

# SJ MEPLA

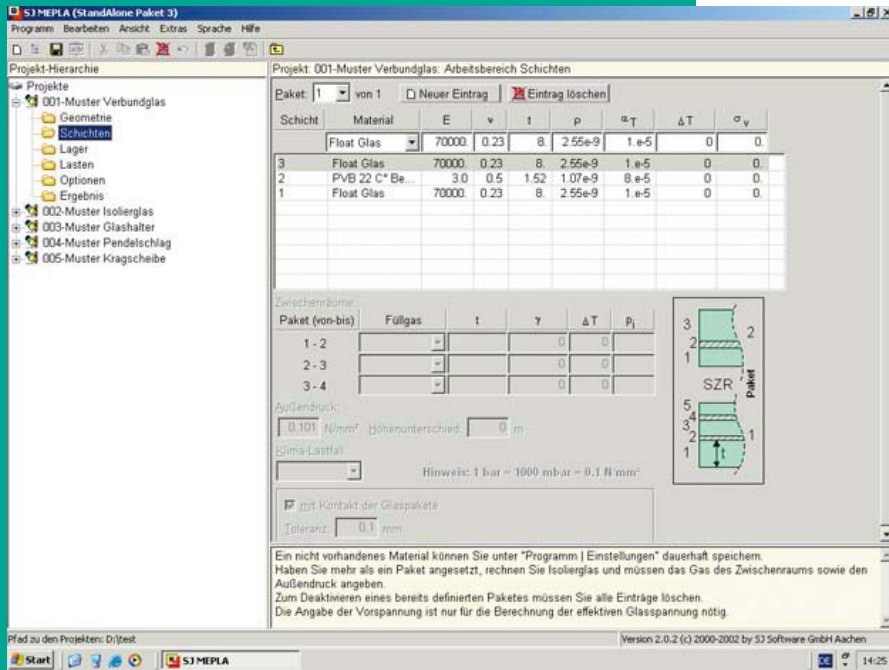
Stress calculation and dimensioning for glass constructions



The dimensioning and stress calculation of glass structures under widely varying conditions is a standard task in routine engineering work.

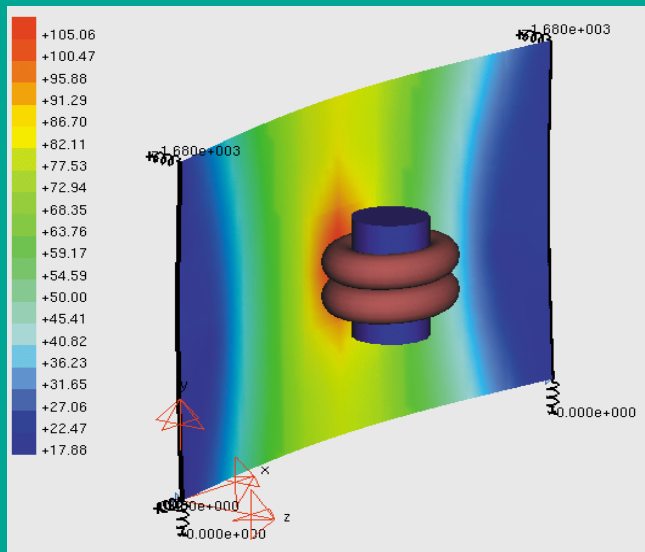
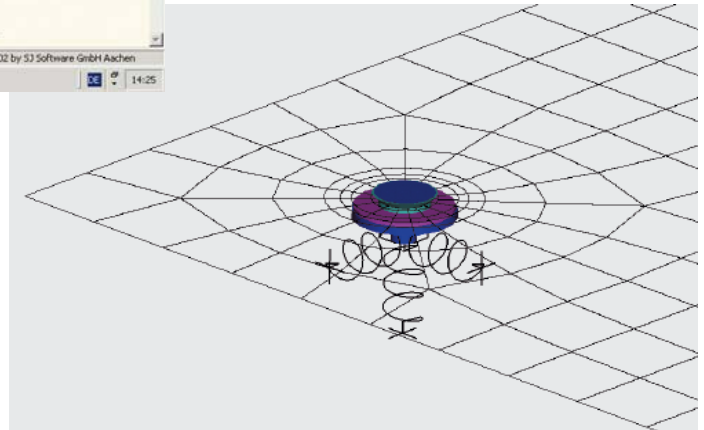
Geometrical configurations which deviate from a rectangular shape cannot here be calculated using tables or rules of thumb, but must instead be evaluated with the method of finite elements.

In this respect new formulations for calculating the stresses in laminated glass, insulation glass, point-supported glass as well as dynamic formulations (pendulum impact, pressure shock) have been specially integrated for the glass construction field.



## Geometry and Layers

- Generation of triangles, rectangles, pentagons, hexagons, panes with rounded edges, circular panes
- Description of the pane geometry by input of the corner points
- Automatic mesh generation
- Adjustable density of the element mesh
- Any pane structure by input of the layer sequence (laminated safety glass)
- Insulation glass units with multiple cavities (also in laminated safety glass version)
- Consideration of the gas pressure laws.



## Loads, Options and Result

- Face loads and concentrated loads with defined area distribution
- Line loads and Climatic loads for insulation glass units running in any direction
- Temperature differences in the layers of insulation glass
- Dynamic simulation of the pendulum impact test according to DIN EN 12600 (also for insulation glass and point fixings)
- Pressure shock stresses, e.g. wind gusts
- Linear and non-linear geometric calculations
- Application of the loads in single steps
- Any results output at freely definable points
- Free selection of additional stress and deformation outputs
- Representation of the comparative stresses in the graphical interface
- Computation log with all basic data, specifications and results
- Graphical display of curve with adjustable x and y axes.

## Supports

- Formulating any spring support
- Elastic edge and line supports
- Point fixing elements for countersunk and double-sided disk fixing
- Freely selectable support for point fixings through co-ordinate specification with automatic fitting
- Predefined types of support for the plate edges with exploitation of symmetrical properties
- Elastic support of point fixings using springs or tensioned bars
- Spacers in insulation glass units
- Reinforcing edge beams
- Elastic bedding.

CAD-PLAN GmbH  
Frankfurter Str. 59-61  
63067 Offenbach  
Germany

Tel. +49-69-800 818-0  
Fax +49-69-800 818-18

info@cad-plan.com  
www.cad-plan.com