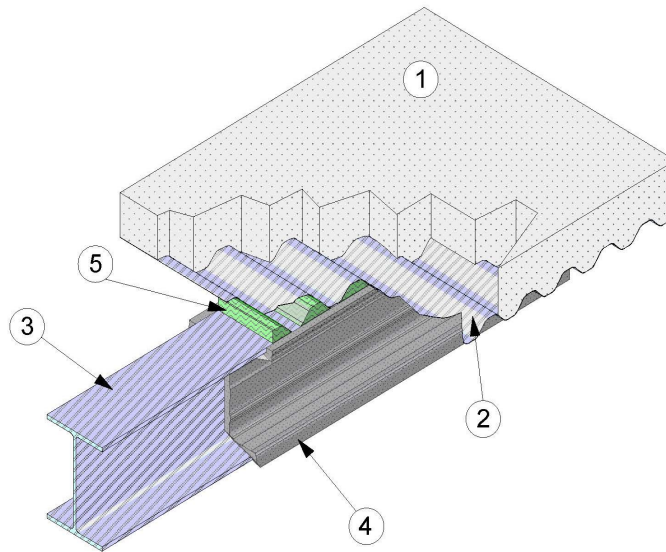


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**Carboline Global Inc.**  
**Design No. CC/IF 150-05**  
**Restrained Beam**  
**Thermo-Lag E100, Thermo-Lag E100 S**  
**ASTM E119**  
**CAN/ULC S101 Restricted Load Maximum 65% of Design Load**  
**Rating: See Table CC/IF 150-05**

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- 1. FLOOR/CEILING ASSEMBLY:** Use a fire-rated floor/ceiling assembly consisting of normal weight or lightweight (min. 105 pcf, 1682 kg/m<sup>3</sup>) reinforced concrete. Thickness of concrete floor/ceiling assembly must comply with designated fire resistive rating.
- 2. FLUTED STEEL FLOOR UNITS:** Corrugated steel decking, min. 1-1/2 in. deep (38 mm), min. 20 GA.
- 3. STEEL STRUCTURAL BEAM:** Use steel sections, I-beam or W-beam, sized in accordance with the Table CC/IF 150-05.
- 4. FIRE-RESISTIVE COATING:** Refer to Table CC/IF 150-05 for specific application thickness of fire resistive coating.  
  
**CERTIFIED PRODUCT:** Carboline Global, Inc., Thermo-Lag E100 or Thermo-Lag E100S intumescent fireproofing.  
  
Spray or paint in one or more coats according to manufacturer's instructions to the required thickness.
- 5. INSULATION:** Any Intertek certified mineral wool or ceramic fiber blanket manufacturer that meets the criteria below. Completely fill the flutes between steel structural beam (Item 3) and the fluted steel floor unit (Item 2) with



minimum 4 pcf mineral wool or minimum 4 pcf ceramic fiber blanket according to the manufacturer’s instructions to the required minimum thickness. Alternatively, apply the fire

resistive coating (Item 4) to the top flange of the beam at the same thickness as required in Table CC/IF 150-05.

Table CC/IF 150-05									
Hp/A	W/D	60 min.		90 min.		120 min.		150 min.	
m <sup>-1</sup>	lb./ft/in.	mm	in.	mm	in.	mm	in.	mm	in.
75	1.79	0.97	0.038	0.98	0.038	2.08	0.082	4.29	0.169
80	1.67	1.06	0.042	1.07	0.042				
85	1.58	1.10	0.043	1.16	0.046				
90	1.49	1.15	0.045	1.25	0.049				
95	1.41	1.19	0.047	1.34	0.053				
100	1.34	1.24	0.049	1.43	0.056				
105	1.28	1.28	0.050	1.52	0.060				
110	1.22	1.33	0.052	1.61	0.064				
115	1.17	1.37	0.054	1.71	0.067				
120	1.12	1.42	0.056	1.80	0.071				
125	1.07	1.46	0.058	1.89	0.074				
130	1.03	1.51	0.059	1.98	0.078				
135	0.99	1.56	0.061	2.07	0.081				
140	0.96	1.60	0.063	2.16	0.085				
145	0.92	1.65	0.065	2.25	0.089				
150	0.89	1.69	0.067	2.34	0.092				
155	0.86	1.74	0.068	2.43	0.096				
160	0.84	1.78	0.070	2.52	0.099				
165	0.81	1.85	0.073	2.66	0.105				
170	0.79	1.94	0.076	2.85	0.112				
175	0.77	2.03	0.080	3.03	0.119				
180	0.74	2.11	0.083	3.21	0.127				
185	0.72	2.20	0.087	3.40	0.134				
190	0.71	2.29	0.090	3.58	0.141				
195	0.69	2.38	0.094	3.76	0.148				
200	0.67	2.46	0.097	3.95	0.155				
205	0.65	2.55	0.100	4.13	0.163				
210	0.64	2.64	0.104	4.32	0.170				
215	0.62	2.73	0.107	4.50	0.177				
220	0.61	2.82	0.111	4.68	0.184				
225	0.60	2.90	0.114	4.87	0.192				
230	0.58	2.99	0.118	5.05	0.199				



*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.*