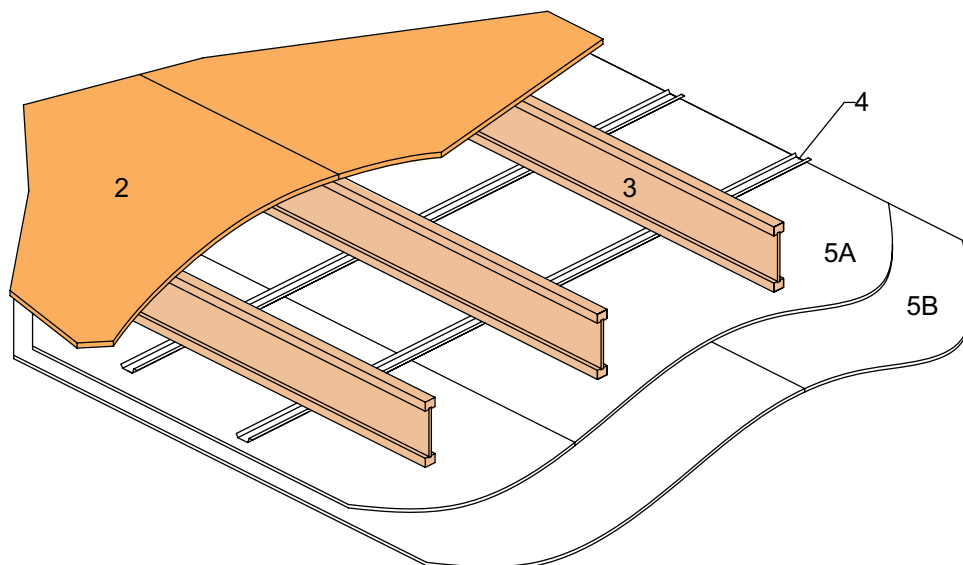


**WIJ-1.6 One-Hour Fire-Resistive Ceiling Assembly**Floor<sup>a</sup>/Ceiling - 100% Design Load - 1 Hour Rating - ASTM E 119 / NFPA 251

1. **Floor Topping (optional, not shown):** Gypsum concrete, lightweight or normal concrete topping.
2. **Floor Sheathing:** Minimum 23/32 inch thick tongue-and-groove wood sheathing (Exposure 1). Installed per code requirements with minimum 8d common nails.
3. **Structural Members:** Wood I-joists spaced a maximum of 24 inches on center.  
 Minimum I-joist flange depth: 1-5/16 inches      Minimum I-joist flange area: 2.25 inches<sup>2</sup>  
 Minimum I-joist web thickness: 3/8 inch      Minimum I-joist depth: 9-1/2 inches  
 See ASTM D 5055-07 for qualification requirements.
4. **Resilient Channels<sup>b</sup>:** Minimum 0.019 inch thick galvanized steel resilient channel attached perpendicular to the bottom flange of the I-joists with one 1-1/4 inch drywall screw. Channels spaced a maximum of 16 inches on center [24 inches on center when I-joists are spaced a maximum of 16 inches on center].
5. **Gypsum Wallboard:** Two layers of minimum 1/2 inch Type X gypsum wallboard attached with the long dimension perpendicular to the resilient channels as follows:
  - 5a. **Wallboard Base Layer:** Base layer of wallboard attached to resilient channels using 1-1/4 inch Type S drywall screws at 12 inches on center.
  - 5b. **Wallboard Face Layer:** Face layer of wallboard attached to resilient channels through base layer using 1-5/8 inch Type S drywall screws spaced 12 inches on center. Edge joints of wallboard face layer offset 24 inches from those of base layer. Additionally, wallboard face layer attached to base layer with 1-1/2 inch Type G drywall screws spaced 8 inches on center, placed 1-1/2 inches from face layer end joints.
6. **Finish System (not shown):** Face layer joints covered with tape and coated with joint compound. Screw heads covered with joint compound.

Fire Test conducted at National Research Council of Canada Report No. A-4440.1 June 24, 1997

STC and IIC Sound Ratings for Listed Assembly

Without Gypsum Concrete				With Gypsum Concrete			
Cushioned Vinyl		Carpet & Pad		Cushioned Vinyl		Carpet & Pad	
STC	IIC	STC	IIC	STC	IIC	STC	IIC
-	-	54	68	-	-	58 <sup>c</sup>	55 <sup>c</sup>

<sup>a</sup> This assembly may also be used in a fire-rated roof/ceiling application, but only when constructed exactly as described.<sup>b</sup> Direct attachment of gypsum wallboard in lieu of attachment to resilient channels is typically deemed acceptable. When gypsum wallboard is directly attached to the I-joists, the wallboard should be installed with long dimension perpendicular to the I-joists and sound ratings for WIJ-1.5 should be used.<sup>c</sup> STC and IIC values estimated by David L. Adams Associates, Inc