

FEA ANALYSIS OF A DRAFT SILL

PURPOSE: Structural stress analysis of a cast draft sill for railroad cars

HLA Engineers, Inc. created and analyzed a detailed FEA model of a draft sill for railroad cars. The FEA model was created by importing drawing entities from a pro-engineer provided model. Due to the geometric complexities, most of the draft sill was prepared using 10-node tetrahedral structural solid elements with a total of 400,000 degrees of freedom. The draft sill model was then integrated with a plastic pellet car model and studied under standard load case recommended by the AAR (American Association of Railroads) in M-1001. The analysis results indicated the high stress regions and a solution and design modifications were studied.

