Load Bearing Structural Assembly

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Wednesday, June 27
# MODIFIED MERCALLI INTENSITY SCALE

<table>
<thead>
<tr>
<th>Instrumental Intensity</th>
<th>Acceleration (g)</th>
<th>Velocity (cm/s)</th>
<th>Perceived shaking</th>
<th>Potential damage</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>&lt; 0.0017</td>
<td>&lt; 0.1</td>
<td>Not felt</td>
<td>None</td>
</tr>
<tr>
<td>II–III</td>
<td>0.0017 – 0.014</td>
<td>0.1 – 1.1</td>
<td>Weak</td>
<td>None</td>
</tr>
<tr>
<td>IV</td>
<td>0.014 – 0.039</td>
<td>1.1 – 3.4</td>
<td>Light</td>
<td>None</td>
</tr>
<tr>
<td>V</td>
<td>0.039 – 0.092</td>
<td>3.4 – 8.1</td>
<td>Moderate</td>
<td>Very light</td>
</tr>
<tr>
<td>VI</td>
<td>0.092 – 0.18</td>
<td>8.1 – 16</td>
<td>Strong</td>
<td>Light</td>
</tr>
<tr>
<td>VII</td>
<td>0.18 – 0.34</td>
<td>16 – 31</td>
<td>Very strong</td>
<td>Moderate</td>
</tr>
<tr>
<td>VIII</td>
<td>0.34 – 0.65</td>
<td>31 – 60</td>
<td>Severe</td>
<td>Moderate to heavy</td>
</tr>
<tr>
<td>IX</td>
<td>0.65 – 1.24</td>
<td>60 – 116</td>
<td>Violent</td>
<td>Heavy</td>
</tr>
<tr>
<td>X+</td>
<td>&gt; 1.24</td>
<td>&gt; 116</td>
<td>Extreme</td>
<td>Very heavy</td>
</tr>
</tbody>
</table>
System Loading

- Inner / Outer Movement of Rings causing Reverse Curvature in Web
- Outer Ring Loading or Reaction (TYP)
- Outer Ring Under Constant Tension or Compression
- Web Ring (TYP) or Reaction (TYP)
- Web / Outer Ring Connection
- Inner Ring Loading or Reaction (TYP)
- Secondary Web Ring
- Inner Ring Under Constant Tension or Compression
- Web deformation causing rotation (TYP)

Angle of Rotation

Total Member Depth

Web Depth

Web Point Distance
Assemblies / Arrangements

Assembly of Rings offers a palette of responses

Mid Ring

Inner / Outer Movement / Rotation of Rings causing Reverse Curvature in Web

Circumferential Rings to generate rotational reciprocating movement
Possible Connection Arrangements
Dead / Live & Seismic Loading of Assembly

Lower Scale Seismic Magnitude
Angle approx. 10°

Upper Scale Seismic Magnitude
Angle approx. 45°
Come see my Poster!

Today Poster Session:

- **Time**: 5:15 – 7:00 pm
- **Room**: Pasadena (Exhibit Hall)
- **Poster location**: Number 033