

Pressure Die-Cast Aluminum Luminaire Mount Non-Linear Analysis – Geometric and Boundary Contact

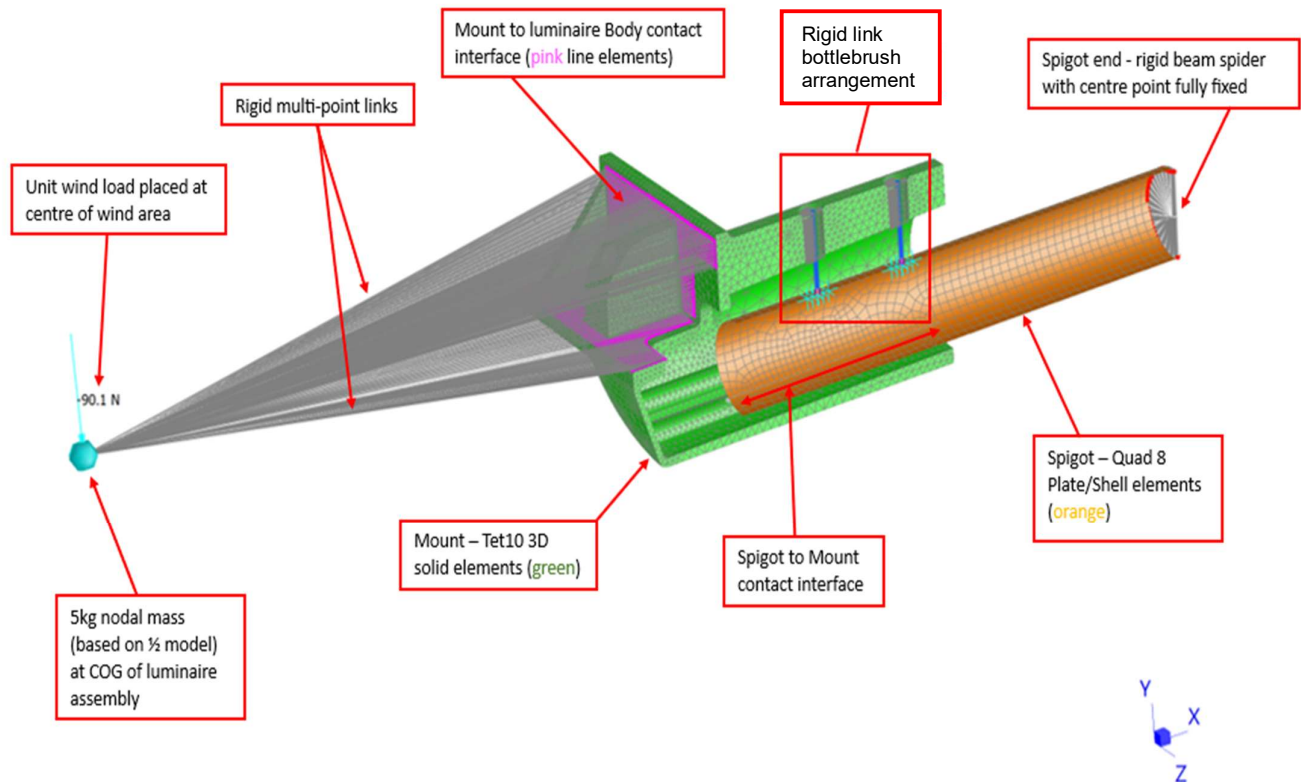
Date: September 2023

Client: Sylvania Schreder

Project Description:

David Beneke Consulting was commissioned by Sylvania Schreder to undertake a finite element analysis (FEA) of a Pressure Die-Cast Aluminium Luminaire Mount (mount). The mount connects a spigot to a luminaire body in either a side or top position. In the side position, the spigot is aligned parallel to the luminaire body and in the top mount position, the spigot is aligned perpendicular to the luminaire body.

The Strand7 non-linear static solver incorporating boundary contact non-linearity was used to analyse this model an isometric image of which is shown below (top position indicated). The purpose of the analysis was to ensure that the surface stresses encountered by the mount were less than that allowable prior to tool production was commenced. It is noted that once manufacturing did take place, the mounts were then load tested for verification and certification purposes.



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