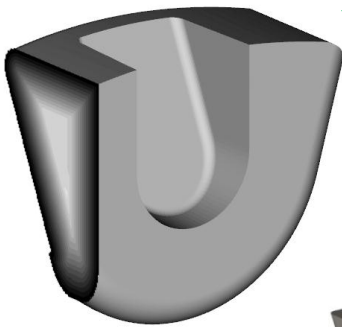
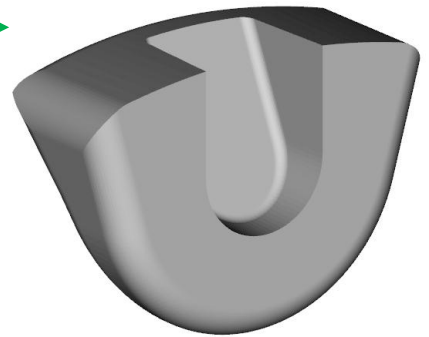


# Lug Casting

Aluminum Alloy, G.D.C

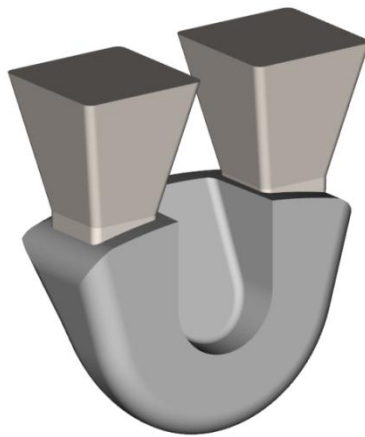
The aluminum-alloy lug casting of overall size 185 mm x 80 mm x 140 mm weighing 2.5 kg is produced in a non-ferrous SME foundry. After fettling and machining the top faces, it exhibited shrinkage porosity just below the riser.



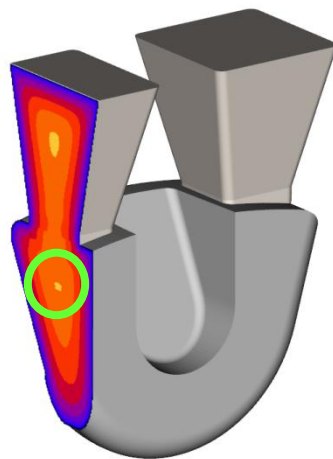
Thickness analysis shows mass concentration in the top portion, corresponding to an inscribed sphere diameter of 60 mm.



The current methoding includes two square-shaped feeders (pyramid) having top face side 75 mm, bottom face side 45 mm.



Simulation of current methoding indicates an isolated hot spot just below the feeder connection. This exactly matches the shrinkage defect found in the actual casting.



After a few iterations of methods design and simulation, the best solution was found when feeder top and bottom face side increased to 100 mm and 55 mm, respectively. Simulation shows that hot spots are now fed by the feeders, and shrinkage defect is eliminated.

