Comparison 2D-2.5D-3D

1 Objectives

The objectives of this analysis are to study the position of the resin front during injection and to compare the results obtained from three meshes:

2D plane mesh

2.5D surface mesh

3D solid mesh

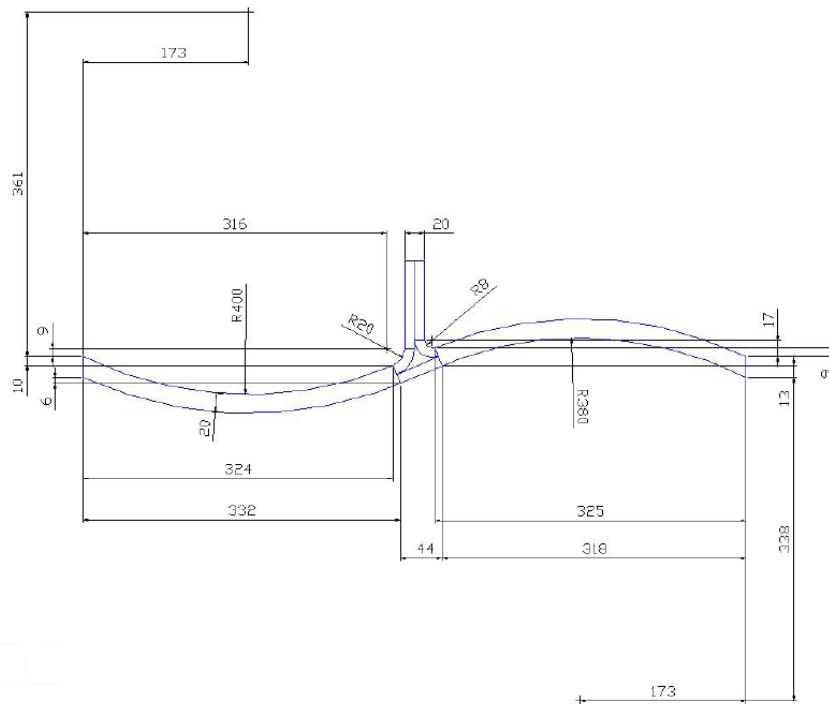Consider the part shown below.

Figure 1 : Part with a rib

The injection of this part is carried out at a constant pressure of 2 bars at each end of the part
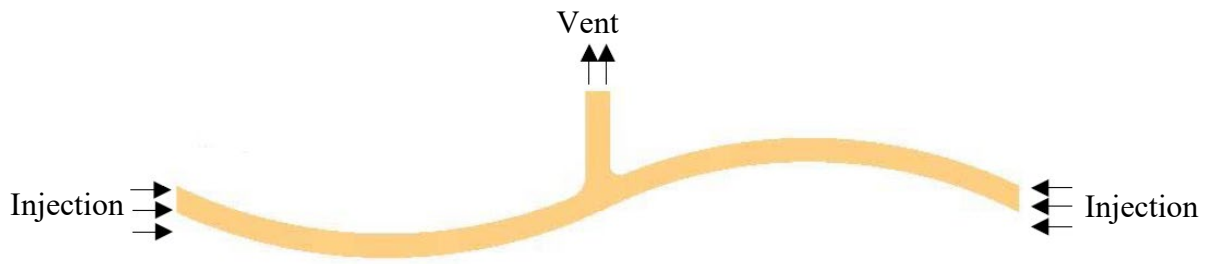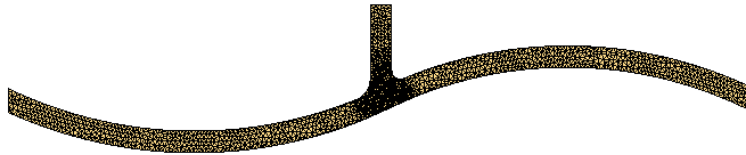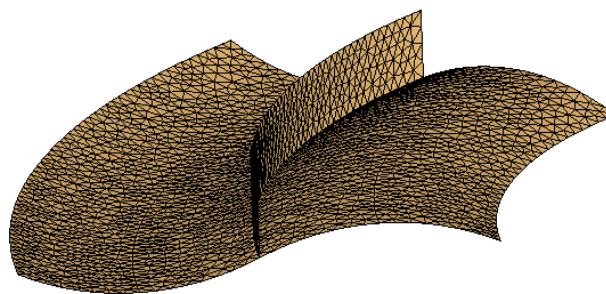
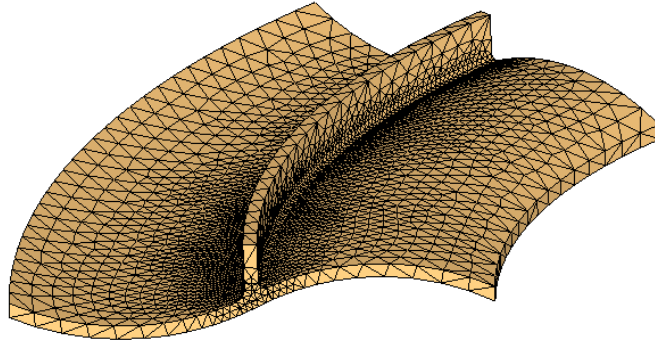**Figure 2 : Representation of the part**

2 Meshes

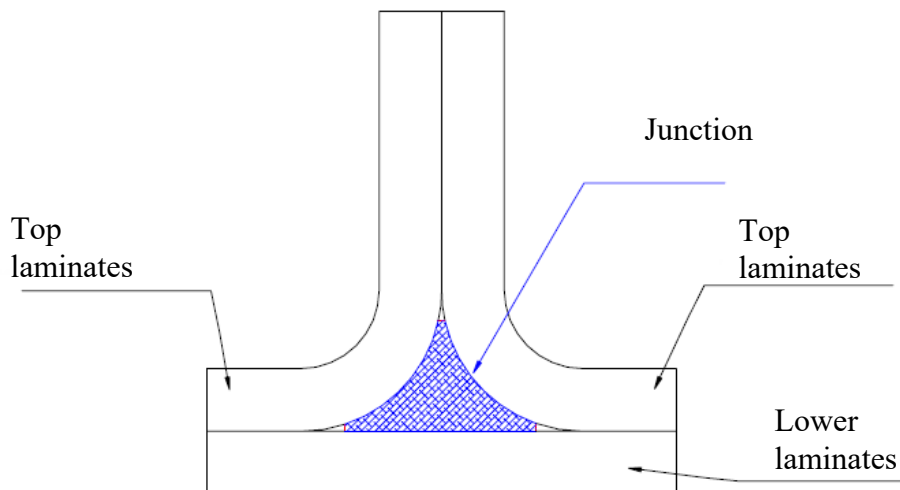o 2D mesh : *comparison_2D.unv*

o 2.5D mesh : *comparison_25D.unv*

o 3D mesh : *comparison_3D.unv*

The reinforcement is isotropic with a permeability K equal to $1.10^{-9}m^2$. The porosity is equal to 0.4.

The junction at the base of the rib (shown schematically on the graph below) is filled with a reinforcement which is assumed to be isotropic and with a permeability $K = 1.10^{-10}m^2$.

- What are the differences between the three meshes? What impact might this have on the result of the injection?

- Carry out the simulations of the filling phase on the three meshes. What can you conclude from this?