Contego International, Inc.
Design No. CII/IF 180-01
Unrestrained Beam
High Solids (HS) Reactive Fire Barrier (RFB) Intumescent
ASTM E119/UL 263
CAN/ULC-S101
Restricted Load: Maximum 75% of Design Load
Assembly Rating: Unrestrained, See Table CII/IF 180-01

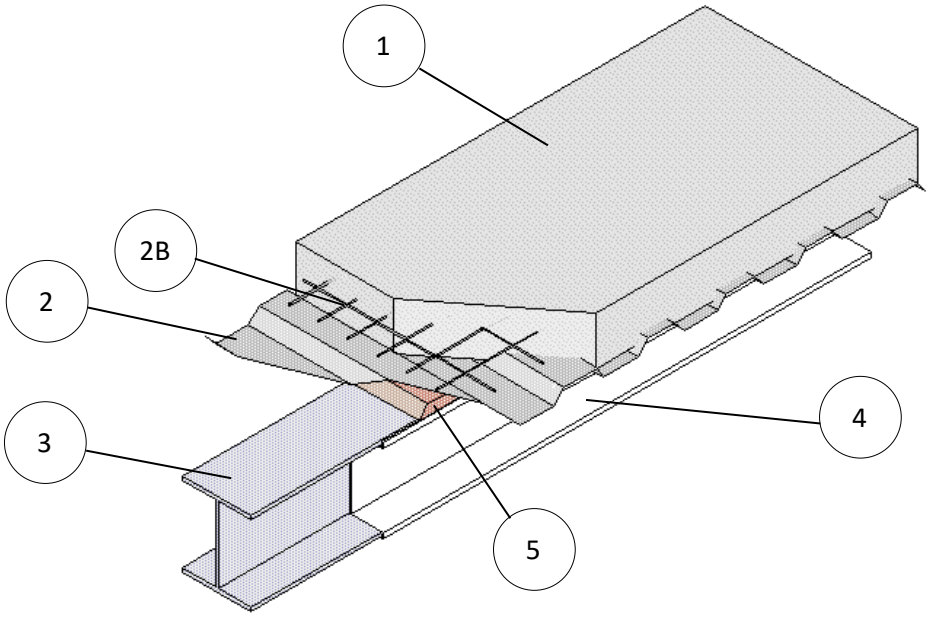

Figure 1. Beam Assembly

1. **FLOOR/CEILING ASSEMBLY:** Use a fire-rated floor/ceiling assembly consisting of normal weight or lightweight (min. 105 pcf, 3000 psi) reinforced concrete. Thickness of concrete floor/ceiling assembly must comply with designated fire resistive rating. The concrete thickness shall not be less than 2.5 in. thick as measured from the upper most surface of the fluted steel floor units.

2. **FLUTED STEEL FLOOR UNITS:** Corrugated steel decking, min. 1-1/2 in. deep (38 mm), min. 20 GA.

A. SHEAR CONNECTORS – (Not Shown) Install shear connectors sized appropriately for assembly, min. 3/4 in. diameter x min. 3.5 in. long, through the steel deck and welded to the top flange of each beam.

B. WELDED WIRE MESH – Install min. 6x6-W1.4xW1.4, 10 GA wire mesh, welded to the top of the shear connectors. Location of the welded wire mesh is at mid-height between the top of the steel deck flutes and the top of the concrete floor/ceiling assembly.

3. **STRUCTRUAL STEEL BEAM**: Use solid steel wide-flange beam, sized in accordance with the Table CII/IF 180-01.

4. **FIRE RESISTIVE COATING:**

   CERTIFIED PRODUCT: Contego High Solids (HS) Reactive Fire Barrier (RFB) Intumescent.

   APPLICATION: Blast and clean structural steel per the manufacturer's instructions. Spray-apply Contego RUSTEX 710 primer (not shown) at a 2-4 mil dry film thickness. Spray-apply Contego High Solids (HS) Reactive Fire Barrier (RFB) Intumescent fire resistive coating onto primed steel to the required final thicknesses as specified in Table CII/IF 180-01 and per the manufacturer's instructions.

5. **INSULATION:** Use non-combustible mineral wool, refractory ceramic fiber, or alkaline earth silicate, high-temperature fiber insulation to completely fill the voids created between the fluted steel floor units and the structural steel beam. Use min. 4 pcf density insulation, determined to be non-combustible in accordance with one of the following standards:

   - ASTM E136
   - CAN/ULC-S114
   - EN ISO 1182.

Table CII/IF 180-01.

**Thicknesses in tables below do not include the primer dry film thickness.*

Hp/A (max)	W/D (min)	Thickness*		Unrestrained Rating
1/m	lb./in./ft.	mil	mm	min.
171	0.78	17.5	0.44	60

Hp/A (max)	W/D (min)	Thickness*		Unrestrained Rating
1/m	lb./in./ft.	mil	mm	min.
198	0.68	80.0	2.03	120

Hp/A (max)	W/D (min)	Thickness*		Unrestrained Rating
1/m	lb./in./ft.	mil	mm	min.
266	0.50	130.3	3.31	120
266	0.50	165.0	4.19	180

Consult the listing report on the Directory of Building Products (https://bpdirectory.intertek.com) for the edition of the standard(s) evaluated.

Compliance of the assembly described in this Design Listing with the referenced standard relies on verification that the assembly constructed in the field is consistent with that described herein. Intertek certified products may be verified by the approved Intertek label; other products must be verified by the Authority Having Jurisdiction as meeting the specifications stated herein.