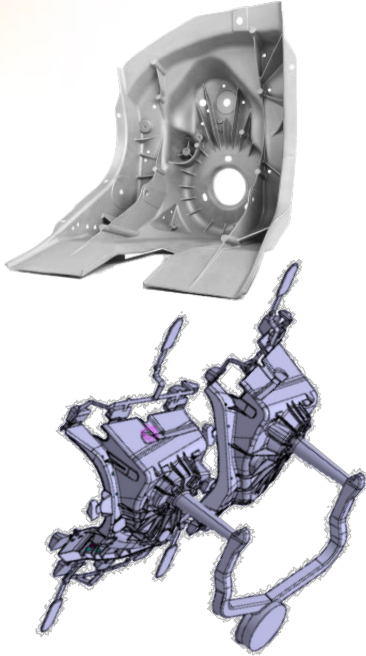


# Properties vs. Section Thickness - High Elongation Structural Alloys

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## Problem:

- Available mechanical data from round as-cast tensile specimens do not accurately characterize production castings being manufactured throughout the industry resulting in differing properties

## Objectives:

- Establish typical mechanical properties for various section thicknesses of production structural die castings made from high integrity aluminum with higher pressure, high vacuum die cast process

## Benefits to Warfighter:

- Better design guidance for structural die castings will result in:
  - Lighter weight, higher quality die cast parts
  - Higher performance capabilities

## Description of Project:

This project will create better design guidance for aluminum structural die castings by establishing typical mechanical properties for various section thicknesses of these castings resulting in lighter and higher performing parts.

**Team:** North American Die Casting Association, ATI



## Milestones / Deliverables:

- Mechanical property data including ultimate tensile strength, yield strength, and percent elongation for four section thicknesses across five alloys
- Characterized fracture surfaces
- Comparative statistical analysis for all alloys tested
- Integrate mechanical data into the NADCA Standard for High Integrity and Structural Die Casting Product Specification