

NIA/AMPP INSULATION INSTALLATION STANDARDS/GUIDELINES UPDATE

2026 NIA Fall Summit

Speakers:

Jeff DeGraaf, NIA Consultant (NIA/AMPP SC 27 Chair)

Scott Sinclair, NIA Consultant (SC 27 Vice Chair)

Michael Pardo, S&B Engineers & Constructors (SC 27 Secretary)

NIA | National Insulation Association®

THE VOICE OF THE INSULATION INDUSTRY™

NIA/AMPP Insulation Installation Standards/Guidelines Leadership



Jeff DeGraaf, NIA Consultant
SC 27 Chair



Scott Sinclair, NIA Consultant
SC 27 Vice Chair



Michael Pardo, S&B Engineers and Constructors
SC 27 Secretary

NIA/AMPP Mechanical Insulation Installation Standards/Guidelines

NIA and the Association for Materials Protection and Performance (AMPP) have partnered to develop standard practices and guidelines in areas related to mechanical insulation in the commercial and industrial markets.

Importance for Industry

- These are “installation standards/guidelines.”
- Standards will be material neutral.
- Includes owner/operator, EPC, manufacturer, distributor, fabricator, and contractor perspectives.
- Intended to complement material/installation details provided by engineering specifications or manufacturer guidelines (Controlling Documents) or provide missing detail.
- This current list of drafts are being developed in response to a survey of engineers, manufacturers, distributors, fabricators, and contractors asking about the biggest challenges they encounter with the design, installation, maintenance and performance of insulation systems.

NIA Working Group Milestones

Drafts in Progress:

- **Vapor Retarders/Vapor Stops** *(Document Program Manager/Lead: Erica Schneider, Bartelt Insulation)*
- **Damaged Insulation** *(Document Program Manager/Lead: Scott Sinclair, NIA Consultant)*
- **Flanges** *(Document Program Manager/Lead: Lee Stuckenschmidt, Systems Undercover)*
- **Pipe Supports** *(Document Program Manager/Lead: Darrell Peil, Knauf)*

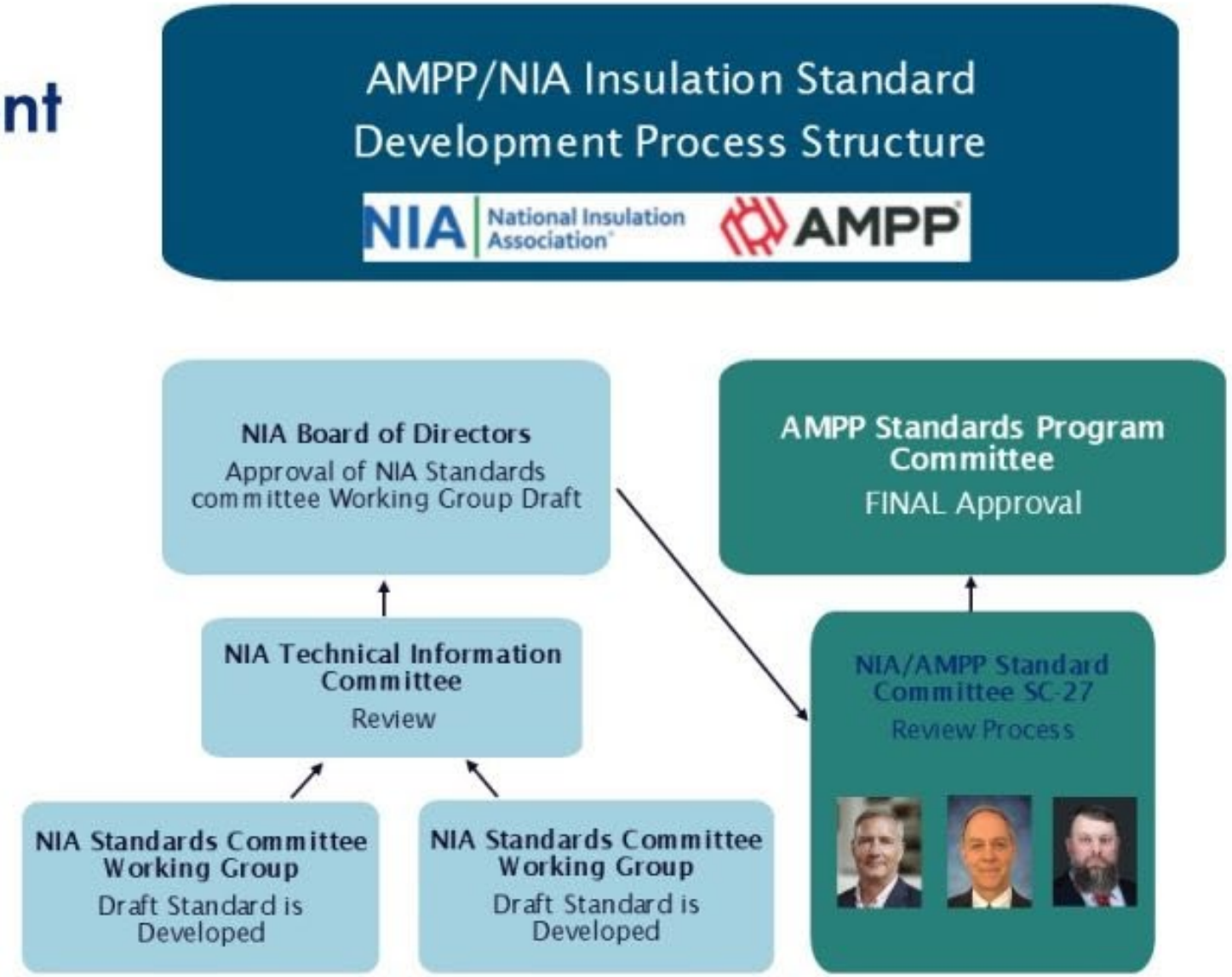
Working Groups Process & Stats:

- 35 meetings held in 2026
- More than 40 volunteers
- Each working group meets every 4–6 weeks for 1–1.5 hours
- Writing is not a requirement for participation– your expertise is needed
- Working groups start with an outline and develop drafts from there
- Contractor participation is key

Insulation Standard Practice Development Process

Through a joint working agreement between NIA and AMPP, the mechanical insulation standards will be:

- developed through NIA's Standards Working Groups
- approved by NIA's TIC and Board
- Submitted to the NIA/AMPP SC 27 Committee
- Reviewed by the AMPP Standards Program Committee for final approval



Components of Each Insulation Installation Standard

Each Mechanical Insulation Installation Standard Includes the Following:

- Foreword
- Rationale
- Reference Standards and Other Consensus Documents
- Scope
- Definitions
- Technique and Workmanship
- Materials
- Installation Instructions

Vapor Retarders: Installation (Sample)

3.2 Workmanship

Best practice is to install the vapor retarder before installing the vapor stops so that vapor stop materials can be applied over and sealed directly to the vapor retarder, providing a continuous vapor-control system.

3.2.1 Workmanship in the installation of vapor retarder system components is extremely critical.

A properly installed vapor retarder should exhibit the following characteristics:

Continuous vapor-tight envelope.

Smooth, tight-fitting installation with no wrinkles, fish mouths, or bridging.

Fully bonded seams and terminations.

Proper watershed orientation of all overlaps where applicable.

No visible gaps, punctures, tears, or unsealed penetrations.

Complete integration with vapor stops, flashings, and other system components.

Vapor Stops: Installation (Sample)

5.1 Vapor Stops Using Mastic and Reinforcing Mesh

5.1.1 Preparation

- Verify installed insulation is securely fitted to the pipe surface.
- Ensure insulation joints are tight, smooth, and free of voids or damage.
- Remove dust, debris, moisture, oil, or other contaminants from the pipe surface and exposed insulation surfaces and VR jacket
- Verify the pipe surface is dry and suitable for application of vapor stop materials.

5.1.2 Material Preparation

5.1.3 Apply Initial Mastic Coat

- Mastic shall extend out from the insulation termination a minimum of 2” onto the bare pipe, ensuring it completely covers the exposed insulation and back onto the VR jacket a minimum of 2”.
- Ensure the mastic forms a continuous coating without gaps, pinholes, or voids.

5.1.4 Install Reinforcing Mesh

- While still tacky, fully embed the mesh into the wet mastic.

Damaged Insulation: Installation (Sample)

4.1 Physical Damage

4.1.1 Identification – Gaps at joints, cracks, or holes in the protective covering, or any areas of exposed insulation should be identified.

4.1.2 Severity Determination – Damage to protective coverings, such as crushing, deformation, openings, bends, cracks, or any penetrations, can allow moisture to enter the insulation system. Assess whether the protective covering is a reusable material and is in undamaged condition. If so, it can be reused. Otherwise, replacement is required.

4.1.3 Remedy – Removal of protective covering(s), inspection of insulation (see section 5), reinstallation, replacement, or installation of additional layers of the protective covering with consideration for the covering types that meet the application's physical demands.

4.1.3.1 Physical damage to the protective covering through the course of normal use may be predictable and preventable by following industry best practices, such as:

a. The application or reinstallation of high compression strength insulation and protective coverings if the instigating issue was the result of events likely to re-occur (i.e., regular maintenance, impacts with machinery, or normal construction processes), and

b. The application of proper tension of any banding around the protective covering (not too tight or too loose) to ensure proper closure and prevent crushing or kinking of the protective covering.

c. The use of appropriate mechanical securement (screws, s-clips) of the protective covering on vertical applications to prevent "telescoping."

Flanges: Installation (Sample)

7.1 Permanent Insulation

7.1.1 Preparation:

7.1.1.1 Examine the system being insulated including existing insulation if present.

7.1.1.2 Identify the item to receive oversize insulation (valves, flanges, etc.)

7.1.1.3 Select an insulation material, if not already defined by the controlling documents, based on the environment and operating temperature of the underlying system. Typically, this would be the same material used on the adjacent piping.

7.1.1.4 Regarding ambient conditions and dew points:

- Specific site and system conditions including but not limited to humidity, ambient, and operating temperatures, insulation surface temperature, and dew points must be taken into consideration when determining overall vapor retarder requirements.

For Moderate to Hot systems (61°F to 450°F / 16°C to 232°C), an additional facing may not be necessary for maintaining thermal performance but will substantially improve the aesthetic and provide additional protection to the insulation itself.

For Cold systems (-49°F to 60°F / -45°C to 16°C), a combination of film and/or coating vapor retarder products should be utilized to maintain a continuous vapor retarder around the insulation system and incorporate internal vapor stops as needed.

Pipe Supports: Installation (Sample)

5.1 Above-Ambient Pipe Supports External to the Insulation System

The following installation procedures apply to above-ambient piping where clevis hangers, trapeze hangers, split ring hangers, rollers, U-bolts, or similar pipe-support components are located outside the insulation system.

5.1.1 Verify that sufficient space is available at the pipe-support location to accommodate the required insulation thickness, protective covering, and support components.

5.1.2 Install high-compressive-strength insulation at the pipe-support location. The insulation shall be suitable for the operating temperature and capable of supporting the anticipated load without excessive compression or deformation.

5.1.3 The thickness of the high-compressive-strength insulation shall equal the thickness of the adjoining pipe insulation.

5.1.4 Fit the adjoining pipe insulation tightly against the high-compressive-strength insulation to maintain continuity of the insulation system and minimize gaps or voids.

5.1.5 Install and secure the protective covering continuously through the support location as required by the Controlling Documents.

Understanding NIA/AMPP SC 27, Mechanical Insulation

- Who is the Association of Materials Protection and Performance (AMPP)?
- AMPP Standards Review and Balloting Process
- Getting Involved in the NIA/AMPP Joint SC 27, Mechanical Insulation committee

2027: Next Drafts/Getting Involved

- Weather Vapor Sealant
- Protective Coverings – Metal Jackets
- Rigid Pipe Insulation
- Valves
- Joint Sealant on Below Ambient Pipe
- Caulking

Interested in lending your talents to the development of Standards? Sign up here:

Questions?

Thank you!

For more information about getting involved in the standards/guidelines development process, email membership@insulation.org.

