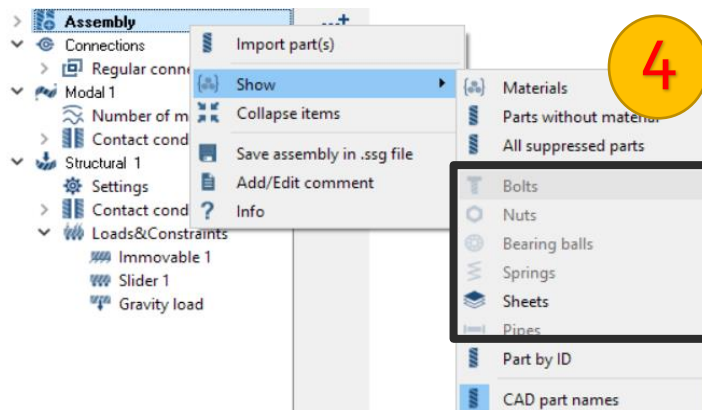# WORKFLOW GUIDELINES
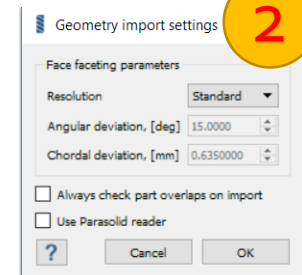
MODELING

1) Check for free surfaces and merged parts

   - Import only solids

   - Do not merge parts

     - Part definition becomes complex

     - Solver works harder

     - Solution accuracy and performance can deteriorate

Settings > Geometry Import Settings

2) Check for solids with curvature

   - If the faceting of those solids is coarse, bring in finer resolution of those parts

   - Do not import the entire assembly with finer resolution, it will slow down the solution considerably

Assembly > check geometry error

3) Check for geometry errors

4) Make sure parts are classified correctly (bolts, nuts, springs etc.)

   RMB Assembly > Show
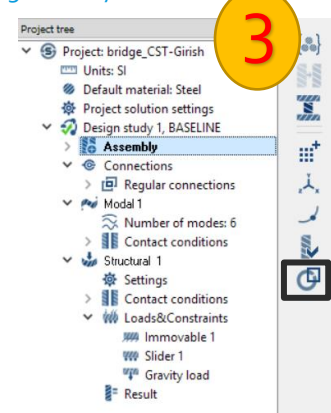
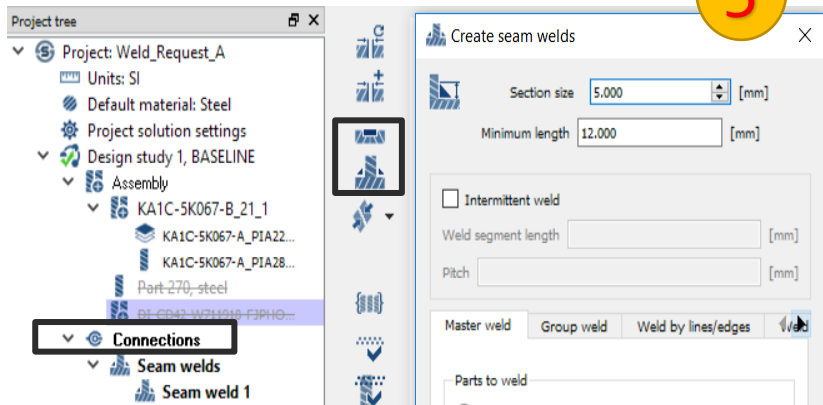5) Create welded connections, if applicable

- Connections in SimSolid should represent connections of the parts in the field

Connections > Seam/Spot Welds

Connections > Find/Show disconnected parts

6) Create auto-connections using normal resolution

- Use small tolerance

- Identify and connect any free parts

- Make sure the structure is not over-constrained
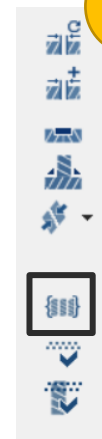
- Delete any redundant connections

Connections > Review regular connections

7) Identify connections with small # of points

- Edit those connections to have higher resolution

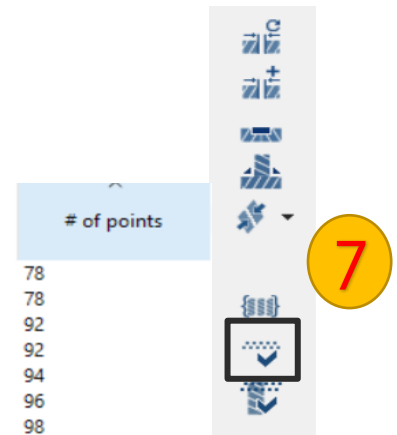8) Review parts with small relative volume
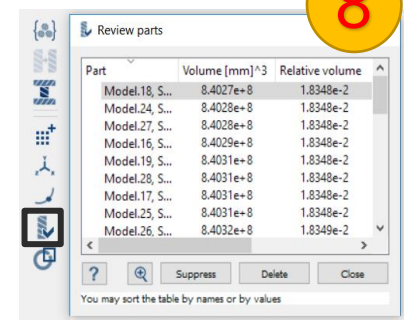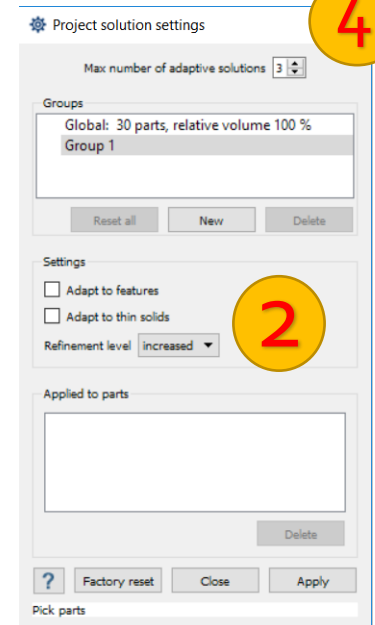
- Verify that they have enough connection points

Assembly > Review parts

SOLUTION SETTINGS

1) Run linear static analysis

   - Identify local deformations, thin curved solids, parts of interest for stresses

2) Create local groups for identified parts and organize them based on part scale

   - **Group parts with similar scale**

   - Apply relevant solution settings (refinement level, adapt to features, adapt to thin solids)

   - Adapt to features: Groups where accurate stresses are required

   - Adapt to thin solids: Groups where there are thin **curved** solids

   - High refinement level: Global-local analysis and groups with local deformations

3) Increase contact resolution (if applicable)

   - Increase resolution of contact interfaces where stresses are important/high

   - Do not always use higher resolution on the entire assembly, it will negatively affect the performance of the solution

4) Increase the number of adaptive solutions to 4-5-6 until convergence is achieved

   - Do not go beyond 6 adaptive passes

   - Higher number of passes cause chatter around contact connections

5) Perform nonlinear analysis only after achieving accurate linear solution

Project tree > Project solution settings

Add/Edit connection