



# **Structural Analysis & Design Software**

[www.dlubal.com](http://www.dlubal.com)



**Dipl.-Ing. (FH) Andreas Hörold**  
Organizer

Marketing & Public Relations  
Dlubal Software GmbH



**Dipl.-Ing. (BA) Andreas Niemeier, M.Eng.**  
Co-Organizer

Head of Product Engineering  
Dlubal Software GmbH

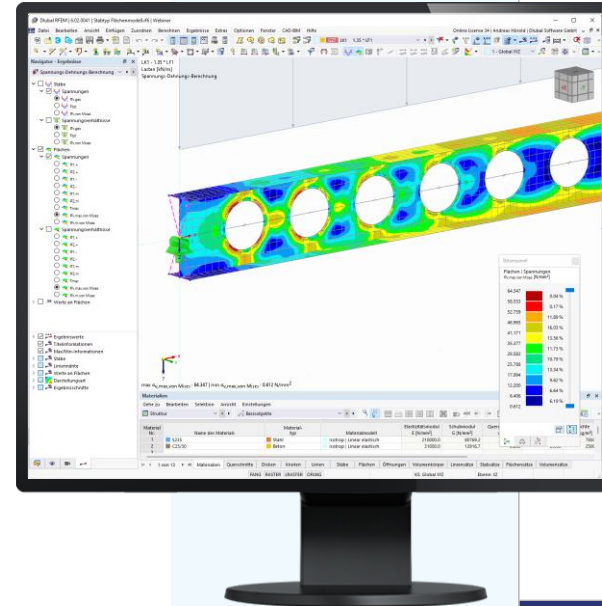


**Dipl.-Ing. Frank Faulstich**  
Co-Organizer

Product Engineering & Customer Support  
Dlubal Software GmbH

Webinar

# New Features in RFEM 6 and RSTAB 9



# Questions During the Presentation



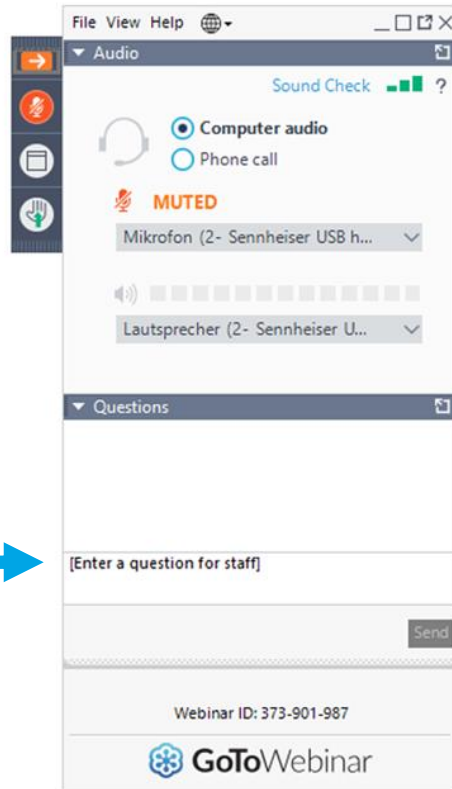
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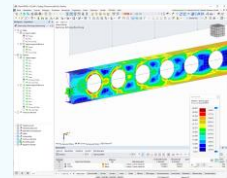
# CONTENT



**01** New features in RFEM 6 and RSTAB 9

**02** New features in add-ons and stand-alone programs

**03** Prospects



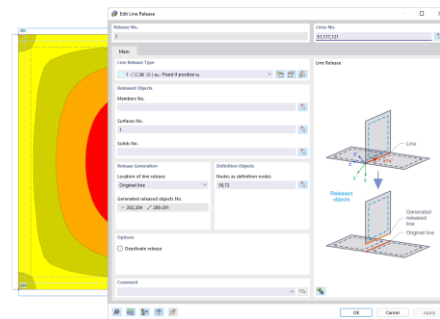


# Features

## Node, Line, and Surface Releases

- Definition of transfer conditions between objects
- For example, release of members, surfaces, or solids from a line
- Optional consideration of nonlinearities such as "Fixed if positive n", "Friction", etc.

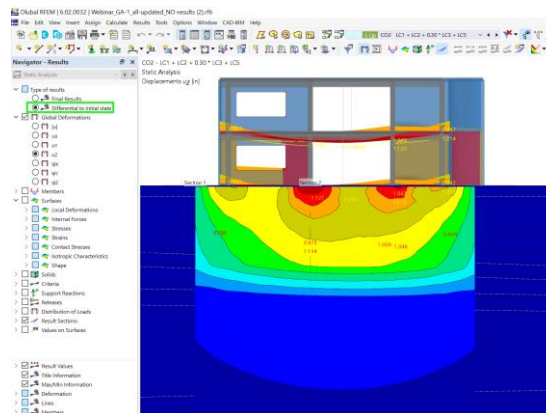
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## Result Difference to Initial State

- For example, output of settlements as a difference to the initial state "soil self-weight" in the geotechnical analysis

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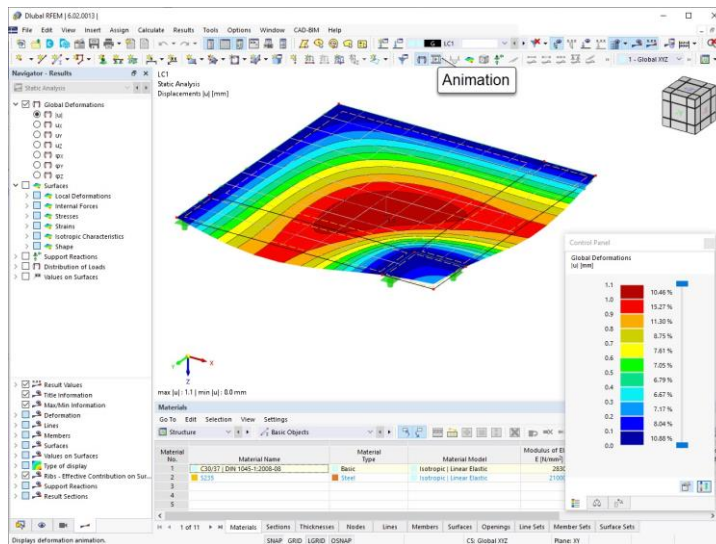
# Features

## Zoom with Window

- Window zoom with pressed right mouse button

## Animation of Deformations

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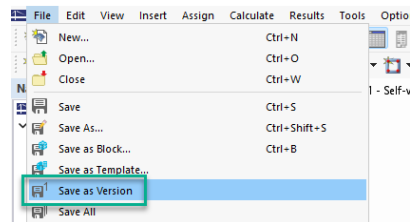


# Features

## Save as Version

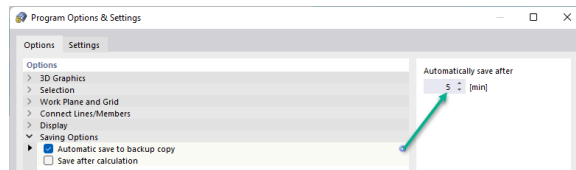
- Saving different model states within a model

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## Automatic Save

- Cycle adjustable



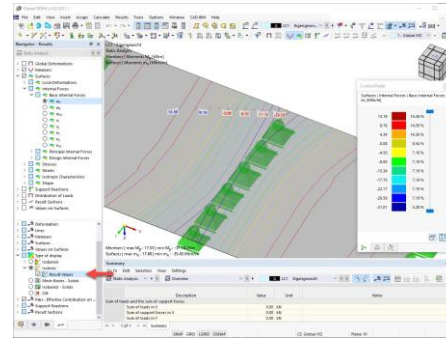


# Features

## Displaying Result Values on Isolines

- Deformations, internal forces, stresses, etc.

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## 3D Mouse Support

- Operation with your free hand
- Move, zoom and tilt the 3D model on the screen simultaneously without using the regular mouse

➔ [More information](#)





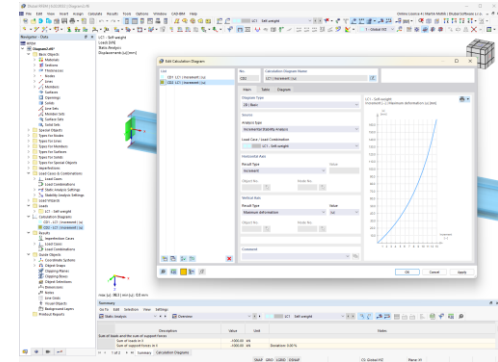


# Features

## Creating Calculation Diagrams

- Representation of relationships between different results (e.g. stresses-strains, internal forces-deformation, etc.)
- Creation and organization via the menu Insert → Calculation Diagrams or in the Navigator - Data

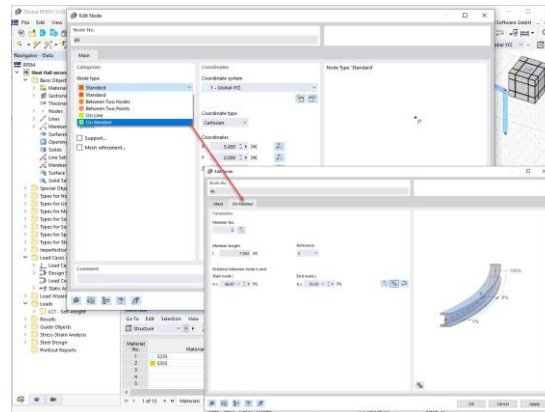
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## Changing Node Types

- Adjust the type and location

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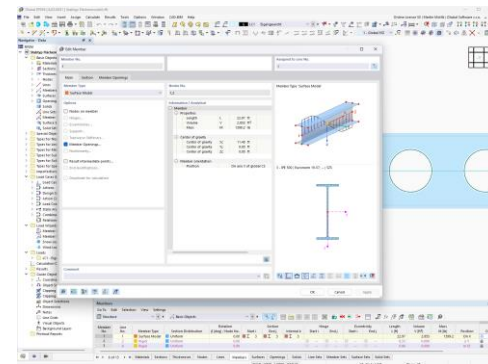


# Features

## Member Type "Surface Model"

- Simulation of openings in web
- Consideration of real stress distribution
- Design of member results with add-on
- For example, for castellated beams, perforated beams, beams with rectangular openings, Vierendeel trusses

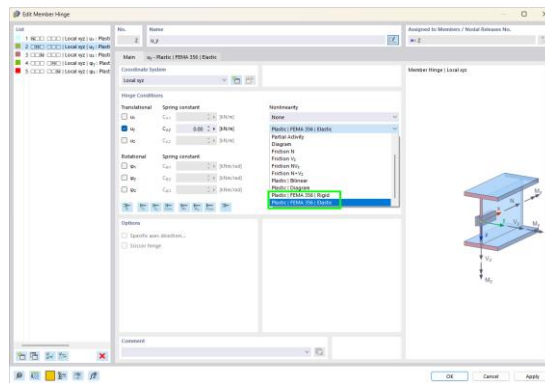
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## Plastic Hinges Acc. to FEMA 356

- Nonlinear hinges with preset yield properties and acceptance criteria for steel members (Chapter 5 of FEMA 356)
- To create pushover curves

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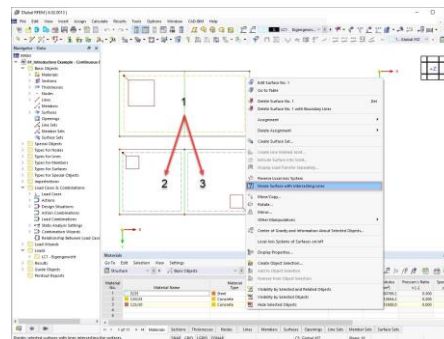




# Features

## Dividing Surfaces with Intersecting Lines

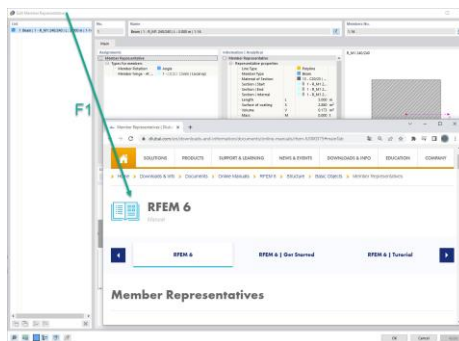
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## Accessing the Manual's Chapters

- Open the corresponding chapter in the online manual by pressing [F1] in the respective dialog box

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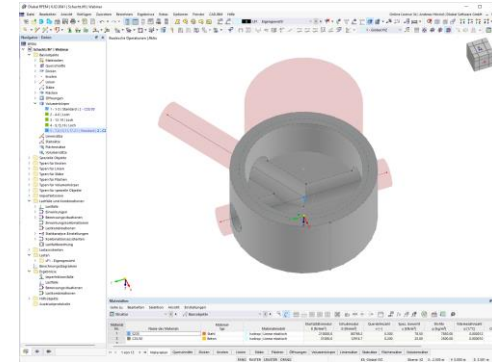


# Features

## Intersection of Curved Surfaces and Solids

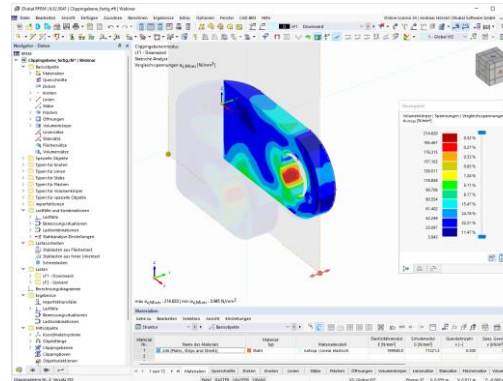
- Surface type "Trimmed" for intersection of curved surfaces (e.g. for pipe penetrations, twisted openings, etc.)
- Intersection of solids via solid types "Hole" and "Intersection" (e.g. for complicated construction pit shapes, perforated solid shapes, etc.)

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## Moving the Clipping Plane

- Smoothly via drag & drop



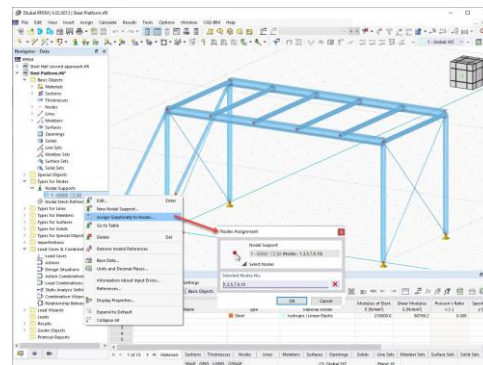


# Features

## Assigning Types in the Graphic

- Nodal supports
- Effective lengths
- Line supports
- Loads
- Member supports, etc.

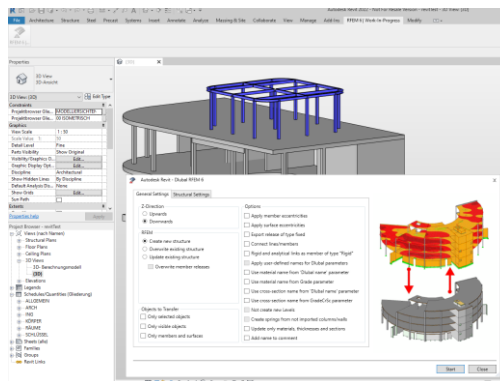
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## Interface with Autodesk Revit 2022

- Bidirectional data exchange
- Members, surfaces, hinges, supports, loads, etc.
- Model alignment

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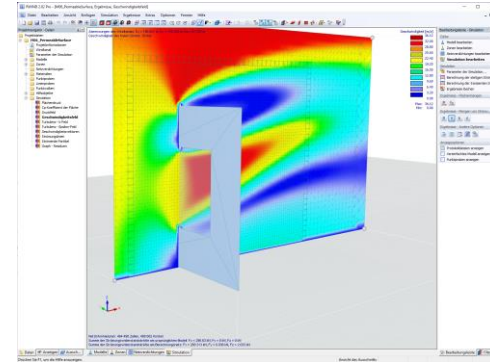


# RWIND 2

## Freely Adjustable Wind Permeability for Surfaces

- Definition of pressure boundary conditions between the front and back of a porous zone
- Simulation of permeable scaffolding, dust curtains, mesh structures, and so on

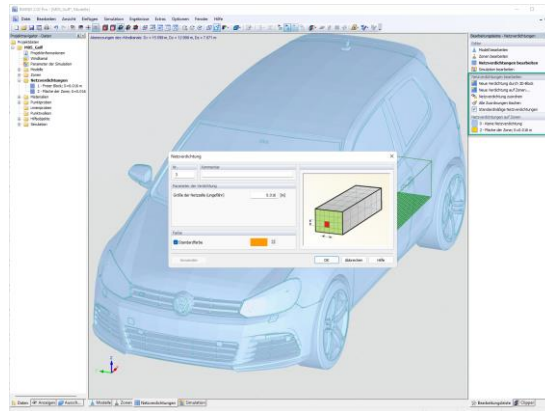
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## Editor for Mesh Refinement Control

- Graphic visualization of areas with mesh refinements
- Mesh refinement of zones
- Deactivation of standard 3D solid mesh refinement with transversion into corresponding manual 3D mesh refinements

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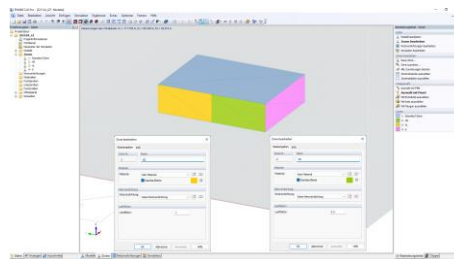




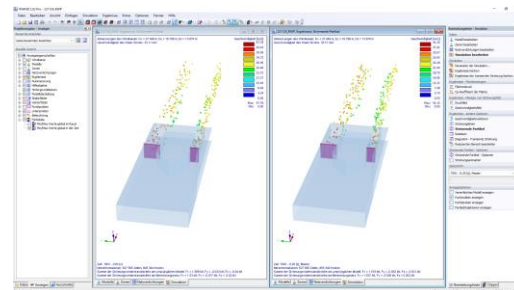
# RWIND 2

## Other New Features

- Load factors for zones
- Point clouds / particle tracking
- Convergence criterion - new residual type "Drag Force Difference"
- Extended model information
- New auxiliary objects
- Graphical model editor



➔ [Webinar Recording: Wind Simulation in RWIND 2](#)



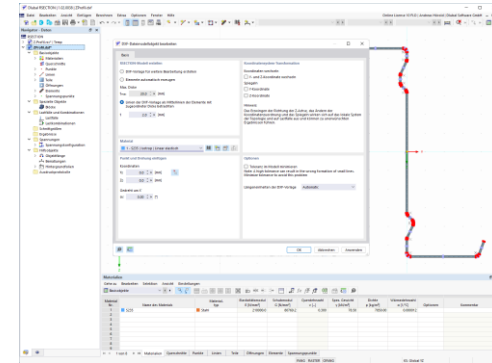


# RSECTION 1

## Creation of Cross-Sections from DXF Files

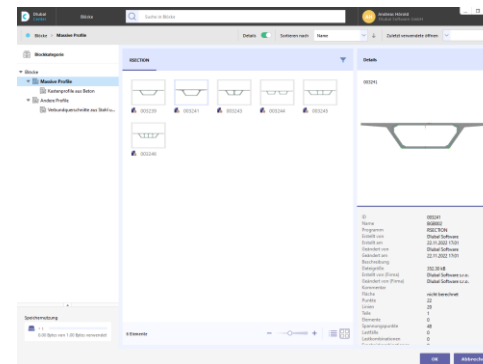
- Create elements automatically
- Use DXF template lines as centerlines of elements with a defined thickness

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## Plastic Unit Stresses According to Simplex Method

## Creation (Incl. via JavaScript) and Import of Blocks





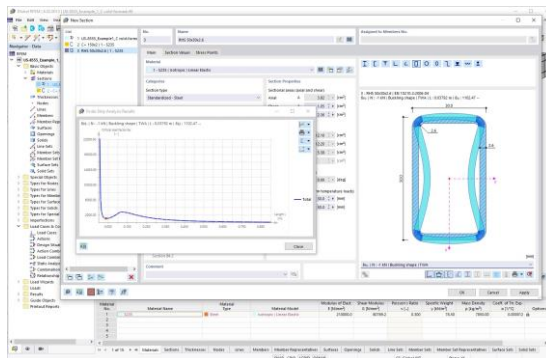


# RSECTION 1 / Steel Design Add-on

## Mode Shape for Distortional and Local/Global Buckling

- Graphical output in RFEM and RSTAB for design according to EN 1993-1-1
- For RSECTION cross-sections as well
- Output in RSECTION for library cross-sections

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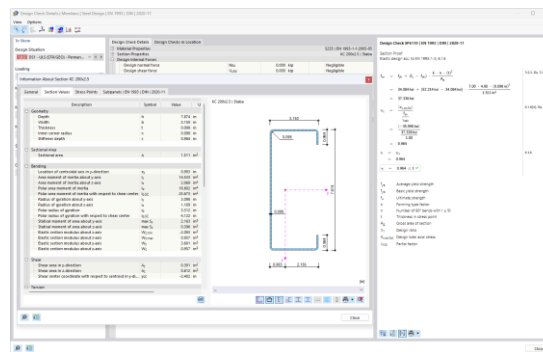


# Steel Design Add-on

## Section Design for Cold-formed Steel Members According to EN 1993-1-3

- For cold-formed sections from the cross-section library as well as for general cold-formed (non-perforated) sections from RSECTION

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# Concrete Design Add-on

## Automatic Layout of Surface Reinforcement

- The required diameter or distance to cover the required reinforcement is determined

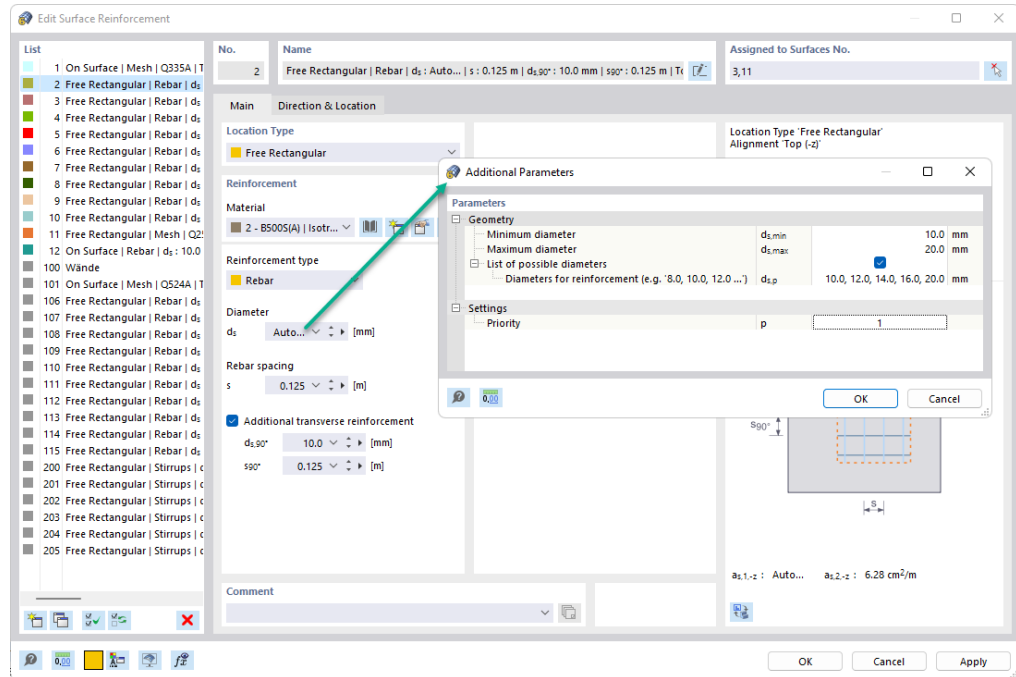
## Multiediting of Member Reinforcement

- Simultaneous definition or editing of reinforcement of members and sets of members

## Detailed Results in Graphic

- E.g.  $V_{Ed} / \sqrt{R_{d,c}} \cdot V_{Ed} / \sqrt{R_{d,max}} \cdot U_{zr} \cdot W_{k,-z} (top)$   
 $W_{k,+z} (bottom)$

## Punching Shear of Foundation Plates



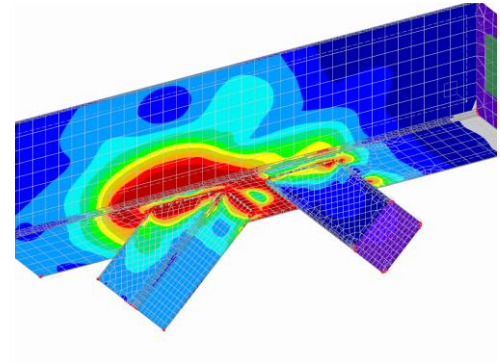


# Steel Joints Add-on

## Connection of Rectangular Hollow Sections

- Connection by means of welds
- For connections among each other or to other cross-sections or components (e.g. end plates)

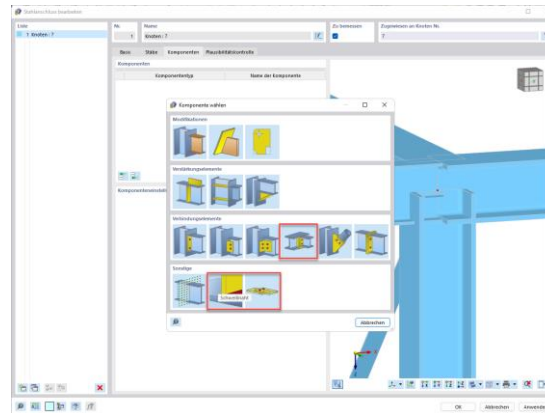
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## New Components

- End plate to plate
- General weld
- Fastener (general positioning of screws)

## Copying of One or More Components

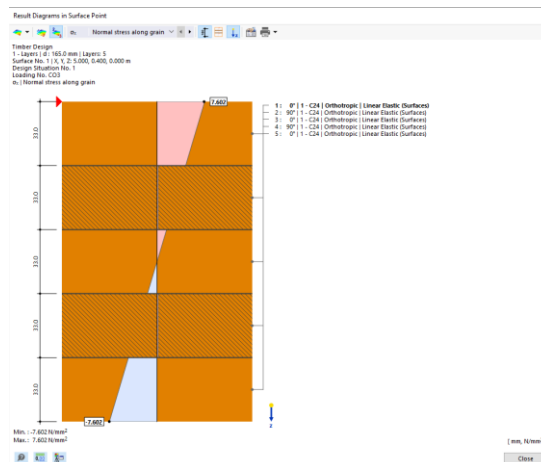




# Multilayer Surfaces / Timber Design Add-on

## Design of CLT Panels

- ULS, SLS, fire protection design
- Floor slabs, deep beams
- Treatment of singularities
- Fastener design



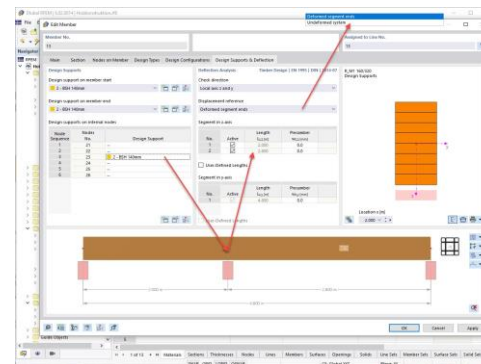
➔ [Webinar "Modeling and Design of CLT Panels in RFEM 6" on 19 January 2023, 2:00 PM](#)

# Features

## Improved Segmentation for Deformation Analysis

- Add-ons Timber Design, Concrete Design
- Automatic segmentation for deformation limits of cantilevers or single-span beams

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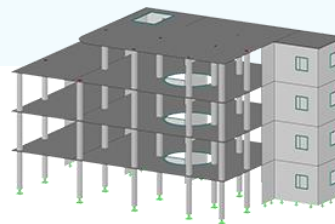


## Planned Features

- Interface with Autodesk Revit 2023
- Interface with Tekla Structures
- Load transfer
- Building Model (load transfer)
- Time history analysis for accelerograms
- Pushover analysis
- Cloud computing
- Consideration of precipitation quantities
- Nonlinear concrete analysis
- Fire resistance design for concrete
- Foundation design
- Glass design
- Steel joint design of circular pipe sections
- Determination of cutting patterns for membranes
- Guidelines
- Interface for import of empirical wind tunnel data
- and much more

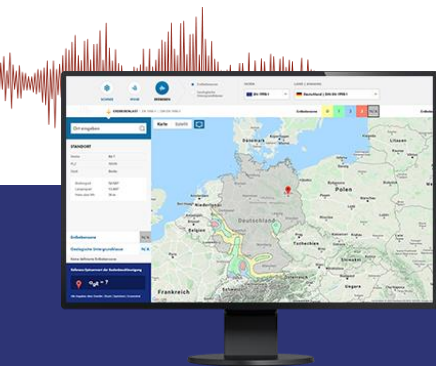


# Free Online Services



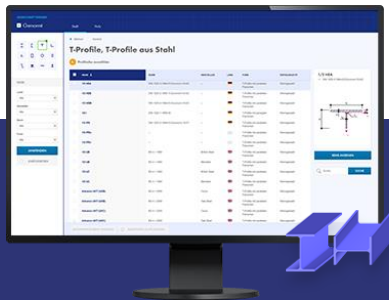
## Geo-Zone Tool

Dlubal Software provides an online tool with snow, wind and seismic zone maps.



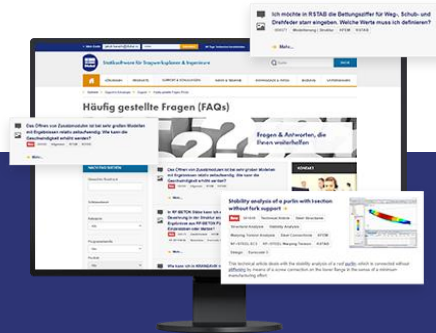
## Cross-Section Properties

With this free online tool, you can select standardized sections from an extensive section library, define parametrized cross-sections and calculate its cross-section properties.



## FAQs & Knowledge Base

Access frequently asked questions commonly submitted to our customer support team and view helpful tips and tricks articles to improve your work.



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Download numerous example files here that will help you to get started and become familiar with the Dlubal programs.





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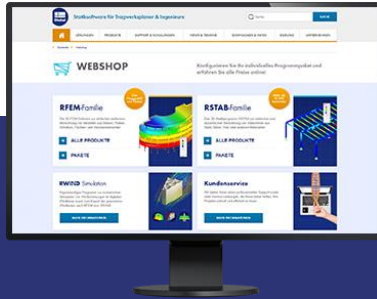
## Youtube Channel - Webinars, Videos

Videos and webinars about the structural engineering software.



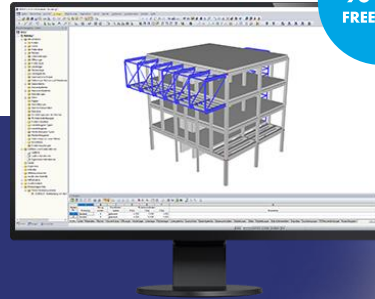
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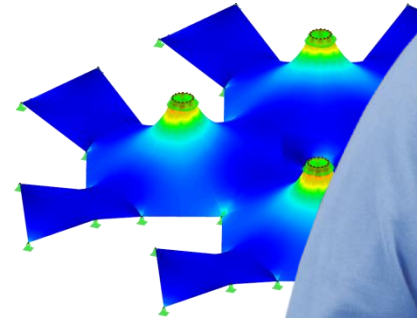
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**Dlubal Software GmbH**  
Am Zellweg 2,  
93464 Tiefenbach, Germany

Phone: +49 9673 9203-0  
E-mail: [info@dlubal.com](mailto:info@dlubal.com)



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