Autodesk® Moldflow® Insight 2012

AMI Gate Location Analysis Results

Autodesk®

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Gate Location analysis results 1

This topic lists the results generated for a Gate Location analysis on a thermoplastic material.

Text based results

The following table lists the text results generated for a Gate Location analysis.

Results
Gate location analysis log on page 2
Results Summary
Analysis Check

Graphical results

The following table lists the graphical result that is created by a Gate Location analysis and indicates whether the result is supported for the following analysis technologies:

- Midplane
- Dual Domain
- 3D

For more information about the result, including how to interpret the display, click on the result name.

Result	Available for analysis technology
Gate location analysis result on page 3[1]	
Flow resistance indicator result on page 5[2]	
Gating suitability result on page 4[2]	

[1] This result is available when using the Gate Region Locator algorithm.
[2] This result is available when using the Advanced Gate Locator algorithm.

Gate location analysis log 2

The Gate Location analysis log lists the input you used for the Gate Location analysis, followed by the recommended gate location.

The analysis log is a text report generated by the Gate Location analysis. Look for these lines of text at the end of the analysis log:

- Recommended gate location(s) are:
- Near node:

Using the analysis log

Go to your model, find the node recommended by the analysis, and add a gate location at that node.

Gate location analysis result 3

The Gate location analysis result rates each place on the model for its suitability for an injection location.

This result is output using the **Gate Region Locator** algorithm, which uses a combination of conditions to determine the best injection location and subsequent injection locations. The most suitable areas are rated from most suitable (best) to least suitable (worst).

If there are no existing injection locations on the model, the Gate Location analysis determines the best place for a single gate based on the selected material.

When one or more injection locations already exist, this result suggests the best place for the next injection location. It balances the flow, so that areas filled from each gate fill at the same time.

Using this result

To use the Gate Region Locator algorithm, place an injection location somewhere within the recommended locations, in a position that best suits the mold or part design constraints and then run a Fill analysis. Test several locations by running a Fill analysis from each location and then compare the results.

The areas recommended for the injection location are the areas worth pursuing as potential injection locations.

The best areas shown on the result do not necessarily represent a good solution (high quality part, or high confidence of fill), but rather the best one for the case at hand using the selected material.

Areas with the same color represent equally suitable positions.

When you have evaluated the Fill results using different injection locations to determine the best location, find that area on your model, and add an injection location.

Things to look for

- Evaluate potential areas for their suitability against any production limitations and guidelines. For example, the result might suggest placing an injection location where it is not possible to gate or in an area which will cause an undesirable blemish.
- Select the injection location furthermost from the existing gates when looking at the next best gate location result.

Gating suitability result 4

The Gating suitability result rates each place on the model for its suitability for an injection location.

The Gating suitability result is produced by the Gate Location analysis when you use the **Advanced Gate Locator** algorithm. The Advanced Gate Locator algorithm minimizes the flow resitance when determining the best gate position for the first and only injection location. You can specify prohibited gate nodes, to block the solver from placing an injection location in the prohibited areas.

If there are no prohibited gate nodes on the model, then the Gate Location analysis rates the gating suitability throughout the part, and creates a copy of your study to place one gate in the best location found during the analysis. This new study is ready for a Fill analysis.

NOTE: The Gating suitability result is produced only if the **Number of gates** in the Process Settings Wizard is set to one (1).

Using this result

The suitable areas shown in this result are worth pursuing as potential injection locations.

The best areas shown on the result do not necessarily represent a good solution (high quality part, or high confidence of fill), but rather the best one for the case at hand using the selected material.

Areas with the same color represent equally suitable positions.

If the injection location is not suitable due to design constraints, consider the other blue regions in the Gating suitability result when placing a different injection location. Use a Fill analysis to check the suitability of these injection locations.

Things to look for

- Evaluate potential areas for their suitability against any production limitations and guidelines. For example, the result might suggest placing an injection location where it is not possible to gate or in an area which will cause an undesirable blemish.

Flow resistance indicator result

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The Flow resistance indicator result shows the resistance at the flow front from the gates.

This result, which is output from a Gate Location analysis by using the Advanced Gate Locator algorithm, represents the flow resistance at the flow front from the gate location, normalized to show the highest flow resistance through to the lowest flow resistance.

Using this result

Use the Flow resistance indicator result in conjunction with Fill analysis results and the Gating suitability result to determine the most appropriate gate location(s).

If the flow resistance is not evenly distributed from the injection locations to the end of the flow paths, you may need to relocate or add new injection locations.

Things to look for

Ensure the flow resistance is evenly distributed throughout the part. Areas that have a high relative flow resistance that are surrounded by areas of low relative flow resistance may cause defects or filling problems.