CITY OF NEW YORK
DEPARTMENT OF BUILDINGS

Pursuant to Administrative Code Section 27-131, the following equipment or material has been found acceptable for use in accordance with the Report of Materials and Equipment Acceptance (MEA) Division.

Richard C. Visconti, R.A., Acting Commissioner
MEA 171-00-M
Report of Material and Equipment Acceptance Division

Manufacturer - Star Maling Og Lakkfabrikk A/S, P.O. Box 593, Lierstranda, Norway.
Trade Name(s) - Carboline Nullifire S605.
Product - Mastic coating for fire protection, for Class II Buildings.
Pertinent Code Section(s) - 27-323, 27-324.
Prescribed Test(s) - RS 5-2 (ASTM E119).
Laboratory - Underwriters Laboratories, Inc.
Test Report - UL File R11193.
Description - Type Nullifire S605 mastic coating with Type TP615 top-coat per requirement of Underwriters Laboratories Inc. is designed to fire-proof interior and exterior steelwork of steel beams, columns, tubes, and pipes in Design Nos. D784 and D935.

Fire Resistance Ratings - ANSI/UL 263

Guide Information

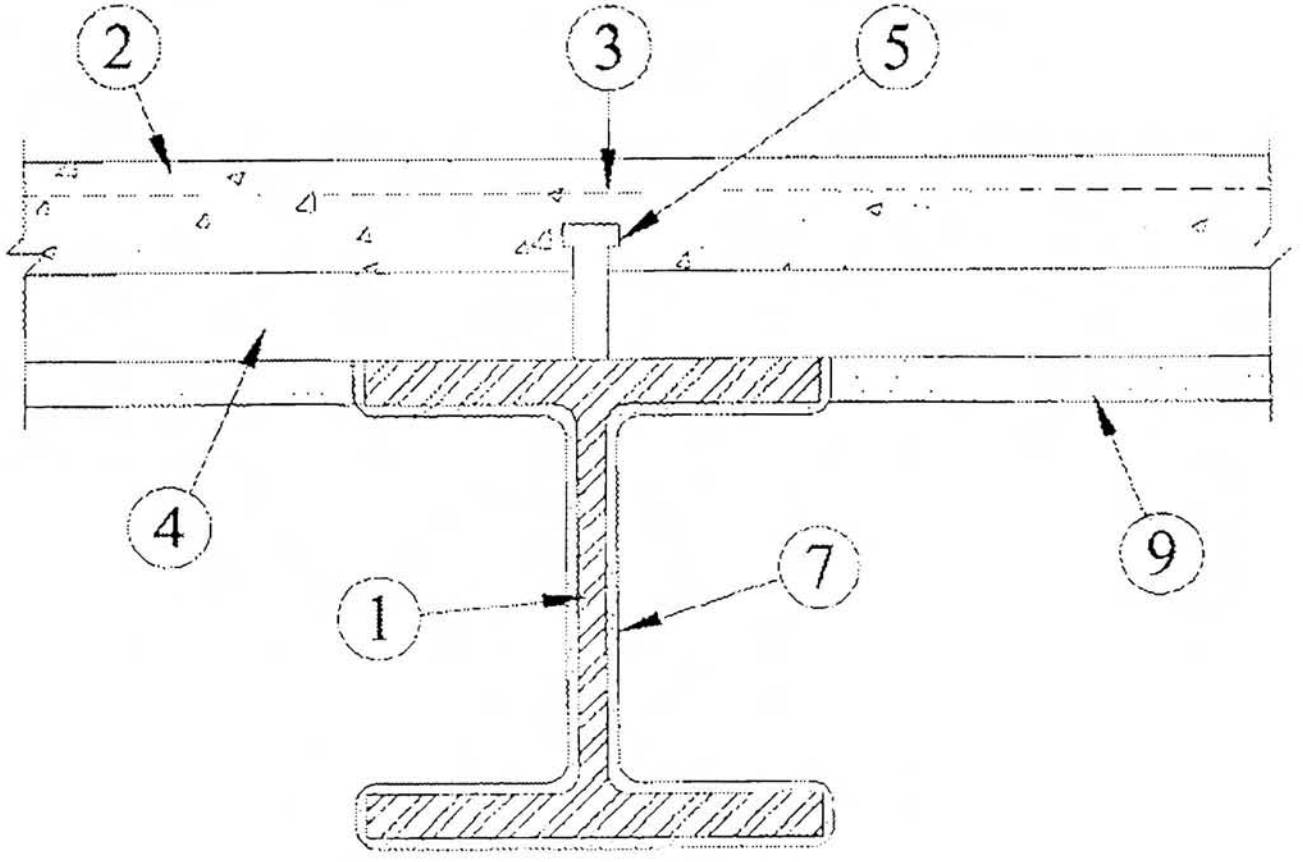
Design No. D784

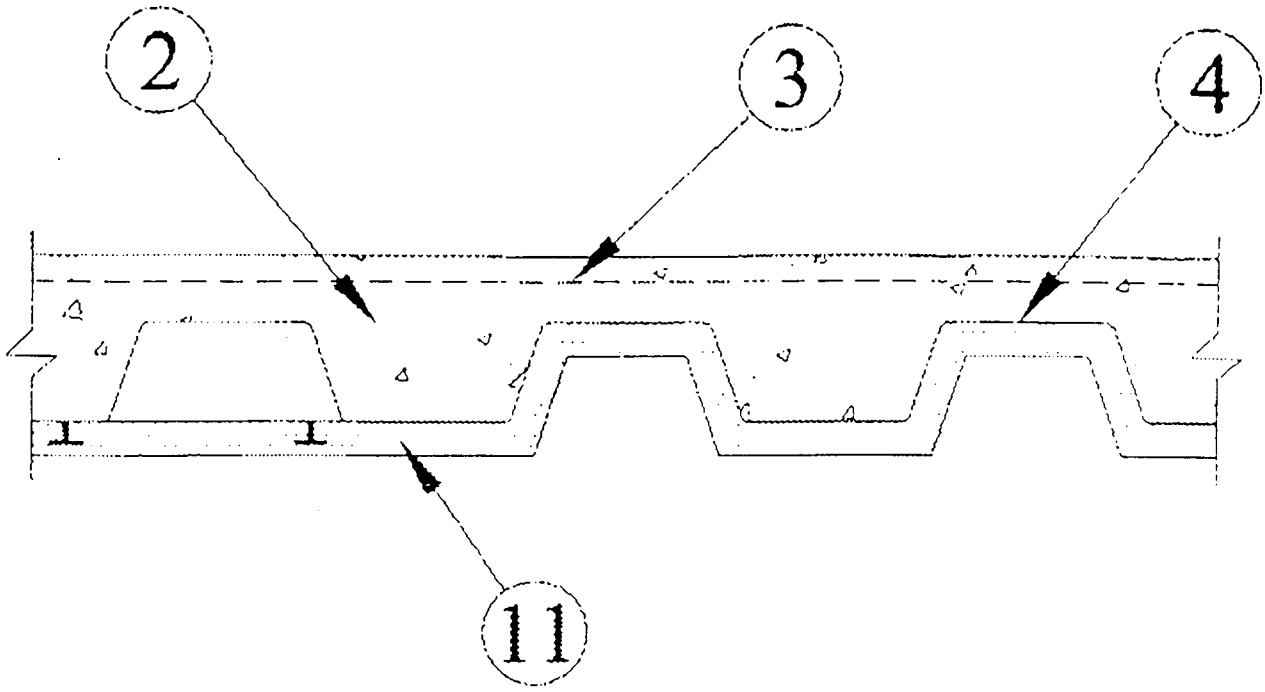
November 30, 1999

Restrained Assembly Ratings - 2 and 3 Hrs. (See Items 7 and 9)

Unrestrained Assembly Ratings-1, 1-1/2 and 2 Hrs. (See Items 7 and 9)

Unrestrained Beam Ratings-1, 1-1/2 and 2 Hrs. (See Items 7 and 9)





1. **Steel Beams** Any wide flange steel size shown in the table in Item 7. Beams shall be primed with a red oxide, zinc phosphate primer.

2. **Normal Weight or Lightweight Concrete** Min thickness above the crest 2-1/2 in. Normal weight concrete, carbonate or siliceous aggregate, 145 lb/ft^3 plus or minus 3 lb/ft^3 unit weight, 3000 psi compressive strength, vibrated. Lightweight concrete, expanded shale, clay or slate aggregate by rotary-kiln method, 102-120 lb/ft^3 unit weight, 3000 psi compressive strength, vibrated, 4 to 7 percent entrained air

3. **Welded Wire Fabric** 6x6 — W1.4xW1.4.

4. **Steel Floor and Form Units*** Composite 1-1/2, 2, or 3 in. deep galv Units. Fluted units may be uncoated. Min gauges 22 MSG for fluted and 20/20 MSG for cellular. Any combination of fluted and cellular units may be used. Spacing of welds attaching unit to supports shall be 12 in. OC max unless specified otherwise, adjacent units button-punched or welded together at side joints and, unless specified otherwise for specific unit types, spacing of all side joint fastening systems shall not exceed 36 in. OC.

CONSOLIDATED SYSTEMS INC — 24 in. wide Types CFD-2, -3; 24, 30 or 36 in. wide Type CFD-1.5; 12, 24 or 36 in wide Types Mac-Lok 2, Mac-Lok 3; 12 in. wide Mac-Way Cellular Types 2-633MTWA, 3-633MTWA, 2-633MTWV, 3-633MTWV. For the 1, 1-1/2, 2h Restrained Assembly Ratings and the 1h Unrestrained Assembly and Beam Rating, 12 in. wide, Type 1.5-633 MTWA may be used. Types CFD-1.5, CFD-2, CFD-3, Mac-Lok 2, Mac-Lok 3 may be phos/ptd. Two rows of steel studs with discs (Item 7) shall be welded along the sides of the Types 2-633MTWV, 3-633MTWV cellular units a max of 22 in. OC.

VULCRAFT, DIV OF

NUCOR CORP — 24, 30 or 36 in. wide Type 1.5VLI, 1.5VLP; 24 or 36 in. wide Types 2VLI, 3VLI, 2VLP, 3VLP. Types 1.5VLI, 2VLI, 3VLI units may be phos/ptd; 24 or 36 in. wide Types 2VLJ, 3VLJ units (+) may be used for max 2 hr Restrained Assembly.

(+)Side joints of Type 2VLJ or 3VLJ units may be fastened together with No. 8-3/4 in. long self-drilling Tek screws driven diagonally from the top side through the joint of the units at 36 in. OC max.

5. **Shear Connectors (Optional)** Studs, 3/4 in. diam (min 1/2 diam for use with steel joists) by 4-1/2 in. long, headed type or equivalent per AISC specification. Welded to the top flange of the beam, through the deck.

6. **Joint Cover** 2 in. wide pressure sensitive cloth tape.

7. **Mastic Coating*** Coating spray, brush or towel applied directly from containers to desired thickness. See table below for appropriate final dry thickness. After each coat, the surface shall be lightly rolled with a paint roller. Flutes above beam to be completely filled with mineral wool insulation having a minimum density of 6 lb/ft^3 or the top flange of the beam shall be protected with the same thickness of coating as required on the beam. For unrestrained assembly ratings see Item 9. The unrestrained beam rating shall be equal to the unrestrained assembly rating.

Restrained		

Assembly Rating (Hr)						
Unrestrained Beam Rating (Hr)		1	1-1/2	2	1-1/2	2
Steel Size	W/D	Thickness (In.)				
W5x19	0.78	0.094	0.104	0.249	NR	NR
W6x16	0.67	0.102	0.117	NR	NR	NR
W6x20	0.68	0.102	0.117	NR	NR	NR
W6x25	0.84	0.090	0.097	0.233	NR	NR
W8x21	0.67	0.103	0.118	NR	NR	NR
W8x24	0.70	0.100	0.113	NR	NR	NR
W8x28	0.81	0.091	0.099	0.239	NR	NR
W8x31	0.80	0.092	0.101	0.242	NR	NR
W8x35	0.90	0.086	0.091	0.219	NR	NR
W8x40	1.02	0.079	0.081	0.195	NR	NR
W8x48	1.20	0.072	0.072	0.167	NR	NR
W8x58	1.43	0.062	0.062	0.142	NR	NR
W8x67	1.63	0.056	0.056	0.125	NR	NR
W10x26	0.70	0.100	0.113	NR	NR	NR
W10x30	0.81	0.092	0.100	0.240	NR	NR
W10x33	0.79	0.093	0.102	0.245	NR	NR
W10x39	0.92	0.084	0.089	0.214	NR	NR
W10x45	1.05	0.077	0.078	0.189	NR	NR
W10x49	1.01	0.079	0.081	0.196	NR	NR
W10x54	1.11	0.074	0.075	0.180	NR	NR
W10x60	1.23	0.069	0.069	0.164	NR	NR
W10x68	1.38	0.064	0.064	0.147	NR	NR
W10x77	1.55	0.058	0.058	0.132	NR	NR
W10x88	1.75	0.043	0.048	0.104	NR	NR
W10x100	1.96	0.043	0.043	0.104	NR	NR
W10x112	2.17	0.043	0.043	0.095	NR	NR
W12x30	0.69	0.104	0.114	NR	NR	NR
W12x35	0.80	0.092	0.100	0.241	NR	NR
W12x40	0.86	0.088	0.094	0.226	NR	NR

W12x45	0.97	0.082	0.085	0.204	NR	NR
W12x50	1.07	0.076	0.077	0.186	NR	NR
W12x53	1.01	0.079	0.081	0.196	NR	NR
W12x58	1.10	0.075	0.075	0.181	NR	NR
W12x65	1.11	0.074	0.074	0.180	NR	NR
W12x72	1.23	0.069	0.069	0.164	NR	NR
W12x79	1.34	0.065	0.065	0.151	NR	NR
W12x87	1.46	0.061	0.061	0.139	NR	NR
W12x96	1.61	0.056	0.056	0.127	NR	NR
W12x106	1.76	0.043	0.048	0.104	0.139	0.139
W12x120	1.98	0.043	0.043	0.104	0.139	0.139
W12x136	2.21	0.043	0.043	0.093	0.139	0.139
W12x152	2.45	0.043	0.043	0.084	0.139	0.139
W12x170	2.71	0.043	0.043	0.076	0.139	0.139
W12x190	2.99	0.043	0.043	0.069	0.139	0.139
W12x210	3.26	0.043	0.043	0.063	0.139	0.139
W12x230	3.53	0.043	0.043	0.058	0.139	0.139
W12x252	3.82	0.043	0.043	0.054	0.139	0.139
W12x279	4.16	0.043	0.043	0.049	0.139	0.139
W12x305	4.48	0.043	0.043	0.046	0.139	0.139
W12x336	4.85	0.043	0.043	0.043	0.139	0.139
W14x34	0.72	0.098	0.110	NR	NR	NR
W14x38	0.81	0.092	0.100	0.241	NR	NR
W14x43	0.87	0.088	0.094	0.226	NR	NR
W14x48	0.96	0.082	0.085	0.205	NR	NR
W14x53	1.05	0.077	0.078	0.189	NR	NR
W14x61	1.09	0.075	0.076	0.183	NR	NR
W14x68	1.21	0.070	0.070	0.166	NR	NR
W14x74	1.31	0.066	0.066	0.155	NR	NR
W14x82	1.44	0.061	0.061	0.141	NR	NR
W14x90	1.29	0.067	0.067	0.156	NR	NR
W14x99	1.42	0.062	0.062	0.143	NR	NR
W14x109	1.55	0.058	0.058	0.131	NR	NR

W14x120	1.69	0.054	0.054	0.121	NR	NR
W14x132	1.85	0.043	0.043	0.104	0.139	0.139
W14x145	1.97	0.043	0.043	0.104	0.139	0.139
W14x159	2.14	0.043	0.043	0.096	0.139	0.139
W14x176	2.36	0.043	0.043	0.087	0.139	0.139
W14x193	2.57	0.043	0.043	0.080	0.139	0.139
W14x211	2.78	0.043	0.043	0.074	0.139	0.139
W14x233	3.04	0.043	0.043	0.068	0.139	0.139
W14x257	3.32	0.043	0.043	0.062	0.139	0.139
W14x283	3.62	0.043	0.043	0.057	0.139	0.139
W14x311	3.93	0.043	0.043	0.052	0.139	0.139
W14x342	4.27	0.043	0.043	0.048	0.139	0.139
W14x370	4.57	0.043	0.043	0.045	0.139	0.139
W14x398	4.87	0.043	0.043	0.043	0.139	0.139
W14x426	5.15	0.043	0.043	0.043	0.139	0.139
W14x455	5.45	0.043	0.043	0.043	0.139	0.139
W14x500	5.89	0.043	0.043	0.043	0.139	0.139
W14x550	6.37	0.043	0.043	0.043	0.139	0.139
W14x605	6.89	0.043	0.043	0.043	0.139	0.139
W14x665	7.43	0.043	0.043	0.043	0.139	0.139
W14x730	7.99	0.043	0.043	0.043	0.139	0.139
W16x36	0.70	0.100	0.113	NR	NR	NR
W16x40	0.77	0.094	0.104	0.250	NR	NR
W16x45	0.87	0.088	0.094	0.226	NR	NR
W16x50	0.96	0.082	0.086	0.206	NR	NR
W16x57	1.08	0.076	0.076	0.184	NR	NR
W16x67	1.08	0.076	0.076	0.184	NR	NR
W16x77	1.24	0.069	0.069	0.163	NR	NR
W16x89	1.42	0.062	0.062	0.143	NR	NR
W16x100	1.58	0.057	0.057	0.129	NR	NR
W18x35	0.67	0.103	0.118	NR	NR	NR
W18x40	0.76	0.095	0.105	0.253	NR	NR
W18x46	0.87	0.088	0.093	0.225	NR	NR

W18x50	0.88	0.087	0.093	0.223	NR	NR
W18x55	0.96	0.082	0.085	0.206	NR	NR
W18x60	1.04	0.078	0.079	0.191	NR	NR
W18x65	1.12	0.074	0.074	0.178	NR	NR
W18x71	1.22	0.070	0.070	0.165	NR	NR
W18x76	1.12	0.074	0.074	0.179	NR	NR
W18x86	1.26	0.068	0.068	0.160	NR	NR
W18x97	1.41	0.062	0.062	0.144	NR	NR
W18x106	1.53	0.059	0.059	0.133	NR	NR
W18x119	1.71	0.054	0.054	0.120	NR	NR
W21x44	0.74	0.097	0.108	NR	NR	NR
W21x50	0.84	0.090	0.097	0.232	NR	NR
W21x57	0.95	0.083	0.086	0.208	NR	NR
W21x62	0.95	0.083	0.086	0.207	NR	NR
W21x68	1.04	0.078	0.079	0.191	NR	NR
W21x73	1.11	0.074	0.074	0.180	NR	NR
W21x83	1.26	0.068	0.068	0.160	NR	NR
W21x93	1.40	0.063	0.063	0.145	NR	NR
W21x101	1.30	0.066	0.066	0.155	NR	NR
W21x111	1.42	0.062	0.062	0.143	NR	NR
W21x122	1.55	0.058	0.058	0.131	NR	NR
W21x132	1.67	0.055	0.055	0.122	NR	NR
W21x147	1.85	0.043	0.043	0.104	0.139	0.139
W24x55	0.090	0.098	0.098	0.235	NR	NR
W24x62	0.93	0.084	0.088	0.212	NR	NR
W24x68	0.94	0.084	0.087	0.211	NR	NR
W24x76	1.04	0.078	0.079	0.191	NR	NR
W24x84	1.14	0.073	0.073	0.175	NR	NR
W24x94	1.27	0.067	0.067	0.159	NR	NR
W24x104	1.23	0.069	0.069	0.163	NR	NR
W24x117	1.38	0.064	0.064	0.147	NR	NR
W24x131	1.53	0.059	0.059	0.133	NR	NR

W24x146	1.70	0.054	0.054	0.121	NR	NR
W24x162	1.87	0.043	0.043	0.104	0.139	0.139
W27x84	1.03	0.078	0.080	0.192	NR	NR
W27x94	1.15	0.073	0.073	0.174	NR	NR
W27x102	1.24	0.069	0.069	0.162	NR	NR
W27x114	1.38	0.063	0.063	0.147	NR	NR
W27x146	1.55	0.058	0.058	0.132	NR	NR
W27x161	1.70	0.054	0.054	0.121	NR	NR
W27x178	1.87	0.043	0.043	0.104	0.139	0.139
W30x99	1.12	0.074	0.074	0.179	NR	NR
W30x108	1.21	0.070	0.070	0.166	NR	NR
W30x116	1.30	0.066	0.066	0.144	NR	NR
W30x124	1.38	0.063	0.063	0.147	NR	NR
W30x132	1.47	0.061	0.061	0.138	NR	NR
W30x173	1.67	0.055	0.055	0.122	NR	NR
W30x191	1.84	0.051	0.051	0.104	NR	NR
W30x211	2.02	0.047	0.047	0.102	0.139	0.139
W33x118	1.21	0.070	0.070	0.167	NR	NR
W33x130	1.32	0.066	0.066	0.153	NR	NR
W33x141	1.43	0.062	0.062	0.142	NR	NR
W33x152	1.53	0.059	0.059	0.133	NR	NR
W33x201	1.80	0.052	0.052	0.114	0.139	0.139
W33x221	1.96	0.043	0.043	0.104	0.139	0.139
W33x241	2.13	0.045	0.045	0.097	0.139	0.139
W36x135	1.29	0.067	0.067	0.156	NR	NR
W36x150	1.43	0.062	0.062	0.142	NR	NR
W36x160	1.52	0.059	0.059	0.134	NR	NR
W36x170	1.61	0.056	0.056	0.127	NR	NR
W36x182	1.71	0.054	0.054	0.119	NR	NR
W36x194	1.82	0.043	0.046	0.104	0.139	0.139
W36x210	1.96	0.043	0.043	0.104	0.139	0.139
W36x230	1.95	0.043	0.043	0.104	0.139	0.139
W36x245	2.07	0.043	0.043	0.100	0.139	0.139

W36x260	2.19	0.043	0.043	0.094	0.139	0.139
W36x280	2.35	0.043	0.043	0.088	0.139	0.139
W36x300	2.50	0.043	0.043	0.082	0.139	0.139

NR - Not Rated

CARBOLINE CO — Type Nullifire S605. Investigated for Interior General Purpose

8. **Topcoat** Type TS 615 top-coat applied over the base coat at 0.003 in. thickness

9. **Spray-Applied Fire Resistive Materials*** Applied to steel floor units (Item 4) by mixing with water and spraying to steel surfaces which must be clean and free of dirt, loose scale and oil. Min avg and min ind density of 15/14 pcf respectively for the Type 15 and 15-High Yield, 22/18 pcf, respectively for the Type 22, 40/37 pcf respectively for the Type 40, 28/25 pcf respectively for the Type 239, 44 5/42 respectively for the 240 High Yield, and 55/50 respectively for the Type 241. For method of density determination, refer to Design Information Section. May be used only in general floor areas without concrete penetrations with all fluted steel floor units or blends consisting of one or more fluted units to one 24 in. wide max cellular unit 1-1/2 or 3 in. deep, with cells spaced approx 6 and 8 in. respectively. Use of steel studs with discs (Item 11) is required on all cellular units with flat plate on the bottom, optional on other steel surfaces.

Restrained Assembly Rating Hr.	Unrestrained Assembly Rating Hr.***	Min Thk of Spray Applied Fire Resistive Mtl (In.)*		
		Crests	Valey	Flat Plate
1 and 2	1	3/8	3/8	3/8
2	1-1/2	3/8	3/8	3/8
2	2	3/8	3/8	3/8
3	1-1/2	11/16	1/2	1/2
3	2	11/16	1/2	1/2

* Where metal lath (Item 9) is required thickness of material shall be measured to the face of the lath

** Min thickness of 1/2 in. is required in crests of 1-1/2 in. deep fluted units for a 2 Hr. Restrained Assembly Rating

*** Unrestrained Beam Rating (See Item 7) shall be equal to the Unrestrained Assembly Rating.

CARBOLINE CO — Types 15, 15-High Yield, 22, 40, 239, 240-High Yield, 241

CARBOLINE KOREA LTD — Types 15, 15-High Yield, 22, 40, 239, 240-High Yield, 241

CARBOLINE MIDDLE EAST L L C — Types 15, 15-High Yield, 22, 40, 239, 240-High Yield, 241

CARBOLINE SOUTHEAST ASIA PTE LTD — Types 15, 15-High Yield, 22, 40, 239, 240-High Yield, 241

CDC CARBOLINE (INDIA) PVT LTD — Types 15, 15-High Yield, 22, 40, 239, 240-High Yield, 241, CDC Crete 15, CDC Crete 15-High Yield, CDC Crete 22, CDC Crete 40, CDC Crete 239, CDC Crete 240-High Yield, CDC Crete 241

CENTRAL PAINTS IND INC LTD — Types 15, 15-High Yield, 22, 40, 239, 240-High Yield, 241

10. **Metal Lath (not shown)** Where Types 40, 239, 240 High-Yield and 241 are applied to steel deck, fluted or cellular, 3/8 in. metal ribbed lath weighing 3.4 lb/yd^2 shall be secured to the underside of the steel deck (ribs upward) with S-12 by 3/8 in. long panhead, self-tapping steel screws spaced 12 in. OC in all directions. Steel screws shall be fitted with 1/2 in. diameter steel washers. Adjacent pieces of lath shall be overlapped 1 in. minimum. Entire surface of deck shall be lathed.

11. **Steel Studs With Discs** For use with Types 15, 15-High Yield and 22, studs consist of No. 12 SWG galvanized steel wire welded to 1-3/16 in. diameter No. 28 MSG galvanized steel disc. The ends of the studs opposite the disc shall be welded to the cellular floor units. The spacing of the rows shall not exceed 22 in. Spacing between studs along the rows shall not exceed 24 in. The total number of studs shall average not less than one stud per 236 in.^{2} of cellular floor units.

*Bearing the UL Classification Marking

Fire Resistance Ratings - ANSI/UL 263

Guide Information

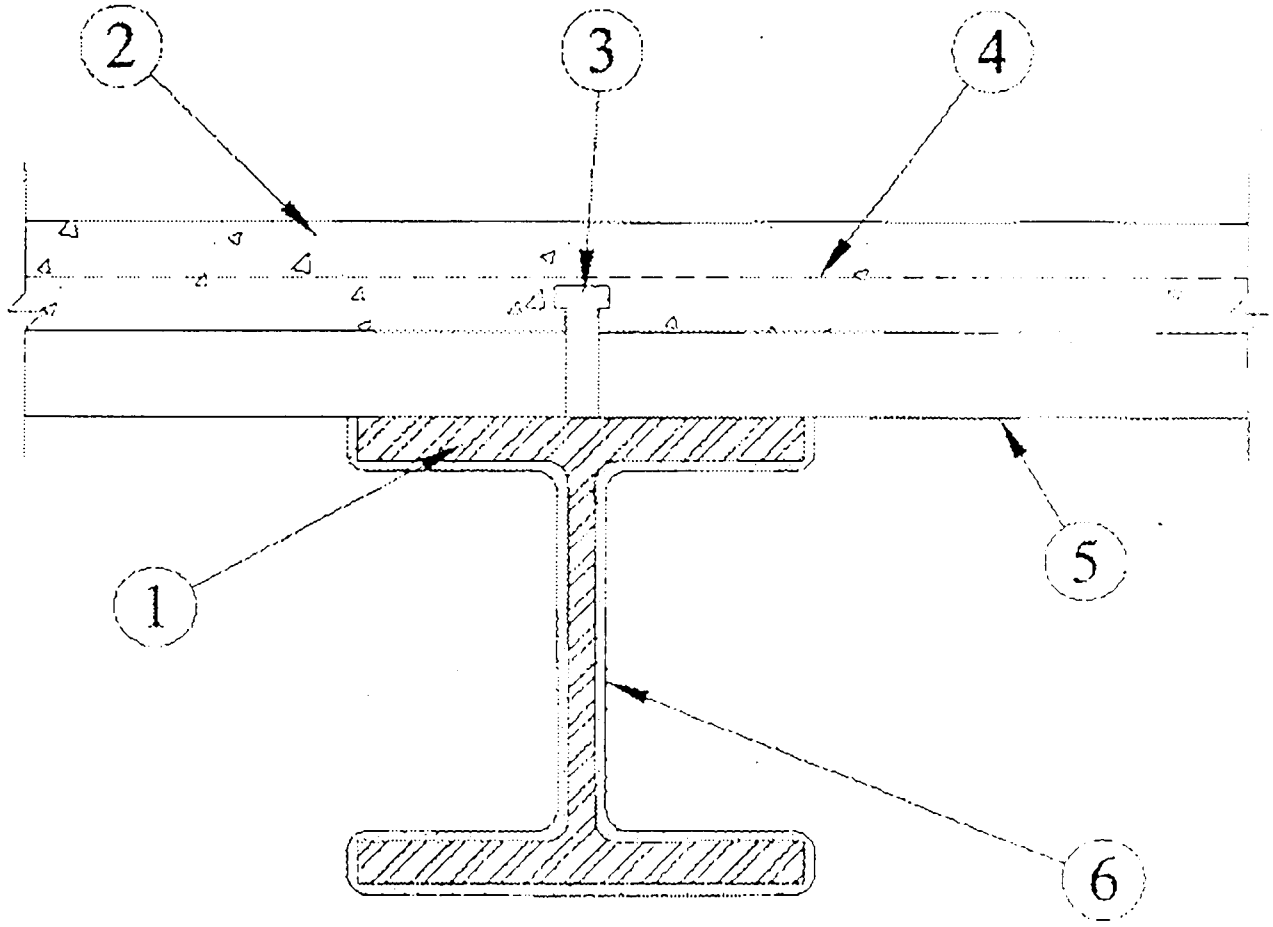
Design No. D935

December 04, 1999

Restrained Assembly Ratings-2 and 3 Hr. (See Items 2, 5 and 7)

Unrestrained Assembly Ratings-1, 1-1/2 and 2 Hr. (See Items 2, 5 and 7)

Unrestrained Beam Ratings-1, 1-1/2 and 2 Hr. (See Items 2, 5 and 7)



1. **Steel Beams** Any wide flange steel size shown in the table in Item 7. Beams shall

be primed with a red oxide, zinc phosphate primer.

2. **Normal Weight or Lightweight Concrete** Normal weight concrete, carbonate or siliceous aggregate, 145 lb/ft^3 plus or minus 3 lb/ft^3 unit weight, 3000 psi compressive strength, vibrated

Lightweight concrete, expanded shale, clay or slate aggregate by rotary-kiln method, 102-120 lb/ft^3 unit weight, 3000 psi compressive strength, vibrated, 4 to 7 percent entrained air. Min thickness shown in the table below

Restrained Assembly Rating Hr	Concrete (Type)	Concrete Unit Weight pcf	Concrete Thkns In.
1	Normal Weight	147-153	3-1/2
1-1/2	Normal Weight	147-153	4
2	Normal Weight	147-153	4-1/2
3	Normal Weight	147-153	5-1/4
1	Lightweight	107-120	2-5/8
1-1/2	Lightweight	107-113	3
2	Lightweight	107-113	3-1/4
2	Lightweight	107-116	3-1/4*
2	Lightweight	114-120	3-1/2
3	Lightweight	107-113	4-3/16
3	Lightweight	114-120	4-7/16

*For use with 2 or 3 in. steel floor and form units only.

3. **Shear Connectors (Optional)** Studs, 3/4 in. diam (min 1/2 diam for use with steel joists) by 4-1/2 in. long, headed type or equivalent per AISC specification. Welded to the top flange of the beam, through the deck.

4. **Welded Wire Fabric** 6x6 — W1.4xW1.4.

5. **Steel Floor and Form Units*** Composite 1-1/2, 2, or 3 in. deep galv Units. Fluted units may be uncoated. Min gauges 22 MSG for fluted and 20/20 MSG for cellular. Any combination of fluted and cellular units may be used. Spacing of welds attaching units to supports shall be 12 in. OC max unless specified otherwise, adjacent units button-punched or welded together at side joints and, unless specified otherwise for specific unit types, spacing of all side joint fastening systems shall not exceed 36 in. OC.

CONSOLIDATED SYSTEMS INC — 24 in. wide Types CFD-2, -3; 24, 30 or 36 in. wide Type CFD-1.5,12, 24 or 36 in. wide Types Mac-Lok 2, Mac-Lok 3; 12 in. wide Mac-Way Cellular Types 2-633MTWA, 3-633MTWA, 2-633MTWV, 3-633MTWV For the 1, 1-1/2, 2h Restrained Assembly Ratings and the 1h Unrestrained Assembly and Beam Rating, 12 in. wide, Type 1.5-633 MTWA may be used. Types CFD-1.5, CFD-2, CFD-3, Mac-Lok 2, Mac-Lok 3 may be phos/ptd. Two rows of steel studs with discs (Item 7) shall be welded along the sides of the Types 2-633MTWV, 3-633MTWV cellular units a max of 22 in OC.

VULCRAFT, DIV OF

NUCOR CORP — 24, 30 or 36 in. wide Type 1.5VLI, 1.5VLP,24 or 36 in. wide Types 2VLI, 3VLI, 2VLP, 3VLP. Types 1.5VLI, 2VLI, 3VLI units may be phos/ptd. 24 or 36 in. wide Types 2VLJ, 3VLJ units (+) may be used for max 2 hr. Restrained Assembly.

(+)Side joints of Type 2VLJ or 3VLJ units may be fastened together with No. 8-3/4 in. long self-drilling Tek screws driven diagonally from the top side through the joint of the units at 36 in. OC max.

The Unrestrained Assembly Rating is equal to the Unrestrained Beam Rating for a max of 3 Hr and is limited to the following units and limitations

(a) 1-1/2 in. deep, 24 in. wide, 22 MSG or thicker fluted with clear spans not more than 7 ft 8 in.

(b) 1-1/2 in. deep, 24 in. wide, 20 MSG or thicker fluted with clear spans not more than 8 ft 8 in.

(c) 1-1/2 in. deep, 24 in. wide, 16 MSG or thicker fluted and 18/18 MDG or thicker cellular with clear spans not more than 9 ft 11 in.

(d) 3 in. deep, 36 in. wide, 18 MSG or thicker fluted and 24 in. wide, 20/18 MSG or thicker cellular with clear spans not more than 13 ft 2 in.

6 Joint Cover 2 in. wide pressure sensitive cloth tape.

7. **Mastic Coating*** Coating spray, brush or towel applied directly from containers to desired thickness. See table below for appropriate final dry thickness. After each coat, the surface shall be lightly rolled with a paint roller. Flutes above beam to be completely filled with mineral wool insulation having a minimum density of 6 lb/ft^3 or the top flange of the beam shall be protected with the same thickness of coating as required on the beam.

Restrained Assembly Rating (Hr)		2			3	
Unrestrained Beam Rating (Hr)		1	1-1/2	2	1-1/2	2
Steel Size	W/D	Thickness (In.)				
W5x19	0.78	0.094	0.104	0.249	NR	NR
W6x16	0.67	0.102	0.117	NR	NR	NR
W6x20	0.68	0.102	0.117	NR	NR	NR
W6x25	0.84	0.090	0.097	0.233	NR	NR
W8x21	0.67	0.103	0.118	NR	NR	NR
W8x24	0.70	0.100	0.113	NR	NR	NR
W8x28	0.81	0.091	0.099	0.239	NR	NR
W8x31	0.90	0.086	0.091	0.219	NR	NR
W8x40	1.02	0.079	0.081	0.195	NR	NR
W8x48	1.20	0.072	0.072	0.167	NR	NR
W8x58	1.43	0.062	0.062	0.142	NR	NR
W8x67	1.63	0.056	0.056	0.125	NR	NR
W10x26	0.70	0.100	0.113	NR	NR	NR
W10x30	0.81	0.092	0.100	.240	NR	NR
W10x33	0.79	0.093	0.102	0.245	NR	NR
W10x39	0.92	0.084	0.089	0.214	NR	NR
W10x45	1.05	0.077	0.078	0.189	NR	NR
W10x49	1.01	0.079	0.081	0.196	NR	NR
W10x54	1.11	0.074	0.075	0.180	NR	NR
W10x60	1.23	0.069	0.069	0.164	NR	NR
W10x68	1.38	0.064	0.064	0.147	NR	NR
W10x77	1.55	0.058	0.058	0.132	NR	NR
W10x88	1.75	0.043	0.048	0.104	NR	NR
W10x100	1.96	0.043	0.043	0.104	NR	NR
W10x112	2.17	0.043	0.043	0.095	NR	NR

W12x30	0.69	0.104	0.114	NR	NR	NR
W12x35	0.80	0.092	0.100	0.241	NR	NR
W12x40	0.86	0.088	0.094	0.226	NR	NR
W12x45	0.97	0.082	0.085	0.204	NR	NR
W12x50	1.07	0.076	0.077	0.186	NR	NR
W12x53	1.01	0.079	0.081	0.196	NR	NR
W12x58	1.10	0.075	0.075	0.181	NR	NR
W12x65	1.11	0.074	0.074	0.180	NR	NR
W12x72	1.23	0.069	0.069	0.164	NR	NR
W12x79	1.34	0.065	0.065	0.151	NR	NR
W12x87	1.46	0.061	0.061	0.139	NR	NR
W12x96	1.61	0.056	0.056	0.127	NR	NR
W12x106	1.76	0.043	0.048	0.104	0.139	0.139
W12x120	1.98	0.043	0.043	0.104	0.139	0.139
W12x136	2.21	0.043	0.043	0.093	0.139	0.139
W12x152	2.45	0.043	0.043	0.084	0.139	0.139
W12x170	2.71	0.043	0.043	0.076	0.139	0.139
W12x190	2.99	0.043	0.043	0.069	0.139	0.139
W12x210	3.26	0.043	0.043	0.063	0.139	0.139
W12x230	3.53	0.043	0.043	0.058	0.139	0.139
W12x252	3.82	0.043	0.043	0.054	0.139	0.139
W12x279	4.16	0.043	0.043	0.049	0.139	0.139
W12x305	4.48	0.043	0.043	0.046	0.139	0.139
W12x336	4.85	0.043	0.043	0.043	0.139	0.139
W14x34	0.72	0.098	0.110	NR	NR	NR
W14x38	0.81	0.092	0.100	0.241	NR	NR
W14x43	0.87	0.088	0.094	0.226	NR	NR
W14x48	0.96	0.082	0.085	0.205	NR	NR
W14x53	1.05	0.077	0.078	0.189	NR	NR
W14x61	1.09	0.075	0.076	0.183	NR	NR
W14x68	1.21	0.070	0.070	0.166	NR	NR
W14x74	1.31	0.066	0.066	0.155	NR	NR
W14x82	1.44	0.061	0.061	0.141	NR	NR

W14x90	1.29	0.067	0.067	0.156	NR	NR
W14x99	1.42	0.062	0.062	0.143	NR	NR
W14x109	1.55	0.058	0.058	0.131	NR	NR
W14x120	1.69	0.054	0.054	0.121	NR	NR
W14x132	1.85	0.043	0.045	0.104	0.139	0.139
W33x141	1.43	0.062	0.062	0.142	NR	NR
W33x152	1.53	0.059	0.059	0.133	NR	NR
W33x201	1.80	0.043	0.043	0.114	0.139	0.139
W33x221	1.96	0.043	0.043	0.104	0.139	0.139
W33x241	2.13	0.043	0.043	0.097	0.139	0.139
W36x135	1.29	0.043	0.043	0.156	NR	NR
W36x150	1.43	0.043	0.043	0.142	NR	NR
W36x160	1.52	0.043	0.043	0.134	NR	NR
W36x170	1.61	0.043	0.043	0.127	NR	NR
W36x182	1.71	0.043	0.043	0.119	NR	NR
W36x194	1.82	0.043	0.043	0.104	0.139	0.139
W36x210	1.96	0.043	0.043	0.104	0.139	0.139
W36x230	1.95	0.043	0.043	0.104	0.139	0.139
W36x245	2.07	0.043	0.043	0.100	0.139	0.139
W36x260	2.19	0.043	0.043	0.094	0.139	0.139
W36x280	2.35	0.043	0.043	0.088	0.139	0.139
W36x300	2.50	0.043	0.043	0.082	0.139	0.139

NR - Not Rated

CARBOLINE CO — Type Nullifire S605. Investigated for Interior General Purpose

8 Topcoat Type TS 615 top-coat applied over the base coat at 0.003 in. thickness

*Bearing the UL Classification Marking

Recommendation - That the above described assemblies be accepted for Class II Buildings only, as having the fire resistance ratings given above, when members framing into the columns have at least the same fire resistance rating, provided that following requirements for application and protection of the mastic coating fireproofing be adhered to:

1. Where used for protection of floor ceiling and/or assemblies in roof/ceiling in fireproof buildings each such assembly shall bear an identifying tag installed at each beam. Subject tag shall be of metal construction mechanically attached to such beams and shall state the following: "this beam has been fireproofed with MEA approved Nullifire S605 with Type TP615 top-coat finish and such finish shall not be removed" nor any subsequent coating shall be applied other than Nullifire S605 with Type TP615 top-coat.

2. The general contractor and the owner shall provide qualified personnel to supervise the application of the sprayed-on fireproofing. They shall certify to the Department of Buildings that the finished fireproofing of the completed building is in full compliance with the acceptance requirements and drawings approved by the Department of Buildings.

3. The installation of the sprayed on fire protection shall be subject to the controlled inspection requirements of Section 27-132.

4. The use of this material shall be subject to all pertinent regulations of the Department of Air Resources and the Department of Health.

5. All installations shall comply with 118-68 GR, the New York City Building Code, the Fire Department Directives, the manufacturer's instructions and laboratory recommendation.

6. All shipments and deliveries of the materials comprising this assembly shall be accompanied by a certificate or label certifying that the materials shipped or delivered are equivalent to those tested and acceptable for use, as provided for in Section 27-131 of the Building Code.

Final Acceptance JUL 27 2000

Examined by S Derbhudan