SIMULATION Tips & Tricks





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SETUP

- Shortcut Toolbar
- Settings
- Folders

S SOLIDWORKS

• Drag materials

MESH / SOLVING

- Draft Quality Mesh
- Mesh Strategy
- Mesh Quality plot
- Local mesh
- Result Quality
- Mesh Convergence
- Adaptive solving
- Stress Hotspots
- Show results during calculations

RESULTS

- Superimpose plot
- Real View results
- Lights
- Mesh

Parts

• Perspective

 Image: State of the s

• Design Insight



Computing time



Accuracy





SETUP

MESH / SOLVING



- Shortcut Toolbar
- Settings
- Folders
- Analysis library
- Drag materials









Shortcut Toolbar

- Settings
- Folders
- Analysis library
- Drag materials

















SETUP • Shortcut Toolbar 7. • Settings Katic 2 (-Default-) • Folders 🗳 Parts • Analysis library 🕨 🗑 📣 blue-1 • Drag materials 🕨 🗑 📣 fäste-1 🕨 🗑 📣 fäste-2 Image: Weight of the second sec V V vellow-5 (-[SW]AISI 1020-) P Connections * Scomponent Contacts S Fixtures La External Loads 🖤 Mesh Result Options





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Draft Quality



High Quality





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Perfect elements has aspect ratio of 1.0

Check types: Edge Length, Inscribed circle, Edge Normal.



When meshing a report will be generated of % of elements

Below AR=3 Between AR=3 & AR=10 Above AR=10



The element may be inverted

Looks for elements that have too much 'bend' on the edges.

The Jacobian ratio check applies to <u>high quality</u> elements only.

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RESULT QUALITY

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Calculating stress





CALCULATING STRESS



Element stress

Nodal stress

[Default]

Nodal stress is the average of the surrounding Gaussian points **Element stress** is the average of the elements Gaussian points









20 20

RESULT QUALITY

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3S SOLIDWORKS

MESH / SOLVING

RESULTS





Do we need 1.000.000 elements for accuracy How accurate is a result ?

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Mesh Convergence

MESH / SOLVING

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3 SOLIDWORKS



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Identify touching faces







Interaction Viewer







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RESULTS





• Lights

• Mesh







RESULTS

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MESH / SOLVING



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MESH / SOLVING



- Superimpose plot
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THANK YOU !

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