

AIREX PROSYSTEMKIT™

Complete Sustainable HVAC & Building Performance

Energy Efficient Product 

30%
Energy
Savings
Mandate*

2 IN 1
System

**Engineered
Wall Seal
&
Superior
Insulation
Protection**

U.S. Patents #9,091,377 B2
#9,523,200 B2

TGS-675G-72C-B (Shown)

Meets All Code Requirements:

- ✓ Building Codes
- ✓ Energy Codes
- ✓ Residential Codes
- ✓ Mechanical Codes
- ✓ Green Codes

Applications for:



2012 & 2015 International Energy Conservation Code (IECC)

Residential Section R403.3.1 (2012), R403.4.1 (2015)
Commercial Section C403.2.8.1 (2012), C403.2.10.1 (2015)

Protection of Piping Insulation:

Piping insulation exposed to weather shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, wind and shall provide shielding from solar radiation that can cause degradation of the material. **Adhesive tape shall not be permitted.**

Air Leakage (Mandatory): Residential Section 402.4
The building thermal envelope shall be constructed to limit air leakage in accordance with the requirements of Sections R402.4.1 through R402.4.4.

Air Barrier Construction: Commercial Section C402.5.1.1
Penetrations of the air barrier shall be caulked, gasketed or sealed in a manner compatible with the construction materials and locations...

Approved Material & Performance Testing

- ASTM E283 – Standard Test Method for Air Leakage
- ASTM E331 – Standard Test Method for Water Penetration
- ASTM E 2178 – Air Permeance of Building Materials
- **Wall Mounted Outlet (Outdoor-Rated Rigid Plastic)**
- ASTM D1525C-09 - Temperature Deformation Test
- ASTM D648-07 - Temperature Load Deformation Test
- UL 94 HB - Flammability Test
- UL 746C - Outdoor Suitability - f1 Rating
- **Wall Outlet Sleeve (Outdoor-Rated Elastomeric Plastic)**
- ASTM D573-04 - Deterioration Test
- ASTM D746-07 - Brittleness Temperature Impact Test
- **E-FLEX GUARD (Outdoor-Rated PVC Material)**
- ASTM G153 - Weatherization and UV Exposure
- ASTM E96 - Water/Vapor Permeability
- ASTM G21 - Anti-Fungal/Anti-Microbial
- ASTM D412 - Tension Deformation Test (UV Exposure & Water Immersion)
- ASTM D570 - Water Absorption
- ASTM E84/UL 723 - Flame and Smoke Rating 25/450

*Based on HVAC Industry and Manufacturer's Independent Study on a Combined ROI & Sustainable Energy Savings Calculation. A contributing product to the U.S. Energy Department's 30% Energy Savings Initiative.

**Weather
Damage
Protection**



**Physical
Damage
Protection**



Residential

Commercial

Multi-Family Units

Codes & Standards Compliance

Pipe Insulation Protection Compliance per:

- IECC 2012 - Protection of Piping Insulation – Commercial Section C403.2.8.1
- IECC 2015 - Protection of Piping Insulation – Commercial Section C403.2.10.1
- IRC 2018 - Refrigerant Line Insulation Protection – M1411.6.1 - Section N1103.4.1
- California Building Energy Efficiency Standards (Title 24 Energy Code) 2016 - Commercial Requirement for Pipe Insulation, Section 120.3(a) General Requirements, (b) Insulation Protection
- California Building Energy Efficiency Standards (Title 24 Energy Code) 2016 - Residential Requirement for Pipe Insulation, Section 150.0-Mandatory, 150.0(j)3 Insulation Protection.(A),(B)
- ANSI/ASHRAE/IESNA Standard 90.1 - 2004, 2007, 2010

Air Leakage/Wall Penetration Compliance per:

- IBC - 2006, 2009, 2012 Chapter 13
- IRC - 2006, 2009, 2012 Chapter 11 Part IV Energy Efficiency - Section N1101 General - N1101.1 Scope - Air Leakage Section N1102.4 Section N1102.4.1 - Building Thermal Envelope - (1. All joints, seams, penetrations) Chapter 11 Refrigeration Section 1101.0 Scope - 1101.3 Protection
- IECC - 2006, 2009, & 2012 Air Leakage (Mandatory) - Residential Section 402.4.1 and 402.4.1.1 Building Thermal Envelope – Penetrations
- IECC - 2006, 2009, & 2012 Air Leakage (Mandatory) - Commercial Section C402.4.3 and C402.4.2 Building Thermal Envelope – Penetrations
- IMC - 2006, 2009, & 2012 Chapter 3 General Regulations Section 301.1 Scope – Sections 301.10, 301.11, 301.14, 301.15, 305.1, 305.2, 305.4
- UMC - 2006, 2009, & 2012 Chapter 11 Refrigeration – Section 1101.0 Scope - Section 1101.1 - General Requirements Section 1106.0 – Section 1106.2, Section 1111.0 Erection of Refrigerant Piping – Sections 1111.1, 1111.2, 1111.4
- California Building Energy Efficiency Standards (Title 24 Energy Code) 2016, Part 6 Section 110.7-Mandatory Requirements to Limit Air Leakage



AIREX
Manufacturing Inc.

72170 Dunham Way, Suite D | Thousand Palms, CA 92276 | (760) 343-2277 | FAX (760) 343-5599 | www.airxmfg.com

*Velcro is a trademark of Velcro USA

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2IN1
System

SUBMITTAL SHEET

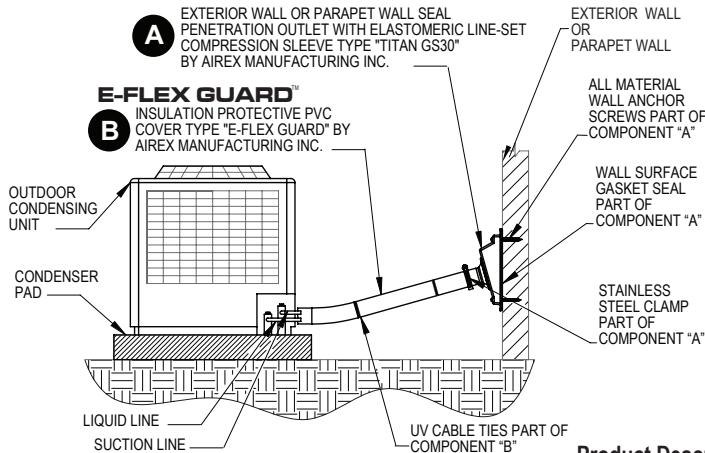
Project _____
Contractor _____
Date _____
Specification Reference _____
Comments _____

TITAN OUTLET™

A EXTERIOR WALL OR PARAPET WALL SEAL PENETRATION OUTLET WITH ELASTOMERIC LINE-SET COMPRESSION SLEEVE TYPE "TITAN GS30" BY AIREX MANUFACTURING INC.

E-FLEX GUARD™

B INSULATION PROTECTIVE PVC COVER TYPE "E-FLEX GUARD" BY AIREX MANUFACTURING INC.



PRO-SYSTEM KIT MODEL NUMBERS

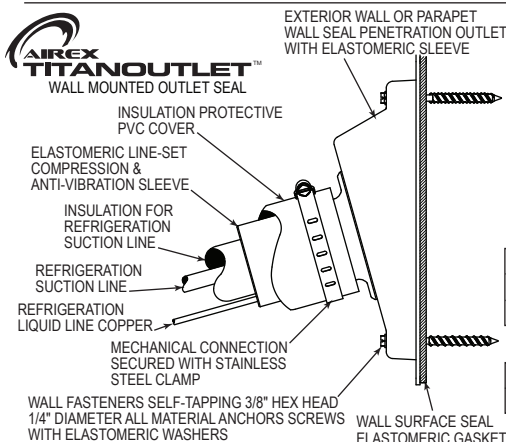
Airex Part Number		Model TGS: Stucco, Masonry Applications	
TGS-650G-72E-B	Black	Fits: 1/2" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube	
TGS-650G-72E-W	White		
TGS-675G-72C-B	Black	Fits: 3/4" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube or 1/2" wall thickness pipe insulation with 1-1/8" tube.	
TGS-675G-72C-W	White		
TGS-610G-72X-B	Black	Fits: 1" wall thickness pipe insulation with 3/4", 7/8" tube or 3/4" wall thickness pipe insulation with 1-1/8"	
TGS-610G-72X-W	White		
Airex Part Number		Model TSS: Siding, Compact Applications	
TSS-650G-72E-B	Black	Fits: 1/2" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube	
TSS-650G-72E-W	White		
TSS-675G-72C-B	Black	Fits: 3/4" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube or 1/2" wall thickness pipe insulation with 1-1/8" tube.	
TSS-675G-72C-W	White		
TITAN OUTLET™	Gray - G	E-FLEX GUARD™	Black - B
Color Options		Color Options	
When ordering, substitute Gray (G) for White (W)		Substitute Black (B) for White (W)	

Product Description and Specification

AIREX PRO-SYSTEM KIT™ (a combined wall seal and insulation protection system) by Airex Manufacturing Inc., to be provided and installed for sealing HVAC refrigerant line "wall penetrations" and protection of refrigerant "line set piping insulation". The combined use of a compression gasket and wall seal system is required by energy codes to prevent: wall air-leakage, moisture intrusion, weather intrusion, rodent intrusion, piping vibration control, physical wall or piping damage, especially when mechanically connecting to thermal insulated refrigerant piping. In addition, pipe insulation is also required to be protected from sun, wind, snow, ice, equipment maintenance and physical damage. **AIREX PRO-SYSTEM KIT™** to be provided is to ensure healthy building indoor air quality, long-term building durability, sustainable building energy efficiency and optimal HVAC system performance.

AIREX TITAN OUTLET™ - A wall outlet seal by Airex Manufacturing Inc., shall be provided and installed with its compression gasket mounting method and must be fastened to wall surface with supplied ICC-ES listed and approved non-corrosive screws with pre-loaded neoprene washers. Wall Outlet must also integrate an over-molded, flexible, elastomeric sleeve for sealing, supporting and isolating refrigerant pipes to also control vibration. The Wall Outlet shall also feature outdoor-rated durability and shall provide wall expansion and contraction protection features achieved by gaskets and seals as per energy code requirements. A stainless steel clamp must be utilized to create a "Mechanical Connection" between wall seal and pipe insulation protector as intended per energy codes to allow removable/reusable maintenance capabilities and designed to co-act with the AIREX E-FLEX GUARD™ Pipe Insulation Protection Cover. Wall Outlet seal and insulation protector must both be sustainably and securely installed, mechanically fastened together as one, due to piping vibration, and shall be assembled without the use of adhesives or adhesive tapes as per energy code requirements. **Wall Outlet shall be tested and must meet the following testing: ASTM E 331 (Water Penetration), ASTM E 283 (Air Leakage), and ASTM E 2178 (Air Permeance of Building Materials).**

AIREX E-FLEX GUARD™ - An insulation protective cover by Airex Manufacturing Inc., shall be provided and installed to be flexible, U/V and weather resistant. The PVC plastic pipe insulation cover shall feature an integrated, outdoor-rated durability, industrial-grade, full-enclosure fastening system that is double secured by molecular bonding, allowing custom, cut-to-length installations. The cut-to-length installations shall comprise of a non-unraveling PVC cover material that does not compromise long-term-effectiveness or require specialized tools and cutting equipment. The engineered fastening system is to allow the cover to be removable and reusable for maintenance without the use of adhesives as an attachment in any way shape or form, including either in the protector's construction, installation, or attachment to pipe insulation, as this will negatively affect insulation permeance performance and promote insulation material degradation which causes added energy usage by equipment. **WRAPPING TAPE OR ADHESIVE TAPE SHALL NOT BE PERMITTED AS PER ENERGY CODES.** Insulation Protector shall be tested and meet the following testing: ASTM E 96 (Vapor Transmission of Materials), ASTM G 153 (Carbon Arc Light Exposure - Accelerated Weathering), ASTM D 412 (Tensile Strength after UV Exposure and Water Immersion) ASTM 570 (Water Absorption of Plastics) ASTM E 84/UL 723 (Surface Burning Characteristics of Building Materials), ASTM G 21 (Fungal Growth). UV/Protector Pipe Insulation Material shall Meet Class II vapor retarder per ASTM E 96 (vapor/moisture permeability test) "1 perm or less". **THE USE OF U/V PAINT OR NON-PERMEABLE MATERIALS OR ADHESIVES ARE NOT PERMITTED FOR THIS APPLICATION. AIREX E-FLEX GUARD™ combines U/V weather and physical protection with a Class II rated vapor retarder permeability performance material, as required per energy codes.**



A

TITAN OUTLET™

Color Options

Gray - G White - W

Substitute (G) with (W) for White

TITAN OUTLET Dimensions

Airex Part Number	
TGS-550-G	Fits: 1/2" wall insulation
TGS-575-G	Fits: 3/4" wall insulation
TGS-510-G	Fits: 1" wall insulation
Model TGS: Stucco, Masonry Applications	
TSS-550-G	Fits: 1/2" wall insulation
TSS-575-G	Fits: 3/4" wall insulation
Model TSS: Siding Applications	



HVAC LINE-SET & PIPE INSULATION PROTECTORS

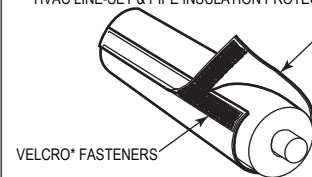
B

E-FLEX GUARD™

Color Options

Black - B White - W

Substitute (B) with (W) for White



E-FLEX GUARD Dimensions

Two Lengths: 72" (6ft) and 75ft roll.

Airex Part Number	
72E-B (6 ft)	Fits: 1/2" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube.
750E-B (75 ft)	
72C-B (6 ft)	Fits: 3/4" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube or 1/2" wall thickness pipe insulation with 1-1/8" tube.
750C-B (75 ft)	
72X-B (6 ft)	Fits: 1" wall thickness pipe insulation with 3/4", 7/8" tube or 3/4" wall thickness pipe insulation with 1-1/8" tube.
750X-B (75 ft)	



www.airexmfg.com

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Energy Efficient Product



2 IN 1 System

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TGS-675W-72C-W (Shown)

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- ✓ Energy Codes
- ✓ Residential Codes
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- ✓ Green Codes

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Mini-Split Systems

Central Systems

2012 & 2015 International Energy Conservation Code (IECC)

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Commercial Section C403.2.8.1 (2012), C403.2.10.1 (2015)

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Air Barrier Construction: Commercial Section C402.5.1.1

Penetrations of the air barrier shall be caulked, gasketed or sealed in a manner compatible with the construction materials and locations...

Weather Damage Protection



Physical Damage Protection



Residential

Commercial

Multi-Family Units

Codes & Standards Compliance

Pipe Insulation Protection Compliance per:

- IECC 2012 - Protection of Piping Insulation - Commercial Section C403.2.8.1
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- California Building Energy Efficiency Standards (Title 24 Energy Code) - Residential & Commercial Requirement for Pipe Insulation 120.3 - Section: 150.0(i) 3a & b
- California Building Energy Efficiency Standards (Title 24 Energy Code) 2016 - Residential & Commercial Requirement for Pipe Insulation 120.3 - Section: 150.0(i) 2 & 3 - Section 150.0(m) 9
- ANSI/ASHRAE/IESNA Standard 90.1 - 2004, 2007, 2010

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- California Building Energy Efficiency Standards (Title 24 Energy Code) - 2016 Air Leakage (Mandatory) - All Occupancies Section 117 Joints and other Openings/Exterior Wall Penetrations

Approved Material & Performance Testing

- ASTM E283 - Standard Test Method for Air Leakage
- ASTM E331 - Standard Test Method for Water Penetration
- ASTM E 2178 - Air Permeance of Building Materials
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*Based on HVAC Industry and Manufacturer's Independent Study on a Combined ROI & Sustainable Energy Savings Calculation. A contributing product to the U.S. Energy Department's 30% Energy Savings Solution Initiative.



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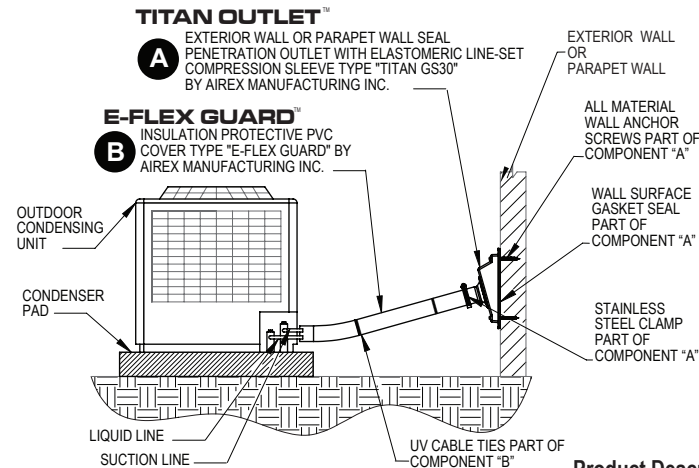
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**Velcro is a trademark of Velcro USA



SUBMITTAL SHEET

Project _____
Contractor _____
Date _____
Specification Reference _____
Comments _____



PRO-SYSTEM KIT MODEL NUMBERS

Airex Part Number	TITAN	E-FLEX	Model TGS: Stucco, Masonry Applications
TGS-650W-72E-W	White	White	Fits: 1/2" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube
TGS-650G-72E-W	Gray	White	
TGS-675W-72C-W	White	White	Fits: 3/4" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube or 1/2" wall thickness pipe insulation with 1-1/8" tube.
TGS-675G-72C-W	Gray	White	
TGS-610W-72X-W	White	White	Fits: 1" wall thickness pipe insulation with 3/4", 7/8" tube or 3/4" wall thickness pipe insulation with 1-1/8" tube.
TGS-610G-72X-W	Gray	White	
Airex Part Number	TITAN	E-FLEX	Model TSS: Siding, Compact Applications
TSS-650W-72E-W	White	White	Fits: 1/2" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube
TSS-650G-72E-W	Gray	White	
TSS-675W-72C-W	White	White	Fits: 3/4" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube or 1/2" wall thickness pipe insulation with 1-1/8" tube.
TSS-675G-72C-W	Gray	White	

TITAN OUTLET™
Color Options
Gray - G White - W
When ordering, substitute Gray (G) for White (W)

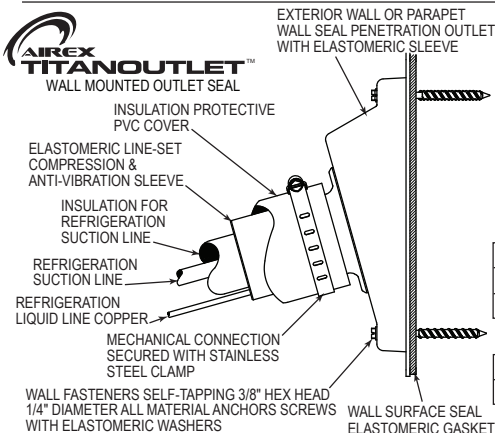
E-FLEX GUARD™
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Substitute Black (B) for White (W)

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TITAN OUTLET™
Color Options
Gray - G White - W
Substitute (G) with (W) for White

TITAN OUTLET Dimensions

Airex Part Number	
TGS-550-W	Fits: 1/2" wall insulation
TGS-575-W	Fits: 3/4" wall insulation
TGS-510-W	Fits: 1" wall insulation
Model TGS: Stucco, Masonry Applications	
TSS-550-W	Fits: 1/2" wall insulation
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Model TSS: Siding Applications	



E-FLEX GUARD™
Color Options
Black - B White - W
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Airex Part Number	
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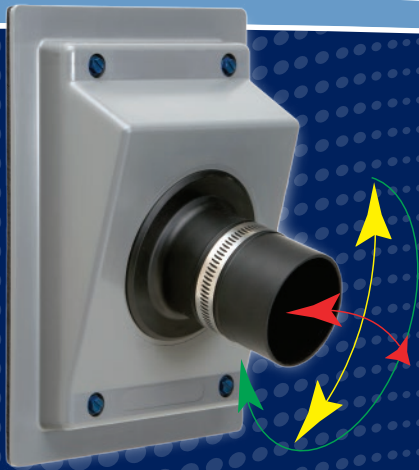


AIREX TITANOUTLET™

Seals HVAC Piping Wall Penetrations

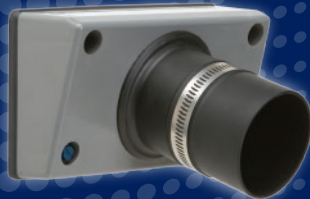
Energy Efficient Product 

30%
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TGS Series

U.S. Patents #9,091,377 B2
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TSS Series

Siding or
Compact
Applications

TITAN OUTLET™

Seals Piping Wall Penetrations

- Superior Durable Quality with U/V Resistance & High Impact Strength Design
- Gasket Compression System Seals Wall Air Leakage & Weather Moisture Wall Damage
- Flexible Elastomeric Outlet Sleeve Design Prevents Air Infiltration & Rodent Intrusion
- Design Supports HVAC Systems with Wall Isolation & Anti-Vibration Features
- Flexible Sleeve Reduces Piping Vibration & Noise
- Seals to Protect Indoor Air Quality

Meets New Code Requirements:

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2012 & 2015 International Energy Conservation Code (IECC)

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Central
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Weather Damage Protection



Physical Damage Protection

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Multi-Family Units

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- ASTM E283 - Standard Test Method for Air Leakage
- ASTM E331 - Standard Test Method for Water Penetration
- ASTM E 2178 - Air Permeance of Building Materials

Wall Mounted Outlet (Outdoor-Rated Rigid Plastic)

- ASTM D1525C-09 - Temperature Deformation Test
- ASTM D648-07 - Temperature Load Deformation Test
- UL 94 HB - Flammability Test
- UL 746C - Outdoor Suitability - f1 Rating

Wall Outlet Sleeve (Outdoor-Rated Elastomeric Plastic)

- ASTM D573-04 - Deterioration Test
- ASTM D746-07 - Brittleness Temperature Impact Test



*Based on HVAC Industry and Manufacturer's Independent Study on a Combined ROI & Sustainable Energy Savings Calculation. A contributing product to the U.S. Energy Department's 30% Energy Savings Solution Initiative.

AIREX
Manufacturing Inc.

72170 Dunham Way, Suite D | Thousand Palms, CA 92276 | (760) 343-2277 | FAX (760) 343-5599 | www.airexmfg.com

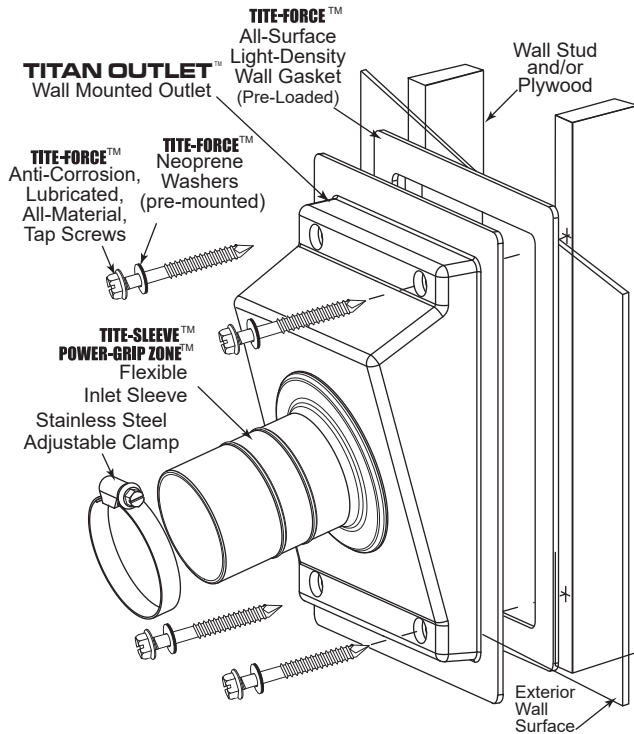
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HVAC Pipe Penetration Wall Seal

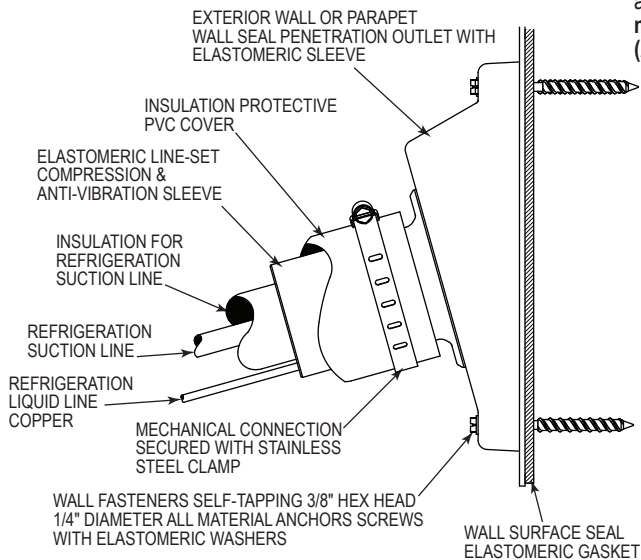


SUBMITTAL SHEET

Project _____
 Contractor _____
 Date _____
 Specification Reference _____
 Comments _____



Refrigeration Pipe Penetration Detail



TITAN OUTLET MODEL NUMBERS

Airex Part Number	Model TGS: Stucco, Masonry Applications
TGS-550-G	(Fits: 1/2" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube)
TGS-575-G	(Fits: 3/4" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube or 1/2" wall thickness pipe insulation with 1-1/8" tube)
TGS-510-G	(Fits: 1" wall thickness pipe insulation with 3/4", 7/8" tube or 3/4" wall thickness pipe insulation with 1-1/8" tube)

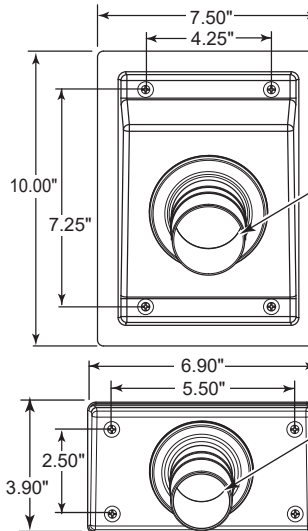
Airex Part Number	Model TSS: Siding, Compact Applications
TSS-550-G	(Fits: 1/2" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube)
TSS-575-G	(Fits: 3/4" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube or 1/2" wall thickness pipe insulation with 1-1/8" tube)

TITAN OUTLET™ Color Options

Gray - G
White - W
Substitute (G) with (W) for White

Product Description and Specification

AIREX TITAN OUTLET™ - A wall outlet seal by Airex Manufacturing Inc., shall be provided and installed with its compression gasket mounting method and must be fastened to wall surface with supplied ICC-ES listed and approved non-corrosive screws with pre-loaded neoprene washers. Wall Outlet must also integrate an over-molded, flexible, elastomeric sleeve for sealing, supporting and isolating refrigerant pipes to also control vibration. The Wall Outlet shall also feature outdoor-rated durability and shall provide wall expansion and contraction protection features achieved by gaskets and seals as per energy code requirements. A stainless steel clamp must be utilized to create a "Mechanical Connection" between wall seal and pipe insulation protector as intended per energy codes to allow removable/reusable maintenance capabilities and designed to co-act with the AIREX E-FLEX GUARD™ Pipe Insulation Protection Cover. Wall Outlet seal and insulation protector must both be sustainably and securely installed, mechanically fastened together as one, due to piping vibration, and shall be assembled without the use of adhesives or adhesive tapes as per energy code requirements. **Wall Outlet shall be tested and must meet the following testing: ASTM E 331 (Water Penetration), ASTM E 283 (Air Leakage), and ASTM E 2178 - Air Permeance of Building Materials.**



TGS Model Series Sleeve Diameters

Airex Part Number	Sleeve Diameter	Insulation Thickness
TGS-550-G	1.70"	1-11/16"
TGS-575-G	2.375"	2-3/8"
TGS-510-G	3.1875"	3-3/16"

TSS Model Series Sleeve Diameters

Airex Part Number	Sleeve Diameter	Insulation Thickness
TSS-550-G	1.70"	1-11/16"
TSS-575-G	2.375"	2-3/8"

Approved Material & Performance Testing

Product Performance Testing

- ASTM E283 - Standard Test Method for Air Leakage
- ASTM E331 - Standard Test Method for Water Penetration of Exterior Walls by Uniform Static Air Pressure
- ASTM E 2178 - Air Permeance of Building Materials

Plastic Material Testing

- Wall Mounted Outlet (Rigid Plastic)**
 - ASTM D1525C-09 - Temperature Deformation Test
 - ASTM D648-07 - Temperature Load Deformation Test
 - UL 94 HB - Flammability Test
 - UL 746C - Outdoor Suitability - f1 Rating
- Wall Outlet Sleeve (Elastomeric Plastic)**
 - ASTM D573-04 - Deterioration Test
 - ASTM D746-07 - Brittleness Temperature Impact

U.S. Patents #9,091,377 B2, #9,523,200 B2



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AIREX TITANOUTLET™

Seals HVAC Piping Wall Penetrations

Energy Efficient Product 



TGS Series

U.S. Patents #9,091,377 B2
#9,523,200 B2



TSS Series

Siding or
Compact
Applications

TITAN OUTLET™

Seals Piping Wall Penetrations

- Superior Durable Quality with U/V Resistance & High Impact Strength Design
- Gasket Compression System Seals Wall Air Leakage & Weather Moisture Wall Damage
- Flexible Elastomeric Outlet Sleeve Design Prevents Air Infiltration & Rodent Intrusion
- Design Supports HVAC Systems with Wall Isolation & Anti-Vibration Features
- Flexible Sleeve Reduces Piping Vibration & Noise
- Seals to Protect Indoor Air Quality

Meets New Code Requirements:

- ✓ Building Codes
- ✓ Energy Codes
- ✓ Residential Codes
- ✓ Mechanical Codes
- ✓ Green Codes

2012 & 2015 International Energy Conservation Code (IECC)

Air Leakage (Mandatory): Residential Section 402.4

The *building thermal envelope* shall be constructed to limit air leakage in accordance with the requirements of Sections R402.4.1 through R402.4.4.

Air Barrier Construction: Commercial Section C402.5.1.1

Penetrations of the air barrier shall be caulked, gasketed or sealed in a manner compatible with the construction materials and locations...



Applications for:



Mini-Split
Systems

Central
Systems

Weather Damage Protection



Physical Damage Protection

Residential

Commercial

Multi-Family Units

Codes & Standards Compliance

Air Leakage and Wall Penetration Compliance per:

- IBC - 2006, 2009, 2012 Chapter 13
- IRC - 2006, 2009, 2012 Chapter 11 Part IV Energy Efficiency - Section N1101.1 General - N1101.1 Scope - Air Leakage Section N1102.4 Section N1102.4.1 - Building Thermal Envelope - (1. All joints, seams, penetrations) Chapter 11 Refrigeration Section 1101.0 Scope - 1101.3 Protection
- IECC - 2006, 2009, & 2012 Air Leakage (Mandatory) - Residential Section 402.4.1 and 402.4.1.1 Building Thermal Envelope - Penetrations
- IECC - 2006, 2009, & 2012 Air Leakage (Mandatory) - Commercial Section C402.4.3 and C402.4.2 Building Thermal Envelope - Penetrations
- IMC - 2006, 2009, & 2012 Chapter 3 General Regulations Section 301.1 Scope - Sections 301.10, 301.11, 301.14, 301.15, 305.1, 305.2, 305.4
- UMC - 2006, 2009, & 2012 Chapter 11 Refrigeration - Section 1101.0 Scope - Section 1101.1 - General Requirements Section 1106.0 - Section 1106.2, Section 1111.0 Erection of Refrigerant Piping - Sections 1111.1, 1111.2, 1111.4
- California Building Energy Efficiency Standards (Title 24 Energy Code) 2016, Part 6 Section 110.7 - Mandatory Requirements to Limit Air Leakage

Approved Material & Performance Testing

- ASTM E283 - Standard Test Method for Air Leakage
- ASTM E331 - Standard Test Method for Water Penetration
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- UL 746C - Outdoor Suitability - f1 Rating

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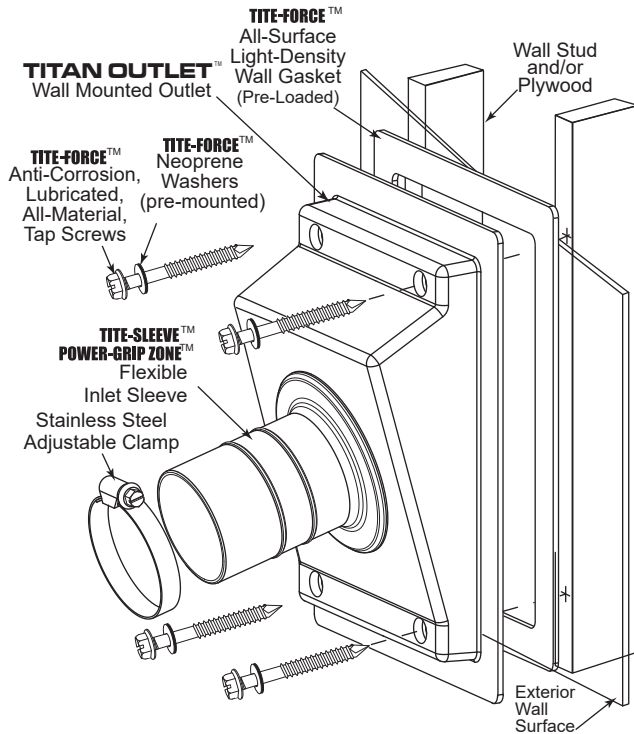
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HVAC Pipe Penetration Wall Seal

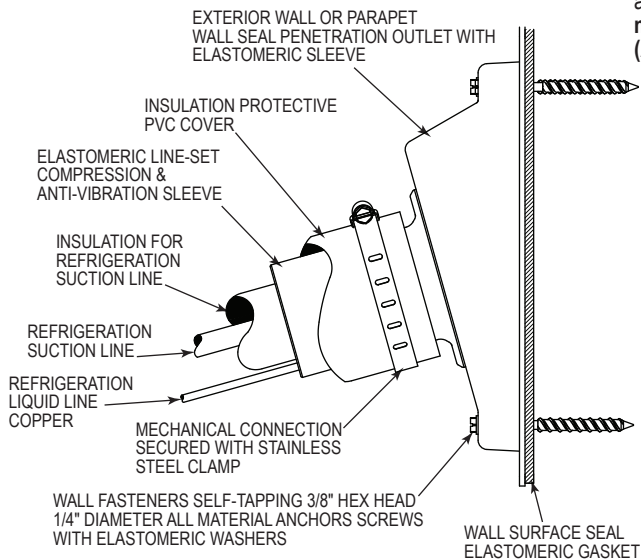


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Project _____
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Refrigeration Pipe Penetration Detail



TITAN OUTLET MODEL NUMBERS

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TGS-510-W	(Fits: 1" wall thickness pipe insulation with 3/4", 7/8" tube or 3/4" wall thickness pipe insulation with 1-1/8" tube)

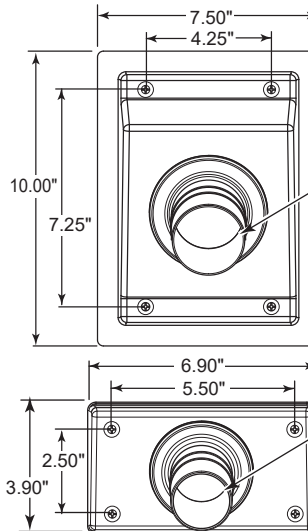
Airex Part Number	Model TSS: Siding, Compact Applications
TSS-550-W	(Fits: 1/2" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube)
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TITAN OUTLET™ Color Options

Gray - G
White - W
Substitute (G) with (W) for White

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TGS Model Series Sleeve Diameters

Airex Part Number	Sleeve Diameter	Insulation Thickness
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TGS-575-W	2.375"	2-3/8"
TGS-510-W	3.1875"	3-3/16"

TSS Model Series Sleeve Diameters

Airex Part Number	Sleeve Diameter	Insulation Thickness
TSS-550-W	1.70"	1-11/16"
TSS-575-W	2.375"	2-3/8"

Approved Material & Performance Testing

Product Performance Testing

- ASTM E283 - Standard Test Method for Air Leakage
- ASTM E331 - Standard Test Method for Water Penetration of Exterior Walls by Uniform Static Air Pressure
- ASTM E 2178 - Air Permeance of Building Materials

Plastic Material Testing

- Wall Mounted Outlet (Rigid Plastic)**
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 - ASTM D648-07 - Temperature Load Deformation Test
 - UL 94 HB - Flammability Test
 - UL 746C - Outdoor Suitability - f1 Rating
- Wall Outlet Sleeve (Elastomeric Plastic)**
 - ASTM D573-04 - Deterioration Test
 - ASTM D746-07 - Brittleness Temperature Impact

U.S. Patents #9,091,377 B2, #9,523,200 B2

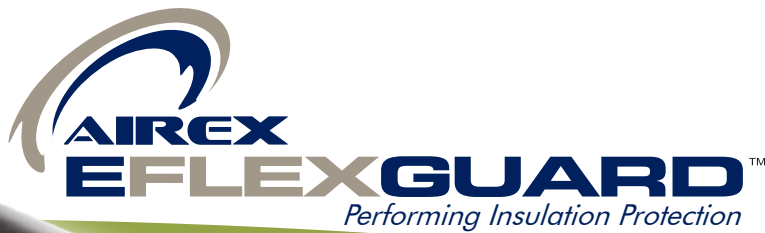


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AIREX EFLEX GUARD™

Performing Insulation Protection

Energy Efficient Product 

30%
Energy
Savings
Mandate*

72-B Series

(6 ft. Standard Roll)

E-FLEX GUARD™

Protects Piping Insulation

- Outdoor UV/Weather Grade Resistant Construction
- Self-Gripping, Dual-Bonded Hook & Loop Fastening System
- Removable/Reusable for Maintenance
- Protector and Class II Vapor Retarder (All-In-One)
- Meets ASTM G153 Weatherization and UV
- Meets ASTM E-96 Water/Vapor Permeability

U.S. Patents #9,091,377 B2
#9,523,200 B2

Copper Piping & Pipe Insulation Are
Shown for Illustration Purposes Only

Meets New Code Requirements:

- ✓ Building Codes
- ✓ Energy Codes
- ✓ Residential Codes
- ✓ Mechanical Codes
- ✓ Green Codes



750 Series

75 ft.
Mega Rolls



Applications for:



Mini-Split
Systems



Central
Systems



90 Series

90°
Elbows

Weather Damage Protection



Residential

Commercial

Multi-Family Units

Approved Material & Performance Testing

Material Testing Standards

- ASTM G153 – Weatherization and UV Exposure
- ASTM E96 – Water/Vapor Permeability
- ASTM G21 – Anti-Fungal/Anti-Microbial
- ASTM D412 – Tension Deformation Test (UV Exposure & Water Immersion)
- ASTM D570 – Water Absorption
- ASTM E84/UL 723 – Flame and Smoke Rating 25/450

Codes & Standards Compliance

Pipe Insulation Protection for Compliance per:

- IECC - 2012 Protection of Piping Insulation – Commercial Section C403.2.8.1
- IECC - 2015 Protection of Piping Insulation – Commercial Section C403.2.10.1
- IRC - 2018 Refrigerant Line Insulation Protection – M1411.6.1 - Section N1103.4.1
- California Building Energy Efficiency Standards (Title 24 Energy Code) 2016 - Commercial Requirement for Pipe Insulation, Section 120.3(a) 1, (b) 1, & 2.
- California Building Energy Efficiency Standards (Title 24 Energy Code) 2016 - Residential Requirement for Pipe Insulation, Section 150.0(j)3. A. & B.
- ANSI/ASHRAE/IESNA Standard 90.1 - 2004, 2007, 2010

2012 & 2015 International Energy Conservation Code (IECC)

Residential Section R403.3.1 (2012), R403.4.1 (2015)

Commercial Section C403.2.8.1 (2012), C403.2.10.1 (2015)

Protection of Piping Insulation:

Piping insulation exposed to weather shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, wind and shall provide shielding from solar radiation that can cause degradation of the material. **Adhesive tape shall not be permitted.**

*Based on HVAC Industry and Manufacturer's Independent Study on a Combined ROI & Sustainable Energy Savings Calculation. A contributing product to the U.S. Energy Department's 30% Energy Savings Solution Initiative.



AIREX
Manufacturing Inc.

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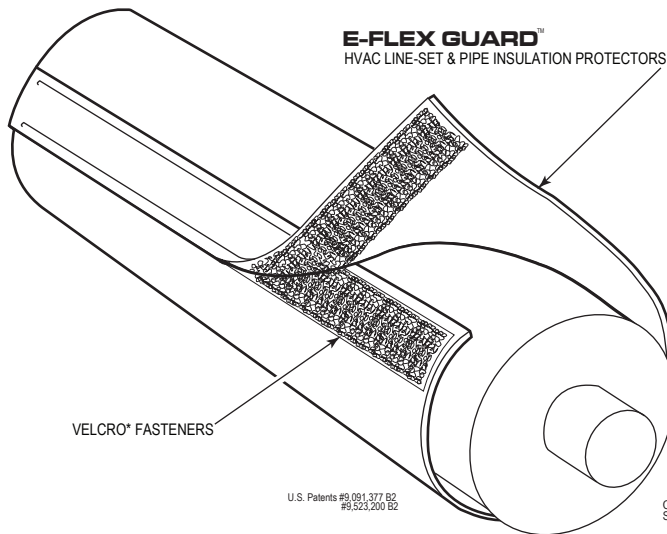
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HVAC Piping Insulation Protector



SUBMITTAL SHEET

Project	_____
Contractor	_____
Date	_____
Specification Reference	_____
Comments	_____



E-FLEX GUARD MODEL NUMBERS

Airex Part Number	Recommended Sizing Chart
72E-B (6 ft)	Fits: 1/2" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube.
72C-B (6 ft)	Fits: 3/4" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube or 1/2" wall thickness pipe insulation with 1-1/8" tube.
72X-B (6 ft)	Fits: 1" wall thickness pipe insulation with 3/4", 7/8" tube or 3/4" wall thickness pipe insulation with 1-1/8" tube.

E-FLEX GUARD™	Black - B	White - W
Color Options		
Substitute White (W) for Black (B)		

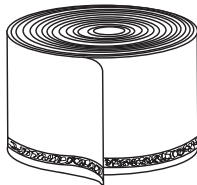
Product Description and Specification

AIREX E-FLEX GUARD™ - An insulation protective cover by Airex Manufacturing Inc., shall be provided and installed to be flexible, U/V and weather resistant. The PVC plastic pipe insulation cover shall feature an integrated, outdoor-rated durability, industrial-grade, full-enclosure fastening system that is double secured by molecular bonding, allowing custom, cut-to-length installations. The cut-to-length installations shall comprise of a non-unraveling PVC cover material that does not compromise long-term-effectiveness or require specialized tools and cutting equipment. The engineered fastening system is to allow the cover to be removable and reusable for maintenance without the use of adhesives as an attachment in any way shape or form, including either in the protector's construction, installation, or attachment to pipe insulation, as this will negatively affect insulation permeance performance and promote insulation material degradation which causes added energy usage by equipment. WRAPPING TAPE OR ADHESIVE TAPE SHALL NOT BE PERMITTED AS PER ENERGY CODES. Insulation Protector shall be tested and meet the following testing: ASTM E 96 (Vapor Transmission of Materials), ASTM G 153 (Carbon Arc Light Exposure - Accelerated Weathering), ASTM D 412 (Tensile Strength after UV Exposure and Water Immersion) ASTM 570 (Water Absorption of Plastics), ASTM E 84/UL 723 (Surface Burning Characteristics of Building Materials), ASTM G 21 (Fungal Growth). UV/Protector Pipe Insulation Material shall Meet Class II vapor retarder per ASTM E 96 (vapor/moisture permeability test) "1 perm or less". THE USE OF U/V PAINT OR NON-PERMEABLE MATERIALS OR ADHESIVES ARE NOT PERMITTED FOR THIS APPLICATION. **AIREX E-FLEX GUARD™ combines U/V weather and physical protection with a Class II rated vapor retarder permeability performance material, as required per energy codes.**

Approved PVC Material Performance Testing

Material Testing Standards
• ASTM G153 - Weatherization and UV Exposure
• ASTM E96 - Water/Vapor Permeability
• ASTM G21 - Anti-Fungal/Anti-Microbial
• ASTM D412 - Tension Deformation Test (UV Exposure & Water Immersion)
• ASTM D570 - Water Absorption
• ASTM E84/UL 723 - Flame and Smoke Rating 25/450

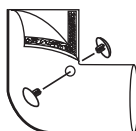
750 Series 75 Foot Rolls



Airex Part Number Recommended Sizing Chart

750E-B (75 ft)	Fits: 1/2" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube.
750C-B (75 ft)	Fits: 3/4" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube or 1/2" wall thickness pipe insulation with 1-1/8" tube.
750X-B (75 ft)	Fits: 1" wall thickness pipe insulation with 3/4", 7/8" tube or 3/4" wall thickness pipe insulation with 1-1/8" tube.

90 Series 90° PVC Insulation Protectors



Airex Part Number Recommended Sizing Chart

90E-B	90° Angle fits E Series
90C-B	90° Angle fits C Series
90X-B	90° Angle fits X Series

U.S. Patents #9,091,377 B2, #9,523,200 B2



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AIREX EFLEXGUARD™

Performing Insulation Protection

Energy Efficient Product 

30%
Energy
Savings
Mandate*

72-W Series

(6 ft. Standard Roll)

E-FLEX GUARD

Protects Piping Insulation

- Outdoor UV/Weather Grade Resistant Construction
- Self-Gripping, Dual-Bonded Hook & Loop Fastening System
- Removable/Reusable for Maintenance
- Protector and Class II Vapor Retarder (All-In-One)
- Meets ASTM G153 Weatherization and UV
- Meets ASTM E-96 Water/Vapor Permeability

U.S. Patents #9,091,377 B2
#9,523,200 B2

Copper Piping & Pipe Insulation Are
Shown for Illustration Purposes Only

Meets New Code Requirements:

- ✓ Building Codes
- ✓ Energy Codes
- ✓ Residential Codes
- ✓ Mechanical Codes
- ✓ Green Codes



750 Series

75 ft.
Mega Rolls



Applications for:



Mini-Split
Systems



Central
Systems



90 Series

90°
Elbows

Weather Damage Protection

Physical Damage Protection



Residential

Commercial

Multi-Family Units

Approved Material & Performance Testing

Material Testing Standards

- ASTM G153 – Weatherization and UV Exposure
- ASTM E96 – Water/Vapor Permeability
- ASTM G21 – Anti-Fungal/Anti-Microbial
- ASTM D412 – Tension Deformation Test (UV Exposure & Water Immersion)
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Codes & Standards Compliance

Pipe Insulation Protection for Compliance per:

- IECC - 2012 Protection of Piping Insulation – Commercial Section C403.2.8.1
- IECC - 2015 Protection of Piping Insulation – Commercial Section C403.2.10.1
- IRC - 2018 Refrigerant Line Insulation Protection – M1411.6.1 - Section N1103.4.1
- California Building Energy Efficiency Standards (Title 24 Energy Code) 2016 - Commercial Requirement for Pipe Insulation, Section 120.3(a) 1. (b) 1. & 2.
- California Building Energy Efficiency Standards (Title 24 Energy Code) 2016 - Residential Requirement for Pipe Insulation, Section 150.0(j)3. A. & B.
- ANSI/ASHRAE/IESNA Standard 90.1 - 2004, 2007, 2010

2012 & 2015 International Energy Conservation Code (IECC)

Residential Section R403.3.1 (2012), R403.4.1 (2015)

Commercial Section C403.2.8.1 (2012), C403.2.10.1 (2015)

Protection of Piping Insulation:

Piping insulation exposed to weather shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, wind and shall provide shielding from solar radiation that can cause degradation of the material. **Adhesive tape shall not be permitted.**

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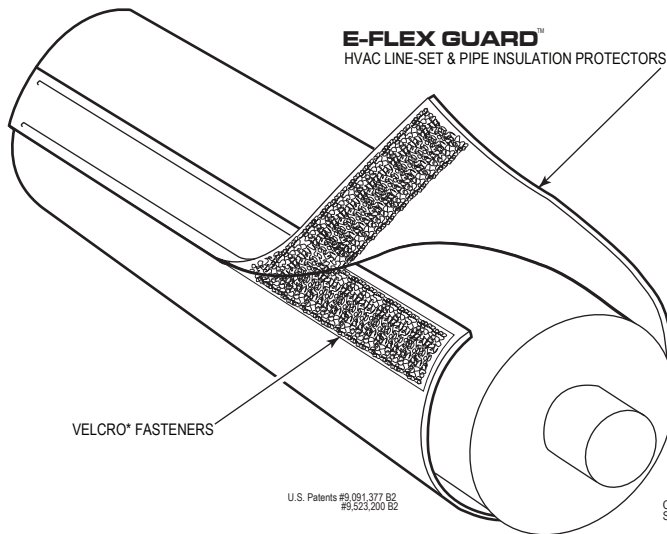
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HVAC Piping Insulation Protector



SUBMITTAL SHEET

Project	_____
Contractor	_____
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Airex Part Number	Recommended Sizing Chart
72E-W (6 ft)	Fits: 1/2" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube.
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72X-W (6 ft)	Fits: 1" wall thickness pipe insulation with 3/4", 7/8" tube or 3/4" wall thickness pipe insulation with 1-1/8" tube.

E-FLEX GUARD™	White - W	Black - B
Color Options		

Substitute Black (B) for White (W)

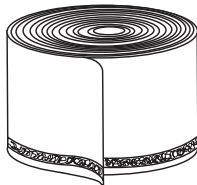
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Approved PVC Material Performance Testing

Material Testing Standards
• ASTM G153 - Weatherization and UV Exposure
• ASTM E96 - Water/Vapor Permeability
• ASTM G21 - Anti-Fungal/Anti-Microbial
• ASTM D412 - Tension Deformation Test (UV Exposure & Water Immersion)
• ASTM D570 - Water Absorption
• ASTM E84/UL 723 - Flame and Smoke Rating 25/450

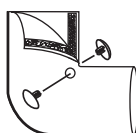
750 Series 75 Foot Rolls



Airex Part Number Recommended Sizing Chart

750E-W (75 ft)	Fits: 1/2" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube.
750C-W (75 ft)	Fits: 3/4" wall thickness pipe insulation with 5/8", 3/4", 7/8" tube or 1/2" wall thickness pipe insulation with 1-1/8" tube.
750X-W (75 ft)	Fits: 1" wall thickness pipe insulation with 3/4", 7/8" tube or 3/4" wall thickness pipe insulation with 1-1/8" tube.

90 Series 90° PVC Insulation Protectors



Airex Part Number Recommended Sizing Chart

90E-W	90° Angle fits E Series
90C-W	90° Angle fits C Series
90X-W	90° Angle fits X Series

U.S. Patents #9,091,377 B2, #9,523,200 B2



72170 Dunham Way, Suite D, Thousand Palms, CA 92276 Phone: (760) 343-2277 Fax: (760) 343-5599

