RISA Webinar

Using the AISC 341/358 Seismic Provisions within RISA-3D

Presenter: Matt Brown, P.E.
INTEGRATED PROGRAMS

RISAFloor 5.1

RISA-3D 9.1
• AISC 360-05 (13th Edition Steel Construction Manual)
• AISC 341-05 (Seismic Provisions)
• AISC 358-05 (Prequalified Moment Connections)
Seismic Considerations

• Member Strength
• Connection Strength
• Drift
R (Response Modification Coefficient)

For steel systems *not* specifically detailed for Seismic Resistance:

\[ R = 3 \]

(SDC A, B, C Only)

SEISMIC EXEMPTIONS
\( \Omega_0 \) (Overstrength Factor)

- Applied to Load Combinations
- For members which must remain elastic
- Seismic Provisions dictate usage
ρ (Redundancy Factor)

• Applied to Load Combinations

• For members which do not use $\Omega_0$

• ASCE 7 dictates usage

REDUNDANCY FACTOR
AISC Frame Types

Moment Frames

Braced Frames
  • Concentric
  • Eccentric
  • Buckling-Restrained

Steel Plate Shear Wall

Version 9.1

Future Releases

SEISMIC FRAME TYPES
Z Factor = \( \frac{Z \text{ @ Section A}}{Z \text{ @ Section B}} \)
<table>
<thead>
<tr>
<th>AISC Requires</th>
<th>RISA-3D Reports</th>
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</thead>
<tbody>
<tr>
<td>Member Strength</td>
<td>Yes</td>
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<tr>
<td>Member Slenderness</td>
<td>Yes</td>
</tr>
<tr>
<td>Connection Strength</td>
<td>Yes</td>
</tr>
<tr>
<td>SC/WB, Span:Depth</td>
<td>Yes</td>
</tr>
<tr>
<td>Fabrication Detailing</td>
<td>No</td>
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</tbody>
</table>

**RISA-3D SEISMIC CHECKS**
Brace Capacities:
Pnt = 200k
Pnc = 100k

BRACED FRAME

FREE BODY DIAGRAM

COMPRESSION BRACE BUCKLED

UNBALANCED FORCE ON BEAM

UNBALANCED BEAM FORCES
Additional Resources

- AISC Seismic Design Manual
- RISA-3D Help File / Manual
- www.risanews.com

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Questions?

Please let us know if you have questions.

We will answer as many questions as time permits during the webinar.

Once the webinar is closed, we will post all Q&A’s, as well as the Quick Reference Guide, to our website: www.risa.com

For further information, contact us at: info@risatech.com

Thank you for Attending!