

GFM 4.0

GFM must be installed by a user logged in on an administrator account. If the user doing the install is not an administrator, the installation may appear to be successful, however, when GFM is started, it may fail if the Visual Basic 6 runtime libraries are not present.

The GFM 4.0 package is the file GFM_Setup.exe. Running GFM_Setup will install GFM 4.0 on your computer including the documentation and two example cases.

The example cases included in the package are the RRTa/RRT4a test cases defined by the TC21 committee of the International Commission on Glass. These cases are described in the included documentation. Case 40 is the 40 ton/day test case. It contains the result files of a completed cycling run with a relatively coarse grid. It can be restarted simply by starting GFM and choosing the Simulation menu→Cycle Regenerative (Melt First) item and then clicking the “OK” button in the Provide Cycle Information dialog box. The RunPlot program can be used to verify that the restart is a smooth continuation from the stored solution files by viewing the mean melt volume and exit temperatures by opening the Tave0040m.plt file with RunPlot in the .../melt/case0040/ folder.

Case0020 contains setup files for the 20 ton/day test case defined by the TC21 committee of the ICG. It is ready to run and can be started by choosing the Simulation menu→Cycle Regenerative (Melt First) item. For this case in the initial cycling startup, the recommended number of cycles to have scaling on is 16. This number is specified in the last data entry box in the Provide Cycle Information dialog box.

Most of the provided documents are recommended reading before using GFM. Section 3 of the Final Report provides an overview of the main features of GFM. A quick look at the Menus document provides brief information on the high level actions that can be accomplished via the menu system. Please read over the document “Using the GFM 4.0 Graph...” in file GFM4-Using-GUI.pdf. Also the Tips and Procedures document provides much useful information. Please read the information on the melt domain in the Tips and Procedures document; it provides important information on defining chargers and related parameters that can make the difference between a melt simulation that converges to physically realistic results and one that diverges. Reading over the procedures can be delayed but reading through the Tips is recommended before using GFM. The Cycle document contains important information on cycling and setting up regenerative burner cases for simulation. The RunPlot document provides a list of the simulation status monitoring data files that can be plotted on screen via RunPlot. RunPlot can be run by itself to view any *.plt file. It can be activated during a simulation via the Options menu.