

UNIT 17: Plotting Results Using Iso-Surfaces

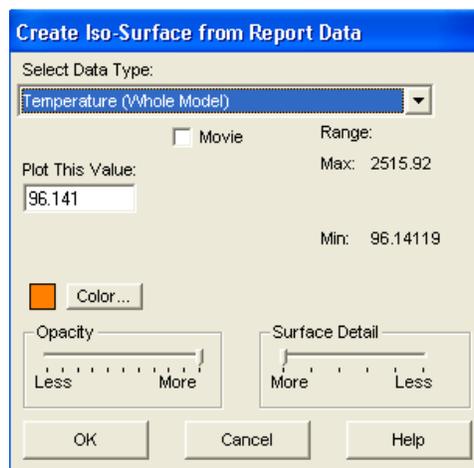
An Iso-Surface is a three-dimensional surface inside the casting model that displays where certain output data has a particular value. This means that you are plotting ONE VALUE of the selected type of output data.

To plot an Iso-Surface, first double-click on the Simulation icon on the project tree, in the SOLIDCast main screen. This will display a window similar to the following:



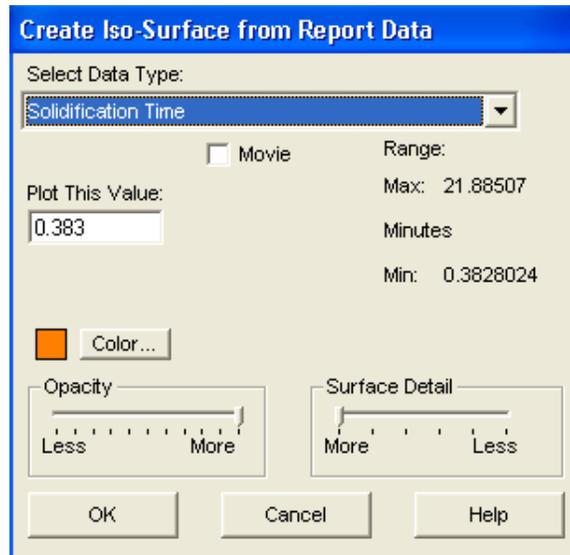
This shows some general information about the simulation that was run. Click on the Close button.

Now, at the menu bar select Simulation... Plot Iso Surface. A window similar to the following will appear:

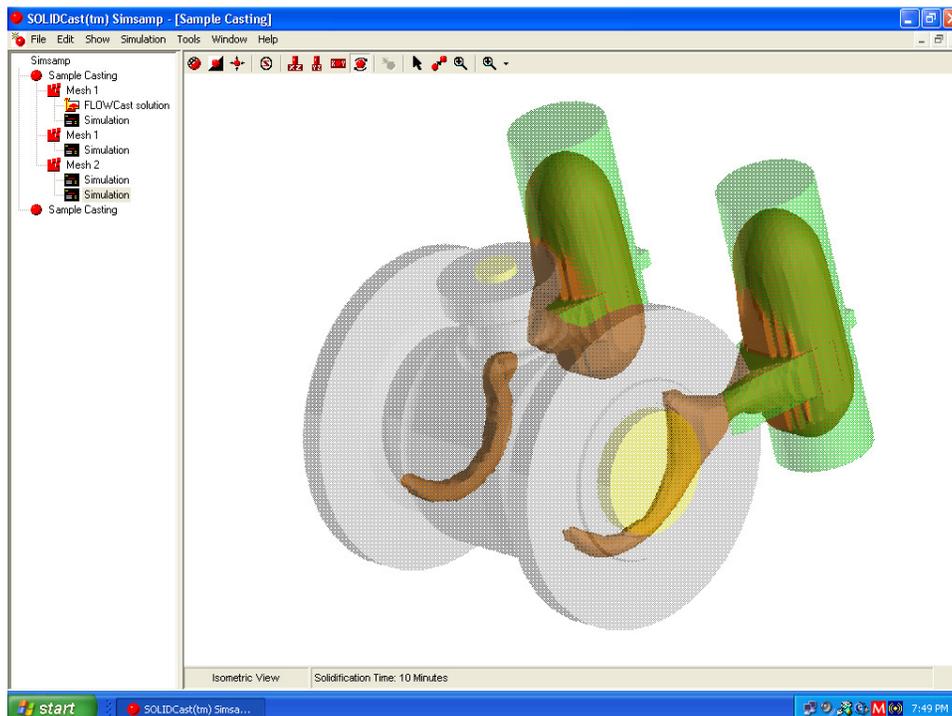


The type of data to be plotted is indicated in the window under the label Select Data Type. Click on the “down” arrow next to this field, and you will see some additional selections.

As an example, here we will select Solidification Time. When you click on this selection, the window will appear as follows:



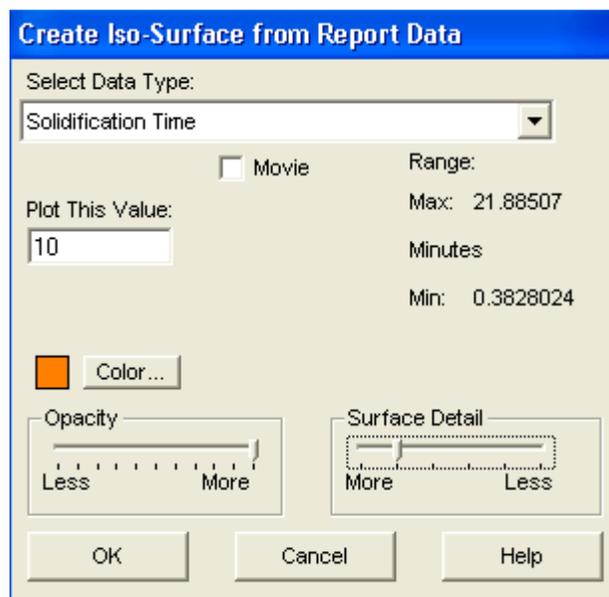
Here, the system is indicating that the minimum solidification time in the casting is .383 minutes (i.e., the first point in the casting finished freezing at .383 minutes) and the very last point solidified at 21.9 minutes. Under the label Plot This Value: is a field where we can enter a value to plot. For this example, a value of 10 minutes has been entered. At this point, you would click on OK, and the following would appear:



The shapes inside the casting represent the locations of metal that had not yet completely solidified as of 10 minutes. All of the metal outside these shapes has solidified prior to 10 minutes.

By changing and re-plotting Iso-Surfaces at various values, it is possible to get a good idea of how solidification progressed within this casting.

Note: If you have a model meshed at a high node count and there are a lot of nodes within the casting, generation of Iso-Surfaces may take a long time. It is possible to decrease this time by changing the parameter called “Surface Detail”. This creates a surface with slightly less detail, but one that takes much less time to generate. Surface Detail is adjusted as shown following:



One notch of adjustment on Surface Detail will make a considerable difference in the time to create an Iso-Surface within a casting model.

Note: This plot can also be used to create an animated movie. Instructions for making movies are given in Unit 37.

