



Structural Analysis & Design Software

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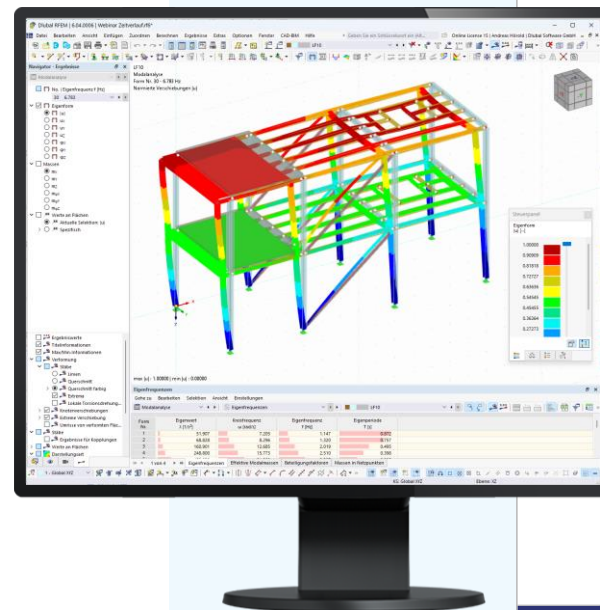
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Webinar

Analysis of Induced Vibrations in Time History Analysis Add-On in RFEM 6



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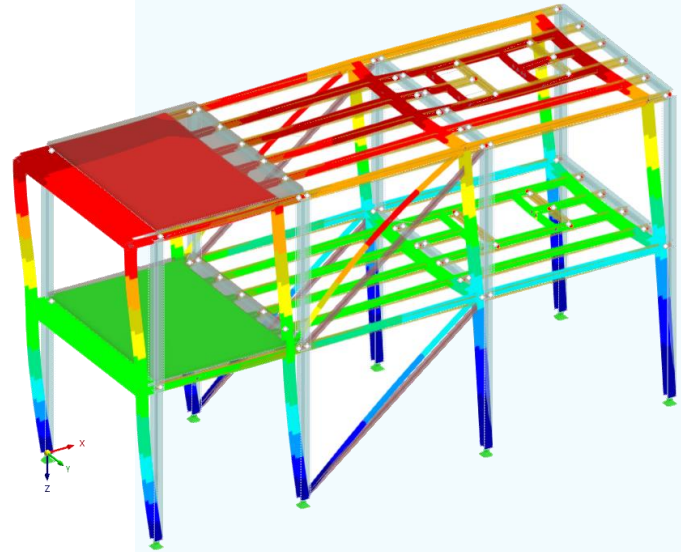


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CONTENT

- 01** Overview of dynamic analyses in RFEM
- 02** Natural frequency analysis of a structure using the Modal Analysis add-on
- 03** Linear time history analysis with machine-induced vibrations using the Time History Analysis add-on
- 04** Evaluation of calculation and optimization of the structure

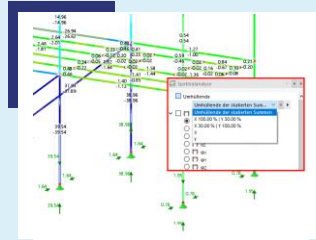




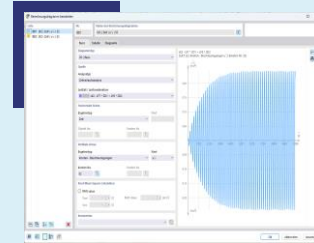
Add-Ons for Dynamic Analysis - RFEM 6 / RSTAB 9



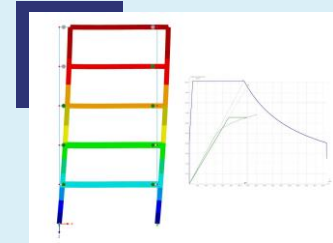
Modal Analysis



**Response
Spectrum Analysis**



**Time History
Analysis**

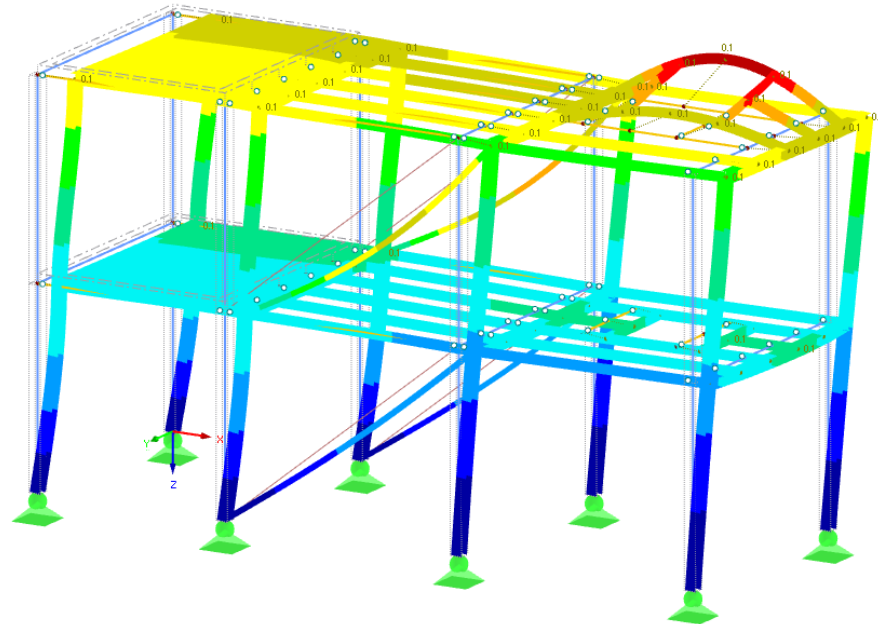


Pushover Analysis



Practical Example: Machine-Induced Vibrations

- Frame structure is now excited by a dynamic load
- Rotating unbalance with a frequency of 5.6 Hz and a force of 0.2 kN



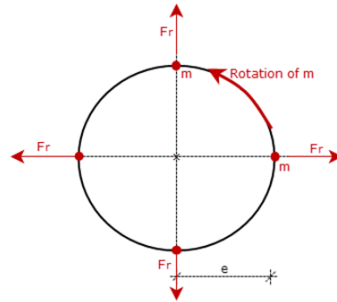


Input Values

Radial Force

0.2 kN divided by member length

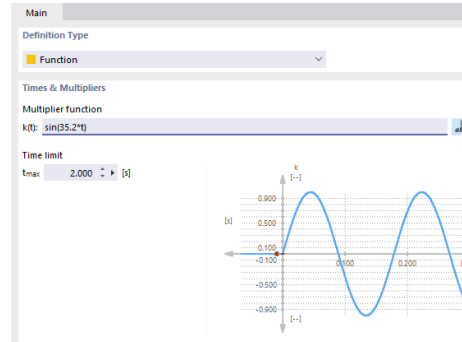
→ results in a radial force of 0.025 kN/m, which is to be applied in vertical and horizontal direction



Definition of Time Diagrams

- time diagrams separated by vertical and horizontal component
- by displacing the curve about quarter of circumference: $\pi/2$
- angular frequency is calculated by

$$\omega = 2 \cdot \pi \cdot f = 2 \cdot \pi \cdot 5.6 \text{ Hz} = 35.2 \text{ rad/s}$$





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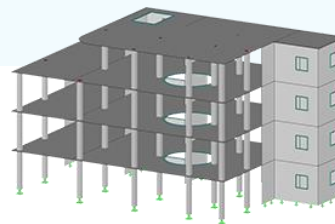
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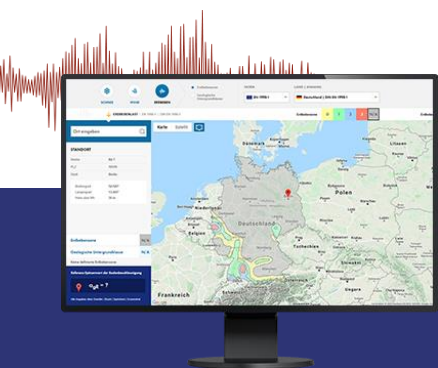


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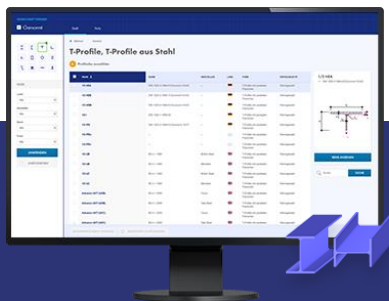
Geo-Zone Tool

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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.



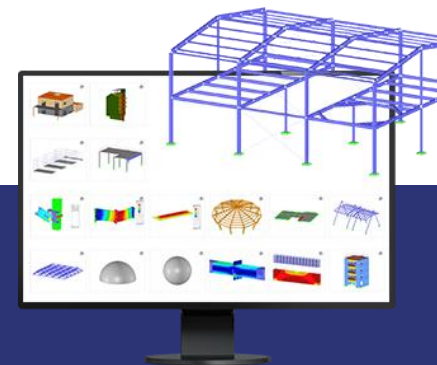
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Models to Download

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Videos and webinars about the structural engineering software.



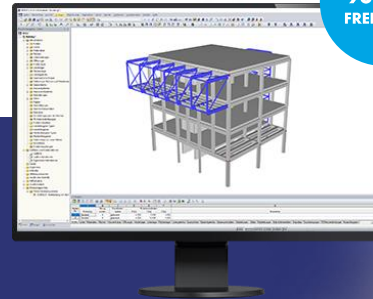
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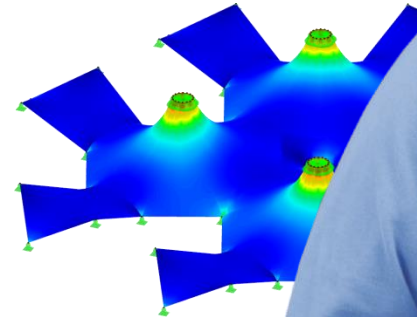
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