Andhra Pradesh State Skill Development Corporation

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Extended Three-Dimensional Analysis of Building System

Defining materials

DEFINING MATERIALS

Objective

This chapter describes how to define material properties like concrete (M30, M25..Etc) and Steel (HYSD415, HYSD500...etc.)

Template generated models typically rely on program defined material and section properties. The following sections will show how to define additional properties or review program defaults.

Material Properties

Click the Define menu > Material Properties command to display the Define Materials form shown in Figure 4-1, or under the Model tab on the Model Explorer expand the Properties branch and then the Materials branch to see a list of the defined material properties (a right-click on the Materials branch will display a context sensitive menu).

Use this form to add, modify, or delete material properties.

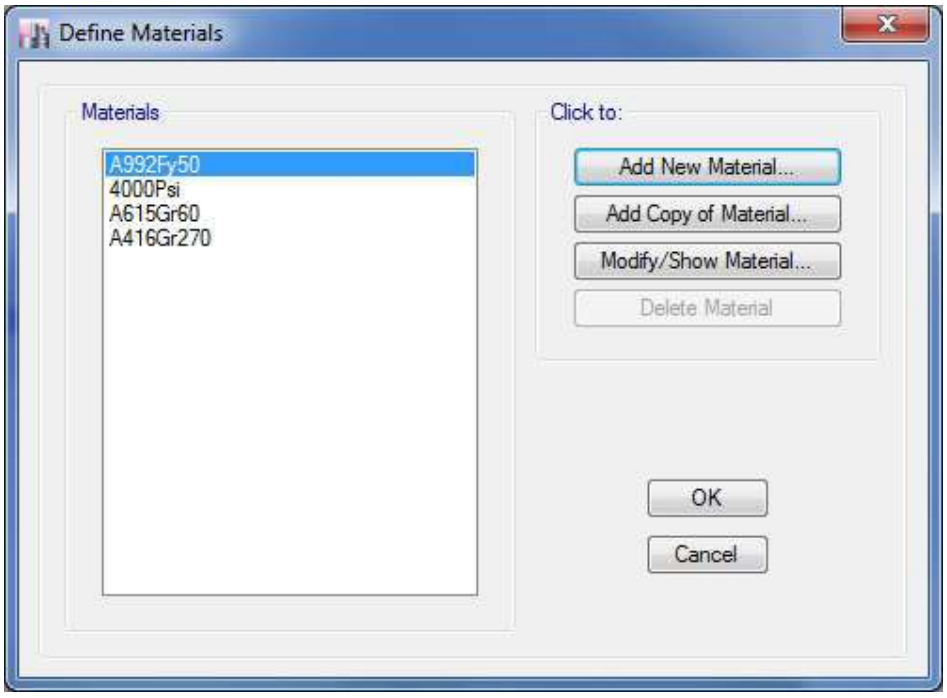

Figure: Define Materials form

The Define Materials form allows for the both the review of existing materials, as well as the definition of new properties. To add a new material, click the Add New Material button on the Define Materials form.

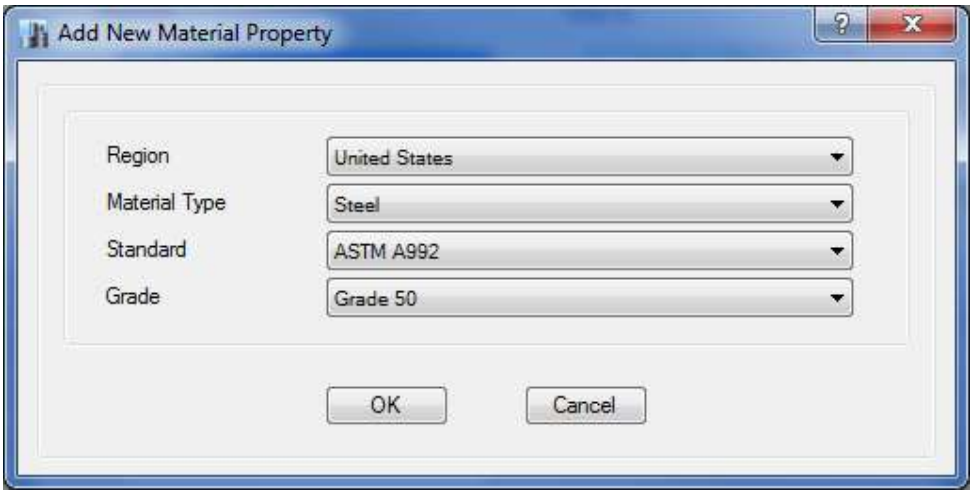

Figure: Add New Material Property form

- **Add New Material** button. Click this button to access the Add New Material Property form and initiate the material definition. Use this form to select the region, material type, standard, and grade that are pre-defined in the CSI Material Library.
    1. Select a *Region* from the drop-down list.
    2. Select the *Material Type* from the drop-down list.
        i. Choose concrete to add grades of concrete like M25, M20, etc.
        ii. Choose Rebar to add grades of steel like HYSD415, HYSD500...etc
    3. Select a *Standard* from the drop-down list as Indian.
    4. Select a *Grade* from the drop-down list.
    5. Click the OK button to close the Add Material Property form and return to the Define Materials form. The newly defined material property will be highlighted in the Materials list box.
    6. Highlight the newly defined definition and click the Modify/Show Material button to display the Material Property Data form and review, and where appropriate, modify the specifications for the definition

A built-in Region, Standard, and Grade called "User" are also available for each material type. The corresponding properties can be directly edited by the user and do not make use of the predefined materials in the property libraries. The name "User" is reserved and should not be used in the material property file libraries.

Note: The Modify/Show Notes button on the Material Property Data form can be used to access the Material Notes form. Use the form to add Material Notes to the model file.

- **Add Copy of Material** button. Highlight the name of the previously defined material in the Materials area of the form and click this button to create a copy of the selected material that can be further modified.
- Material Name and Display Color:
- **Modify/Show Material** button.
    1. Highlight a previously defined material property in the *Materials* list.
    2. Click the Modify/Show Material button to display the Material Property Data form.
    3. Enter the necessary changes to the material property.

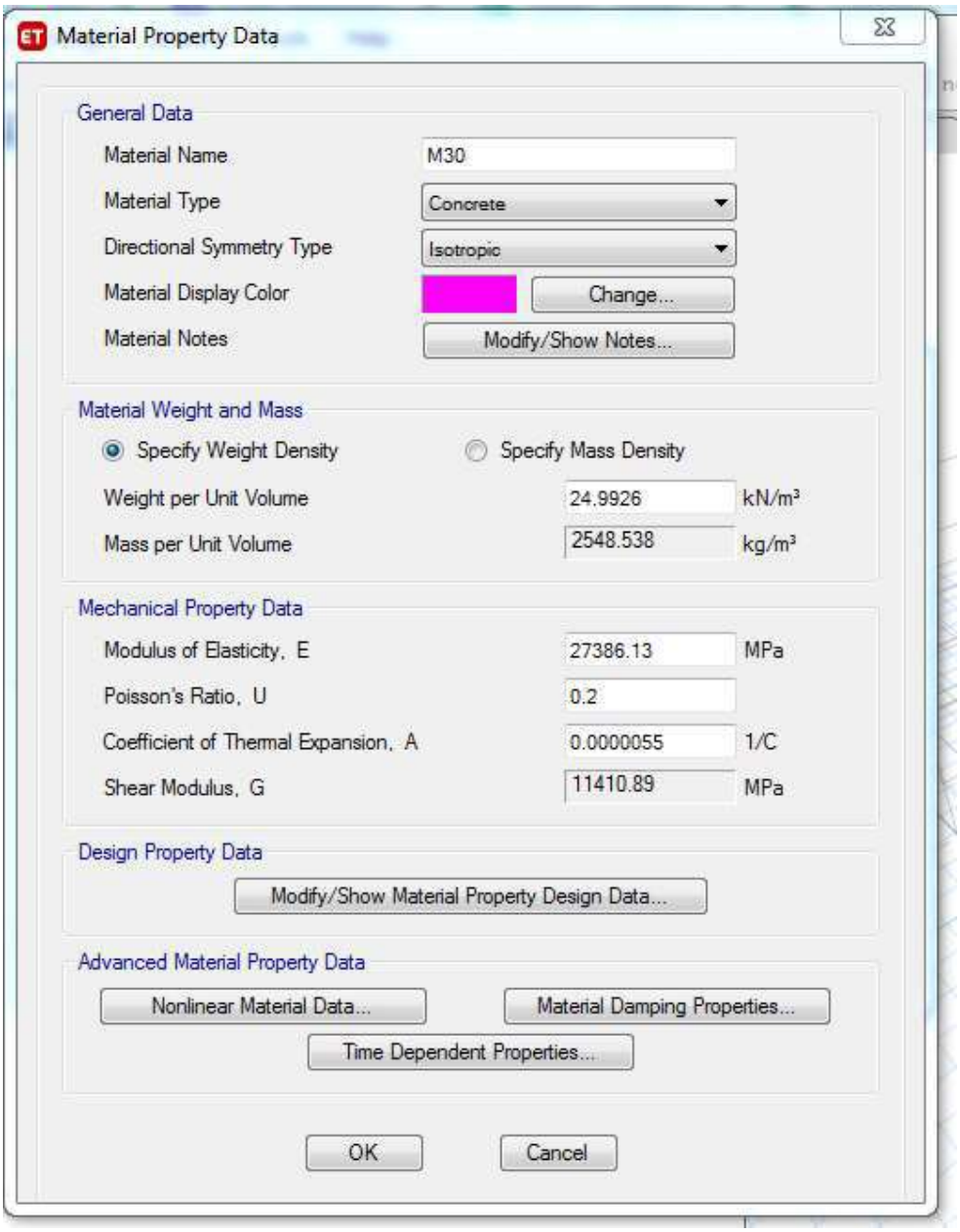

Figure: Material Property data form

- **Delete Material** button.

  To delete any existing material property

  1. Highlight the previously defined material property in the *Materials* list.
  2. Click the Delete Material button.