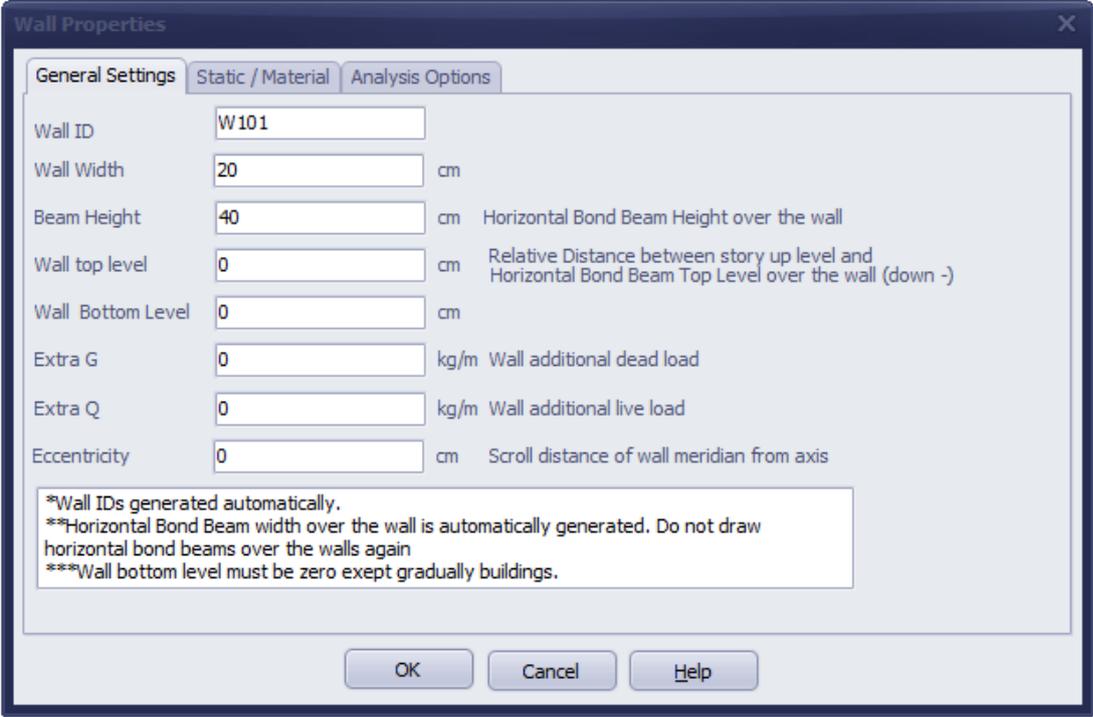


3.3- DRAWING WALL

To draw walls, wall properties form is displayed by clicking the  button in the main window.



Wall Properties

General Settings Static / Material Analysis Options

Wall ID

Wall Width cm

Beam Height cm Horizontal Bond Beam Height over the wall

Wall top level cm Relative Distance between story up level and Horizontal Bond Beam Top Level over the wall (down -)

Wall Bottom Level cm

Extra G kg/m Wall additional dead load

Extra Q kg/m Wall additional live load

Eccentricity cm Scroll distance of wall meridian from axis

*Wall IDs generated automatically.
**Horizontal Bond Beam width over the wall is automatically generated. Do not draw horizontal bond beams over the walls again
***Wall bottom level must be zero except gradually buildings.

OK Cancel Help

There are three tabs for data entry in the Wall Properties window.

3.3.1 General Settings Tab

There is no need to enter any information in the wall ID section. The software automatically assigns names to walls while drawing.

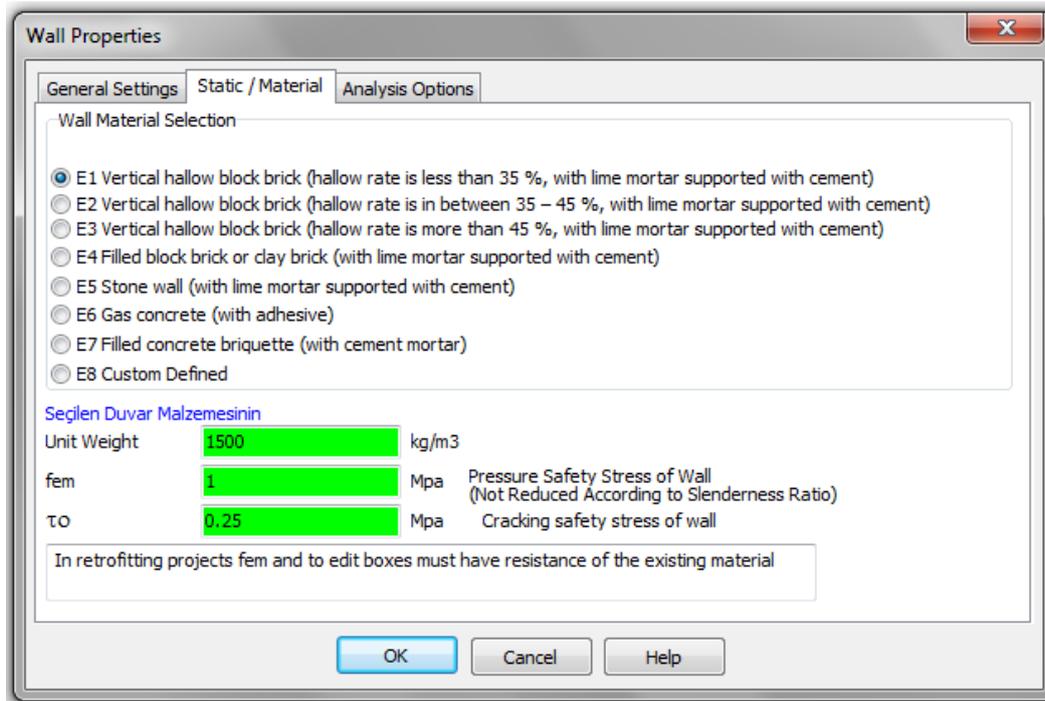
Wall widths are entered as centimeters.

Horizontal bond beam height over the wall is entered. Horizontal bond beam width over the wall is automatically generated as the width of the wall stated here. Horizontal bond beam over the wall is automatically drawn when the wall is drawn. No additional bond beam should be defined over the wall. If additional bond beams are defined over the wall; the slab load would be distributed both to the wall and horizontal bond beam, and the bond beam would transfer the load to the construction elements at endpoints; so load transfer would be performed twice. To avoid such error, no horizontal bond beam should be defined over the wall. Horizontal bond beams over the wall are automatically generated.

Wall Top Level value is the distance between story top coordinate point and horizontal bond beam top level over the wall. Wall Bottom Level is the distance of the wall base from the story base defined in

general story settings. Wall Bottom Level value should be zero except for gradual buildings. Distance values are positive (+) for up, negative (-) for down. Story coordinate settings and descriptions are performed in general story settings. If you prefer to draw a wall of the same height as the story, Wall Top Level and Wall Bottom Level values should remain zero.

For example, for a wall with the wall top level 1m below the story top level, wall top level value should be set to -100. After the value is set, horizontal bond beam top level over the wall would be 100 cm below the story level.



3.3.2 Static/Material Tab

If one of the defined walls E1-E7 is selected; wall unit weight, pressure safety stress of wall and cracking safety stress of wall values are selected from earthquake code tables and entered in relevant boxes. If E1-E7 defined material is used, those values need not be changed and are colored green.

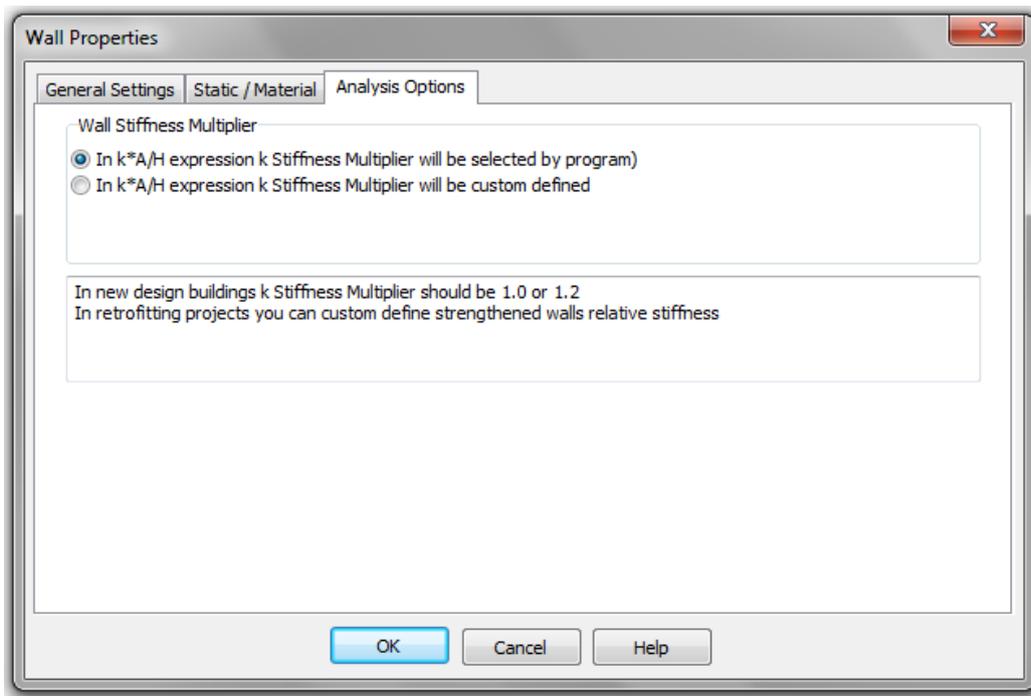
Table 5.3 of Earthquake Code 2007 is used for Pressure Safety Stress of Wall value (fem) that is automatically selected. If desired, user can perform modeling by entering values obtained from methods within the scope of Turkish Earthquake Code 2007, 5.3.2 Pressure Safety Stress on Walls or other methods and experiments.

In retrofitting projects, fem and t0 boxes shall be filled with current material strengths. Current material strengths are Pressure Safety Stress of Wall (not reduced according to slenderness ratio) and Cracking Safety Stress of Wall, obtained empirically in the existing building. Cracking safety stress of the wall is the shear resistance stress of the wall calculated empirically, without vertical loads.

For information about the necessity of performing pressure strength experiments, refer to articles related to Existing Building Reviews and Retrofits.

Unit weights of walls can be calculated by the user and can be entered to the software as kg/m^3 ; or the values given in the program can be used for E1-E7 materials.

3.3.3 Analysis Options



In retrofit projects, custom values can be defined for k stiffness factor, by reasons like considering composite section relative stiffness or using different relative wall stiffness.

If the option to select k multiplier by the program is clicked, k value will be set to 1,2 if there is a vertical bond beam or a perpendicular wall at wall end; otherwise, k value will be 1.0.