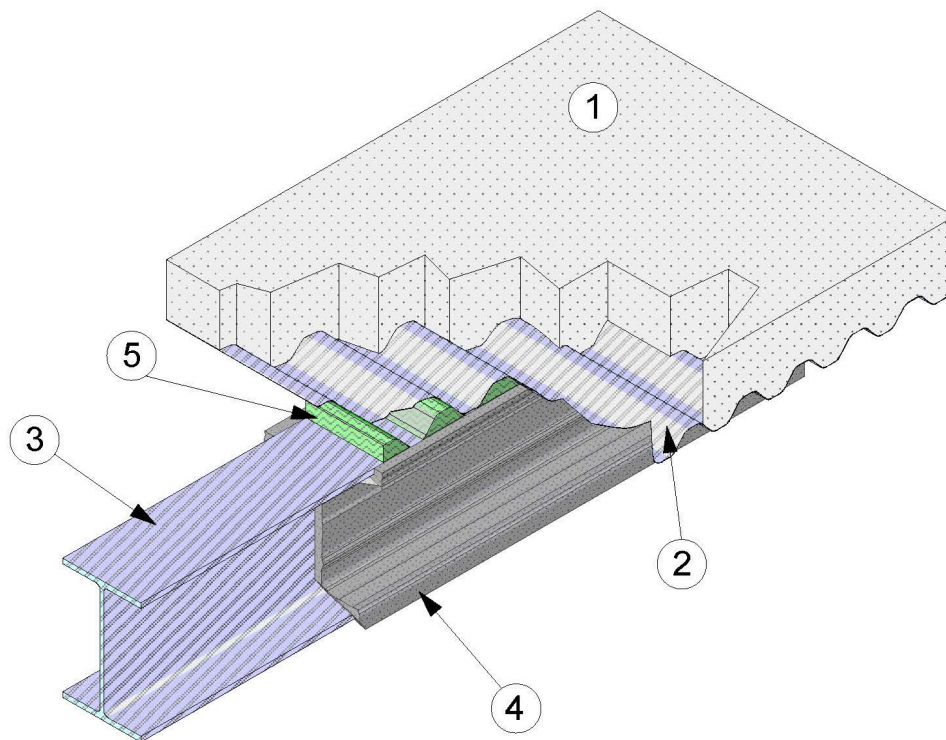


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**Carboline Global Inc.**  
**Design No. CC/IF 180-01**  
**Restrained or Unrestrained Beam**  
**Thermo-Lag E100, Thermo-Lag E100 S**  
**ASTM E119**  
**CAN/ULC S101 Restricted Load Maximum 65% of Design Load**  
**Rating: See Table CC/IF 180-01**

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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 180-01
  - 4. FIRE-RESISTIVE COATING:** Refer to Table CC/IF 180-01 for specific application thickness of fire resistive coating.
- CERTIFIED MANUFACTURER:** Carboline Global Inc.



**CERTIFIED PRODUCT:** Fire Resistive Coating

**MODEL:** Thermo-Lag E100/E100S

**INTUMESCENT FIREPROOFING** – Spray or paint in one or more coats according to manufacturer's instructions to the required thickness.

- 5. LISTED MANUFACTURER:** Any Intertek certified mineral wool or ceramic fiber blanket manufacturer that meets the criteria below.

**CERTIFIED PRODUCT:** Insulation

**MODEL:** Any Intertek certified mineral wool or ceramic fiber blanket model that meets the criteria below.

**FLUTE FILLER** – Completely fill the flutes between steel structural beam (Item 3) and the fluted steel floor unit (Item 2) with 4 pcf mineral wool, 4 pcf ceramic fiber blanket, or spray-applied material according to the manufacturer's instructions to the required minimum thickness.



**Table CC/IF 180-01**

HP/A	W/D	30 min.		60 min.		90 min.		120 min.		150 min.		180 min.	
		m-1	lb/ft/in	mm	in	mm	in	mm	in	mm	in	mm	in
20	6.68	0.26	0.010	0.62	0.025	0.99	0.039	1.36	0.054	1.73	0.068	2.10	0.083
30	4.46	0.37	0.015	0.90	0.035	1.43	0.056	1.96	0.077	2.49	0.098	3.02	0.019
35	3.82	0.42	0.017	1.03	0.041	1.64	0.065	2.25	0.088	2.85	0.112	3.46	0.136
40	3.34	0.47	0.019	1.16	0.046	1.84	0.072	2.52	0.099	3.20	0.126	3.89	0.153
45	2.97	0.52	0.021	1.28	0.050	2.03	0.080	2.78	0.110	3.54	0.139	4.29	0.169
50	2.67	0.57	0.022	1.39	0.055	2.22	0.087	3.04	0.120	3.86	0.152	4.69	0.184
55	2.43	0.62	0.024	1.51	0.059	2.40	0.094	3.29	0.129	4.18	0.164	5.06	0.199
60	2.23	0.66	0.026	1.62	0.064	2.57	0.101	3.52	0.139	4.48	0.176	5.43	0.214
65	2.06	0.71	0.028	1.72	0.068	2.74	0.108	3.75	0.148	4.77	0.188	5.78	0.228
70	1.91	0.75	0.029	1.82	0.072	2.90	0.114	3.98	0.156	5.05	0.199	6.13	0.241
75	1.78	0.79	0.031	1.92	0.076	3.06	0.120	4.19	0.165	5.32	0.210	6.46	0.254
80	1.67	0.83	0.033	2.02	0.079	3.21	0.126	4.40	0.173	5.59	0.220	6.78	0.267
85	1.57	0.86	0.034	2.11	0.083	3.35	0.132	4.60	0.181	5.84	0.230	7.09	0.279
90	1.49	0.90	0.035	2.20	0.087	3.50	0.138	4.79	0.189	6.09	0.240	7.39	0.291
95	1.41	0.94	0.037	2.29	0.090	3.63	0.143	4.98	0.196	6.33	0.249	7.68	0.302
100	1.34	0.97	0.038	2.37	0.093	3.77	0.148	5.17	0.203	6.57	0.259	7.97	0.314
110	1.22	1.04	0.041	2.53	0.100	4.02	0.158	5.52	0.217	7.01	0.276	8.51	0.335
120	1.11	1.10	0.043	2.68	0.106	4.27	0.168	5.85	0.230	7.43	0.293	9.02	0.355
130	1.03	1.16	0.046	2.83	0.111	4.50	0.177	6.16	0.243	7.83	0.308	9.50	0.374
140	0.95	1.21	0.048	2.96	0.117	4.71	0.185	6.46	0.254	8.21	0.323	9.96	0.392
150	0.89	1.27	0.050	3.09	0.122	4.92	0.194	6.74	0.265	8.57	0.337	10.39	0.409
160	0.84	1.32	0.052	3.21	0.127	5.11	0.201	7.01	0.276	8.90	0.351	10.80	0.425
170	0.79	1.36	0.054	3.33	0.131	5.30	0.208	7.26	0.286	9.23	0.363	11.19	0.441
180	0.74	1.41	0.055	3.44	0.135	5.47	0.215	7.50	0.295	9.53	0.375	11.56	0.455
190	0.70	1.45	0.057	3.55	0.140	5.64	0.222	7.73	0.304	9.83	0.387	11.92	0.469
200	0.67	1.49	0.059	3.65	0.144	5.80	0.228	7.95	0.313	10.10	0.398	12.26	0.483
210	0.64	1.53	0.060	3.74	0.147	5.95	0.234	8.16	0.321	10.37	0.408	12.58	0.495
220	0.61	1.57	0.062	3.83	0.151	6.10	0.240	8.36	0.329	10.62	0.418	12.89	0.507
230	0.58	1.61	0.063	3.92	0.154	6.24	0.246	8.55	0.337	10.87	0.428	13.18	0.519
240	0.56	1.64	0.065	4.01	0.158	6.37	0.251	8.74	0.344	11.10	0.437	13.46	0.530
250	0.53	1.67	0.066	4.09	0.161	6.50	0.256	8.91	0.351	11.32	0.446	13.74	0.541
260	0.51	1.71	0.067	4.16	0.164	6.62	0.261	9.08	0.357	11.54	0.454	14.00	0.551
270	0.50	1.74	0.068	4.24	0.167	6.74	0.265	9.24	0.364	11.74	0.462	14.25	0.561
280	0.48	1.77	0.069	4.31	0.170	6.85	0.270	9.40	0.370	11.94	0.470	14.49	0.570
290	0.46	1.79	0.071	4.38	0.172	6.96	0.274	9.55	0.376	12.13	0.478	14.72	0.579
300	0.45	1.82	0.072	4.44	0.175	7.07	0.278	9.69	0.382	12.31	0.485	14.94	0.588
310	0.43	1.85	0.073	4.51	0.177	7.17	0.282	9.83	0.387	12.49	0.492	15.15	0.597
320	0.42	1.87	0.074	4.57	0.180	7.27	0.286	9.96	0.392	12.66	0.498	15.36	0.605



*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.*