



# DURO-LAST® ROOFING, INC.

## CUSTOM PREFABRICATED SINGLE-PLY ROOFING SYSTEM



Durable

Energy-efficient

Precision-fabricated  
for every building

Professionally installed by authorized  
contractors with minimal disruption

Code compliant

Delivers long-term value

Backed by the industry's  
best warranties



*Proven Performance Since 1978*

# CORPORATE HEADQUARTERS



Duro-Last Roofing, Inc. is the pioneer of custom prefabricated single-ply roofing systems. Since our inception in 1978, Duro-Last has been the Proven Performer®, with over 1½ 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 contributions to the roofing industry.

## THE DURO-LAST MEMBRANE: STRONG AND DURABLE

The Duro-Last 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 between film formulation, membrane thickness, and reinforcement. Duro-Last adds no “filler” material to increase the 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

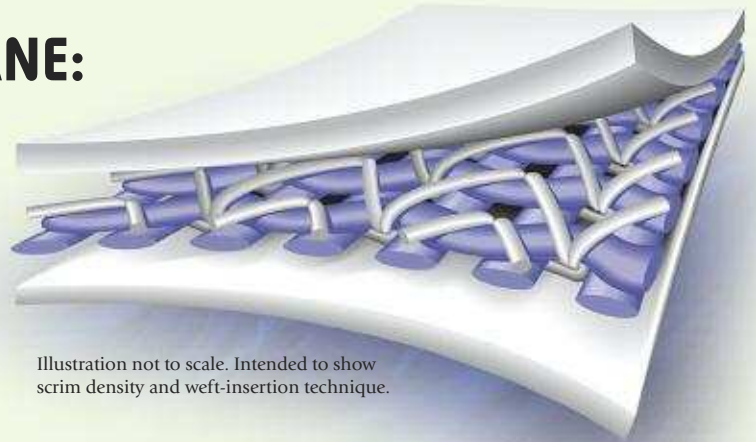
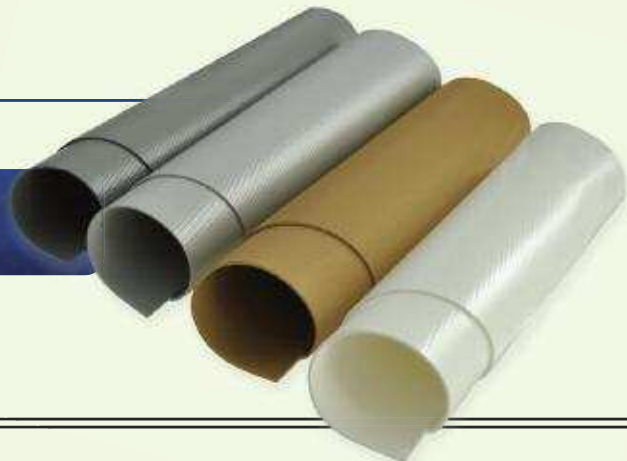


Illustration not to scale. Intended to show scrim density and weft-insertion technique.

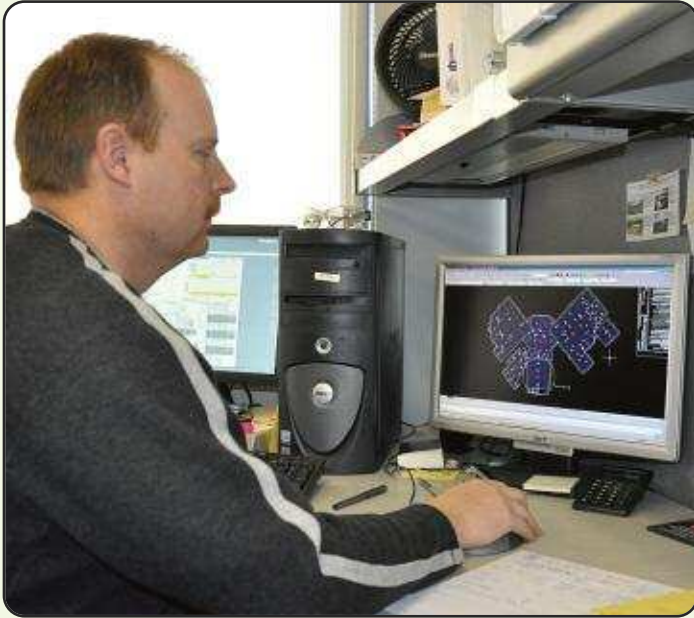
with a density of 14 x 18 threads-per-inch – among the highest in the industry.

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

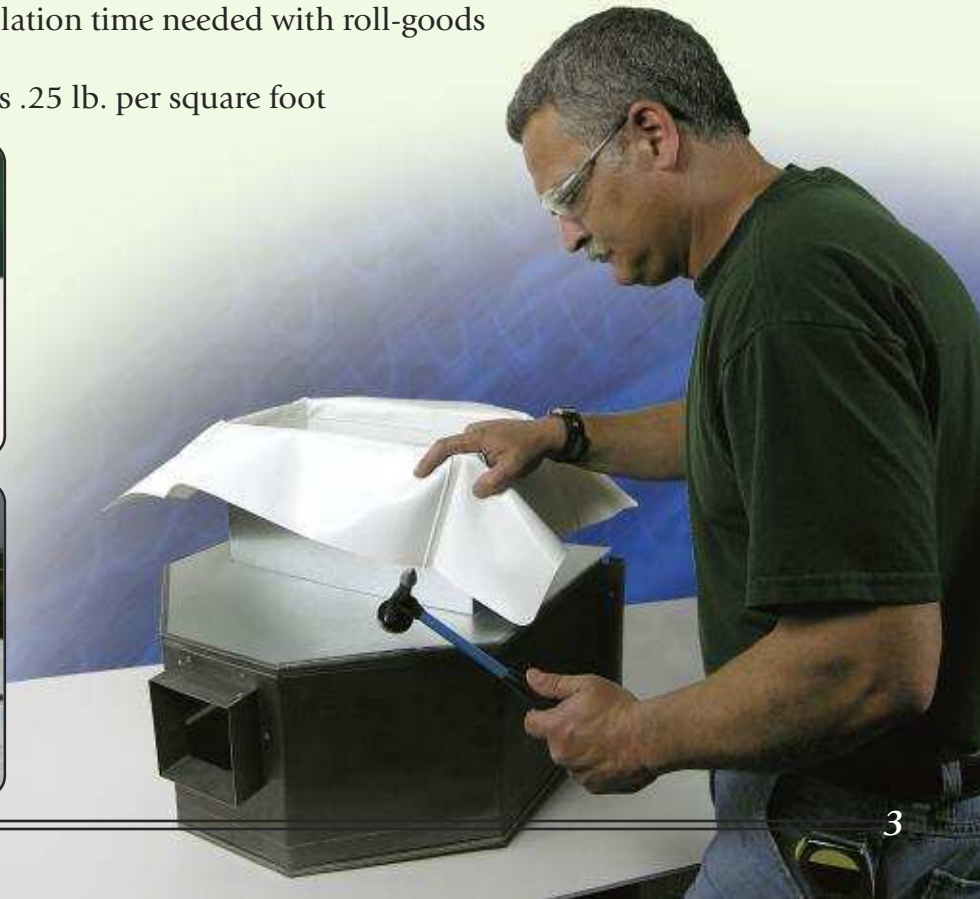
**The Duro-Last membrane is available in white, tan, gray or dark gray.**



# EVERY ROOF IS MANUFACTURED TO EXACT BUILDING SPECIFICATIONS



- Every Duro-Last roof is custom-fabricated to address the specific needs of each project; roofing system layout services are also available from Duro-Last Engineering Services
- Material is custom welded into sheet sizes up to 2,500 square feet each
- 80-85% of membrane seaming is completed in our controlled factory environment, reducing field workmanship performed in the harsh rooftop environment
- Reduces labor costs and installation time needed with roll-goods system applications
- Installed 40-mil system weighs .25 lb. per square foot



## HEAT-WELDED ROOFING SYSTEM PROVIDES EASY INSTALLATION AND LOW MAINTENANCE

- Hot air welding bonds all Duro-Last field seams; 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 and other special situation warranties available.

## DURO-LAST'S CODE COMPLIANCE OFFERS 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, 1-120, 1-135, 1-150, 1-165, 1-195, 1-210, 1-270, 1-435, 1-495. Ratings apply both to mechanically-attached and fully-adhered systems
- 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 PHYSICAL PROPERTIES: 40-MIL MEMBRANE



| 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      | 1579 x 1961 N  | 355 x 441 lbf./in.                              |
|                               | Elongation at Break       | ASTM D 751 - Grab Method      | 31%  |   |
|                               | 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   | 14.75 ft-lb.                                    |

\* Above information is based on the latest 3rd party testing data available.

| 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 MJ/m <sup>2</sup>   | >8.1 million Langley's      |
|                  | Moisture Vapor Transmission | ASTM E-96, Proc. B, Method A  | <.086 g/hr/m <sup>2</sup>   | <.25 U.S. Perms             |
|                  | Weight                      | ASTM D 751                    | 1.1 kg per m <sup>2</sup>   | .22 lb. per ft <sup>2</sup> |
|                  | 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, 1-105, 1-120, 1-135, 1-150, 1-165, 1-195, 1-210, 1-270, 1-435 & 1-495 |                             |

\* Contact Duro-Last or visit website for data on other membranes.

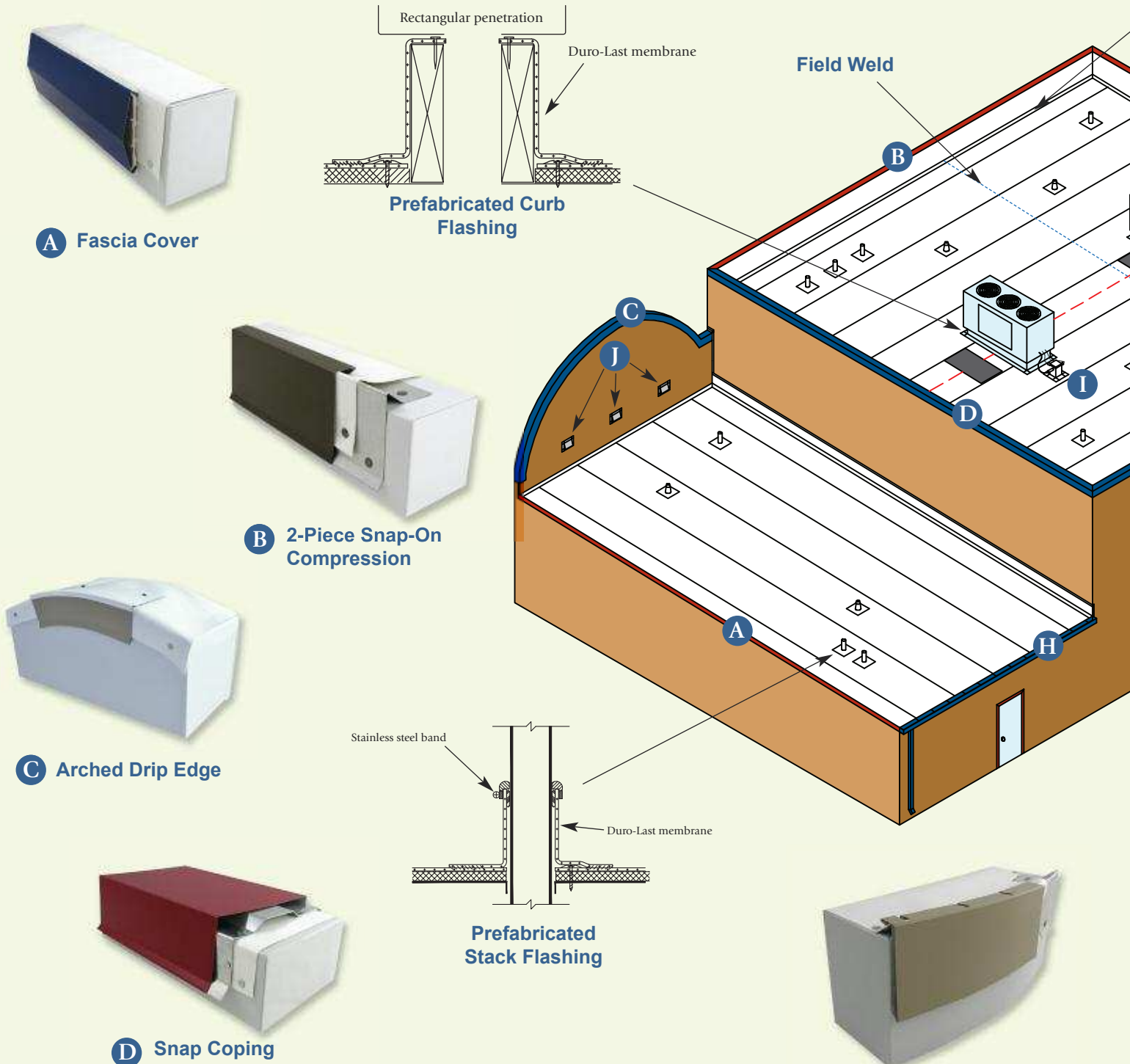
## MATERIALS THAT CAN BE USED SAFELY WITH THE DURO-LAST ROOFING SYSTEM

The Duro-Last roofing membrane is extremely durable and can withstand contact with dozens of chemicals, construction products, and other materials. Some of the most common are below. For information about other materials, contact the 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 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 that is required (dashed blue line) is much less than the welding done beforehand in Duro-Last's controlled factory environment (solid lines).



**A** Fascia Cover

**B** 2-Piece Snap-On Compression

**C** Arched Drip Edge

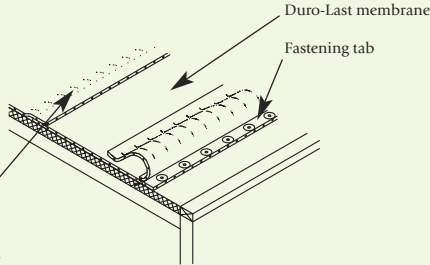
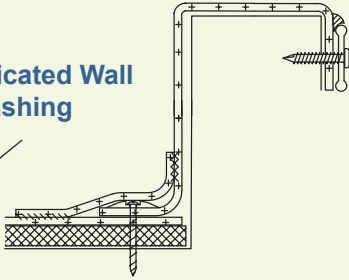
**D** Snap Coping

**E** 2-Piece Flex Compression

*Note: Illustrations are not to scale.*

CUSTOM PREFABRICATION: IF YOU CAN DRAW IT, WE CAN MAKE IT.

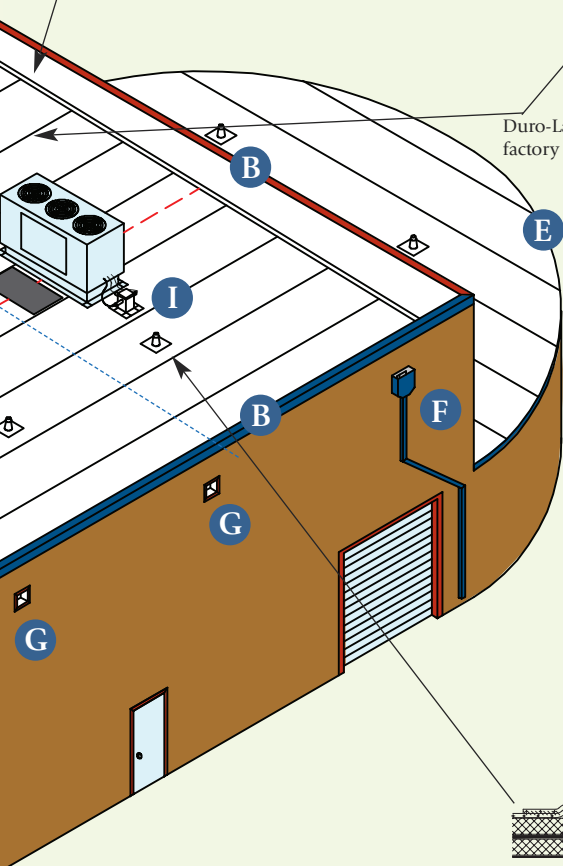
Prefabricated Wall Flashing



Prefabricated Deck Sheet



F Collector Box



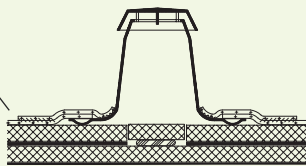
Duro-Last factory welds



I ATR Hub



G Metal Flange Scupper



Two-way Vent With Prefabricated Skirt



H DX-Style Gutter System

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. Metal accessories are manufactured by EXCEPTIONAL® Metals (a division of Duro-Last) and are available in a variety of colors and styles.



J Parapet Wall Vent



## DURO-LAST COOL ZONE® SYSTEM: DEFINING ROOFTOP SUSTAINABILITY

What does sustainability really mean for building owners, facility managers, architects, and other specifiers? It means that the design, manufacture, maintenance, life-cycle impact, adaptive re-use, destruction, and recycling of roofing components help meet the long-term environmental standards demanded by today's high-performance buildings.

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



**Energy** – It's more important than ever to select a roof that can reduce energy use and improve a building's efficiency in any climate.



**Environment** – High-performance roofing minimizes the impact on the Earth's environment throughout the roof's life and helps maintain a healthy, productive environment inside the building.



**Endurance** – A high-performance roof meets or exceeds performance requirements for long life: all-weather reliability; chemical, fire, and puncture resistance; and ease of maintenance and repair.



**Economics** – A high-performance roof has to make economic sense in the long run. A true economic comparison analyzes the cost of a roof throughout its life-cycle.



**Engineering** – Utilizing the right materials, design, and manufacturing process is the key enabler of the other four E's, resulting in a complete, integrated roofing system that can be installed easily and performs reliably over the long run.



The Cool Zone roofing system is Solar-Ready™ ideal for rooftop photovoltaic installations. Prefabricated flashings help ensure watertight coverage for roof-penetrating support structures. The Cool Zone membrane provides long-term, maintenance-free protection beneath any type of mounting system.





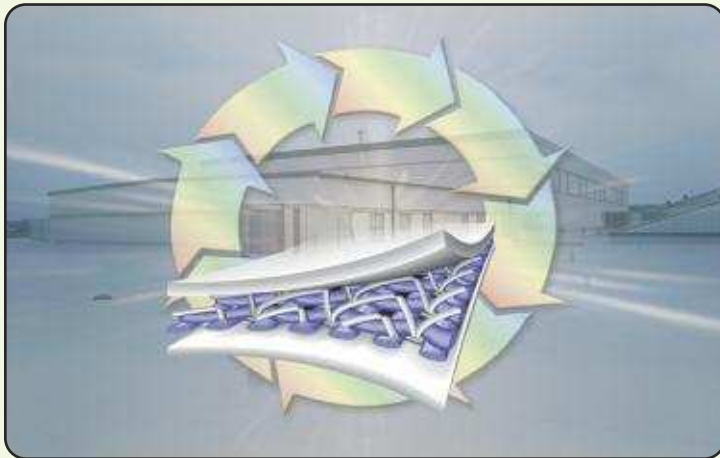
# PROTECTING YOUR ROOF AND THE ENVIRONMENT

The bright white Duro-Last® Cool Zone® membrane has an established history of providing environmental benefits to facilities throughout North America. We're committed to being the industry leader when it comes to environmentally-friendly roofing systems. The white Cool Zone system is the best green choice for your building.

# WHITE GREEN

## Green, as in environmental responsibility

The Duro-Last Cool Zone roofing system has an excellent environmental reputation. From lowering a building's energy consumption to helping facilities obtain LEED credits to reducing the urban heat island effect to recycling at the end of its rooftop life. The Cool Zone system is a leading building sustainability product.



## Green, as in the money you can save by reducing your roofing system's life-cycle costs

Electricity costs continue to escalate, driving a significant market shift toward highly-reflective, energy-efficient roofing systems. In addition to reducing utility bills, the Cool Zone system can improve worker productivity in non-conditioned space and extend the life of other roof assembly components.

## Green, as in the best system to be installed under your rooftop garden or solar application

A growing trend in the facilities market is turning "forgotten" roofs into usable space. Photovoltaic and paver systems are gaining a foothold in this area, as are vegetative roofs. These systems require a reliable waterproofing membrane beneath them, and a new Cool Zone roof is ideal for any of these applications.





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



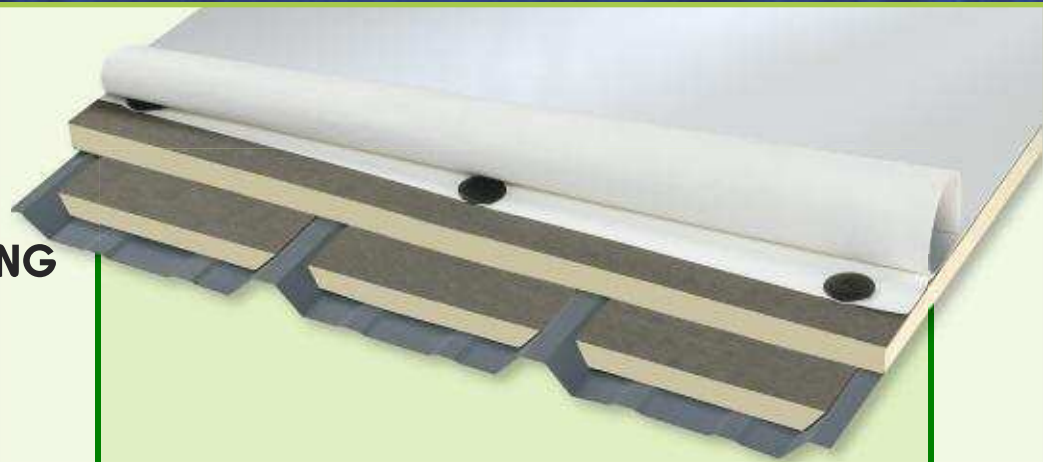
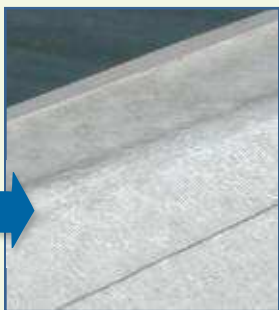
Fix seam and fastener problems



Perfect for cracks or leaks around penetrations



No more rust and corrosion



## Lock out leaks. Lock in your investment.

- 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:

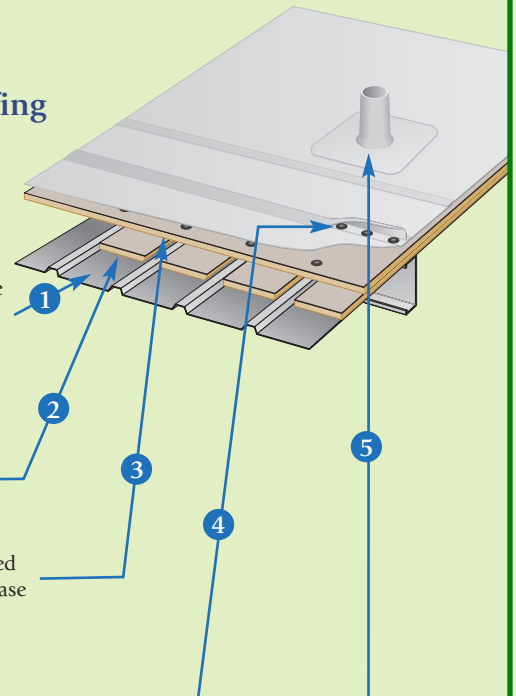
Your existing metal deck can be covered with the Duro-Shield roofing system, with no tear-off required.

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 DESIGNER SERIES: THE IDEAL COMBINATION OF WATERTIGHT INTEGRITY AND AESTHETICS

The Duro-Last Designer Series of roofing systems is ideal for applications where building appearance is important, but conventional shingles, ballast, or architectural standing seam may not be practical. Each Designer Series system provides an aesthetic look plus the watertight performance and long-term durability of Duro-Last's single-ply roofing system – a proven performer since 1978.

Our **Shingle-Ply™** system has a shingle design printed onto the membrane. A special polymer coating helps protect the finish from marring, fading, and dirt accumulation. Shingle-Ply rolls are delivered to the job site ready to be unrolled, positioned, and installed by an authorized Duro-Last contractor. Each piece is aligned with the installed adjacent piece and mechanically attached to the roof deck. Overlapping edges are heat-welded together, forming a watertight, monolithic covering. The Duro-Last Shingle-Ply roofing system can be ordered in Slate Gray or Sandstone in 50-mil thickness only.



Like the Duro-Last roofing system, the **Rock-Ply™** system is pre-fabricated to fit the dimensions of the roof space, ready to be installed by an authorized Duro-Last contractor. A ballast design is printed on the membrane and protected by a special polymer coating. Deck sections are mechanically-attached or adhered to the roof deck and adjacent edges are heat-welded together, forming a watertight, monolithic covering. The Duro-Last Rock-Ply roofing membrane is available in 50-mil thickness only.



The **Vinyl Rib™** system consists of the Duro-Last single-ply membrane and separate vinyl ribs. Membrane sections are fully-adhered to the roof deck and overlapping edges are heat-welded together, forming a watertight, monolithic covering. Ribs are then heat-welded to the installed deck membrane to ensure a permanent, secure installation. The Vinyl Rib system is available in light gray and white, and requires the use of Duro-Last's 60-mil membrane, fully-adhered to the roof deck to provide a smooth roof surface.



**Aesthetic looks with watertight performance.**



# The "World's Best Roof"®



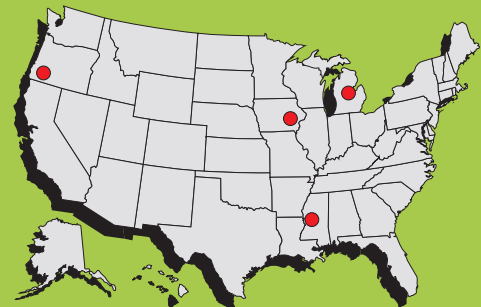
## DURO-LAST MANUFACTURING FACILITIES

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: 866-258-2858

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](http://www.duro-last.com)  
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