



DOW CORNING

Building and Construction Solutions

# Dow Corning® Building Insulation Blanket

Application Guide



flexible

fire resistance

high performance

easy application

thin

hydrophobic

Thermal protection for hard-to-insulate spaces

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## Introduction

This application guide is intended to give guidance on proper procedures for the application of *Dow Corning*<sup>®</sup> Building Insulation Blanket. As construction projects vary in many aspects, such as design, customer requirements and environment, this guide cannot be considered a comprehensive quality assurance program for all situations.

## Product

The *Dow Corning*<sup>®</sup> Building Insulation Blanket Application Guide applies to the following product:

- *Dow Corning*<sup>®</sup> HPI-1000 Building Insulation Blanket

## Product description

*Dow Corning* HPI-1000 Building Insulation Blanket is a thin insulation product with significantly improved thermal resistance when compared to conventional insulation. Its thin profile, superb flexibility and compression resistance allow for thermal protection in hard-to-insulate spaces. It can be easily cut and conformed to complex shapes and tight curvatures and adhered without difficulty to most common building substrates.

*Dow Corning* Building Insulation Blanket is based on silicon aerogel technology. Silicon aerogels, which are ultraporous, ultralight solid materials with unique properties, are made by converting silica in chemical form into a highly solvated silica gel. A specialized process is then used to remove the solvent from the gel without collapsing the delicate remaining physical structure. The result is a solid material that is chemically similar to sand or glass, but with a physical structure and porosity that enable it to trap air molecules, such that the density and thermal conductivity are extremely low. Its unique combination of thermal conductivity, fire resistance, vapor permeability, flexibility and ease of installation makes it an ideal material for use in building and construction.

## Applications

*Dow Corning* Building Insulation Blanket is intended for applications including:

- Providing continuity in thermal insulation transitions
  - Where below-grade systems meet above-grade wall systems.
  - Where glazing systems meet wall systems
  - Where design results in exposed or underinsulated slab edges
  - Where additional thermal insulation is required at curtainwall mullions (mullion wrap)
  - Parapet applications
- Providing a thermal break between highly conductive elements
  - Thermal shim or spacer
- Problem-solving
  - Retrofit interior insulation of mass walls
  - Reducing thermal flanking around window openings
- Maintaining code-compliant continuous insulation in limited spaces

## Compatibility

*Dow Corning* Building Insulation Blanket is compatible with the *Dow Corning*<sup>®</sup> brand high-performance building products listed below:

### Air barrier products

- *Dow Corning*<sup>®</sup> DefendAir 200 liquid applied air barrier
- *Dow Corning*<sup>®</sup> 778 Silicone Liquid Flashing
- *Dow Corning*<sup>®</sup> 758 Air Barrier Sealant
- *Dow Corning*<sup>®</sup> Silicone Transition System (STS)

### Weatherproofing sealants

- *Dow Corning*<sup>®</sup> 791 Silicone Weatherproofing Sealant
- *Dow Corning*<sup>®</sup> 795 Silicone Building Sealant
- *Dow Corning*<sup>®</sup> 790 Silicone Building Sealant
- *Dow Corning*<sup>®</sup> 756 SMS Building Sealant
- *Dow Corning*<sup>®</sup> 758 Air Barrier Sealant

### Structural glazing sealants

- *Dow Corning*<sup>®</sup> 795 Silicone Building Sealant
- *Dow Corning*<sup>®</sup> 983 Structural Glazing Sealant
- *Dow Corning*<sup>®</sup> 995 Silicone Structural Sealant

### Other adhesives

*Dow Corning* HPI-1000 Building Insulation Blanket is generally compatible with water-based adhesives.

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## Application

The blanket can be cut in numerous ways, including electric fabric-cutters, shears, die-cutting or utility knives. When cutting and forming, the material can fray when disturbed, which makes it more difficult to work with. Compressing the cut line with a straightedge while cutting with a sharp razor knife can minimize fraying of the edge.



Cutting Dow Corning® Building Insulation Blanket with a utility knife.

## Attachment

The fastening method depends on the needed green strength and the backing support for the insulation. A field test should be performed prior to full-scale installation to determine the appropriate attachment method.

Attachment methods:

- Common construction materials – Apply 3/16" ribbons of approved Dow Corning® brand silicone sealant and press the insulation flat against the ribbons to adhere.
- Plastics and air barriers – Apply 3/16" ribbons of Dow Corning 758 Air Barrier Sealant and press the insulation flat against the ribbons to adhere.
- Mechanical fasteners can be used to attach the Dow Corning Building Insulation Blanket or to support it while adhesives cure.
- Higher-green-strength spray adhesives and/or contact cements work well when it is necessary to make sharp curves and bends in the material.

Contact your Dow Corning representative if you have attachment questions.

## Surface prep

Both the building surface and Dow Corning Building Insulation Blanket should be dry; sound; and free of dirt, foreign objects and protrusions greater than 1/8".

## Ambient conditions

Do not install insulation in the rain, in adverse precipitation or in wind conditions that would affect the quality of the installation or the cure of the adhesives selected. Follow manufacturer's guidelines for the adhesives used.

## Exposure

If installed securely, the blanket may be exposed to weather prior to installing the cladding, with minimal impact on performance. Dow Corning Building Insulation Blanket should be protected if exposed to areas that are subjected to mechanical abrasion and traffic.

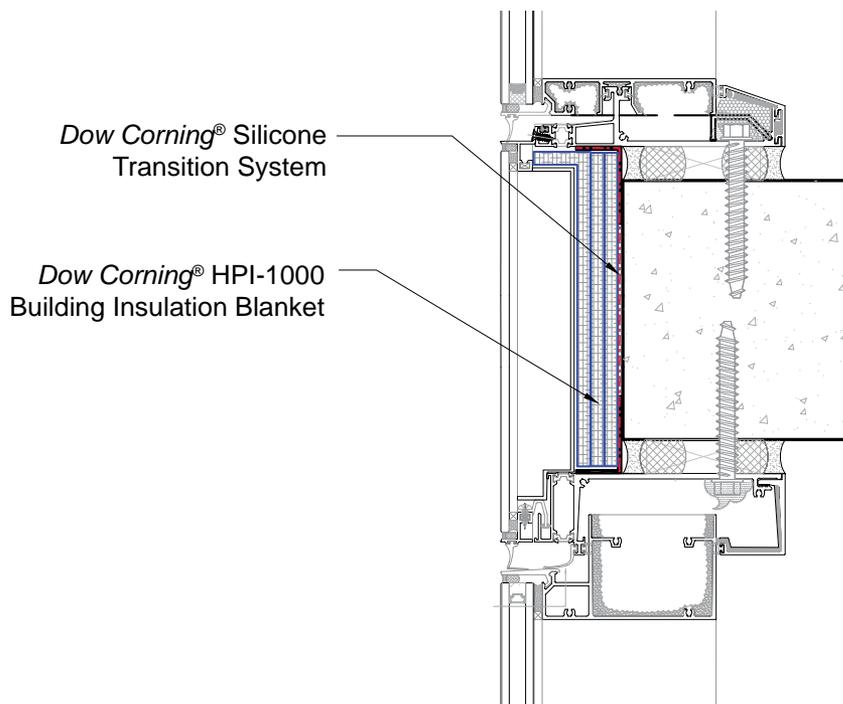
## Visible surfaces

If an area of Dow Corning Building Insulation Blanket is to be permanently exposed, such as behind a back-ventilated cladding system, a coat of tinted Dow Corning® AllGuard Silicone Elastomeric Coating may be applied to the visible area for improved aesthetics.

## Typical applications and installation guidance

Illustrations on the following pages are provided as guidance and to suggest how products from Dow Corning may be incorporated into a project.

## Slab Edge Application



### Installation procedure



1. Apply a bead of *Dow Corning* weatherproofing sealant to the *Dow Corning* Building Insulation Blanket.



2. Firmly press the blanket to the slab edge to ensure good contact of the sealant to the substrates.



3. Secure the insulation blanket, ensuring a sharp corner fold for best fit.

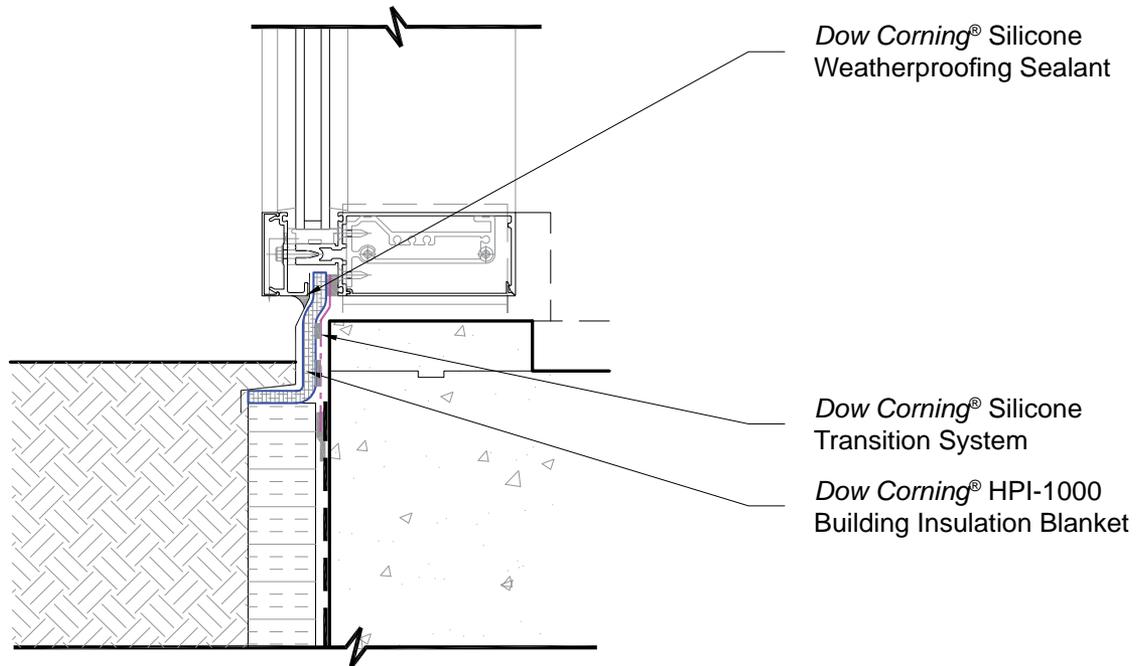


4. Continue with curtainwall installation using standard construction techniques.

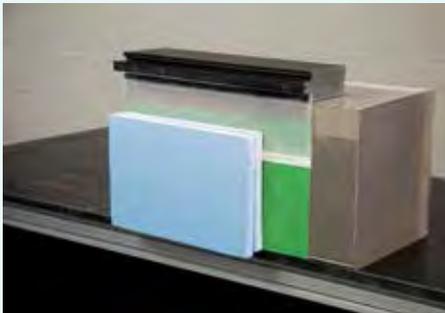


5. Completed installation.

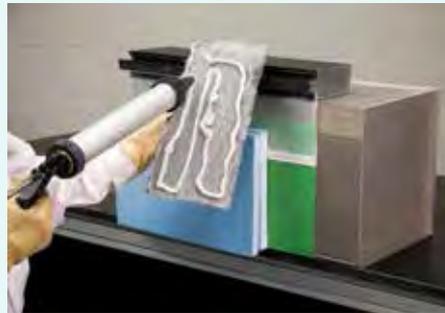
## Slab Grade Application



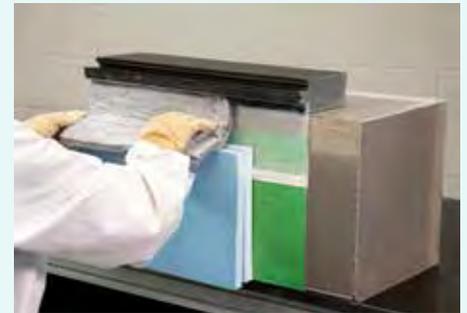
## Installation procedure



1. Prepare window-curtainwall transition area.



2. Apply a bead of *Dow Corning* weatherproofing sealant to the *Dow Corning* Building Insulation Blanket.



3. Firmly press the blanket to the wall to ensure good contact of the sealant to the substrates.

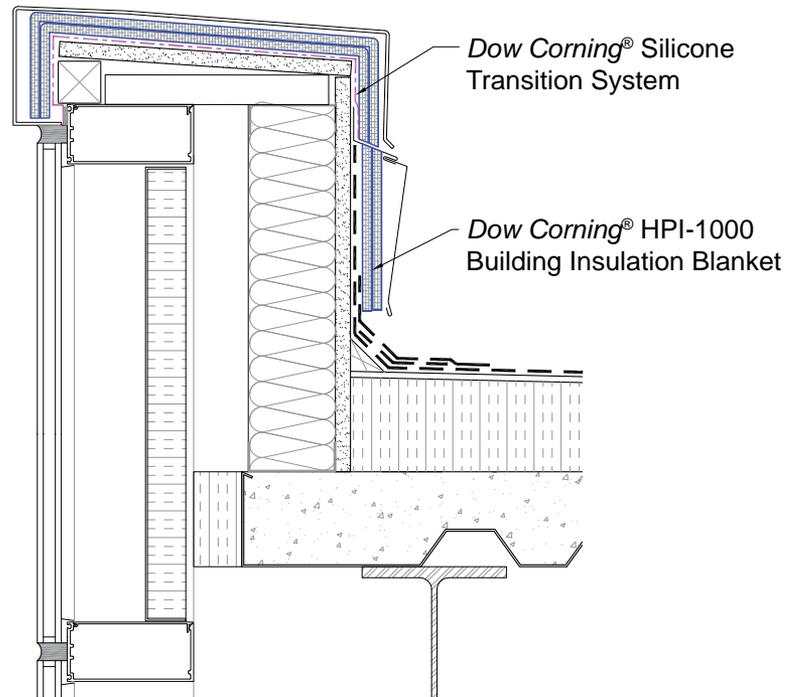


4. Apply flashing over the insulation blanket using standard installation techniques.

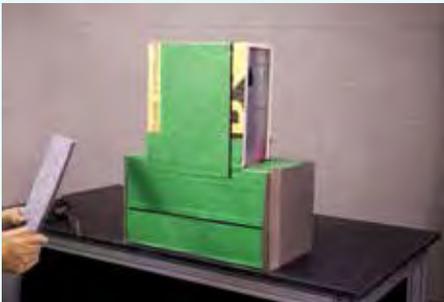


5. Continue with installation of additional components.

## Parapet Application



### Installation procedure



1. Cut *Dow Corning* Building Insulation Blanket to the needed size and shape.



2. Apply a bead of *Dow Corning* weatherproofing sealant to the *Dow Corning* Building Insulation Blanket.



3. Firmly press the blanket to the wall to ensure good contact of the sealant to both substrates.

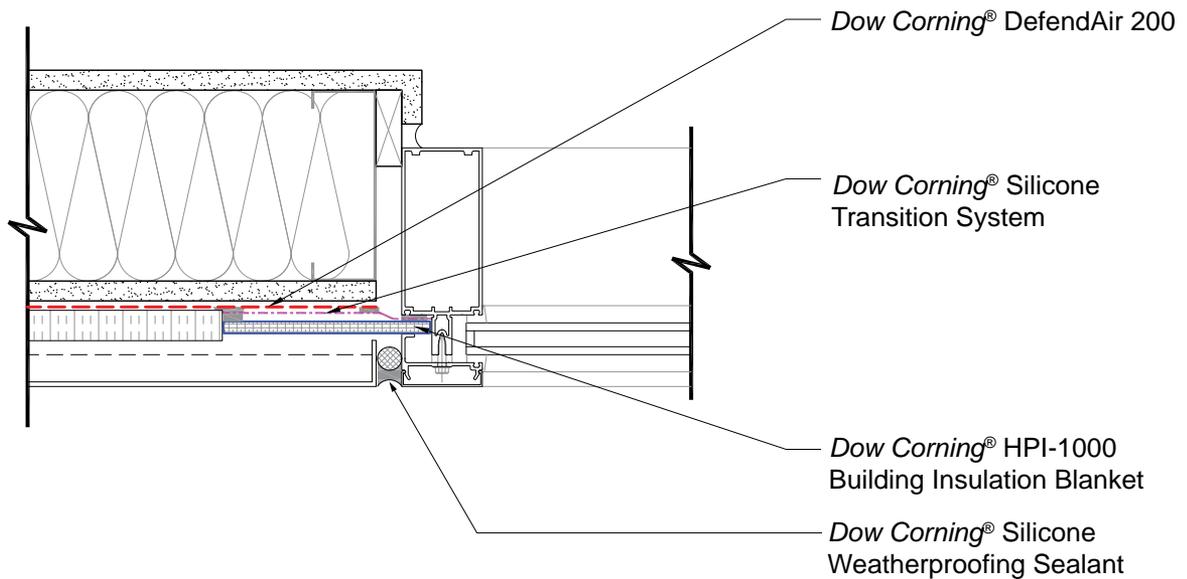


4. Crease a sharp corner fold into the insulation blanket to ensure optimum aesthetics and fit.



5. Completed installation.

## Window-Wall Transition Application



### Installation procedure



1. Install window-curtainwall transition materials – including the *Dow Corning* Silicone Transition System and *Dow Corning* 778 Liquid Flashing – as required.



2. Apply a bead of *Dow Corning* weatherproofing sealant to the *Dow Corning* Building Insulation Blanket.

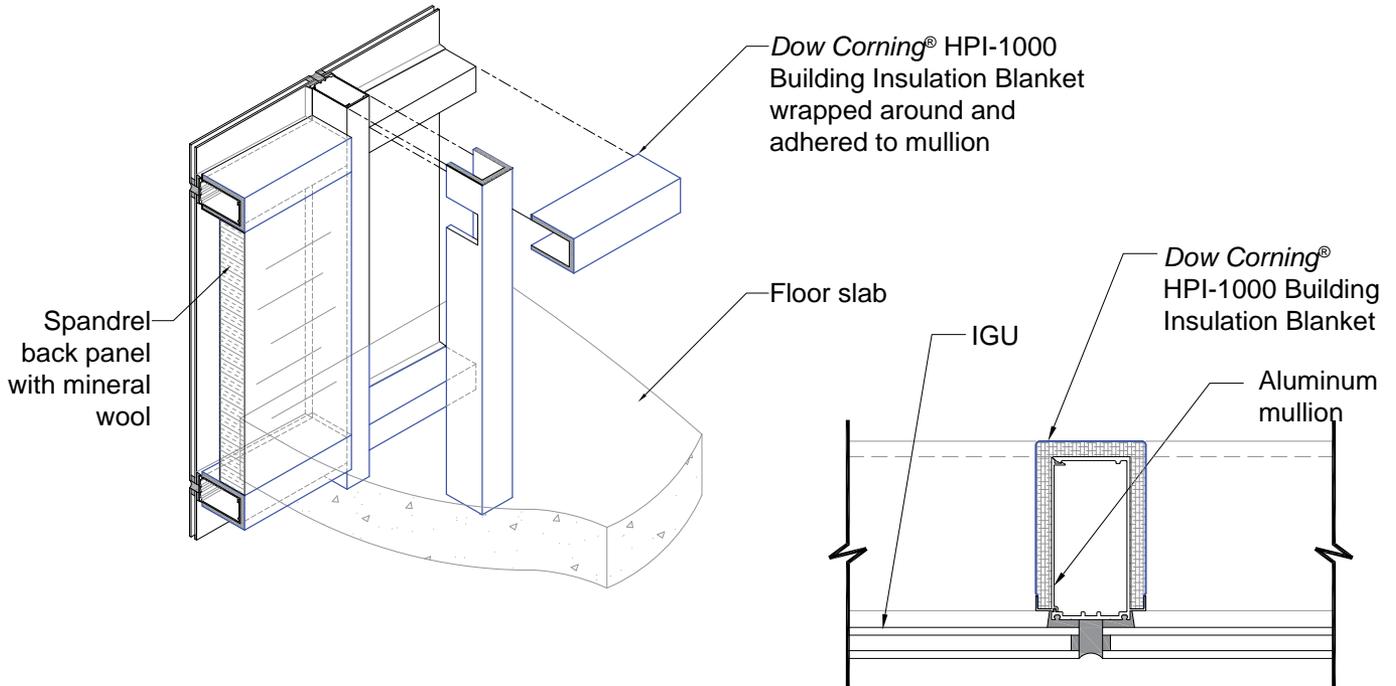


3. Firmly press the blanket to the wall to ensure good contact of the sealant to the substrates.



4. Completed installation.

## Interior Mullion Wrap Application



### Installation procedure



1. Apply spray adhesive to the back side of the *Dow Corning* Building Insulation Blanket.



2. Apply spray adhesive to the mullion.



3. Firmly apply the *Dow Corning* Building Insulation Blanket to the mullion to ensure good adhesion.



4. Completed installation.

## Continuous and Layered Applications

### Installation procedure



1. Apply a bead of *Dow Corning* weatherproofing sealant to the *Dow Corning* Building Insulation Blanket.

2. Layer the insulation blanket to achieve the necessary thickness for the thermal performance required. For best thermal performance, ensure that successive layers overlap the seams of the underlying layer.

Note:  
*Dow Corning* Building Insulation Blanket also can be affixed using mechanical fasteners, such as nail guns.

## Packaging

*Dow Corning* HPI-1000 Building Insulation Blanket is available in a 10 mm thickness. The material is available in a large roll size (approximately 750 sq ft per roll) or smaller rolls in varying widths.

### Standard Roll Sizes

Package	Width, in	Length, ft	Width, mm	Length, m
Large Roll	58 ±2	approx. 150	1,473 ±50	approx. 45.7
Small Roll	1	50	25.4	15.2
	2	50	50.8	15.2
	3	50	76.2	15.2
	4	50	101.6	15.2
	5	50	127	15.2
	6	50	152.4	15.2
	7	50	177.8	15.2
	8	50	203.2	15.2
	9	50	228.6	15.2
	10	50	254	15.2
	11	50	279.4	15.2
	12	50	304.8	15.2



*Small rolls are available in a variety of widths.*



*Large rolls also are available.*

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## Storage

*Dow Corning* Building Insulation Blanket should be stored in a dry environment, out of harsh weather conditions such as rain or snow. Excessively handled material can fluff to larger than its original dimension.

## Limitations

This product is neither tested nor represented as suitable for medical or pharmaceutical uses. This product is neither tested for nor recommended for use in residential applications.

*Dow Corning* HPI-1000 Building Insulation Blanket is not recommended for:

- Long-term exposure to, or submersion in, water or other fluid mediums.
- Use in applications that result in permanent direct UV exposure. Partially concealed (e.g. open-joint) cladding applications are acceptable.
- Applications for air-handling vents, or HVAC.
- Applications that subject the product to:
  - Repeated striking
  - Mechanical abrasion
  - Continuous submersion in water or other fluid mediums
  - Contact with oils and solvents

## Dust

When cutting or handling the blanket, a light-colored dust is sometimes noticeable. This dust is comprised of amorphous silica aerogel, which because of its light nature can float, leading to skin, respiratory and eye exposures when handling. The dust is nontoxic, but it may cause irritation.

Effects include:

- A sensation of dryness to skin
- Irritation to eyes, skin and respiratory tract

These effects are not unique to aerogels and are consistent with the handling of dusty materials. When inhaled in sufficient amounts, any dust or particulate will cause respiratory effects. Excessive exposure to any type of dust can cause skin or mucous membrane irritation by chemical or mechanical action or rigorous skin-cleaning.

Exposure guidelines are provided in the safety data sheet (SDS).

## Exposure control/personal protective equipment

Workplace exposure to dust can be minimized with proper handling, ventilation and personal protective equipment (PPE). Tips and guidelines for proper care include:

### General housekeeping

- Keep workplaces clean. Do not allow opened insulation blanket to accumulate.
- Keep blankets in their original packaging until ready for use.
- Unpack the material in the work area to help minimize the dust exposure area.
- Promptly pack trimmed material and scrap in disposal bags.
- Promptly clean up any dust released during the handling of aerogel blankets. Dry vacuuming using a HEPA (high-efficiency particulate air) filter is the preferred method for cleaning of dust. Sweeping is not effective for picking up aerogel dust. Since aerogel dust is hydrophobic, water is not effective as a dust control agent.

### Ventilation

- Ensure adequate ventilation and comply with SDS guidelines and/or local regulations such as OSHA. In most cases, an outdoor or open environment will provide sufficient ventilation. If dust is noticed to accumulate or if the blanket is used indoors, provide forced ventilation sufficient to reduce the dust to below the targeted threshold.
- If dust cannot be reduced, or as an additional level of protection, use a paper mask or respirator capable of removing dust to within SDS guidelines.

### Skin protection

- General – Silica aerogels may cause drying and irritation of the skin, eyes and mucous membranes. After working with the blanket, the dust can be washed from the skin using soap and water.
- Hands – Disposable nitrile, latex or other impermeable gloves offer protection from the dry feel from handling the blanket.
- Eyes – Glasses with side shields are recommended if ventilation is adequate. If not, goggles are recommended. Do not rub eyes or touch face while working with the blanket.
- Skin – Long sleeved, long-legged work clothes are advised. Disposable coveralls may be convenient and effective in minimizing skin exposure.

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## Cleanup/disposal

The blanket can be safely disposed per local regulations.

## Contact us

Dow Corning is collaborating with industry professionals around the world to improve the energy efficiency of buildings, offer long-lasting solutions and provide excellent technical support. Taking a holistic approach, Dow Corning brings together expertise from across the company to help customers find answers to a wide range of high performance building challenges. Dow Corning Building and Construction Solutions include proven materials for structural and protective glazing, weatherproofing, insulating glass, window and door fabrication, and building materials protection, as well as innovations for high-efficiency insulation, LED lighting, thermal management systems, and the incorporation of photovoltaic cells and solar panels into building design. Learn more about our full range of Building and Construction Solutions, including service and support, at [dowcorning.com/construction](http://dowcorning.com/construction).

Dow Corning has sales offices, manufacturing sites, and science and technology laboratories around the globe. Find local contact information at [dowcorning.com/ContactUs](http://dowcorning.com/ContactUs).

For the most up-to-date information about *Dow Corning* Building Insulation Blanket, visit the High Performance Insulation webpage at [dowcorning.com/HPInsulation](http://dowcorning.com/HPInsulation).

Images: Cover – AV21735, AV23495, AV23489, AV22459; Page 3 – AV21735; Page 4 – AV23442, AV23444, AV23449, AV23451, AV23452; Page 5 – AV23629, AV23631, AV23633, AV23635, AV23636; Page 6 – AV23469, AV23471, AV23473, AV23476, AV23479; Page 7 – AV23637, AV23638, AV23642, AV23645; Page 8 – AV23461, AV23623, AV23626, AV23462; Page 9 – AV23456, AV23459, AV23466, AV23480, AV23453

### HANDLING PRECAUTIONS

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW CORNING WEBSITE AT [DOWCORNING.COM](http://DOWCORNING.COM), OR FROM YOUR DOW CORNING SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CORNING CUSTOMER SERVICE.

### LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY

The thermal properties of *Dow Corning*® HPI-1000 Building Insulation Blanket are based on actual testing and best engineering practices and estimates. Dow Corning makes no representation, warranty or guarantee regarding the thermal performance of any particular system or application in which *Dow Corning* HPI-1000 Building Insulation Blanket may be incorporated; results may vary.

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Dow Corning's sole warranty is that our products will meet the sales specifications in effect at the time of shipment.

Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

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