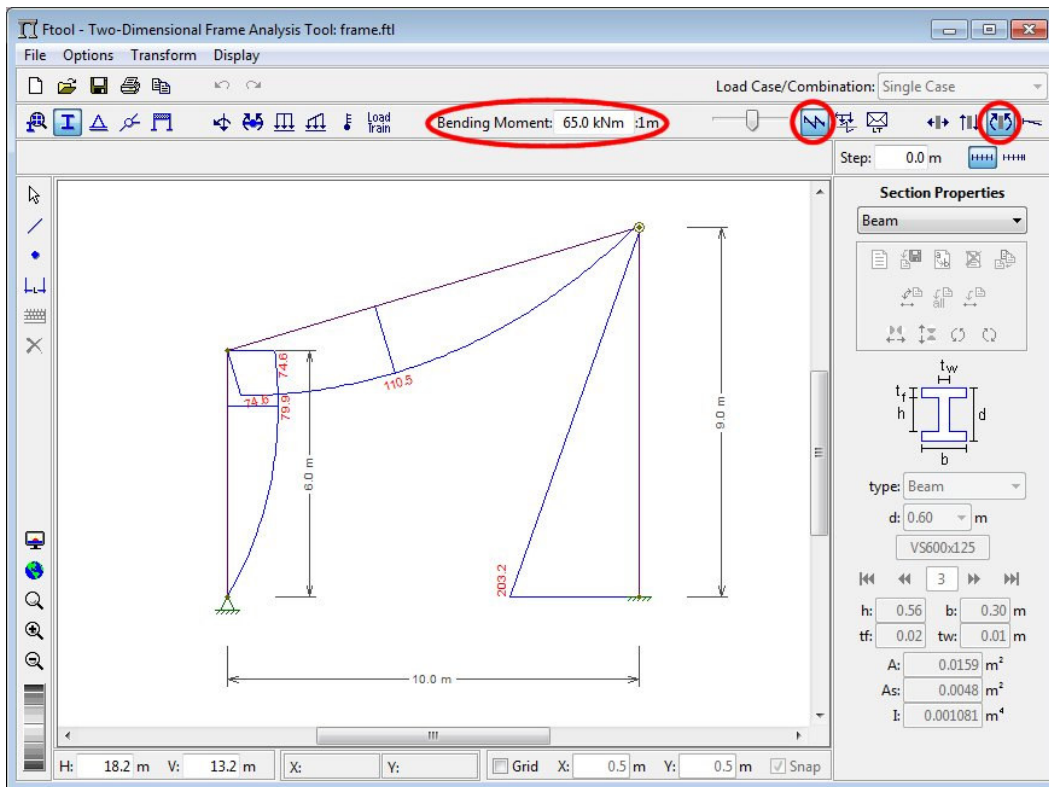


Visualization of model shear force diagram response





Visualization of model bending moment diagram response



Visualization of support reactions

