

~ Making Plastic CAE Solution More Familiar ~

Injection Molding Analysis on ANSYS Workbench

The polymer flow analysis function of the injection molding CAE system PLANETS is incorporated into ANSYS Workbench. It enables you to use, with ease, a highly accurate plastic CAE solution which provides precise modeling of resin state changes, combined with the smooth operation of ANSYS Workbench.

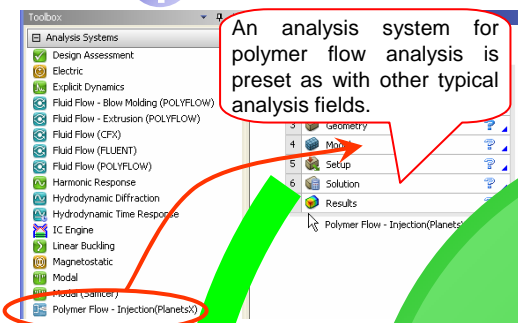
ANSYS Workbench and PLANETS Connected at Native Level

Incorporation of PLANETS solver into ANSYS Workbench is realized at the native level, and the solver works perfectly as one of the analysis systems of Workbench. It requires no complicated operations, such as conversion and transfer of files and addition and modification of commands, which are usually necessary when multiple CAE tools are used together.

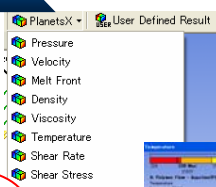
Operation can be conducted on standard GUI of Workbench throughout the flow from pre-processing to post-processing

1 Preparation of system

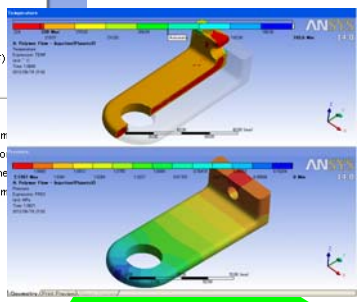
An analysis system for polymer flow analysis is preset as with other typical analysis fields.



Various result items in polymer flow analysis can be evaluated using various post functions of Workbench (contour display, vector display, intersection display, mouse position display, path display, graph in chronological order, animation, etc.).



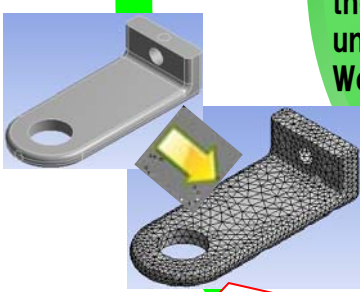
7 Evaluation of Results



2 Attach of geometry

3 Meshing

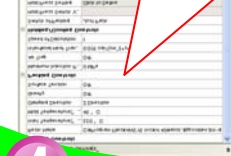
All processes of polymer flow analysis—from analysis data management in the project page to actual analysis operation in the mechanical page—can be performed under the standard interface of ANSYS Workbench.



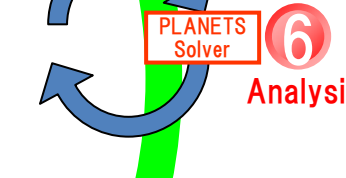
For basic model handling including the interface function for CAD, shape correction function, and meshing options, the various functions of ANSYS Workbench can be used.

The necessary settings for polymer flow analysis can be collectively done in accordance with the general input format in the detailed view.

4 Setting of Analysis



6 Analysis



The boundary conditions can be defined simply by clicking buttons on the toolbar, and the target area can be selected intuitively with mouse operation.

5 Definition of Load

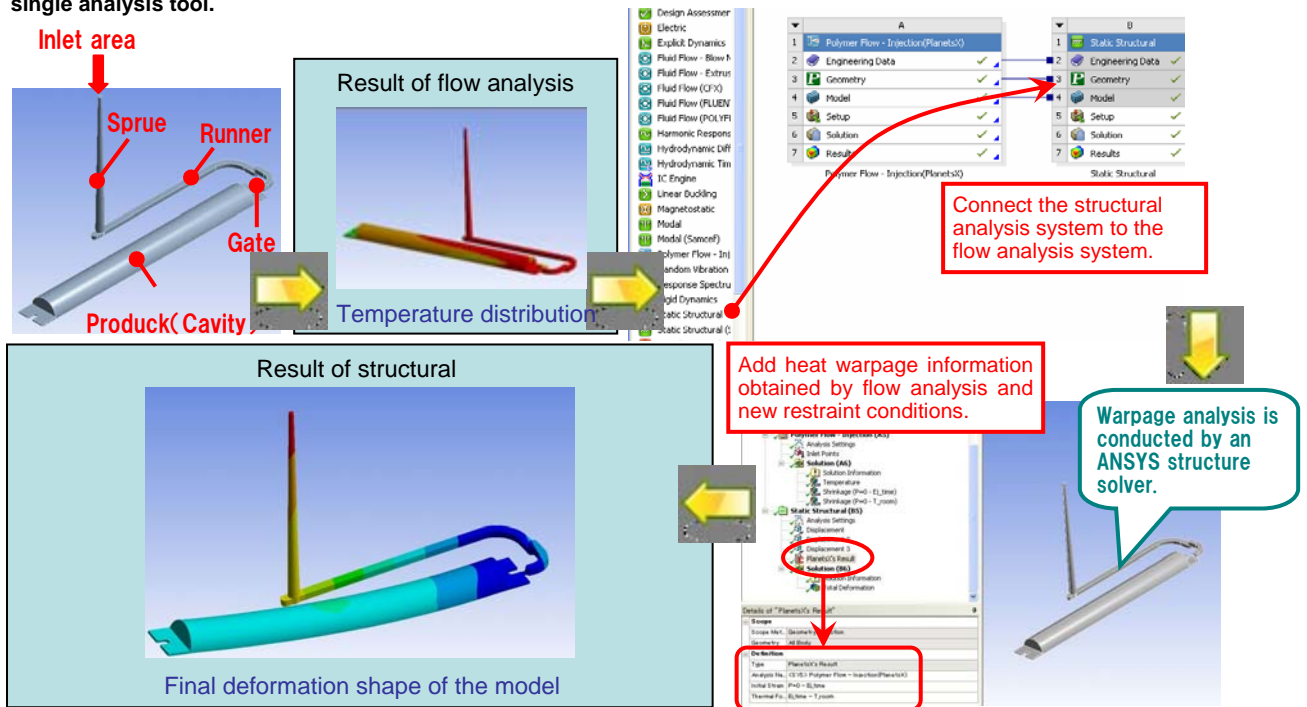


Example

«Polymer Flow Analysis and Warpage Analysis Using Result of Polymer Flow Analysis»

One of the main features of the integration of the injection molding CAE system PLANETS and ANSYS Workbench is that flow analysis and structural analysis can be easily coupled with each other. In the following analysis example, polymer flow analysis of a model which consists of sprue, runner, gate, and product sections is performed, then warpage analysis is implemented using the obtained heat warpage, and finally, structural evaluation such as displacement and stress in the model is conducted.

The only necessary operation to couple flow analysis with warpage analysis is to connect the relevant systems in the project page, and you can make evaluation of the entire polymer molding processes seamlessly and effectively with a single analysis tool.



Advantage

The polymer flow analysis using PLANETS solver under an ANSYS Workbench environment is a strong tool to make the plastic CAE solution more familiar to you than ever.

- You can easily use the highly accurate polymer flow analysis using the PLANETS solver, which has a long history.
- You can conduct all the operations from flow analysis to structural analysis under the integrated operation environment of Workbench.
- You can use the abundant functions of Workbench, such as auto mesher and data control tool.
- The solver contributes to improvement of the work efficiency of all workers involved with product development, from design to mass production.

Required products

- Resin flow analysis software: PlanetsX
- Structural analysis software: ANSYS Professional NLT (Mechanical or Multiphysics)
ANSYS DesignModeler can also be used for analyses that account for a runner.
- System Requirement

OS	Microsoft Windows 7 on which ANSYS 15.0 works normally. (64bit recommended)	Hard disk	1GB of available hard-disk space for installation. *additional free space is required for: (1)ANSYS installation, (2)Saving user data of PlanetsX		
Memory	2 GB or greater (recommended)	Graphics board	OpenGL equivalent	Graphics memory	128 MB or greater