

Analysis Presentation Format

All analysis presentations should adhere to this format and follow the expectations for each section. This format for peer review was derived from RTX standard presentation formatting and expectations — keep it professional.



Sub team:
Project:
Revision:
Names:

Abstract:

- Include all information surrounding the project
 - Location
 - Purpose
 - Restrictions
 - Image of part

Key Point of the slide

Methodology:

- What analyses were performed?
- What's the goal of the analyses?
- What is the overarching approach taken during analysis?
- Image of Workbench

Key Point of the slide

Assumptions:

- List all assumptions made during every slide moving forward
 - This slide is a catalog of all assumptions made during analysis

Key Point of the slide

Geometry:

- What are the dimensions, weight, and density of the part?
 - Include images of hand calculations if performed, with formulas stated
- What is the material of the part?
 - Include images of material properties from Ansys Mechanical
- Were sections of the part removed or changed for the FEM?
 - Include images of part before and after changes

Key Point of the slide

Mesh:

- What additions were made to make the mesh better?
- How many nodes?
- Does the mesh go through the thickness of the part?

Key Point of the slide

Connections:

- What were the contacts, targets, and type of connections?
 - Show image of initial information from contact tool
 - Show penetration
- What friction coefficient, formulation, and ramping were used?
 - Show images of details panel to show all changes

Key Point of the slide

Boundary Conditions:

- What supports were used?
 - Fixed? Location?
 - Image of support locations
- Were point masses used?

Key Point of the slide

Loading Conditions:

- Displacement? Force? Penetration?
 - Images of loading conditions on geometry and details
- PSD charts with modes mapped to them should always be included for random vibrational analyses

Key Point of the slide

Checks:

- List of checks that must* be done:
 - Free-Free Modal for first 7 modes
 - Isothermal FEM to 450°F stress against hand calculations (Command: "TUNIF, (450°F)")
 - Center of mass check from solver output
 - Mesh should go through thickness of geometry, ensure not a surface level stress (not real stress)
 - 1 G quasi-static analysis
 - Mass from solver output times 386.088 (1G) should be equivalent to the mass from the properties in the geometry tab of Ansys Mechanical
 - Image of Constraint Equations
 - Normal reaction force times friction coefficient should be equivalent to axial reaction force
- All checks should have their own respective images

Key Point of the slide

Analysis:

- Resultant stress, RMS stress, total strain, direction deformation, positive crossing, factors of safety, ply stresses & strains, and user defined results
 - Images and videos for all results should be included
 - Show everything

Key Point of the slide

Results & Suggestions:

- What are the final results of this analysis?
- Where should this project move forward?
 - How should the part improve?
- Design suggestions?

Key Point of the slide

References:

- Standards, CIDS, MILS, Books, etc. should be sourced appropriately

Key Point of the slide

Revision #6

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