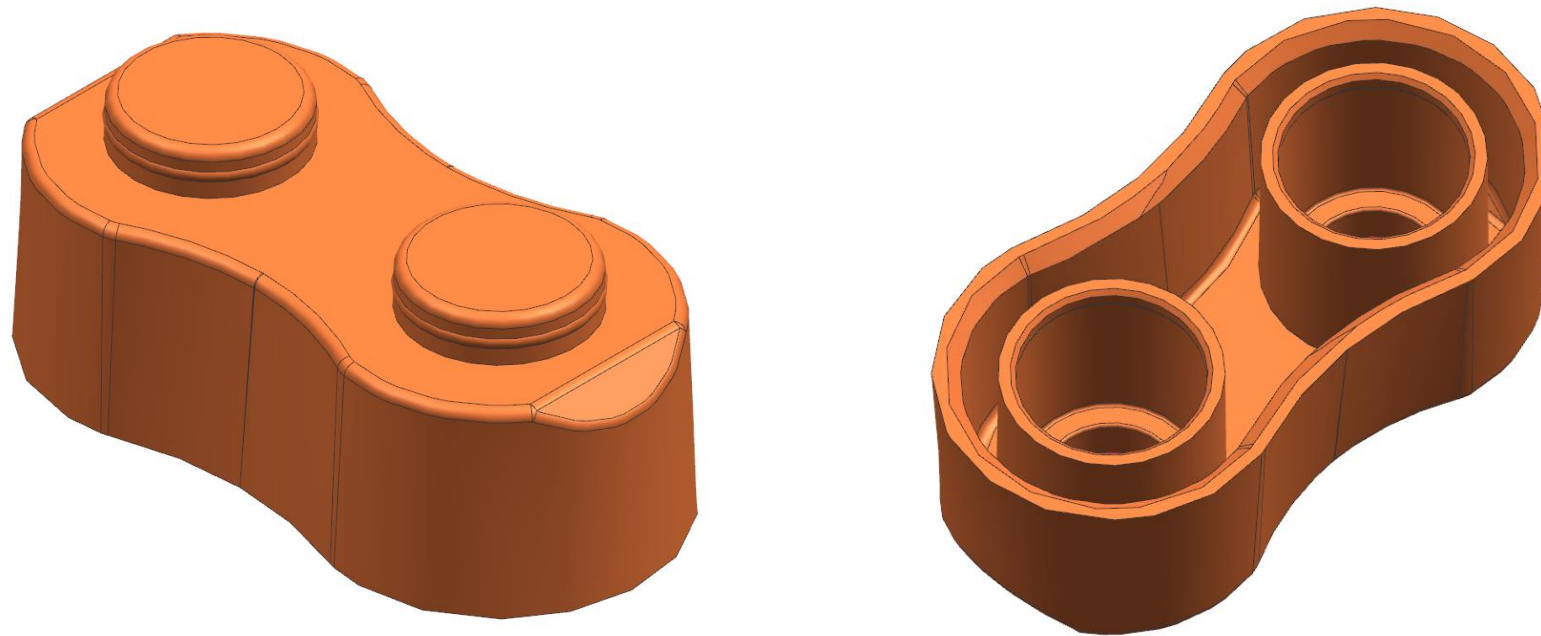




Moldex3D Report For Mold: JG23053

Customer Name:



Standard block

Part : Marketing MFA

Injection Molding Simulation Report

Type of Analysis (Fill , Pack, Cool and Warp)

Material – HDPE

Material Grade – HDPE HD 6908 ExxonMobil (Used In Moldex3D)

Inputs and Requirements:

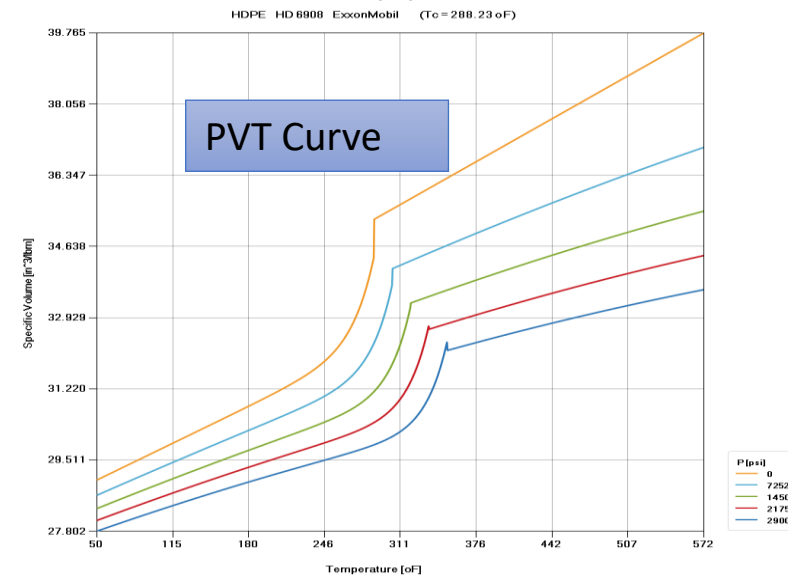
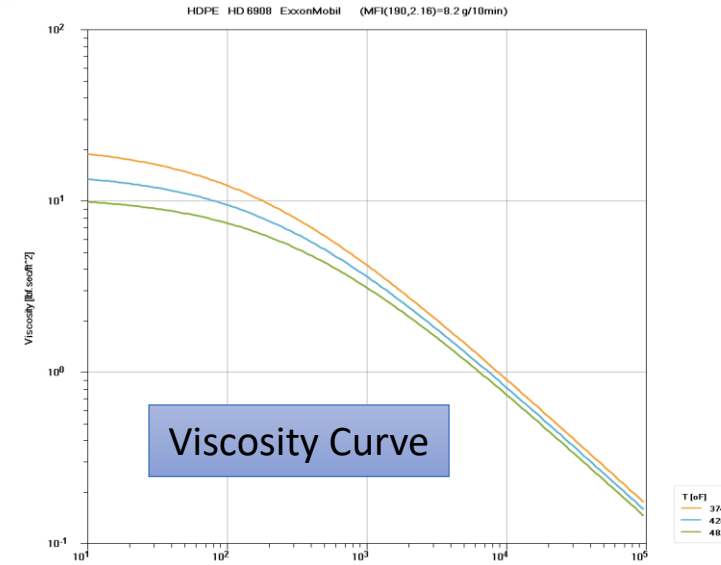
3D Part Data	Standard Block
No. of cavities.	32
Feed System	Cold runner to Sub Gates
Material UDB/ MTR File	HDPE HD 6908
Mesh Type	Solid
Volume (Part)	.816 in3

Polymer Detail

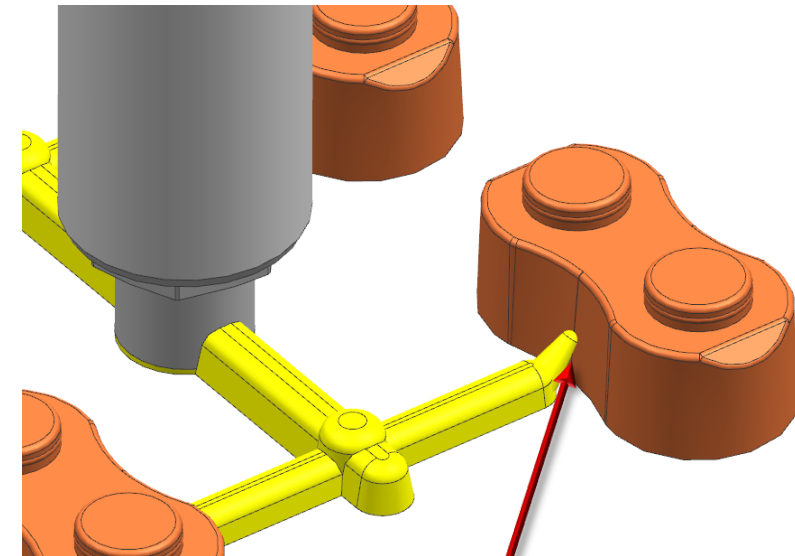
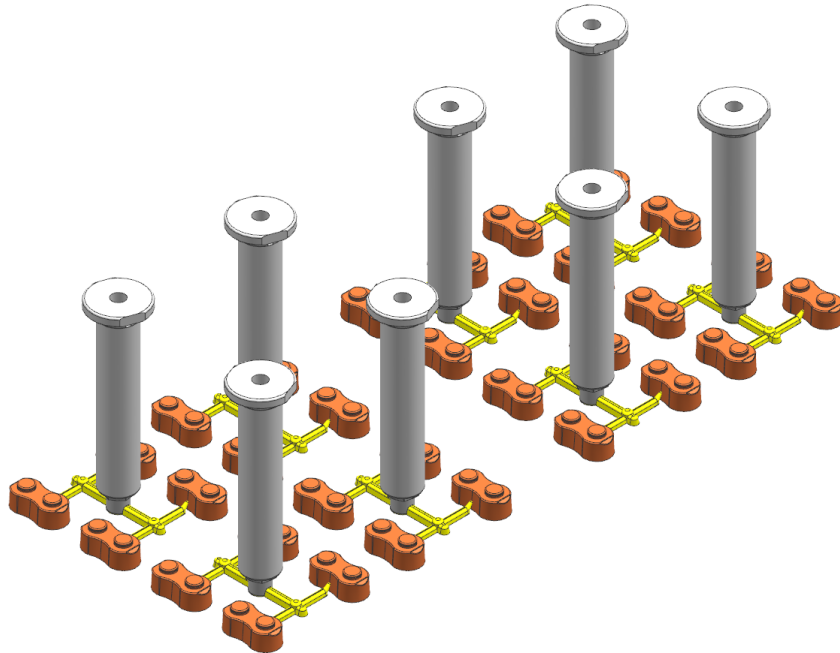
Material	HDPE
Grade Name	HD 6908
Producer	ExxonMobil
Comment	MFI(190,2.16)=8.2 g/10min ,D=0.965 g/cm3
Moldex3D Bank Version	2022.3.4

Process Condition

Process condition	
Melt temperature (minimum)	374 oF
Melt temperature (nomal)	428 oF
Melt temperature (maximum)	482 oF
Mold temperature (minimum)	77 oF
Mold temperature (nomal)	95 oF
Mold temperature (maximum)	122 oF
Ejection temperature	234.23 oF
Freeze temperature	270.23 oF



Number of Cavities	32
Approx. Total part weight (gms)	1.50 Gms. (Approx.) (single part)
Number of gates/ cavity	01
Runner System	Cold runner to Subgate



1X Direct gate /part
Gate opening Ø1.2mm

All dimensions are in Inches/mm.

25%

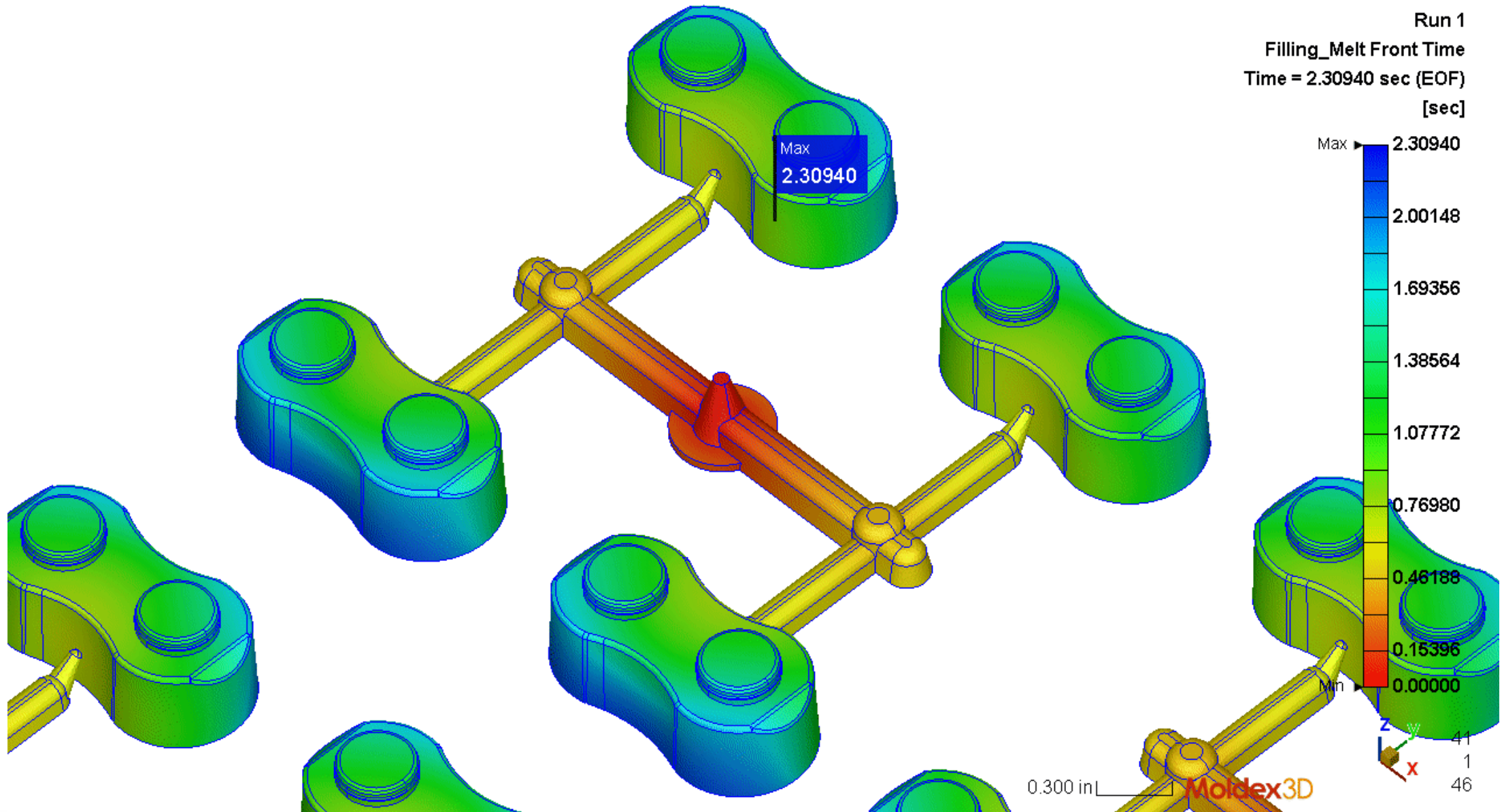
50%

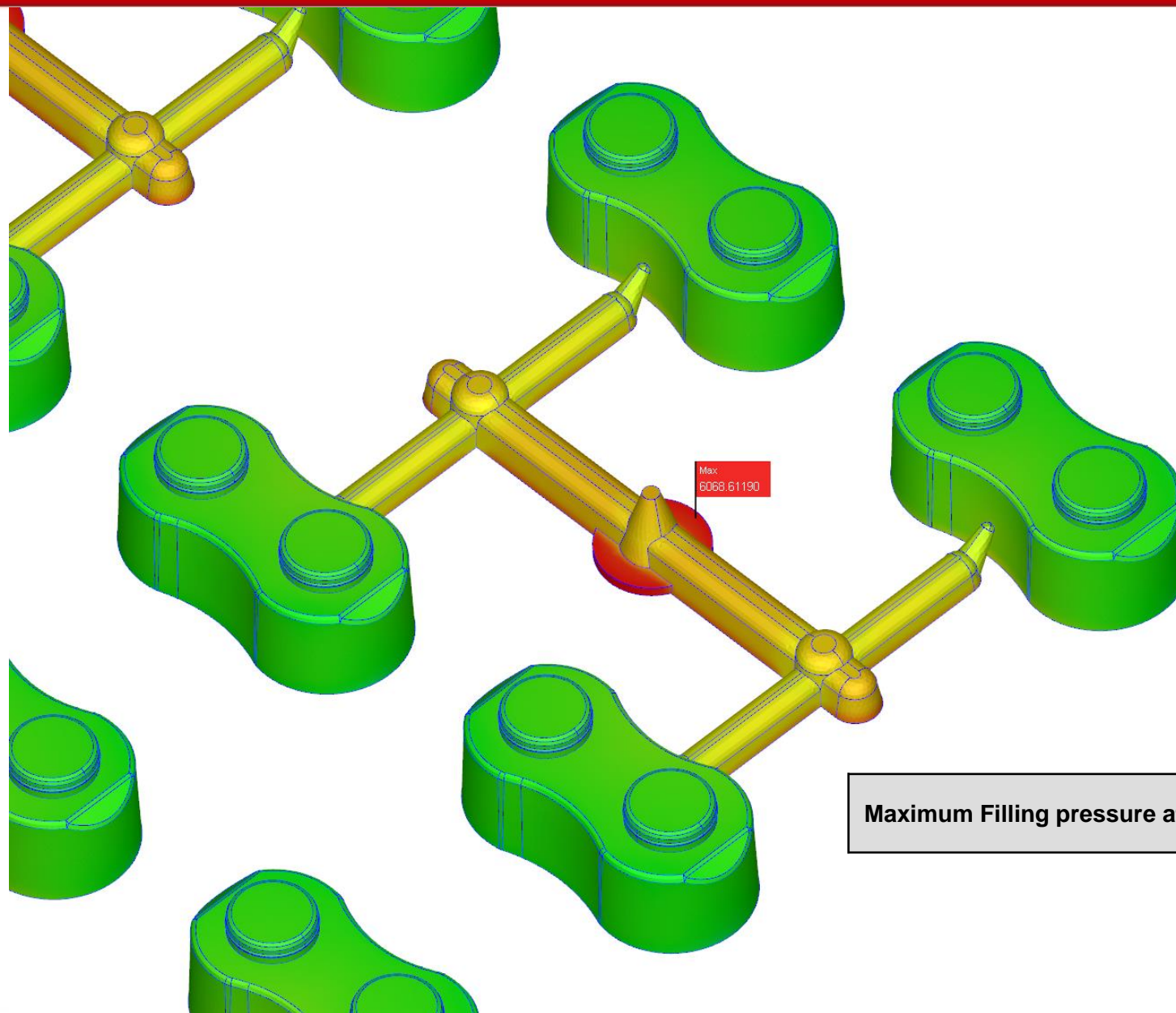
75%

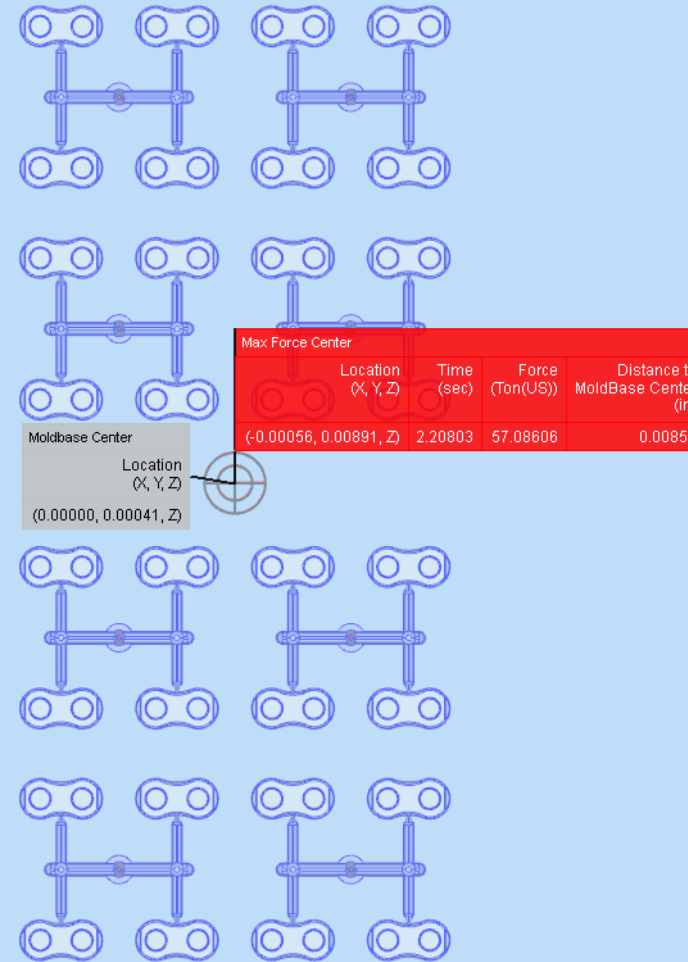
100%

Filling Status: Filled and the flow is not uniform
Fill time (sec): 2.309 Sec.
Blue areas highlighted in the plot indicates the
End of filling area in the part.

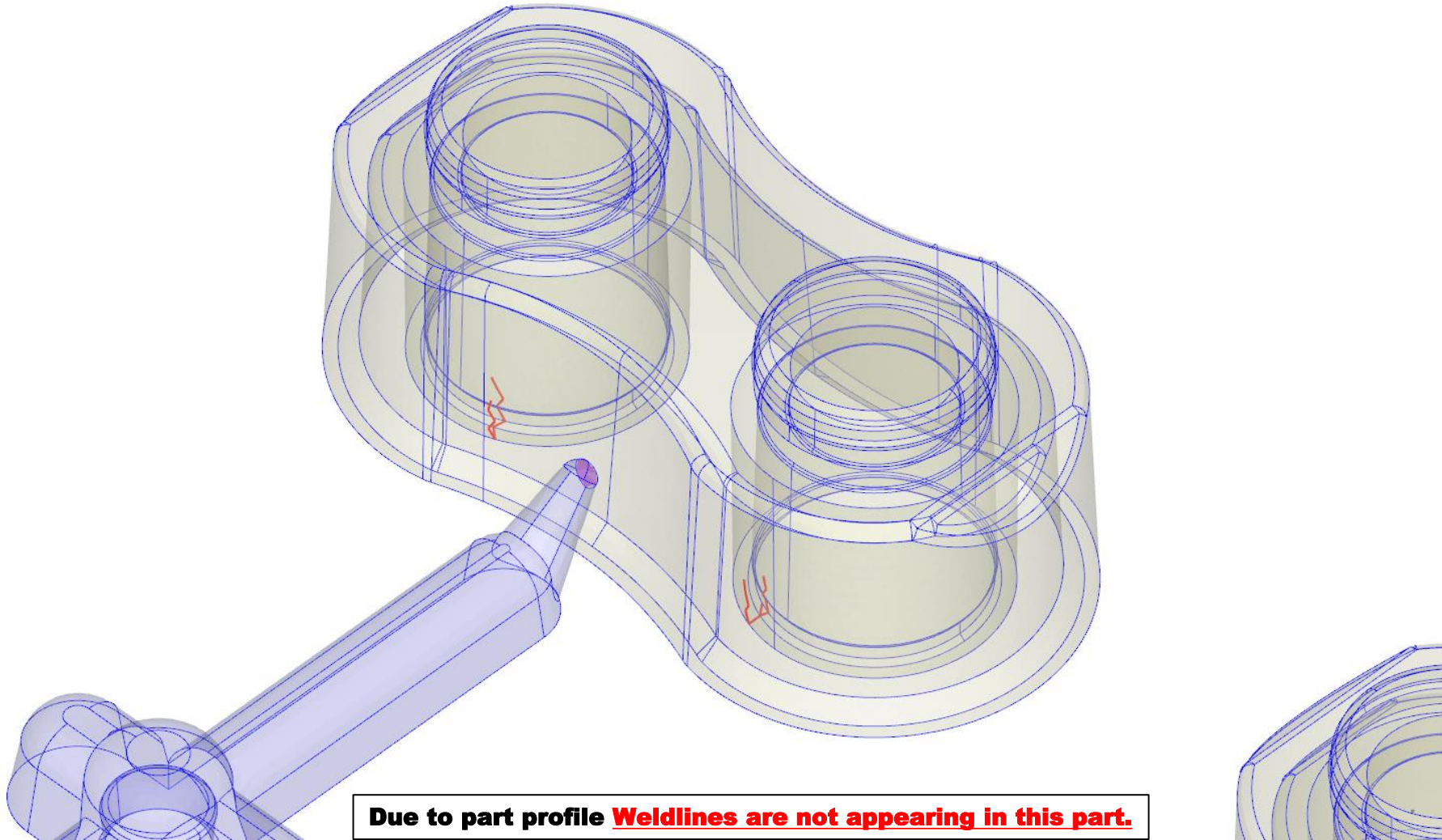
EOF AREAS







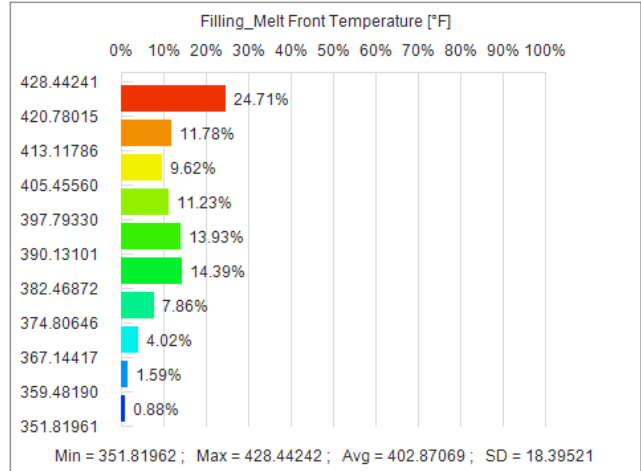
Clamp force observed is 57 T, Consider 10% Extra for factor of safety.



FILLING TEMPERATURE

The flow of melt is uniform due to the part profile and there is no major temp variation in the part.

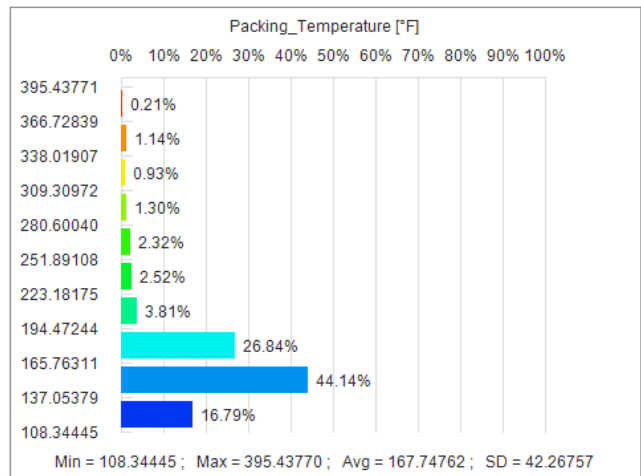
Melt front temperature result shows the recorded temperature value of the plastic melt at the instant that it reaches the given point



PACKING TEMPERATURE

These areas are above ejection temperature at EOP

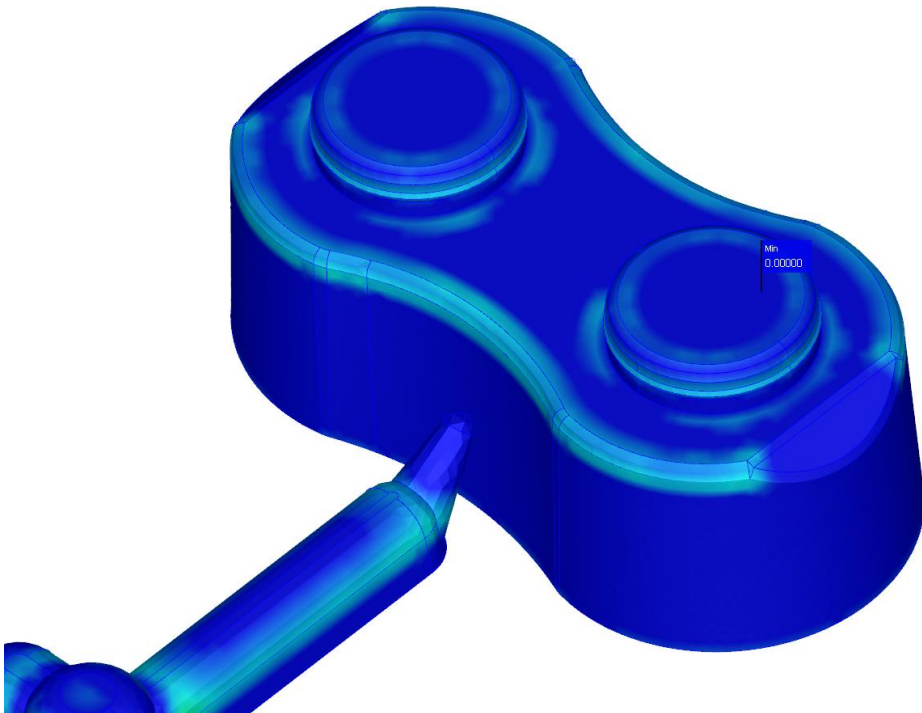
These areas are at ejection temperature



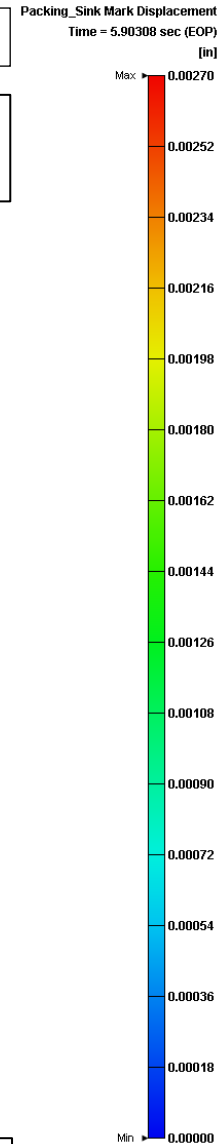
There is some temperature variation at Packing stage and most of the part is above ejection temperature at the end of packing stage.

SINK MARKS

Uniform wall thickness will allow smooth filling of the mold, otherwise sink mark may observed. During processing, these areas will have a temperature variation and this will lead to improper cooling and difficult to trouble shooting.

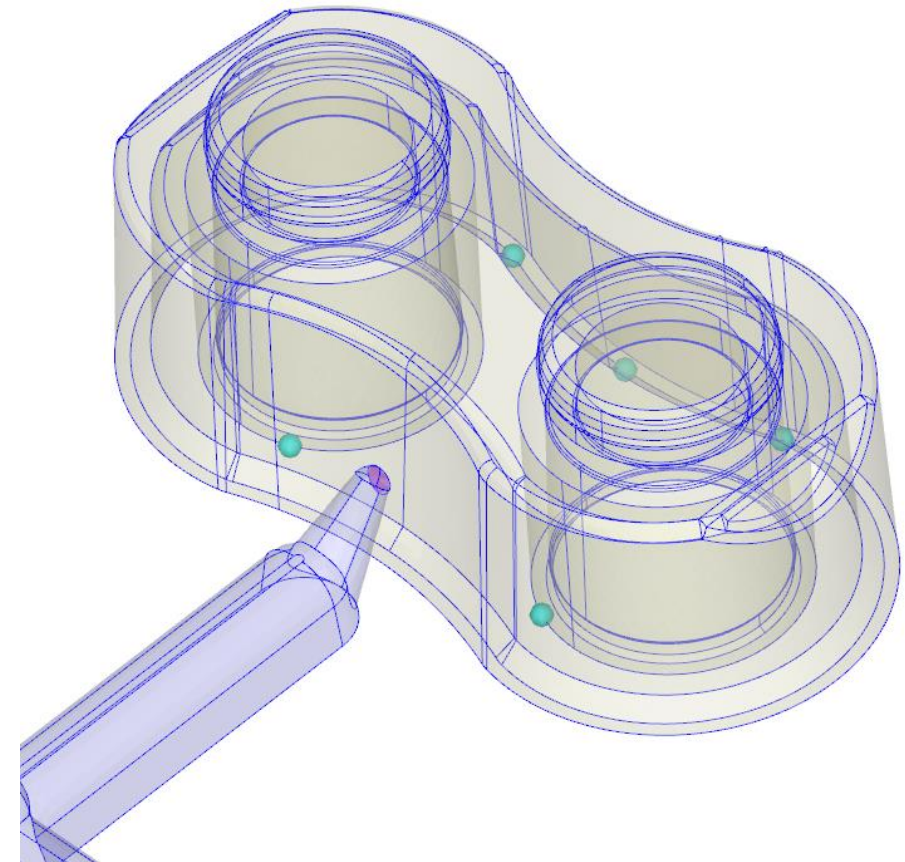


Sink marks may occur where there is a thicker section of plastic compared to the general wall thickness.



AIR TRAPS

Air Traps occur when a bubble of air is trapped as plastic flow fronts coincide. The air bubble, or air trap, can cause various defects in a plastic part such as blemishes on the surface, incomplete filling and packing, Air trapped in pockets may compress, heat up and cause burn marks.



Recommendation: The air traps are shown in image. The Air trap can be removed by proper venting around the part.

Summary:

- Total fill time **2.309 Sec.**
- Temperature variation observed is within recommended limit.
- Clamp force observed is **57 Tonnes.**
- Air vents are required to remove the air trapped at different locations.
- Max cavity pressure observed is 6068 **psi**
- Approximately part weight is **1.5 Gms. Single Part**

We look forward to discussing this engineering report with you soon so we can adjust as needed and move forward to mold design. Reach out to craig.nelson@jademolds.com to discuss.

