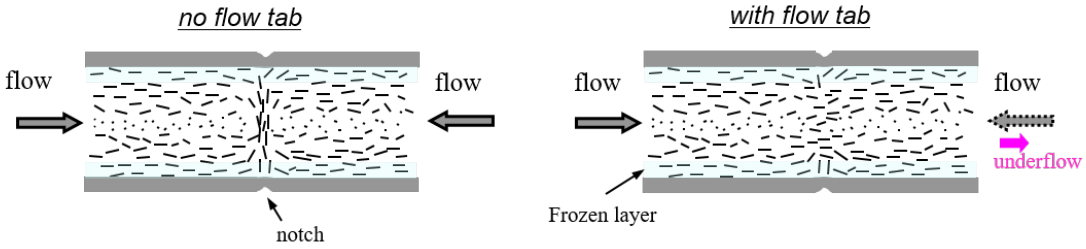
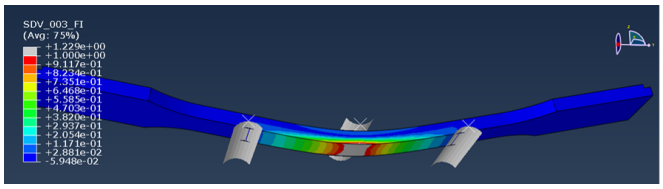
Weld lines (VE)

Moldflow (or Moldex) is the ideal tool to predict the position(s) of the weld line(s) so that we can anticipate potential mechanical issue and today, unless using non reliable material data (or severe design), the predictions are rather good.

If the gate position and design are frozen and if a weld line is critical (with potentially leads or could lead to a failure), we might try using a spillover or overflow tab (but only for some specific designs) with the objective to increase the weld line strength. A **study** made some years ago illustrated the technique (and highlight the limitations).



It is actually possible to predict with some accuracy the weld line strength of a reinforced polymer using the classical failure model combined with the predicted fiber orientation. Therefore, it might be relevant when performing anisotropic mechanical calculations to take explicitly these weld line weaknesses into account to better predict the ultimate strength of the overall structure. This is illustrated in this **document** .



Moldflow develops his own tool to take account on the local fiber orientation (Helius) that we tested in the prediction of the weld line strength (so without the use of Digimat), in this case in coupling with Ansys. The procedure and some results are presented in this **document** .