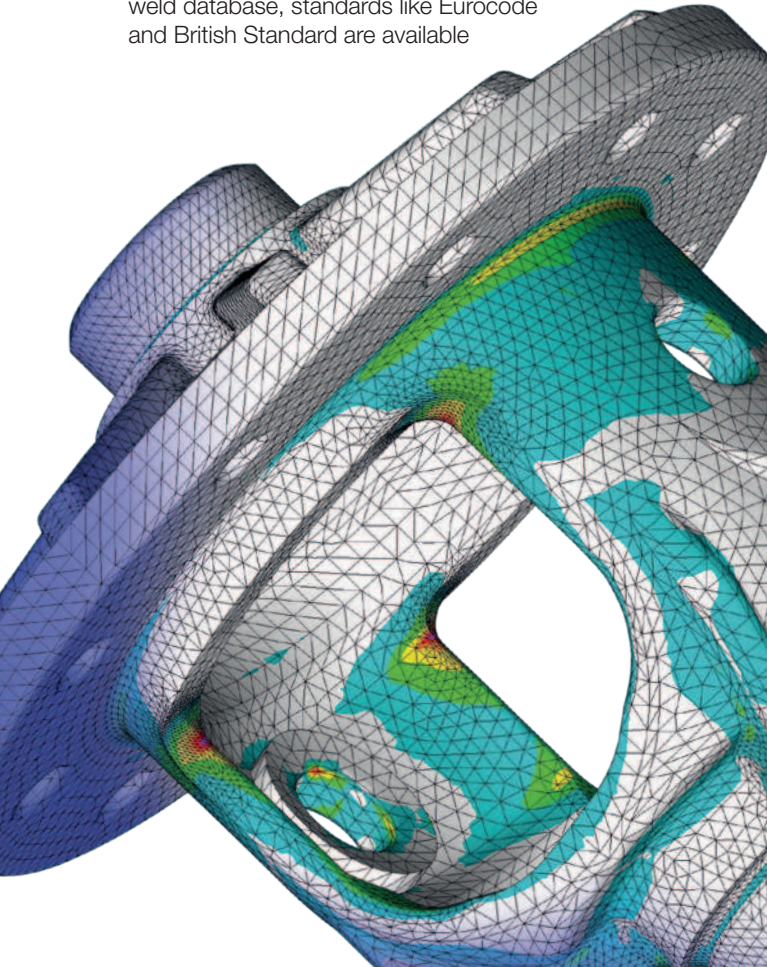


Your Benefits

- Can be directly launched from FEMFAT
- Fast FE-solver independent postprocessing
- Handles shell, solid, linear and parabolic FEM elements
- Unlimited number of displays for one user
- High graphic performance in all display modes for wire frame, hidden-line, flat-shaded, smooth-shaded, result display
- Semi -automatic recognition of weld lines and joint types
- Visualization of the detailed weld geometry
- Checks and warnings to avoid modeling errors
- xMCF interface for CAD based weld definition
- Detailed weld display can be defined in the weld database, standards like Eurocode and British Standard are available



FEMFAT visualizer

FINITE ELEMENT METHOD FATIGUE

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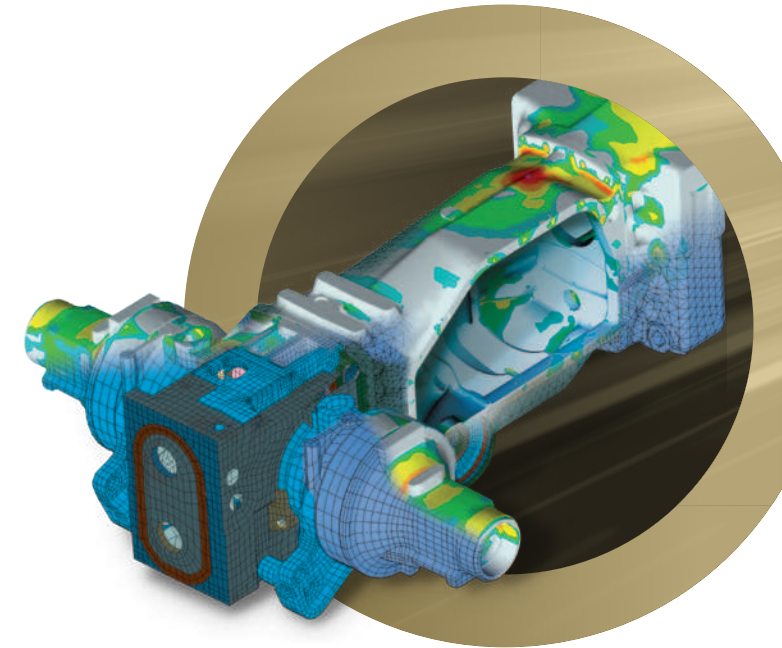
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FEMFAT visualizer

BY MAGNA POWERTRAIN



3D Postprocessor

- Fast FE-solver independent postprocessor
- Stress and damage history
- Near-automatic WELD definition
- Detailed weld and spot joint information

femfat.magna.com

Displaying FEM models

FEMFAT visualizer is a fast 3D postprocessor for displaying the structure of FEM models, FEA stresses and for viewing fatigue results.

It is also a valuable preprocessor for the FEMFAT weld assessment to facilitate near-automatic weld definitions. This enables a quick and easy weld seam definition. The weld seam line can be specified with only a few mouse clicks on the FEM geometry. The joint type (T-joint, lap joint, etc.) is automatically recognized, details can be modified and added – with visual support. The detailed weld geometry is displayed within the FEM model (see bottom figure), allowing rapid and unambiguous checking.

Method

Animation of stresses

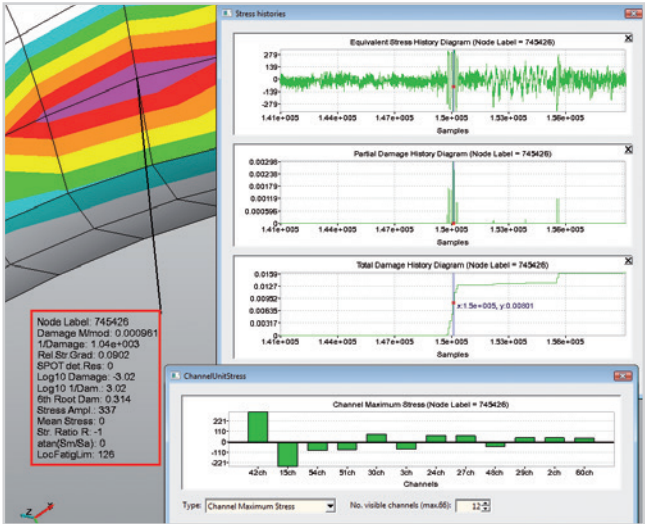
VISUALIZER can display the ChannelMAX or TransMAX or SPECTRAL FEA stress results as static images or as an animation by selecting a specific time interval. If the result is from ChannelMAX, the channels can be selected for superimposing too.

Node group definition

VISUALIZER provides an option for creating a new node group by dragging a frame or by selecting individual nodes. This new group can be saved and imported in the FEMFAT group menu.

3D Screenshots

For enhanced presentation of your results it is possible to export a 3D screenshot of your part. With a plug-in it is possible to export the 3D screenshots and put it into your presentation.



Stress and damage history plots

ChannelMAX load factors

From the equivalent stress or the damage history diagrams, the load factors for all channels can be visualized as a bar chart. The results (channel load factors, unit stress data, maximum stress data) are sorted according to absolute value. So it is easy to find out the most relevant loading directions.

Additional information for hot spots at a glance

All analyzed results (in analogy to the report file) can be selected for output simultaneously for one or more nodes. This applies to the base material, WELD and SPOT nodes.

Stress and damage history

After selecting a FEM-node from the DETAILED RESULTS group, the stress history and the partial and total damage history can be displayed in a diagram (see left figure). Exact diagram points are displayed with the aid of markers and the time range of interest can be enlarged with the help of a zoom function.

Semi-automatic weld definition

Selecting the weld start node FEMFAT visualizer is showing possible weld lines. With selecting the weld end node and finish the weld definition an automatic window is opening where the weld setting can be modified as needed. The weld definition can be saved in a file which is used in the subsequent fatigue analysis.

CAD based weld definition with xMCF

Based on the information included in the xMCF file the VISUALIZER can do automatic definition of the weld seams.

