



Pennguard™ Adhesive/Membrane

SELECTION & SPECIFICATION DATA

Type	Elastomeric urethane asphalt
Description	Pennguard Adhesive/Membrane is a 2-component trowel applied urethane-asphalt flexible membrane and adhesive.
Uses	<p>Pennguard Adhesive/Membrane is a component of the Pennguard Block Lining System used to bond and bed Pennguard Block to the underlying substrate.</p> <p>It also functions as the seamless membrane beneath the insulating Pennguard Block layer to protect the substrate from chemical attack.</p>
Features	<ul style="list-style-type: none">• Strong adhesion to Pennguard Block, steel, concrete, ceramic brick, fiber reinforced plastic (FRP) and glass reinforced plastic (GRP).• Excellent resistance to acidic flue gas environments• Capable of bridging cracks in concrete and ceramic brick substrates• Suitable for vertical and overhead application• Factory Mutual (FM) tested and approved for use in chimney flues as a component of the Pennguard Block Lining System
Limitations	Not for use beyond its chemical resistance or thermal capabilities. Consult Armor with specific questions.

INSTALLATION GUIDANCE

Reference Specifications	CES-354 CES-355	Armor Specifications for Installation of the Pennguard Block Lining System on concrete brick and steel.
Installation Conditions	Pennguard Adhesive/Membrane is formulated for use at temperatures between 50°F (10°C) and 95°F (35°C). Maintain temperatures at least 5°F (3°C) above the moisture dew point.	
Ratio	46 parts Part A base: 1 part Part B hardener by weight. Mix full units only.	
Mixing	Using the Jiffler mix blade specified in Armor installation specification CES-350, loosen the Part A base by pre-mixing it for 1 minute. Slowly add the entire contents of the can of Part B hardener to the pail of Part A base. Thoroughly mix the material for a minimum of 3 minutes, moving the mix blade up, down and around the inside of the pail, taking care to brush the sides, bottom, and corners of the pail.	
Pot Life	45-55 minutes at 70°F (21°C)	
Cleanup	Mineral spirits	
<u>CURE TIME</u>		
Temperature	Dry-to-Touch	Full Cure
70°F (21°C)	2-4 hours	72 hours
<u>SAFETY</u>		
Safety	Mixes and applications of this product present a number of hazards. Read and follow the hazard information, precautions and first aid directions on the individual product labels and safety data sheets before using.	
Ventilation	Provide thorough air circulation during and after application until the material has cured when used in enclosed areas.	



Pennguard™ Adhesive/Membrane

PACKAGING & ESTIMATING

Product	Code	Packaging
Pennguard Adhesive/Membrane Kit, Part B hardener shipped inside Part A pail	19671	4-gallon kit for ground transportation within U.S.A. and Canada
Pennguard Adhesive/Membrane Part A Base	19672	4-gallon pail for ground or ocean transportation
Pennguard Adhesive/Membrane Part A Base	19681	4-gallon pail for air transportation
Urethane Asphalt Hardener Part B	29488-341	0.6 lb (341 gram) can

A 4-gallon (15 L) unit consists of 1 x 4-gallon pail of Part A and 1 x 0.6 lb (341 gram) can of Part B.

Theoretical Coverage	<p>A mixed 4-gallon unit will theoretically install 90 pieces of 1.5 x 6 x 9-inch Pennguard Block and 82 pieces of 2 x 6 x 9-inch Pennguard Block with 1/8-inch (3 mm) side and bed joints.</p> <p>Substrate surface irregularity and normal pail wastage substantially reduce actual coverage.</p> <p>Experience indicates a 1/3 reduction in the actual number of pieces installed per unit on steel and further reduction on concrete or ceramic brick.</p> <p>Consult Armor for specific application advice and estimating assistance.</p>
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Storage & Shelf Life	<p>Maintain products in original packaging and sealed until ready for use. Estimated shelf life for the Part A base and Part B hardener is 3 years when stored in a dry area at 70°F (21°C).</p> <p>If there is any question with respect to the quality of the components, check reactivity prior to use. For assistance consult with Armor.</p>
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TYPICAL PHYSICAL PROPERTIES

Property	Typical Value
Color	Black
Density, ASTM D71	8.7 lb/gal (1.0 kg/L)
Elongation, ASTM D412	>100%
Tensile strength, ASTM D412	>100 psi (0.7 MPa)
Fire resistance	Factory Mutual (FM) approved Consult Armor for details.
Service temperature	-40°F (-40°C) to 200°F (93°C) when measured at the substrate bond line behind the block
	Pennguard Block insulates the Pennguard Adhesive/Membrane when used as part of Pennguard Block Lining System. As a result, the maximum face temperature limits for Pennguard Block Lining System substantially exceed the maximum service temperature limits at the substrate bond line behind the block.
	Consult Armor for maximum service temperature limits for specific applications.

Rev 11/2025

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