INTEGRATED
engineering

SHOP DRAWING TRANSMITTAL

To: Daniel Cusimano Architect Inc.
185 Bridgeland Ave.
Toronto, ON M6A 1Y7

Att: Stacey Melville

Project: **Shopper's Drug Mart #9688**
Nashville Heights
Kleinburg, Ontario

From: Kyle McCallum
Date: May 16, 2025
File: 7370.pt

We have reviewed the attached contractor's equipment shop drawings for general conformity with the design documents and are forwarding them to you for your use in association with the above noted project.

The documents are sent by: Courier • Hand • Pick-up • **Email**

Qty	Shop Drawings	Notes
1	Rooftop Unit HVAC-5 liner	Reviewed: No comment.

Fortis Construction Group Inc.
info@fortisgroup.ca
T: +1 519-419-7828
F: +1 519-419-7830

SUBMITTAL

Project	
Number	25-1024
Name	SDM 9688 Kleinburg - New Store (Shell & Comp)
Address	6520 Major Mackenzie Drive West Kleinburg, ON L6A 4W4

Submittal	
Number	00014 rev 00
Subject	AP/Armaflex Duct Liner/Wrap
Submitted By	Consult Mechanical Inc.
Sent Date	May 12, 2025
Due Date	May 16, 2025

Contractor	
Company	Fortis Construction Group Inc
Address	416 Advance Blvd. Tecumseh, ON N8N 5G8
Contact	Tim McEachen
Phone	647-969-9518
Email	

Owner	
Company	Shoppers Realty Inc.
Address	1 President's Choice Circle 4th Floor, South Tower Attn: Carmen Nucum/Leah Elliot Brampton, ON L6Y 5S5
Name	
Email	Carmen.Nucum@loblaw.ca

Consultant / Approver

Name	Email	Phone
Cusimano Architect Inc. - Stacy Melville 85 Bridgeland Avenue, Suite 107 Toronto, ON M6A 1Y7	stacy@studio185.ca	

Submittal Items

Item	Spec Section	Description	Supplier / Manufacturer	Copies	Transmitted For
01		AP/Armaflex Duct Liner/Wrap	Consult Mechanical Inc.	1	

Submittal Tracking

Proposed vs Actual Date In Preparation By Subcontractor	Proposed vs Actual Date Received From Subcontractor	Proposed vs Actual Date Sent For Consultant Approval	Proposed vs Actual Date Returned By Consultant	Proposed vs Actual Date Returned To Subcontractor
May 11, 2025	May 11, 2025	May 11, 2025	May 16, 2025	May 16, 2025
May 12, 2025	May 12, 2025	May 12,		

Remarks

I am very pleased to provide you with the attached documents for your action as stated in the above Submittal Items table. Your timely return within five (5) business days is greatly appreciated and will unquestionably add to the overall success of this project.

Sincerely,
Tim McEachen
Fortis Construction Group Inc

#BUILDSTRONG

Fortis Construction Group Inc.
info@fortisgroup.ca
T: +1 519-419-7828
F: +1 519-419-7830

SUBMITTAL

Approval Stamps

Contractor

FORTIS GROUP

REVIEWED AS TO GENERAL ARRANGEMENT AND LAYOUT ONLY. DIMENSIONS AND COMPLIANCE WITH DRAWINGS AND SPECIFICATIONS ARE THE RESPONSOBILITY OF THE SUB CONTRACTOR.

REVIEWED STATUS	REVIEWED
JOB NUMBER	25-1024
REVIEW DATE	May 12, 2025
REVIEWED BY	Tim McEachen

Owner

Architect

Engineer

INTEGRATED ENGINEERING

REVIEW OF THIS DRAWING IS FOR GENERAL CONFORMITY WITH THE DESIGN ONLY. THE CONTRACTOR IS RESPONSIBLE FOR ALL REQUIREMENTS OF THE INSTALLATION.

PROJ No.	7370	REVIEWED	✓
DATE	25.05.16	REVISED	
BY	KJM	RESUBMIT	

#BUILDSTRONG

Corporate Head Office
416 Advance Blvd.
Tecumseh, ON, N8N 5G8

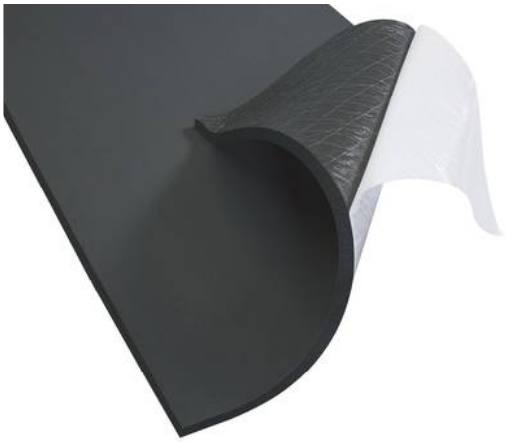
ENERGY SAVING SOLUTIONS

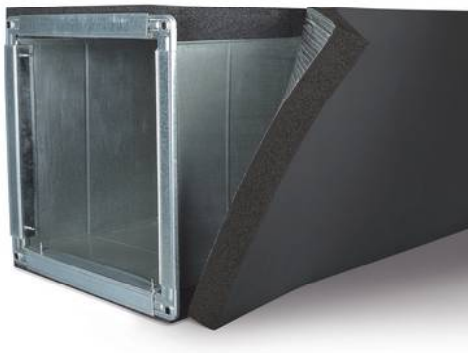
AP/ArmaFlex
Duct Liner/Wrap

The original fiber-free, closed-cell thermal and acoustical duct insulation engineered to safeguard IAQ, attenuate HVAC noise, and reduce energy waste.

// Designed to last the life of mechanical equipment
// Available with or without pressure-sensitive adhesive

www.armacell.com





armacell®
ArmaFlex®

TECHNICAL DATA - AP/ARMAFLEX DUCT LINER/WRAP

Brief description	Black flexible closed-cell elastomeric thermal and acoustical duct insulation in sheet and roll form. Available with and without factory-applied pressure sensitive adhesive (PSA).
Product range	Sheet: Width x Length 36" x 48" (0.915 m x 1.22 m) Roll Width 48" (1.22 m) (all thicknesses) 56-1/4" (1.42 m), 59" (1.49 m), 60" (1.5 mm) (1/2", 1", and 1-1/2" thick) (13, 25, 38 mm) Thickness AP ArmaFlex Duct Liner and Wrap: 1/2", and 1" (13, 25 mm) AP ArmaFlex FS Duct Liner and Wrap: 1-1/2" and 2" (38, 51 mm) Available in Sheet/Roll.

Approvals and compliance

Specification compliance

- GREENGUARD Gold Certified
- ASTM C534 Grade 1 Type II Sheets (NBR/PVC)
- ASTM E84, UL723
- City of New York approval MEA 107-89M
- Manufactured without CFCs, HFCs, HCFCs, PBDEs, or Formaldehyde.
- ASTM C534 Grade 2 Type II for sheets (EPDM)
- Title 24 California Building Energy Efficiency Standards
- MIL-P-15280J, FORM S
- Made with EPA registered MICROBAN® antimicrobial product protection.
- ASTM C1534, Type 1
- ASTM G21/C1338
- Conforms to building codes: International Mechanical Code (IMC), International Energy Conservation Code, IECC, International Residential Code, IRC.
- All Armacell facilities in North America are ISO 9001 certified.
- ASTM D1056, 2C1
- CAN/ULC S102
- UL 94 File Number E535094

Property	Value / Assessment					Standard / Test method
Temperature range						
Service temperature	Range	Min. °C	Min. °F	Max. °C	Max. °F	ASTM C534[1,2,3,4]
	3/8" through 1" Walls (NBR/PVC-based)	-183	-297	105	220	
	1-1/2" and 2" Walls (EPDM-based)	-183	-297	150	300	
	Remarks	82 °C (180 °F) — Full bonding sheet insulation				
Thermal conductivity						
Declared thermal conductivity	θm	75 °F (24 °C)		100 °F (38 °C)		ASTM C518, ASTM C177
	λd ≤ [W/(m·K)]	0.0353		0.037		
	k ≤ [Btu·in/(h·ft²·°F)]	0.245		0.257		
	Range	3/8" through 1" walls (NBR/PVC products)				
Declared thermal conductivity	θm	75 ° F (24 °C)		100 °F (38 °C)		ASTM C518, ASTM C177
	λd ≤ [W/(m·K)]	0.040		0.041		
	k ≤ [Btu·in/(h·ft²·°F)]	0.28		0.289		
	Range	1 1/2" and 2" Walls (EPDM based)				
R-Value for sheets and rolls[5,6]	Wall thickness	R-value				
	1/2" (13mm)	2.1				
	1" (25mm)	4.2				
	1-1/2" (38mm)	6				
	2" (50mm)	8				
Fire Performance and Approvals						
Hot surface performance	Pass					ASTM C411[1]
Surface burning characteristics	Flame Spread Index of less than 25 and Smoke Developed Index of less than 50, 25/50 rated.					ASTM E84 and UL 723, CAN ULC S102[7]

Property	Value / Assessment				Standard / Test method
Resistance to water					
Water absorption	0.2% by volume				ASTM C209, ASTM C1763[8]
Physical attributes					
Density	3 to 6 pounds per cubic feet (48 to 96 kilograms per cubic meter)				ASTM D1667
Acoustic performance					
Sound absorption average	Thickness (mm)	25	38	50	ASTM E90[9]
	Thickness (inches)	1	1.5	2	
	SAA	0.38	0.49	0.51	
Octave band sound absorption coefficient, α	Thickness	1" (25mm)	1-1/2" (38mm)	2" (50mm)	
	125 Hz	0.01	0.07	0.14	
	250 Hz	0.13	0.26	0.62	
	500 Hz	0.39	0.92	0.44	
	1000 Hz	0.69	0.31	0.43	
	2000 Hz	0.29	0.49	0.51	
	4000 Hz	0.26	0.53	0.45	
Sound transmission class, STC	25 at Nom. 1/2" (13 mm) 25 at Nom. 1/2" (13 mm)				ASTM E 413
Weather and UV resistance					
Outdoor use	Painting with WB Finish or other protective jacketing is required to prevent damage to the insulation in exterior applications and to comply with the insulation protection sections of the International Energy Conservation Code (IECC) and ASHRAE 90.1.				
Health and environment					
Mould growth	Pass				UL 181
Fungal growth	Pass				ASTM G21, ASTM C1338
Other technical features					
Erosion resistance	Does not break away, flake off or show evidence or delamination at velocities of 10,000 ft/min				ASTM C1071

[1] AP/ArmaFlex insulation can withstand temperatures as high as 250 °F (121 °C) when tested according to ASTM C411 - Standard Test Method for Hot-Surface Performance of High-Temperature Thermal Insulation.

[2] 1-1/2" and 2" AP/ArmaFlex tubes and AP/ArmaFlex FS sheets are formulated with EPDM rubber giving them a higher maximum service temperature as compared to other AP/ArmaFlex products.

[3] At temperatures below -20°F (-29°C), elastomeric insulation starts to become less flexible. However, this does not affect the performance of AP/ArmaFlex in terms of thermal efficiency and resistance to water vapour permeability.

[4] For applications of -40 °F to -297 °F (-40 °C to -183 °C) contact Armacell.

[5] Please see technical bulletin #1 for more details.

[6] These specifications are based on the measurements methods employed by Armacell. Other methods may not result in the same values and cannot be used to determine if the product is within the given tolerance.

[7] CAN/ULC S102 up to 1" thickness.

[8] Procedure B

[9] Type A Mounting

ArmaFlex | AP/ArmaFlex Ductliner | TDS | 042025 | en-CA

ABOUT ARMACELL

As the inventor of flexible foam for equipment insulation and a leading provider of engineered foams, Armacell develops innovative and safe thermal and mechanical insulation solutions that create sustainable value for its customers. Armacell's products significantly contribute to driving energy efficiency worldwide. With more than 3,300 employees and 25 production plants in 20 countries, Armacell operates two main businesses, Advanced Insulation and Engineered Foams. Armacell focuses on insulation materials for technical equipment, high-performance foams for acoustic and lightweight applications, recycled PET products, next-generation aerogel technology and passive fire protection systems.

armacell®
ArmaFlex®

For more information, please visit:
www.armacell.com