R-Control I-Beam splines are a companion product that provide additional strength and span capacity to R-Control SIPs assemblies. When the I-Beam splines are used with R-Control SIPs the composite panel/spline engineering data is detailed in the R-Control Load Design Charts.

However, on occasion it may be necessary to engineer a portion of a structure using the design capacities of the I-Beam. This bulletin provides the design capacities of the R-Control I-Beam for use in these instances.

R-Control I-Beam Spline Reference Design Values

<table>
<thead>
<tr>
<th>Joist Depth (in)</th>
<th>Joist Weight (plf)</th>
<th>EI (10^6 lbs-in^2)</th>
<th>K</th>
<th>Moment (ft-lb)</th>
<th>Shear (lb)</th>
<th>End Reaction (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9-1/4&quot;</td>
<td>3.3</td>
<td>246</td>
<td>5.3</td>
<td>5050</td>
<td>1685</td>
<td>1375</td>
</tr>
<tr>
<td>11-1/4&quot;</td>
<td>3.5</td>
<td>395</td>
<td>5.3</td>
<td>6545</td>
<td>2120</td>
<td>1375</td>
</tr>
</tbody>
</table>

1 Please refer to ICC-ES ESR-2994 for general design information
2 Moment and shear values and end reactions are for normal duration of load
3 Maximum end reaction is based 1-3/4" (44 mm) bearing length
4 The formula below shall be used to determine total deflection of uniformly loaded simple span.

\[
\text{Defl.} = \left(\frac{22.5WL^4}{EI}\right) + \left(\frac{12WL^2}{Kdx10^5}\right)
\]

Defl. = Deflection in inches.
W = Uniform Load (plf).
L = Clear Span (ft).
D = Out to Out depth of joist in inches.