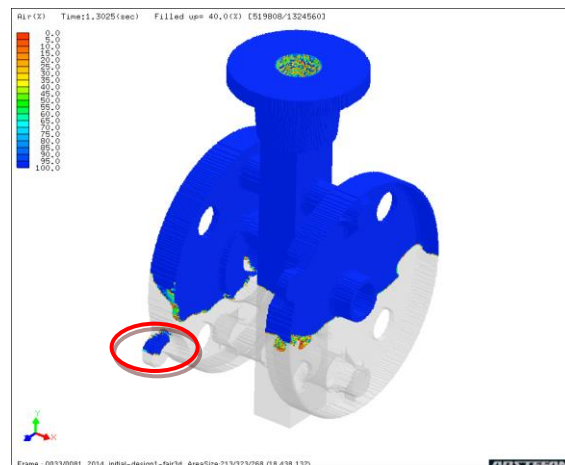
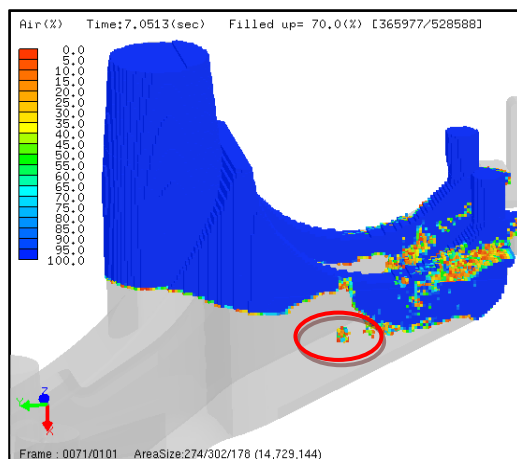


Air Entrapment

As the metal enters into the cavity air tries to escape through the risers or vents. In some regions air gets trapped because of lack of space for the air to escape from the cavity region. This will result in the air entrapment defect

In all kind of casting process there is a provision made to evacuate the air from the cavity. For example air/metal vents are provided in case of sand casting and Overflows or chill vents are provided near the parting line to provide the path for air to go out of the casting region in case of High pressure die casting. Each and every type of casting has its own fashion of providing the vents. Air entrapment defects occur mostly on top of the casting surface because of inadequate venting and air entrapment defect inside the casting are either because of faulty gating or non uniform filling pattern. In both the cases the tendency of rejection is more depending on the acceptance level defined by customer.

Casting simulation software **ADSTEFAN** can predict exact location of air entrapment. Air evacuation of last regions is highlighted in the component, which helps in placement of vents. Permeability of sand will also be considered in the simulation. Also back pressure generated in the casting vents will help to decide the size of vents required.



Blue color - air in the component
Transparent color - complete liquid metal
Green color - mixture of liquid metal and air

Observation- Figure shows last region of **air evacuation** from the cavity during filling of the molten metal. Air might get entrapped in this highlighted region. Provide sufficient venting in order to avoid air entrapment defect.