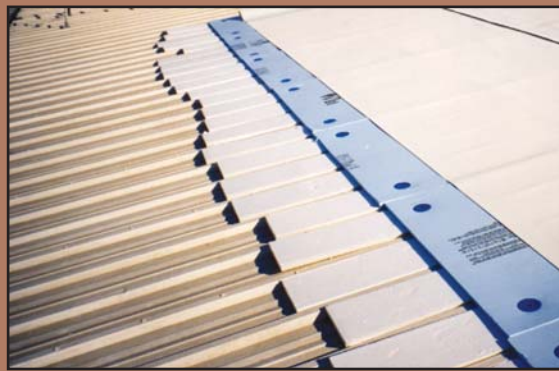


visit our web pages on energy efficient roofing at [www.stevensroofing.com](http://www.stevensroofing.com)



Metal Roof Retrofit  
**Stevens EP™** Metal Roof Retrofit  
Metal Roof Retrofit  
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Metal Roof Retrofit



*Innovative Technology*  
since  
**1863**



Since 1863

Our history of rubber compounding and calendaring dates back to 1863 and the founding of our forerunner, the Easthampton Rubber Thread Company, supplier of rubber thread and tape to the apparel industry.

In 1975, the company (then part of J. P. Stevens & Co.), entered the pond and pit lining business with a reinforced, Hypalon®-based containment membrane. A few years later, Stevens began manufacturing commercial roofing membranes under private label agreement.

Today, Stevens Roofing Systems is a business unit of JPS Elastomerics, with nearly 140 years of combined rubber compounding experience. Stevens Roofing membranes are marketed in nearly 60 countries around the globe and more than 1.5 billion square feet of Stevens membrane has been installed worldwide. In addition to commercial roofing, the company is a worldwide supplier of geomembranes.

### Stevens EP™... The Best of Both Worlds

Stevens EP membrane is based on a proprietary thermoplastic polyolefin (TPO) compound of ethylene and propylene.

The result is a hot-air weldable membrane offering the best performance characteristics of both EPDM rubber and PVC, but without the limitations of either. In short order, Stevens EP has defined the TPO roofing industry and is the most widely installed brand of TPO roofing in the world.

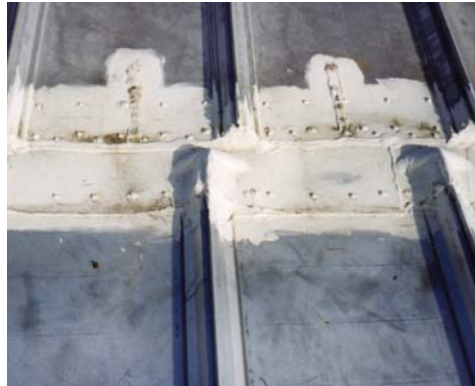
Stevens EP brand of TPO is an environmentally friendly roofing membrane that provides outstanding weatherability, fire and chemical resistance, strong reliable seams, and no plasticizers to leach out and embrittle the membrane.

Stevens EP membranes provide superb value at a competitive price.

\*©Hypalon is a registered trademark of DuPont-Dow Elastomers L.L.C.

# What Shape Is

**Like everything in life, your metal building's roof is going to get tired, old and worn. It happens to them all. Over time, Mother Nature's destructive forces combined with long-term UV exposure and continuous expansion and contraction has left your metal roof rusty, leaking and deteriorating.**



When this happens, a technically-advanced Stevens EP™ roofing system will provide your building with a fresh new look and help it to give you many more years of service life.

### Solve Metal Roof Problems Once and For All

The Stevens EP Metal Retrofit Roofing System is based on a proprietary thermoplastic polyolefin (TPO) formulation. Stevens has been compounding and calendaring the Stevens EP brand of TPO — the world's first reinforced TPO roofing membrane — since 1992. More than one-half billion square feet (50 million sq. meters) have been installed around the globe, and on virtually every type of building, including those with aging metal roofs.

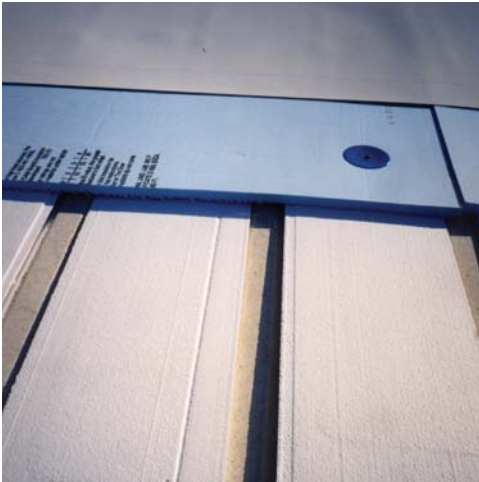
As the leading manufacturer of reinforced TPO roofing membranes, Stevens Roofing Systems engineered a durable, light-weight roofing system specifically for retrofitting tired, aging, metal roof decks regardless of whether it is a standing seam, flat seam, or corrugated metal roof.

**1.** From the deck up we start with an approved polyisocyanurate, extruded or expanded polystyrene insulation that has been cut to fit in the flutes of the existing metal roof deck. This material is loose-laid between the standing seams of the existing roof deck, providing additional R-value to the building as well as structural support for the insulation that will be installed over the top.

**2.** Next we mechanically attach a cover board or insulation board over the top to provide a uniform and flat substrate for the roofing membrane. Stevens can provide polyisocyanurate, extruded or expanded polystyrene insulation, in thickness ranging from 1 to 4-in. (25.4-mm, 101.6-mm) depending on your specific R-value and energy savings requirements.

**3.** Last, the Stevens EP membrane is installed over the insulation and mechanically fastened directly to the supporting purlins using a specially designed, self-tapping purlin fastener and seam plate. Membrane widths of 64.5-, 70.5- and 76.5-

# Your Roof In?



inches (1.63-m, 1.79-m, 1.94-m) can accommodate typical 4 and 5-foot (1.21 and 1.52-m) purlin spacing and any variances. When fastened at 12-in. (304.8-mm) on center using Stevens Purlin Fasteners and a Stevens 2-3/8-in. (60-mm) Barbed Metal Seam Plate, the system is Factory Mutual approved for a 1-90 wind uplift classification rating. Additional wind uplift ratings are also available. Consult the Stevens Roofing Systems Technical Department or the latest FMRC Approval Guide for details.

## Maximum Seam Strength

All Stevens membranes are heat weldable. Heat welding has long been recognized as the strongest, most reliable seaming method in the single-ply roofing industry. Literally fusing the materials together,

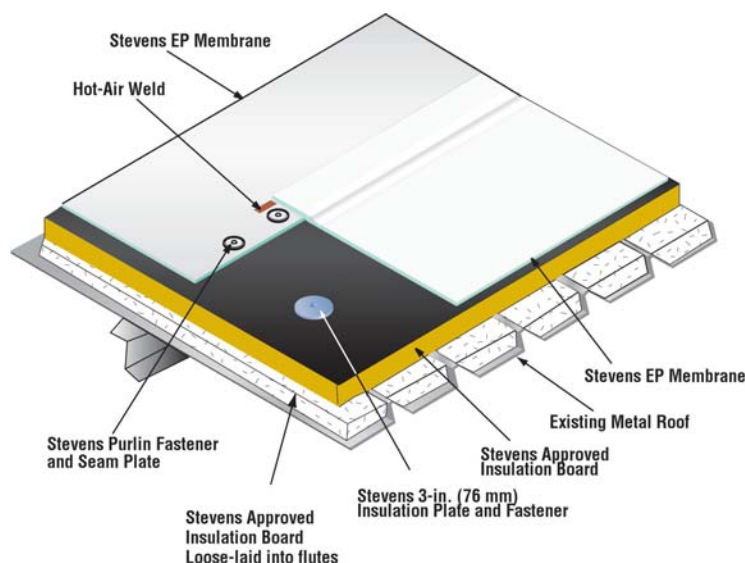
hot-air welding creates one homogeneous bond that can be made stronger than the membrane itself. Hot-air welded Stevens membranes can be:

- Up to three times stronger than butyl tape seams.
- Significantly faster and less expensive to install than adhesive or taped seams. So more of your roofing investment goes into materials that stay on the roof, rather than into the labor to install the system.

Stevens EP brand of TPO weathers like EPDM, has the seam strength advantages of hot-air-welded thermoplastic membranes, and can be installed year-round when compared to liquid adhesive-seamed systems or taped systems which are

*continued on back*

## Stevens Metal Retrofit Cutaway



## Energy Savings

Stevens is a longtime proponent of the energy related benefits associated with white reflective roofing, and a Charter Partner in the EPA Energy Star® Roof Products Program.

Many complex factors impact the life-cycle cost of a commercial roofing system:

- The installed cost
- Warranty charges
- Maintenance
- Depreciation
- Net present value

One factor that is frequently overlooked is energy cost as a function of roof color.

We all know that lighter surfaces reflect more of the sun's light, while darker surfaces absorb it. The question is: will a building with a reflective white roof save enough in air conditioning costs during the warm weather to outweigh the potential savings in heat absorption from a black or dark colored roof during the winter months? Especially in Northern climates? The answer is **yes!**

To find out, we conducted a computer-based life-cycle analysis that compares the installed roofing system cost and heating/cooling costs for a 100,000 sq. ft. (9290 m<sup>2</sup>) air-conditioned building in three cities across the country. A white Stevens roof was compared to a popular dark colored system, with the following assumptions:

- Natural gas heat at \$.58/therm.
- Electrical AC at \$.12/kwh.
- Building temperature at 78°F (25.6°C).
- Roof insulation at R-10.

We also ran the same analysis with an R-20 to see if extra insulation would outweigh roof color. The results are very revealing. See for yourself.

Stevens is a Charter Partner in the EPA Energy Star Roof Products Program and Stevens white membranes can also qualify for points in the U.S. Green Building Council's LEED Program.

Contact Stevens for a free **LIFE-CYCLE COST ANALYSIS** that can show you the energy savings possible with a reflective white Stevens Roofing System, call **877/TPO-ROOF ext. 1004**. Or visit the "Energy Efficient Roofing" section of our web page at: [www.leakymetalroof.com](http://www.leakymetalroof.com).

temperature sensitive and cannot be installed in cold weather.

In addition, Stevens EP does not contain plasticizers and therefore does not suffer any of the problems associated with plasticizer migration or membrane shrinkage that some PVC membranes have experienced.

A variety of membrane color options are available from Stevens Roofing Systems. Consult your Stevens representative for colors, minimum order sizes, availability and delivery.

All Stevens EP membrane is manufactured in an ISO-9001:2000 registered facility and Stevens EP membranes meet the ASTM 6878-03 specification for TPO-based roofing material.

### Fire Resistance Meets Critical UL & FM Requirements

Stevens EP membranes for metal roof retrofit attachment have achieved UL Class A fire resistance over steel decks, as well as Factory Mutual Windstorm Classification Ratings of 1-60 and 1-90, 1-120, 1-135, 1-150 and 1-195. Consult the latest *FM Approval Guide* and *UL Directory* for specific listings.

### Maintenance & Repair

Stevens Roofing Systems are engineered to require minimal maintenance. Should damage occur, Stevens EP membranes can be easily repaired by an Authorized Stevens Applicator.

### Warranty Options

When it comes to long-term weathering, Stevens Roofing Systems has really got you covered too, because Stevens EP membranes are available with a variety of 15- and 20-year\* warranties vs. 5- to 10-year warranty that most roof coatings typically offer.

### Technical Support

Stevens Roofing Systems offers a full range of technical support, including:

- A comprehensive Technical Manual.
- Electronic Specs & Details available on the web and CD-ROM.
- Bilingual English/Spanish Pocket Guide.
- Toll free technical support **800/621-ROOF ext. 1007.**

### Call for a Roof Inspection or Quote

Call **877/TPO-ROOF**, ext. **1004** for more information or to arrange for a competitive quote from an Authorized Stevens Applicator.

*\* 20 year warranties for metal retrofit installations available with 60 mil membrane only.*

STEVENS EP PHYSICAL PROPERTIES			
Physical Property	Test Method	Typical Values 45 mil**	Typical Values 60 mil**
Breaking Strength	ASTM D-751 (Grab Method)	275 lbf. (1.22 kN)	320 lbf. (1.42 kN)
Tear Strength	ASTM D-751 (Procedure B, 8"x 8" sample)	135 lbf. (.600 kN)	110 lbf. (.489 kN)
Shore A Hardness	ASTM D-2240	82	82
Dimensional Stability (% change max.)	ASTM D-6878 (White: 6 hrs @ 158°F/70°C)	±0.3%	±0.3%
Hydrostatic Resistance	ASTM D-751 (Method A)	400 psi (2.8 Mpa)	425 psi (2.9 MPa)
Ozone Resistance*	ASTM D-1149 (70 hrs @ 100°F/37.8°C)	Pass	Pass
Weather Resistance	Xenon Arc, ASTM D-6878 G-155; 5040 kJ/m <sup>2</sup> @ 340nm	No cracks, loss of breaking strength, or tear strength	No cracks, loss of breaking strength, or tear strength
	EMMAQUA, (Concentrated Natural Sunlight) ASTM G-90, 167 359 kJ/m <sup>2</sup>	Pass	Pass
Puncture Resistance	FTM 101B (Method 2031)	330 lbf. (1.47 kN)	400 lbf. (1.78 kN)
Vapor Transmission	ASTM E-96 (Procedure B Condition BW @ 72°F/22.2°C)	0.035 PERMS	0.035 PERMS
Elongation (%) Ultimate*	ASTM D-412 (Die C)	700%	700%
Brittleness	ASTM D-2137 (@ -45°C)	Pass	Pass
Water Absorption (max. % weight change)*	ASTM D-6878 D-471, (158°F/70°C for 7 days) Testing only one side section	±3%	±3%
Heat Aging	ASTM D-6878 D-573 (28 days @ 240°F/115°C)	Break: 250 lbf. (1.1 kN)	Break: 290 lbf. (1.29 kN)
Hemispherical Reflectance	ASTM E-903	>70%	>70%
Near Normal Emittance	ASTM E-408-71 (Method A)	>0.93	>0.93

\*Test performed on non-reinforced Stevens EP membrane.  
\*\*Thickness (nominal) per ASTM D-751 Test Method.



Nine Sullivan Road  
 Holyoke, MA 01040-2800 USA  
 Tel: 800/621-ROOF • Main Tel: 413/533-8100 • Int'l Tel: 1-413/552-1000  
 Fax: 413/552-1070  
 www.leakymetalroof.com • email: info@stvroof.com

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