

# TK<sup>®</sup> PRODUCTS

## CONSTRUCTION COATINGS

An Operating Unit of Sierra LLC, Minnetonka, MN

A COMPLETE AIR BARRIER SYSTEM OF PRODUCTS

# TK-AIRMAX<sup>®</sup>

## Air & Vapor Barrier Systems

Non-Permeable • Vapor Permeable • Accessory Products



# Seamless Building Designs Begin with a Seamless Building Envelope.

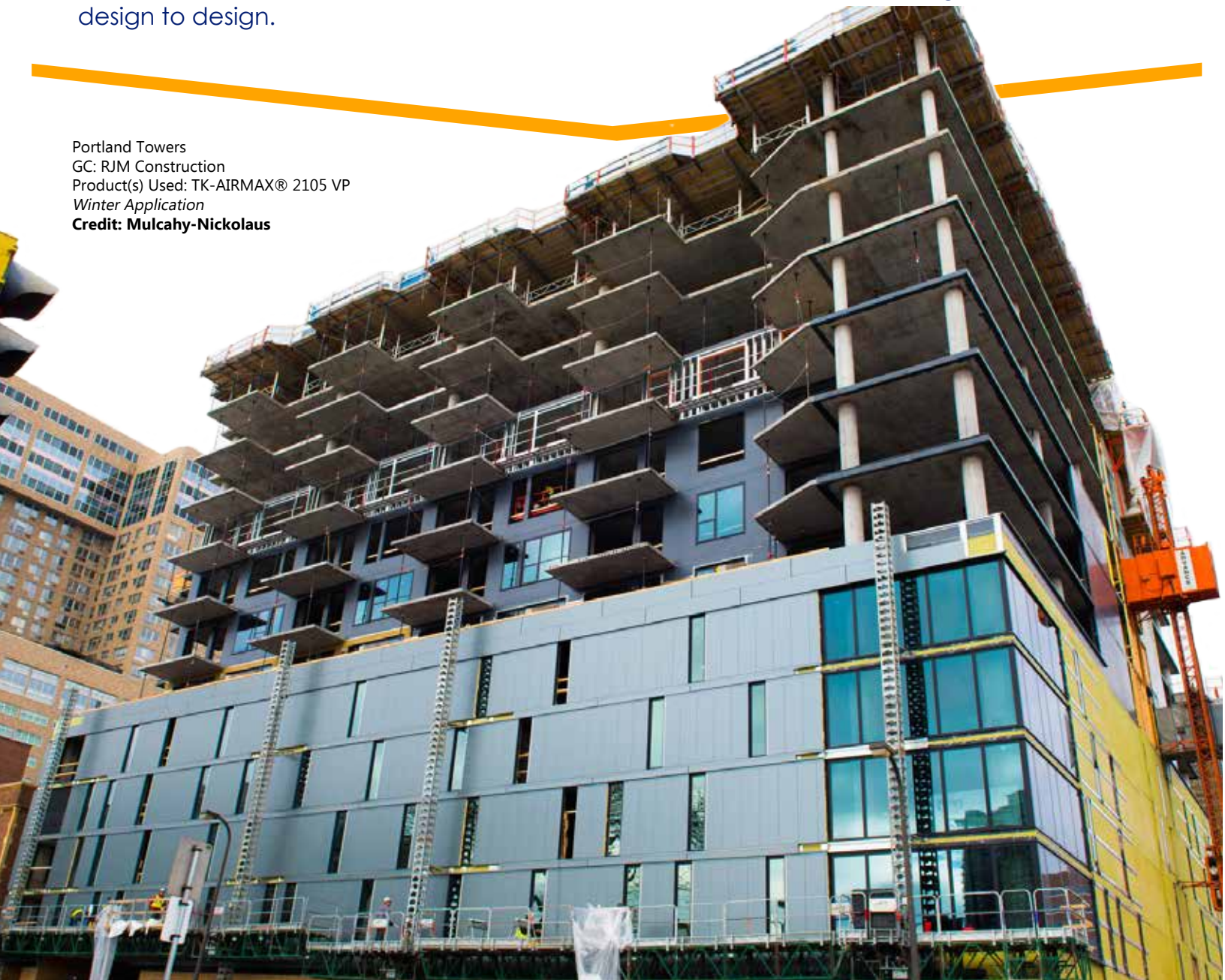
The key to a successful and efficient building envelope system is two-fold.

First, is selecting products which work together in providing a seamless barrier that guards against uncontrolled leakage of air, excessive energy usage, poor interior air quality and moisture damage.

Second, is selecting materials and components which provide the flexibility to evolve with each of your project designs.

TK Products is your source for the AIRMAX® line, a complete system of fluid applied air/vapor barriers and their complimentary accessory products. Our comprehensive line makes it easy to tailor your product selections for a continuous and uninterrupted building envelope - from design to design.

Portland Towers  
GC: RJM Construction  
Product(s) Used: TK-AIRMAX® 2105 VP  
Winter Application  
Credit: Mulcahy-Nickolaus



## What is an Air Barrier?

An air barrier is a system of materials that **control the movement of air, water and vapor** both into and outside of a building. An air barrier is **essential to the building's envelope** because it "wraps" the building and **ensures that it is protected from the negative effects of air leakage.**



## Why Professionals Spec the AIRMAX® System



### SINGLE SOURCE

One-stop shopping for a full line of fluid applied and transitional products to meet all your project design needs.



### PROFESSIONAL SUPPORT

Certified staff to assist with design & application inquiries, LEED® certification, pre-construction meetings & product selection.



### LEED® CERTIFICATION

Use of our products may contribute eligibility to multiple LEED® points & to the attainment of LEED® certifications.



### SUPERIOR DURABILITY

High performance products that hold up to pressures from wind, stack effect & variable climates.

# AIRMAX® Product Selection

A complete line of fluid applied air and vapor barrier products



	<b>AIRMAX® 2102</b> Non-Permeable Solvent Base	<b>AIRMAX® 2103</b> Non-Permeable Water Base	<b>AIRMAX® 2104</b> Vapor Permeable Water Base	<b>AIRMAX® 2105</b> Vapor Permeable Solvent Base
Features	- Solvent Base - Rubberized Polymer Elastomeric - LEED Points - Seamless	- Water Base - Rubberized Polymer Elastomeric - LEED Points - Seamless	- Water Base - Rubberized Polymer Elastomeric - LEED Points - Seamless	- Solvent Base - Rubberized Polymer Elastomeric - LEED Points - Seamless
Application Temp	0°F (minimum)	40°F (minimum)	40°F (minimum)	0°F (minimum)
Color	Dark Gray	Dark Gray	Dark Gray	Dark Gray
U.V. Resistance	12 months	12 months	12 months	12 months
Application Method	Spray/roll/brush	Spray/roll/brush	Spray/roll/brush	Spray/roll/brush
NFPA 285 Flame Propagation	✓	✓	✓	✓
NFPA 285 IAPMO Listing	UEL-5006	UEL-5006	UEL-5006	UEL-5006
ASTM E2178 Air Leakage	✓	✓	✓	✓
ASTM E2357 Air Assembly	✓	✓	✓	✓
ASTM E96 Vapor Permeability	✓	✓	✓	✓
ASTM D1970-01 Fastener Sealability	✓	✓	✓	✓
ASTM D4541-05 Pull Adhesion	✓	✓	✓	✓
ASTM C1305 Crack Bridging	✓	✓	✓	✓
ASTM D412 Elongation	✓	✓	✓	✓
AATCC 127-03 Water Resistance	✓	✓	✓	✓

\*See product technical data sheets for complete product features, testing data and application instructions

# AIRMAX® Accessory Products

Complimentary transitional membranes

	<b>SUPER SEAL PE™</b> Polyether Joint Sealant	<b>CLIMATE FLASH™</b> All Weather Flashing Tape	<b>TK-SS FLASHING™</b> Stainless Steel Flashing	<b>TK-TWF 18™</b> Stainless Steel Thru-Wall Flashing
Features	<ul style="list-style-type: none"> <li>- Non-shrinking and will not discolor from UV light</li> <li>- Does not "outgas" or bubble when applied to damp surfaces.</li> <li>- Excellent adhesion to most construction materials.</li> <li>- Resilient elastomeric properties</li> <li>- Moisture cure</li> <li>- Solvent and isocyanate-free</li> </ul>	<ul style="list-style-type: none"> <li>- Self-adhering air, moisture and vapor barrier</li> <li>- Durable and resistant to tears and punctures</li> <li>- Low permeability</li> <li>- Conforms to irregular surfaces</li> <li>- Broad application temperature, from 5°F (-15°C) to 120°F (48°C).</li> <li>- Cuts and applies easily</li> </ul>	<ul style="list-style-type: none"> <li>- Excellent resistance to punctures, tears, fire, mold and UV light.</li> <li>- Broad application temperature, from 20°F to 170°F.</li> <li>- Stable and air-tight at temperatures from -70°F to 200°F.</li> <li>- Excellent transitional flashing with compatibility to most construction materials.</li> </ul>	<ul style="list-style-type: none"> <li>- Superior durability against punctures, tears &amp; degradation</li> <li>- Compatibility with most construction materials and will not discolor masonry or adjacent surfaces.</li> <li>- Not susceptible to UV ray degradation.</li> <li>- Resistance to corrosion, mold and fire.</li> </ul>
Packaging	2-gallon pails 20 oz. (600 ml) cartridge	Width(s): 2", 4", 6", 9" Length(s): 75'	Width(s): 6" Length(s): 50'	Width(s): 18" Length(s): 60'

**\*See product technical data sheets for complete product features, testing data and application instructions**



Seams detailed with CLIMATE FLASH™ Flashing Tape

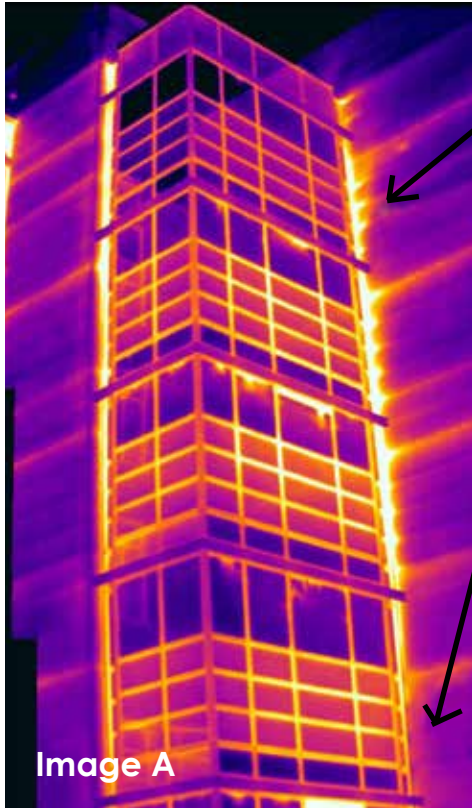


Seams detailed with SUPER SEAL PE™ Joint Sealant

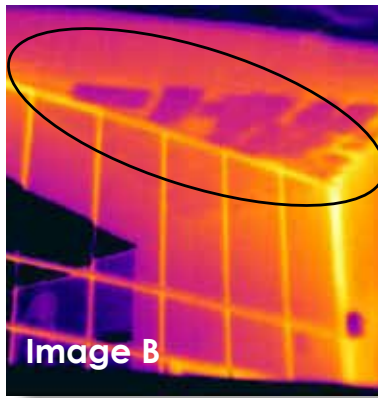


## Infrared Thermal Imaging and the Case for Air Barriers

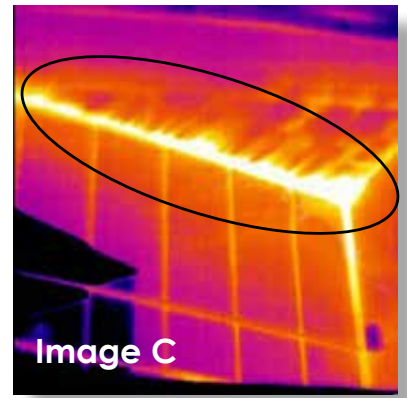
**Stack Effect (Image A):** What you are observing below is called stack effect. Stack effect (or chimney effect) is a phenomenon where the differences between outdoor and indoor temperatures, coupled with increases in height and decreasing air pressures result in pressure differences that affect air flow across the building envelope. This creates an upward movement of air which is shown in this picture as air leakage.



(Image A): This picture demonstrates air loss through stack effect. This detail did not properly tie in the curtain wall to the masonry wall. **Notice the air leakage at the top of the seam but not at the bottom.**



**Image B:** Indicates what appears to be a successful air barrier system *before* pressurization was added to the building.



**Image C:** Infrared thermal imaging shows a failure in the air barrier system *after* pressurization was added to the building.

## NFPA 285 and the AIRMAX® System

**NFPA 285: One of the most critical fire tests for designers and engineers to consider whenever planning non-combustible type wall construction that includes the use of air barriers.**

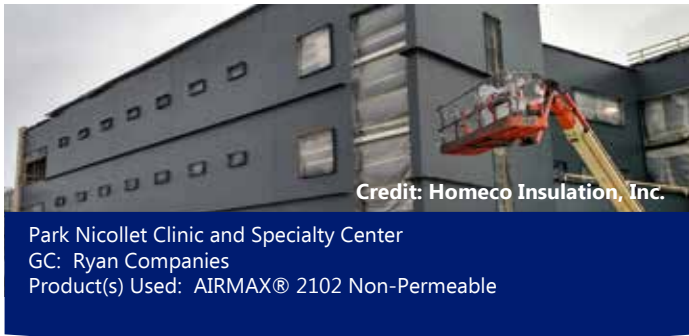
The addition of modern building materials, including water resistive components such as air barriers, has led to a need for fire propagation testing. While such materials have a positive impact on the energy efficiency and interior health of new structures, they are also combustible materials.

TK Products manufactures a full line of air and vapor barrier products that have been tested and successfully passed NFPA 285 for use in non-combustible construction.

Fast Horse Ad Agency  
Minneapolis, MN



## Project Profiles



Credit: Homeco Insulation, Inc.

Park Nicollet Clinic and Specialty Center  
GC: Ryan Companies  
Product(s) Used: AIRMAX® 2102 Non-Permeable

### Project Design Requirements:

The project called for a fluid applied air barrier to be placed in a Northern climate during the winter months. This presented two challenges:

- Temperatures were consistently between 0°F and 15°F.
- Multiple substrates (CMU and OSB) were present, requiring a versatile and seamless air barrier.

### Solution:

AIRMAX® 2102 Non-Permeable solvent base was chosen as it allowed the installer to apply the product in the extreme temperatures that were present without the need for tenting or heating the structure during application. This resulted in the contractor saving thousands of dollars on propane costs and finishing the project on-time and within budget.



Credit: PBS Protective Barrier Systems

Crow Creek Tribal School  
GC: Krause-Anderson  
Product(s) Used: AIRMAX® 2102 Non-Permeable,  
2104 Vapor Permeable & Accessory Products

### Project Design Requirements:

The massive 125,000 square foot facility, which houses a K-12 school, dormitory, bus garage and staff housing required a single-source, comprehensive air barrier system that would contribute to the obtainment of multiple LEED® points.

- The project design called for both a non-permeable and vapor permeable air barrier.
- Products needed to contribute to LEED® Silver registration.

### Solution:

TK Products not only provided both the non-permeable and vapor permeable fluid applied air barriers required for the project, but it also supplied the transitional membranes needed for the facility. The use of TK's comprehensive product line helped the school to obtain LEED® Silver registration; one of the highest certifications available in sustainable building design.

## AIR BARRIERS; A GROWING REQUIREMENT

The US Army Corps of Engineers (USACE) now requires that all army-sanctioned construction projects meet a specific air tightness level when tested against the requirements of the *Air Leakage Test Protocol for Measuring Air Leakage for Building Envelopes* test.

### Problem:

The air/vapor barrier system chosen for the building had to stand up to rigorous testing using two standard ASTM test methods; **ASTM E1827**, *Standard Test Method for Determining Air Tightness of Buildings Using an Orifice Blower Door (Leakage Rate by Fan Pressurization)*, and **ASTM E779**, *Standard Test Method for Determining Air Leakage Rate by Fan Pressurization*.



Fort Snelling Army Reserve Center  
GC: LS Black Constructors  
Product(s) Used: AIRMAX® 2102 Non-Permeable &  
AIRMAX® 2104 Vapor Permeable

### Solution:

Air leakage testing requirements were significantly surpassed using a combination of AIRMAX® fluid applied air barrier products (non-permeable and vapor permeable).

### Air Leakage Testing Requirement:

≤ 0.25 CFM/sq. ft. @ -75 Pa

### Actual Air Leakage Results:

**0.10 CFM/sq. ft. @ -75 Pa**




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## ADVANCED CONCRETE COATING SOLUTIONS

TK Products Construction Coatings

*An Operating Unit of Sierra LLC, Minnetonka, MN*

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