

# Flex™

Thermoplastic Single Ply and Multi-Ply  
Roofing Systems with DuPont Elvaloy® KEE



Specializing in Cool Roof Solutions



# Now available in 10' wide sheets!

Fewer Seams • Lower Labor • Faster Installation

## Flex™

### Simplified Installation for Fully Adhered and Mechanically Attached Thermoplastic Single Ply Roofing Systems



*Automated hot air welding helps maximize installation efficiency.*

### Reduces Labor While Increasing Performance

Savings provided by easier, simpler installation more than offset material cost to provide high-performance roofing solutions for a wide variety of applications. Flashings for cutouts and penetrations are fast and watertight, and Flex Membranes stay flexible and workable indefinitely.

### Green Roof Installations

Flex Waterproofing Membranes are perfect components in green roof systems, considered especially challenging to design and construct, but which add great benefits for energy savings to building owners, and make a positive contribution to the general environment.



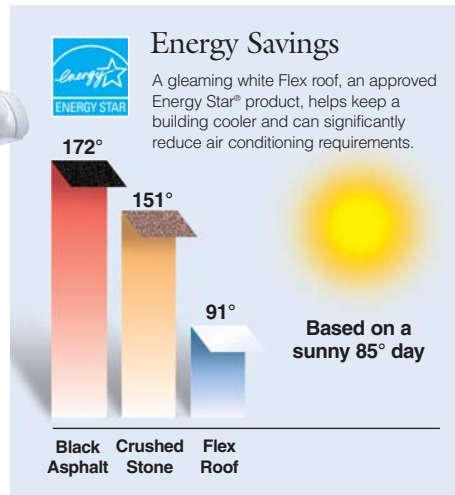
*Flex Waterproofing Membranes are ideal for green roof systems.*

### Flex Membranes Based On Elvaloy® KEE

- Are the only thermoplastic single ply system type completely compatible with asphalt.
- Allows you to directly cap smooth BUR to minimize tear-off labor and debris disposal cost.
- Remains flexible and workable indefinitely, even in extreme environments.
- Resists chemicals, air conditioning coolants, jet fuels, restaurant grease, as well as UV light, airborne bacteria, acid rain and industrial pollutants.
- Are tough and resistant to tearing by workmen, their tools and equipment.
- Reflects heat to reduce air conditioning loads.
- Are easy to clean, and are unharmed by the harshest cleaning agents.
- Are environmentally-friendly, containing no volatile organic compounds (VOC's).
- Apply either fully-adhered or mechanically attached.
- Are proven in the toughest climates and environments.
- Are ideal for use with green roof systems.
- Perfect for below-grade waterproofing.
- Qualifies for points under the LEED (Leadership in Energy and Environmental Design) Green Building Rating System.®



# Flex Thermoplastic Cool Roof Systems with DuPont Elvaloy® KEE



Introduced in 1973, DuPont Elvaloy® KEE (ketone ethylene ester) provides state-of-the-art performance for thermoplastic single ply roofing systems. Elvaloy® KEE, unlike liquid plasticizers, does not migrate out of the membrane, keeping it flexible, workable and tough from the day the roof is installed. Its remarkable physical and chemical properties make Flex Thermoplastic Single Ply Membranes the ideal choice for roofing systems that are tougher than the elements. Specify Flex Thermoplastic Single Ply Membranes with confidence. DuPont Elvaloy® KEE makes the difference.



**A Flex roofing system on a prestigious office building overlooking San Francisco Bay resists high moisture and salt air conditions.**

## Roofing Solution By The Bay

Roofs adjacent to scenic San Francisco Bay are subjected to salt air, highly variable moisture conditions and constant wind. When the BUR on administrative headquarters of a Fortune 500 company urgently needed reroofing, Flex was the solution of choice. Building owners especially wanted to avoid exposure to asphalt fumes during installation. Involved parties had successfully used Flex Thermoplastic Single Ply Membranes in similar applications, where fast and unobtrusive installation is a benefit.

Results were superior. Roofing contractor Tom Halpin reported, "Flex Roofing Membranes go on very easily. I would not hesitate to recommend Flex Single Ply because of the readily available product and strong technical support. Everyone was highly satisfied with the end product, from the building owners to the installation crew."



**Schools in northern climates as well as in the south enjoy Flex benefits for saving air conditioning energy costs.**

## School Graduates to Flex

Three roofs consisting of a variety of older systems at the Athens Area School District in northern Pennsylvania were sorely in need of replacement. Teachers and students had coped for years with leaks until a new roof was absolutely necessary.

School Superintendent Tom Salpino comments, "We selected Flex because it is compatible with bitumen based products, keeps our buildings cooler, and remains workable for a very long period of time. We especially liked that Flex is installed with cold application techniques to avoid the use of flames and strong odors."

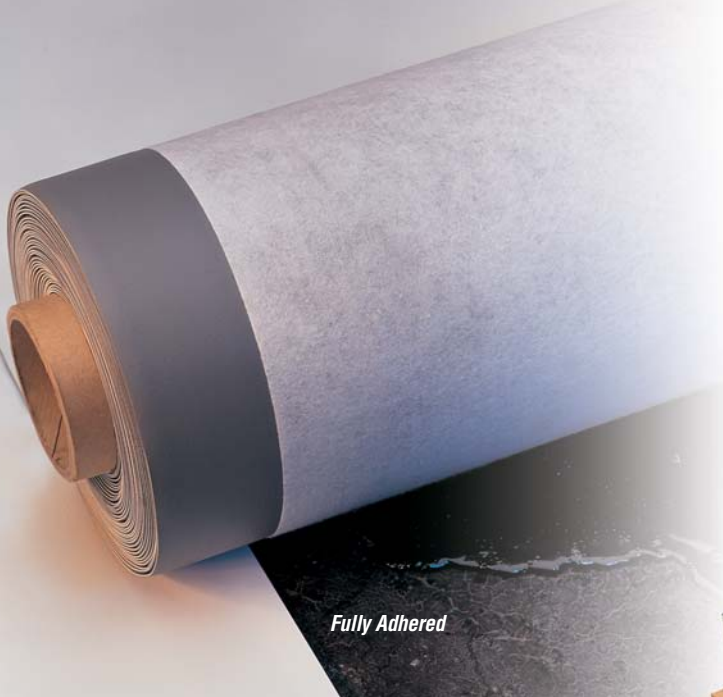
The roofing contractor, Ken Kotwas of Finger Lakes Roofing, was impressed with the Flex system. "Flex is very user friendly, which helped us work at an efficient pace. It's easier to apply than similar systems we've used. The welds are consistently top quality, and the edge details are superior."

"We simply cannot imagine a better roofing system for our students and for our community," Superintendent Salpino concluded.

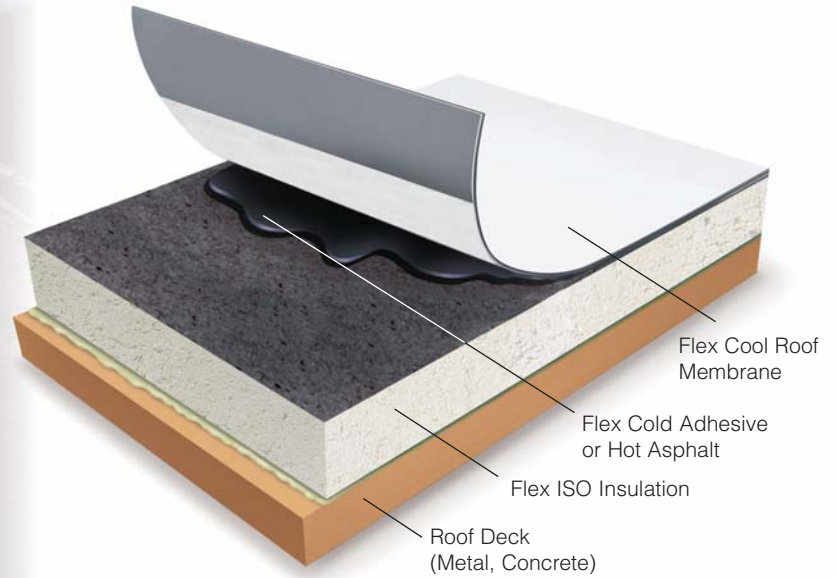


## Flex Multi-Ply Cool Roof

A Flex Cool Roof Single Ply System can be installed directly to existing built-up-roof systems, dramatically reducing air conditioning loads and energy costs.



Fully Adhered



**Mechanically Attached**



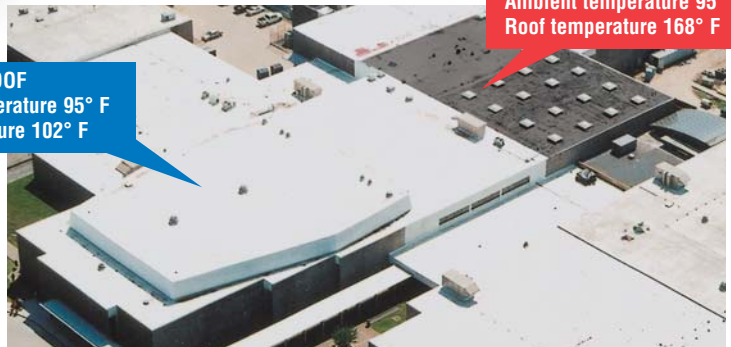
**Hot-air welded Flex seams are as strong as the membrane itself.**

## Flex Elvaloy® Based Membranes

Flex Roofing Membranes are ideal for mechanically attached, fully adhered, ballasted and green roof applications. All membranes are reinforced and are available with fleece backing.

**FLEX COOL ROOF**  
Ambient temperature 95° F  
Roof temperature 102° F

**TRADITIONAL ASPHALT ROOF**  
Ambient temperature 95° F  
Roof temperature 168° F



## Reflective Residential Roofing

Flex Roofing Systems benefit not only institutional and commercial facilities of all types, but residences with low slope roof construction are also ideal applications for Flex.

Flex Roofing is so durable that it is widely used in regions subject to hurricane winds up to 150 mph. Residences with Flex Roofing Systems can be found across North America and beyond, all with outstanding results.

# Specifications

	FB 45	FB 60	MF/R PLUS 45	MF/R PLUS 60
<b>Overall thickness of PVC sheet, minimum inches (ASTM D751)</b>	0.045	0.060	0.045	0.060
<b>Breaking Strength, minimum lbf/inches (ASTM D751)</b>				
Machine Direction	473	537	374	412
Cross Machine Direction	436	457	407	538
<b>Elongation at Break, minimum % (ASTM D751)</b>				
Machine Direction	42	35	29	29
Cross Machine Direction	40	33	32	31
<b>Seam Strength, minimum % of Tensile or Breaking Strength (ASTM D751)</b>	100	90	100	100
<b>Retention Properties after Heat Aging (ASTM D751 / D3045)</b>				
Breaking Strength (Machine Direction), min, % of original	97	94	92	91
Breaking Strength (Cross Machine Direction), min, % of original	93	90	97	94
Elongation (Machine Direction), min, % of original	95	92	100	97
Elongation (Cross Machine Direction), min, % of original	98	100	91	94
<b>Tearing Strength, minimum lbf (ASTM D751)</b>				
Machine Direction	175	119.2	88.6	111
Cross Machine Direction	183	86.3	108.3	110.6
<b>Low Temperature Bend (ASTM D2136)</b>	Pass @ -40°C	Pass @ -40°C	Pass @ -40°C	Pass @ -40°C
<b>Accelerated Weathering Test (ASTM G53)</b>				
Cracking (7x Magnification)	No Cracking	No Cracking	No Cracking	No Cracking
Crazing (7x Magnification)	No Crazing	No Crazing	No Crazing	No Crazing
<b>Linear Dimensional Change, maximum (ASTM D1204)</b>				
Machine Direction	0.3	0.1	0.4	0.5
Cross Machine Direction	0.3	0.1	0.1	0.1
<b>Weight Change after Water Immersion, maximum % (ASTM D570 – modified)</b>	0.41	0.41	0.41	0.41
<b>Static Puncture Resistance (ASTM D5602)</b>	Pass @ 33 lbs.	Pass @ 33 lbs.	Pass @ 33 lbs.	Pass @ 33 lbs.
<b>Dynamic Puncture Resistance (ASTM D5636)</b>	Pass @ 20 J	Pass @ 20 J	Pass @ 20 J	Pass @ 20 J

Flex Roofing Membranes are thermoplastic in nature, and exceed the requirements of ASTM D4434 standard specifications for polyvinyl chloride sheet roofing. Flex Elvaloy® based Membranes meet the requirements of ASTM D6754 standard specifications for ketone ethylene ester (KEE) based sheet roofing.

These specifications serve as a general guide when choosing a Flex Roofing Membrane. Such considerations as the type of structure and environmental conditions are also important to the ultimate decision when choosing a roofing application. Call the Flex Sales Office at 1-800-969-0108. We'll provide an assessment tailored to your needs.



## Complete Roof System

Flex provides complete systems including Flex ISO Insulation Board, Architectural Metals, Trim, Flashing, Accessories, Tools and Supplies.



## Flex Warranties

Flex Single Ply Systems carry standard five, ten, fifteen or twenty year warranties, depending upon the product used, the method of application, the type of application and the climatic environment.



# Texas Educational Facilities Grade Flex A+

Educational facilities at all levels from Independent School Districts to Community Colleges and Universities in southeastern Texas are getting outstanding results from Flex Roofing Systems.

Known for extreme temperatures and harsh weather conditions, ranging from sizzling heat to hurricanes and exposure to salt air in coastal locations, the region is a test for any roofing system. Highly reflective Flex Roofing Systems consistently pass all these challenging tests with flying colors, helping save significantly on air conditioning requirements and related energy costs.

Columbia Brazoria ISD, located approximately an hour south of Houston, TX, built a new facility for the West Brazos Junior High School, designed by the architects SHW Group. The building is a LEED certified facility, thanks in part to the use of Flex Roofing Systems.

Texas Southern University finds Flex Roofing Systems bring great benefits on its campus of 45 buildings located on the 150 acre campus. The energy savings, ease of maintenance and durability are the key reasons for relying heavily on Flex Roofing Systems.

Houston Community College, one of the world's largest community colleges, with an enrollment of over 55,000 students, uses only Flex Roofing Systems for all of the campus re-roofing work, and in fact specifies Flex as the standard for all new roofing throughout the entire Houston Community College System, comprising hundreds of buildings located throughout the Houston area.



## **Flex**<sup>TM</sup>

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**1-800-969-0108**

FlexRoofingSystems.com

Specify Flex for proven excellence in thermoplastic single ply and multi-ply roofing.

