Meets or Exceeds Building Code Requirements:

Underside Roof Assembly Fire-Tested and Rated for Building Code Compliance by Underwriters Laboratories Inc.®

The roofing system commercial builders want now has the fire-resistance ratings they need.

When commercial builders see the many advantages of a Sprayed Polyurethane Foam roofing system — such as energy-efficient insulation and wind uplift protection — they want it on their buildings. Now they can have it. The SPF roofing system assembly has fire-resistance ratings that meet or exceed building code requirements for most every type of commercial structure and type of occupancy.

Architects and Engineers: *Specify a Sprayed Polyurethane Foam roofing system in your plans — Design No. P733, as described in the Underwriters Laboratories Inc. Fire Resistance Directory. Regional fire-safety requirements may vary, so please check your local building code for compliance.*

Fire-tested at Underwriters Laboratories

The Sprayed Polyurethane Foam roofing assembly was tested for fire resistance in accordance with the UL263 testing method. Initially, a series of small-scale fire tests were done to qualify individual polyurethane foam manufacturers and to derive data for use in conjunction with the full-scale assembly test at Underwriters Laboratories Inc. Based on analysis of the full-scale test results, UL promulgated the P733 fire-resistance design with hourly ratings shown here.

See the back of this sheet for more information on the ratings and design assembly components.

Other Qualities of the Roofing System

- 5.8 - 6.2 R value
- Resists wind uplift
- Rigid, durable
- Monolithic surface
- Elastomeric coating
- Aggregate covering

Now every building — hospitals, schools, offices, industrial facilities — can gain the added protection of a Sprayed Polyurethane Foam roofing system.

DESIGN NO. P733

Underwriters Laboratories Inc. Fire Resistance Directory

Restrained Assembly Rating	Unrestrained Assembly Rating	Unrestrained Beam Rating
3 HOURS	2 HOURS	3 HOURS

Please see the back for additional ratings.

Design No. P733 — Underwriters Laboratories Inc. conducts the fire test, analyzes the test results and publishes, or promulgates, the specific fire-resistance design and hourly ratings. Under the UL reporting system, the letter "P" indicates a roof assembly; the number "7" indicates that the assembly is protected with a cementitious mixture; and, the number "33" refers to the testing chronology.

Hawk Eye Aerial

Meets or exceeds building code requirements for most types of commercial construction The impressive Borland International Complex in California was constructed with a Sprayed Polyurethane Foam roofing assembly. The SPF assembly has fire-resistance ratings that meet or exceed most commercial building code requirements, so it can be included in new construction plans for most every type of commercial structure and type of occupancy.

SPRAY POLYURETHANE FOAM ALLIANCE
SPFA
Spray Polyurethane Foam Alliance

SPFA Stock Number AY 125

Architectural Guide Specification:

Sprayed Polyurethane Foam Roofing Assembly Design No. P733

Underwriters Laboratories Inc.
Fire Resistance Directory

FIRE RESISTANCE DESIGN RATINGS

Restrained Assembly - 1, 1-1/2, 2 or 3 Hrs
Unrestrained Assembly - 1, 1-1/2, 2 or 3 Hrs
Unrestrained Beam - 1, 1-1/2, 2 or 3 Hrs

Tested in accordance with UL263 testing method. These hourly fire resistance ratings meet or exceed the required ratings of roofing assemblies for the majority of commercial buildings and types of occupancy. Specific fire-resistance rating requirements based on occupancy and proximity to other structures vary according to local building codes. Check the building code regulations in your area to ensure compliance.

Contact Underwriters Laboratories Inc. for a listing of Sprayed Polyurethane Foam manufacturers that have been classified by UL.

WIND UPLIFT RESISTANCE AND STRUCTURAL QUALITY

Excellent

According to Underwriters Laboratories Inc., the direct application of Sprayed Polyurethane Foam to steel deck and plywood deck demonstrated uplift load resistance (160-165 psf) without any sign of delamination or other damage to the foam.

Sprayed Polyurethane Foam results in a highly rigid, monolithic (continuous) roof surface with no joints or seams, which helps SPF roofing systems resist wind uplift.

For additional information, contact:

SPRAY POLYURETHANE FOAM ALLIANCE

Call (800) 523-6154 or write to:
Spray Polyurethane Foam Alliance
4400 Fair Lakes Court, Suite 105
Fairfax, VA 22033

www.sprayfoam.org

Design No. P733

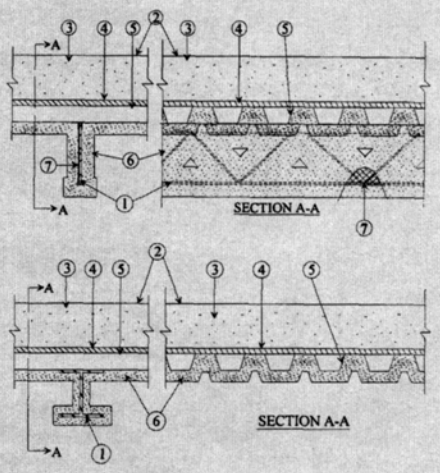
1. Steel Supports - W6x16 steel beam (min size) or 10K1 steel joist, (min size) having the following properties: Top chords consisting of two 1-1/4 by 1-1/4 by 0.135 in. thick steel angles; Lower chord consisting of two 1 by 1 by 0.113 in. thick steel angles; Bearing plates consisting of two 1-1/4 by 1-1/4 by 0.134 in. thick steel angles, 8 in. in length; Diagonal web members consisting of 0.561 in. diameter steel rods.

1A. Bridging - (Not Shown) - Min 1-1/4 by 1-1/4 by 1/8 in. thick steel angles welded to top and bottom chords of each joist. Number and spacing of bridging angles per Steel Joist Institute specification. Bridging coated with the same thickness of cementitious mixture as the joist(s) - See Item 6.

2. Roof Covering* - Consists of cold application, fluid applied roof coating materials compatible with insulation(s) described herein which provide Class A, B or C coverings. See Roofing Materials and Systems Directory - Roof Covering Materials (TEVT).

3. Roof Insulation-Foamed Plastic* - Polyurethane foamed plastic roof insulation. Formed by the simultaneous spraying of two liquid components applied over the gypsum wallboard at a nominal thickness of 1 to 5 in. in accordance with the manufacturers' instructions.

4. Wallboard, Gypsum* - 5/8 in. thick, supplied in 4 ft wide sheets. Min weight 2.2 psf. Installed perpendicular to steel roof deck with all joints tightly butted and end joints staggered and offset from steel roof deck sidelap joints. See Wallboard, Gypsum (CKNX) category for name of manufacturers.



5. Steel Roof Deck - Unclassified - Min 36 in. wide, 1-1/2 in. deep, galv fluted steel deck. Min gauge is 22 MSG. Flutes approx 6 in. OC, crests approx 3-1/2 in. wide, valleys approx 1-1/2 in. wide. Welded to supports 12 in. OC Adjacent units welded 18 in. OC along sidelap joints or mechanically fastened with Type S-10 1/2 in. long steel screws 18 in. OC.

6. Cementitious Mixture* - Applied by mixing with water and spraying in more than one coat to a final thickness as shown above and on the table below, 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 method of density determination, refer to Design Information Section.

* Bearing the UL Classification Marking

Restrained Assembly Rating, Hr	Unrestrained Assembly Rating, Hr	Unrestrained Beam Rating, Hr	Material Thickness in. On Joists Spaced			
			On Deck	More Than 4 Ft OC	4 Ft Or Less OC	On Beam
3	**2†**	**3**	**2-1/2**	**3-1/4**	**2-13/16**	**1-1/2**
1	1	1	1-1/2	1-1/8	15/16	3/4
1-1/2	1-1/2	1-1/2	1-11/16	1-5/8	1-7/16	7/8
2	2	2	2-1/8	2-3/16	1-7/8	1-1/8

† The Unrestrained Assembly Rating is 3 Hr when 1-1/2 in. deep No. 22 MSG or thicker fluted deck with clear spans of not more than 6 ft. 8 in. is used.

GLOSSARY OF TERMS

Fire resistance - The property of materials or their assemblies that prevent or retard the passage of excessive, hot gases or flames under conditions of use.

Fire-resistance rating - The time in hours, or incremental fractions of hours, that materials or their assemblies will resist fire exposure as determined by the fire tests specified in building codes.

Restrained - A building that, through design, is reinforced to resist movement under fire conditions so that it is less likely to fail structurally during a fire.

Unrestrained - A building that, by design, is free to move under fire conditions. Generally, many building code jurisdictions treat all buildings as unrestrained, which has more stringent temperature limitations than restrained designs.

SPFA 1/3/95 rev 6/2004