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Photo by Dale Fisher

DURO-LAST® ROOFING, INC.

CUSTOM PREFABRICATED SINGLE-PLY ROOFING SYSTEM



Durable

Energy-efficient

Professionally installed by
authorized contractors

Precision-fabricated for
every building

Code compliant

Delivers long-term value

Installed with minimal disruption

Backed by the industry's
best warranties



Proven Performance Since 1978

CORPORATE HEADQUARTERS



Since our inception in 1978, Duro-Last Roofing, Inc. has been the pioneer of custom prefabricated single-ply roofing systems. For over 30 years, Duro-Last has been The Proven Performer®, with over a billion square feet of membrane installed. This position of distinction has led industry leaders, corporations, and sources of specifications throughout the country to recognize our technological contributions to the roofing industry.

THE DURO-LAST MEMBRANE: STRONG AND DURABLE

The Duro-Last roofing system membrane is a proprietary thermoplastic formulation that provides exceptional flexibility, reflectivity, resistance to U.V. radiation, and flame retardance.

Roofing system performance is a balance among film formulation, membrane thickness, and reinforcement. Duro-Last adds no “filler” material to increase membrane thickness; our film is the same proven formula from top to bottom. Plus, our membrane’s over-scrim thickness is equal to or greater than that of many competitive single-ply products.

A key Duro-Last difference is the reinforcement scrim within the membrane. It’s a weft-insertion scrim

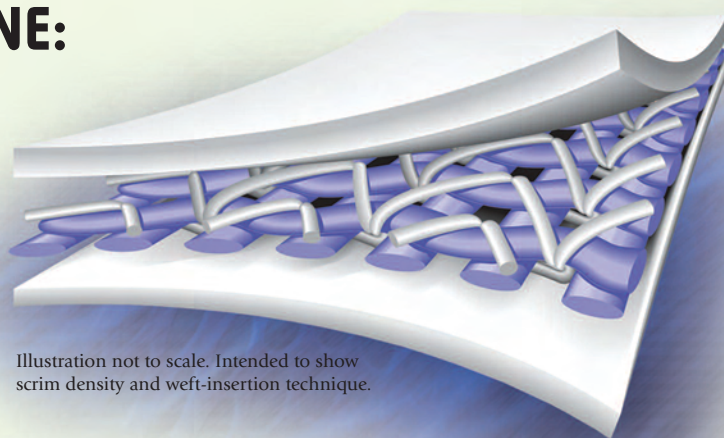
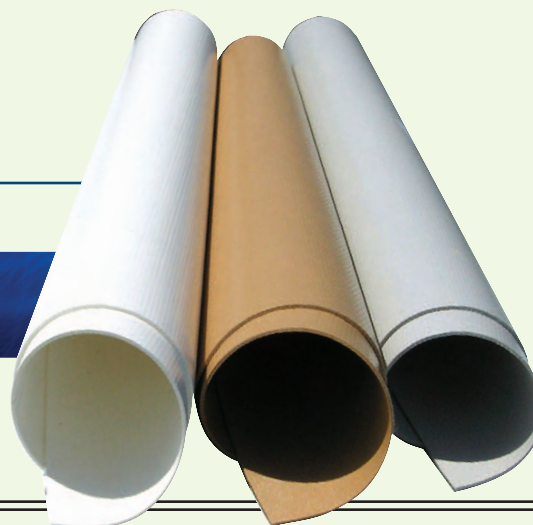


Illustration not to scale. Intended to show scrim density and weft-insertion technique.

with a density of 14 x 18 threads-per-inch – among the highest in the industry.

The Duro-Last 40-mil membrane is classified as a ASTM D4434 Type IV PVC roof system, but the strength characteristics pass all the standards for 50-mil products, which are classified as ASTM D4434 Type III PVC.

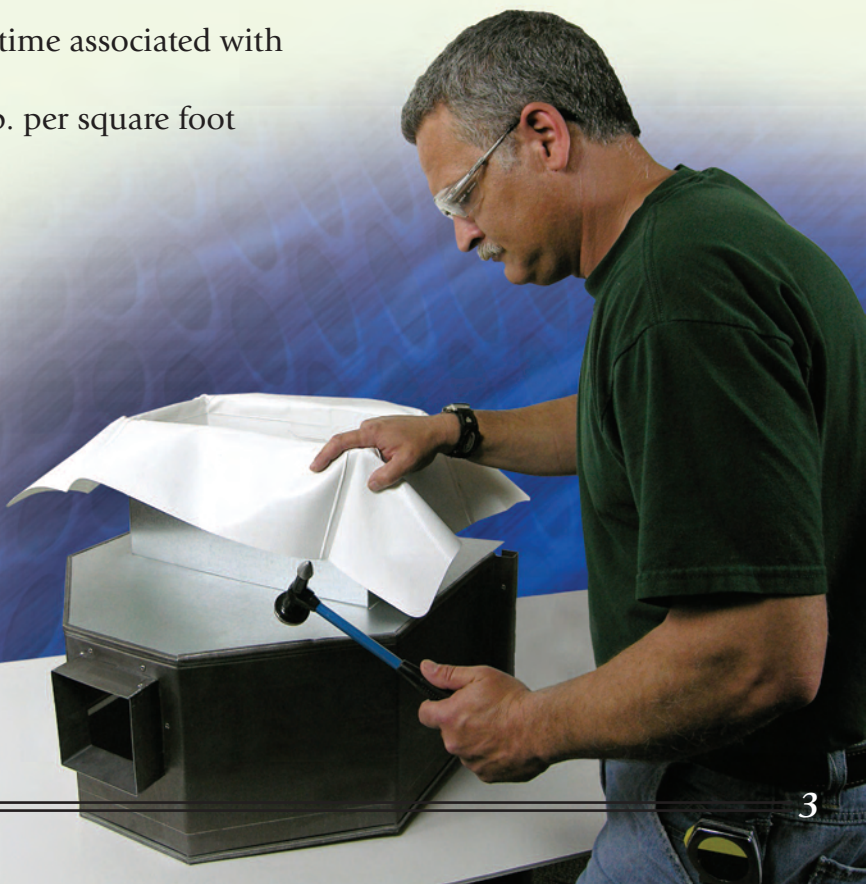


**The Duro-Last membrane is
available in white, tan or gray.**

EVERY ROOF IS MANUFACTURED TO BUILDING SPECIFICATIONS



- Every Duro-Last roof is pre-engineered, designed, and manufactured to address the specific needs of each roofing project
- Prefabrication provides quality-assured products
- Material is custom welded into sheet sizes designed for each building, up to 2,500 square feet each
- 80-85% of membrane seaming is completed in our factory's controlled environment
- Custom prefabrication helps reduce field workmanship performed in the harsh rooftop environment
- Reduces labor costs and installation time associated with roll goods system installations
- Installed 40-mil system weighs .22 lb. per square foot

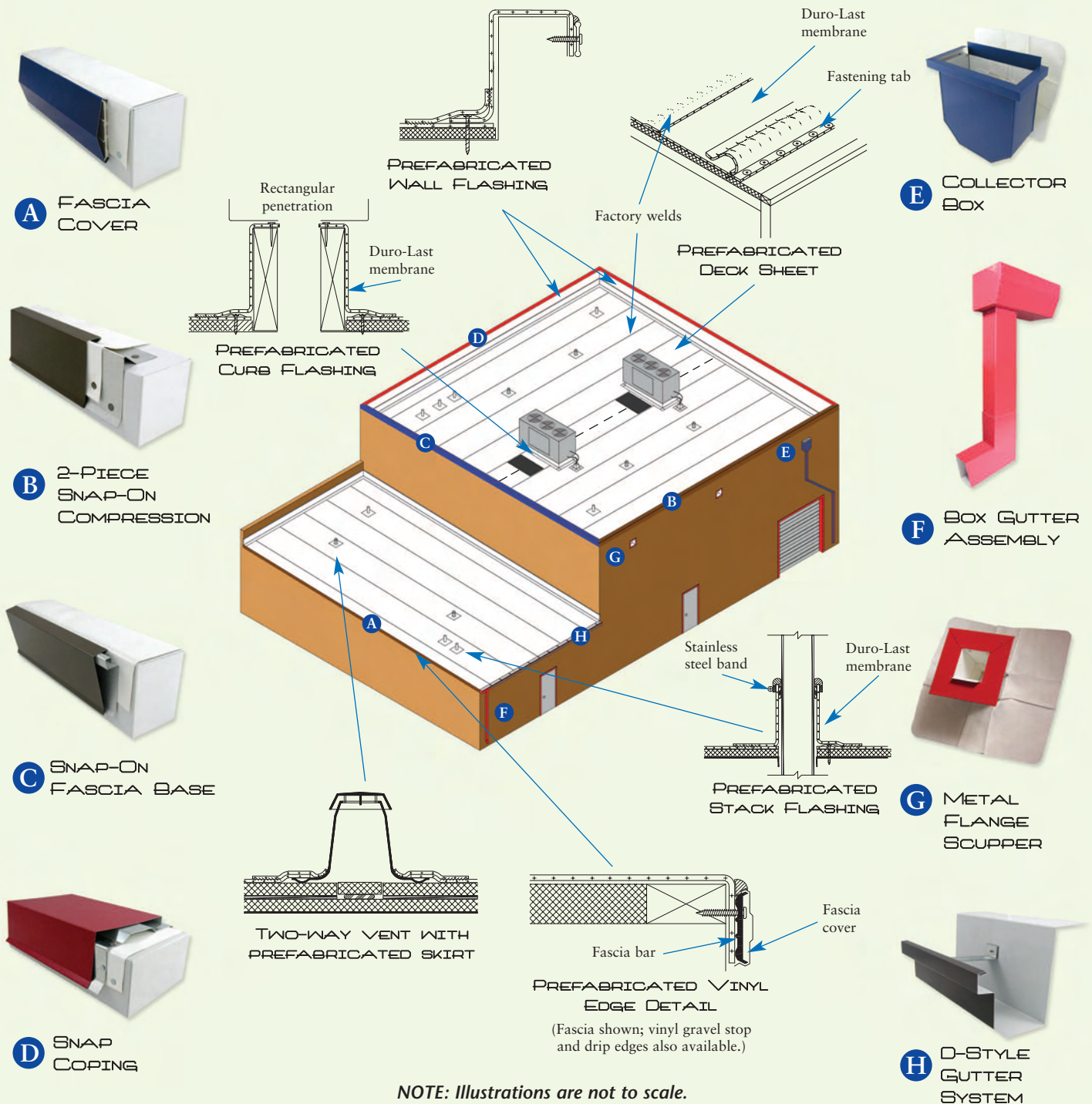


THE DURO-LAST DIFFERENCE – CUSTOM PREFABRICATION

This illustration shows how three prefabricated Duro-Last panels completely cover a roof approximately 7,000 square feet in size. The field welding required (dashed line), is much less than the welding done beforehand in Duro-Last's controlled factory environment (solid lines).

Duro-Last also produces a complete line of standard and custom accessories. All flashings, details, and other components are factory-produced, reducing field fabrication. Flashings are made with reinforced membrane to provide unmatched strength at critical transitions. Both vinyl and metal accessories are available in a variety of colors and styles.

Custom prefabrication: if you can draw it, we can make it.



HEAT-WELDED ROOFING SYSTEM PROVIDES EASY INSTALLATION AND LOW MAINTENANCE

- Hot air welding bonds all Duro-Last field seams
- Welds are done with a hand-held unit or “walker” welder
- No chemicals, torches or other unsafe seaming methods are used
- The Duro-Last membrane is non-curing; patches, curbs, stacks or other alterations can be easily heat-welded to the membrane throughout the life of the system
- The membrane can be installed over most new or existing substrates; it is watertight and virtually maintenance-free
- The need for costly tear-offs and disposal can often be eliminated



COMPREHENSIVE WARRANTY COVERAGE

Duro-Last is so confident in the durability of our roofing systems that we protect commercial and industrial installations with the best warranties in the industry. Our standard, comprehensive 15-year No Dollar Limit (NDL) warranty is transferable, has no exclusions for ponding water, and provides coverage against consequential damages that result from defects in the Duro-Last material and/or installation workmanship. Duro-Last also has 20-year warranties available.



DURO-LAST'S CODE COMPLIANCE OFFERS CUSTOMERS PEACE OF MIND

- Duro-Last has met or exceeded all major fire/wind code requirements, and obtained necessary regional approvals throughout the United States and Canada
- Factory Mutual ratings: 1-60, 1-75, 1-90, 1-105, 1-135, 1-150, 1-165, 1-195, 1-210, 1-270, 1-435, 1-495
- Rated by Underwriters Laboratories (UL) as a Class A material
- Approved by International Building Code (IBC) and complies with the MIAMI-DADE building code
- Duro-Last is a charter partner of the EPA ENERGY STAR® Roof Products Program, a charter member of the Cool Roof Rating Council (CRRC), and a member of the United States Green Building Council (USGBC). Duro-Last is also a member of the Vinyl Roofing Division of the Chemical Fabrics and Film Association (CFFA)
- The Duro-Last roofing system can help obtain credits toward LEED® and LEED-EB certification
- Duro-Last participates in all major roofing industry technical committees, plus the American Society of Testing Materials (ASTM), American Institute of Architects (AIA), Construction Specifications Institute (CSI), Roof Consultants Institute (RCI), National Roofing Contractors Association (NRCA), and the Single Ply Roofing Industry (SPRI)

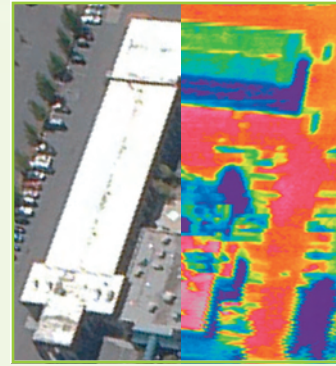


DURO-LAST COOL ZONE® SYSTEM DELIVERS FIVE E'S OF HIGH-PERFORMANCE ROOFING

Five interrelated attributes are important in the selection of a high-performance roofing system:

- Reduce **ENERGY** use and improve energy efficiency
- Minimize impact on the earth's **ENVIRONMENT**
- Meet or exceed **ENDURANCE** requirements for long life
- Deliver good **ECONOMICS** for the entire life-cycle
- Incorporate solid design and **ENGINEERING** principles

When you consider these Five E's, alone or together, high-performance roofing takes on a new meaning and one very cool solution emerges: the Duro-Last Cool Zone roofing system.



DURO-LAST
COOL ZONE
THE WORLD'S COOLEST ROOF

WHITE
GREEN



DURO-LAST SHINGLE-PLY ROOFING SYSTEM



The perfect combination of watertight integrity and aesthetics.

The Duro-Last shingle-ply system is ideal for commercial applications where building appearance is important, but conventional shingles are not practical because the roof's slope may not provide good water runoff or the roof has other limitations. The shingle-ply membrane provides a shingle look and the watertight performance and long-term durability of a thermoplastic, single-ply roofing system.

DURO-SHIELD® ROOFING SYSTEM IS THE PERFECT FIT FOR METAL RETROFIT

- Can be installed over an existing metal roof without an expensive tear-off
- A cost-effective, long-term way to protect buildings against rain, temperature changes, interior drips, ice build-up, and rust/corrosion
- Flexible membrane expands and contracts with the weather, eliminating the risk of rooftop leaks

Here's how the Duro-Shield roofing system works:

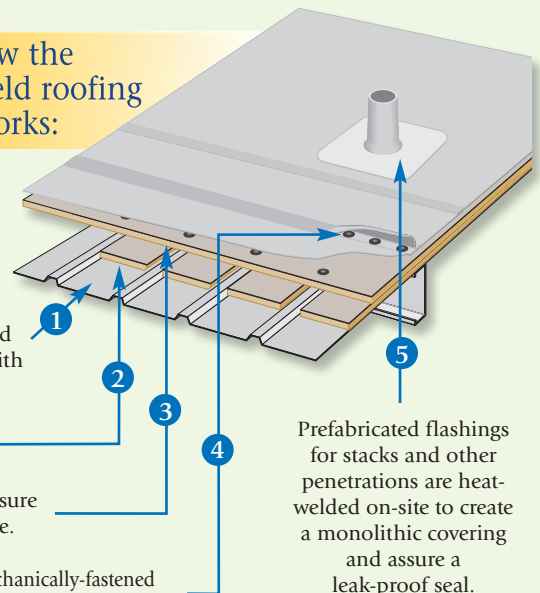


Your existing metal deck can be covered with the Duro-Shield roofing system, with no tear-off required.

Insulation is cut and placed to fill the flutes.

Another insulation layer is added to ensure a flat surface and increase the R-value.

The prefabricated membrane is mechanically-fastened to the deck over the insulation.



Prefabricated flashings for stacks and other penetrations are heat-welded on-site to create a monolithic covering and assure a leak-proof seal.

DURO-LAST PHYSICAL PROPERTIES

Tests outlined by ASTM D-4434	Test Description	Test Method	Metric Results	U.S. Standard Results
	Thickness-Nominal	ASTM D 751	1 mm.	40 mil - Type IV (50 and 60 mil also available)
	Breaking Strength	ASTM D 751 - Grab Method	1912 x 1636 N	435 x 368 lbf./in.
	Elongation at Break	ASTM D 751 - Grab Method	30%	
	Heat Aging	ASTM 3045, 56 days @ 176°F	Pass	
	Factory Seam Strength	ASTM D 751 - Grab Method	1601 N	360 lbf.
	Tearing Strength	ASTM D 751 - Procedure B	604 x 556 N	136 x 125 lbf.
	Low Temperature Bend	ASTM D 2136@-40°F	Pass	
	Accelerated Weathering	ASTM G 154 (Formerly G53)	No cracking, checking, crazing or erosion at 5,000 hours of exposure. Pass	
	Linear Dimensional Change	ASTM D 1204 - 6 hrs. @ 176°F	-0.4%	
	Water Absorption	ASTM D 570 - 166 hrs. @ 158°F	2.60%	
	Static Puncture	ASTM D 5602	25 kg.	56 lb.
	Dynamic Puncture	ASTM D 5635	20 J	474 pdl-ft.

Additional Tests	Test Description	Test Method	Metric Results	U.S. Standard Results
	Fungi Resistance	ASTM G-21	No sustained growth or discoloration	
	Solar Reflectance	ASTM C1549	88%	
	Thermal Emittance	ASTM C1371-98	87%	
	Thermal Emissivity	ASTM E408	95%	
	EMMAQUA Exposure	ASTM G90, Desert Sun	339,790 M/J/m ²	>8.1 million Langleys
	Moisture Vapor Transmission	ASTM E-96, Proc. B, Method A	<.086 g/hr/m ²	<.25 U.S. Perms
	Weight	ASTM D 751	1.1 kg per m ²	.22 lb. per ft ²
	Underwriters Laboratories	UL-790	Classes A, B & C approved	
	Factory Mutual Research	ASTM E-108; FM 4450 & FM 4470	Rated 1-60, 1-75, 1-90, 1-95, 1-105, 1-135, 1-150, 1-165, 1-195, 1-210, 1-270, 1-435, and 1-495	

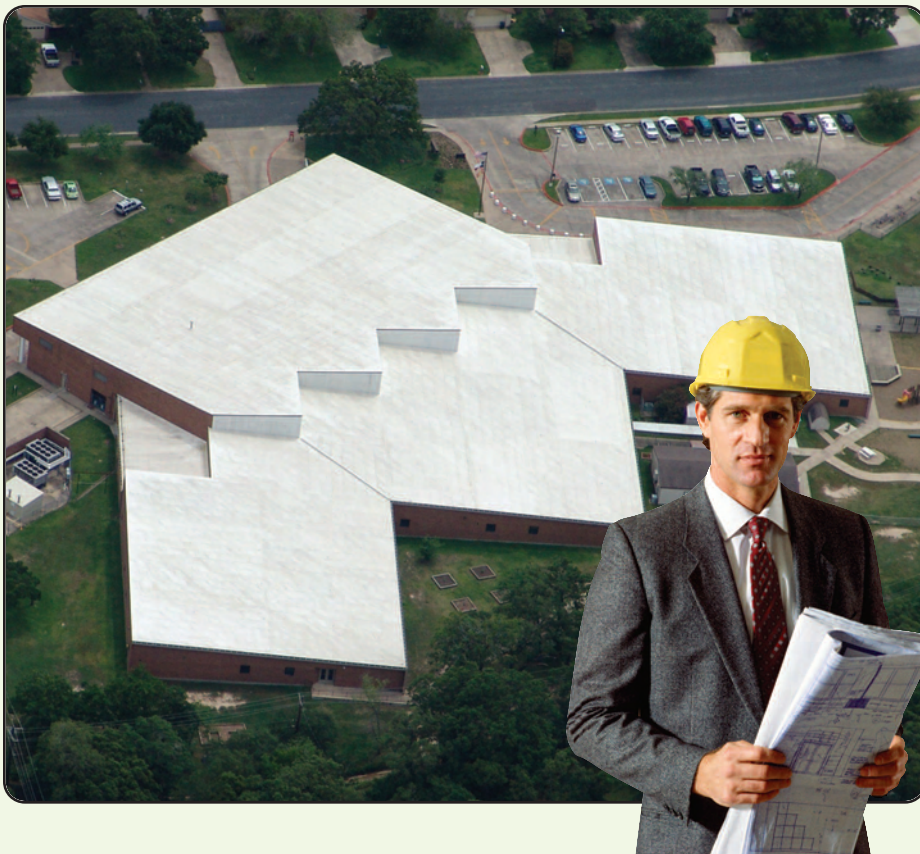
MATERIALS THAT CAN BE USED SAFELY WITH THE DURO-LAST ROOFING SYSTEM

The Duro-Last roofing membrane is extremely durable and compatible with dozens of chemicals, construction products, and other materials. Some of the most common are below. For information about materials not listed, contact the Duro-Last Engineering Services Department at 800-248-0280.

- Acid Rain
- Acrylic/Latex Paint
- Bird Droppings
- Bleach
- Brick & Masonry Cleaner
- Cooking Grease
- Detergent Solution
- Diatomaceous Earth
- Ethyl/Methyl Alcohol
- Furnace Residue
- Hydrofluoric Acid Cleaner
- Incinerator Ash
- Linseed Oil
- Nitrogen Sulfate
- Polyethylene
- Polypropylene
- Sea Water
- Soldering Acid/Flux
- Tannic Acid
- Triethylene Glycol



The "World's Best Roof"®



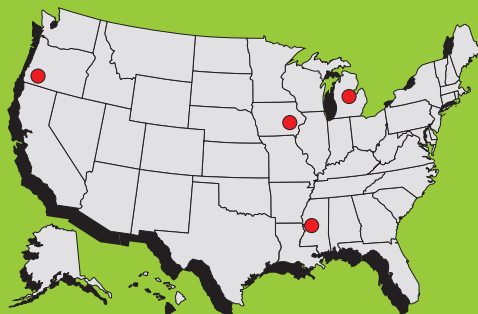
DURO-LAST MANUFACTURING FACILITIES

525 Morley Dr.
Saginaw, MI 48601
800-248-0280
Fax: 800-432-9331

111 N. Valley Dr.
Grants Pass, OR 97526
800-356-6646
Fax: 800-566-2698

1409 E. SADC Ave.
Sigourney, IA 52591
888-500-3574
Fax: 888-501-3574

6200 I-55 South
Jackson, MS 39272
800-434-3876
Fax: 866-602-4387



www.duro-last.com

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