



2025 Texas Roofing Conference
Round Rock, Texas – September 18, 2025

Technical issue update – Steep- and low-slope roofing

presented by

Mark S. Graham
Vice President, Technical Services
National Roofing Contractors Association (NRCA)



Past presentations... at least the recent, local ones

2022 RCAT (Low-slope): [Link](#)

2022 RCAT (Steep-slope): [Link](#)

2023 HARCA: [Link](#)

2023 RCAT (Low- and steep-slope): [Link](#)

2025 RCAT Texas Roofing Conference Schedule of Events

Wed 9/17/2025

8:00AM - 5:00PM	Tradeshow/Registration Setup (Convention Center Lower Level, Kilimanjaro Ballroom)
8:30AM - 3:00PM	RCAT Golf Tournament at Teravista Golf Club (4333 Teravista Club Dr, Round Rock, TX 78665)
3:00PM - 6:00PM	Exhibitor Setup (Convention Center Lower Level, Kilimanjaro Ballroom)
6:30 PM – 8:00 PM	Welcome Reception at the Kalahari Event Barn

Thu 9/18/2025

6:30AM - 5:00PM	Registration Desk OPEN (Convention Center Lower Level, Kilimanjaro Ballroom)					
7:00AM - 12:00PM	Tradeshow/Expo Setup (Convention Center Lower Level, Kilimanjaro Ballroom)					
7:00AM - 8:30AM	Attendee Breakfast (Convention Center Lower Level ACACIA)					
Lower Level	CYPRESS	PORTIA	BANYAN	CROWN PALM	BAMBOO	
7:30AM - 8:20AM	Mark Graham - "NRCA update on roofing industry technical issues - low & steep slope" (1.5 CEU)	Don Lamont - "Storm Damage Assessment: A Practical Guide" (1 CEU)	Frank King - "Resilience on the Roof: Mental Health Strategies for Roofing Professionals" (1 CEU)	Chad Westbrook- "The 5 Revenue Drivers Behind High-Performing Roofing Service Divisions" (1 CEU)	RCAT Licensing Exam Prep. Boot Camp: 7:30 AM Business & Safety; 8:30 AM Residential Roofing; 9:30 AM Commercial Roofing (3 CEU)	
8:30AM - 9:20AM		Marco D. Flores - "A Roofing Contractor's Playbook to Ethically Maximize Insurance Claim Values For Your Clients" (1 CEU)	Trent Cotney - "Nailed It: Mitigating Risk Before It Hits Your Bottom Line" (1 CEU)	Mark Husted- "Killer Contract Clauses!" (1 CEU)		
9:30AM - 10:20AM		Sam Taggart- "Eat What You Kill - Becoming a Sales Carnivore" (1 CEU)	Wilson/Wood - "Property Insurance Claims: One Size Does NOT Fit All" (1 CEU)	Trent Cotney - "State of the Industry: A Legal Perspective" (1 CEU)		JP Vogel – "Tools to get paid" (1 CEU)
10:30AM - 11:20AM	KEYNOTE PROGRAM: A Session with the Legends of Texas Roofing (Convention Center Lobby Level, Kalahari Ballroom F)					
11:30AM - 12:50PM	RCAT Business/Membership Meeting & Awards Luncheon (Convention Center Lobby Level, Kalahari Ballroom E)					
1:00PM - 5:00PM	Tradeshow/Expo Open (Convention Center Lower Level, Kilimanjaro Ballroom)					
5:30PM - 7:00PM	RCAT Past President, Board and Chapter Board Reception (this is a private event: Amatuli Entertainment Village)					

Fri 9/19/2025

7:00AM - 2:00PM	Registration Desk OPEN (Convention Center Lower Level, Kilimanjaro Ballroom)			
7:30AM - 9:00AM	Attendee Breakfast (Convention Center Lower Level ACACIA)			
Seating For: Lower Level	75 CYPRESS	75 PORTIA	50 BANYAN	50 CROWN PALM
8:00AM - 8:50AM	Glen Clapper - "The Energy Code and What It Means to Your Customer's Roof" (1 CEU)	Hank Ebeling - "Delivering Superior Service" (1 CEU)	Bill Elliott - "The Employment Creed" (1 CEU)	Charlie Smith – "8 Ways to Use Metal to Recover an Existing Sloped Roof" (1 CEU)
9:00AM - 9:50AM	Pete McKendrick – "Why Your Sales Focus is Ruining Your Business" (1 CEU)	Karen Ensley - "Questions You Always Wanted to Ask an Attorney" (1 CEU)	Michael Rubin - "How to Handle OSHA Inspections and Remain Compliant" (1 CEU)	Jeff Butler - "Building an Effective Multi-generational Workplace" (1 CEU)
10:00AM - 2:00PM	Tradeshow/Expo Open (Convention Center Lower Level, Kilimanjaro Ballroom)			
10:00AM - 10:50AM	Steve Badger & Chip Merlin "Roofing & Insurance Claims Discussion" (1.5 CEU)	Craven/Davis - "Boost Your Bottom Line: Using AI to Save Time and Win More Jobs" (1 CEU)		Sky Goodwin – "Scaling Without Breaking" (1 CEU)
11:00AM - 11:50AM				

Glen Clapper - "The Energy Code and What It Means to Your Customer's Roof" (1 CEU)

“Moisture” meter concerns



*These meters do not read moisture...
...they are reading relative conductivity, which can be
correlated to specific materials in specific conditions
when properly calibrated.*

Considerations

“Moisture” meters

- Read/understand the instruction manual
- Understand device sensitivity
- Understand proper operating conditions
- Proper calibration/recalibration is critical
- Don't overstate the meter's capability
- Verify job-specific results with gravimetric analysis

IR thermometers



The same concerns apply:

- Not really measuring temperature
- Emissivity
- Reflectivity
- Devices are sensitive to temperature and humidity changes



Installation

Apply only as many DensDeck® Roof Boards as can be covered by a roof membrane system in the same day.

DensDeck® Roof Boards of any thickness do not require gapping. Board edges and ends should be butted tightly together. When installed on a structural metal deck, edge joints should be located on and parallel to top flutes, so that edges are supported.

Independent evaluations have demonstrated that hot mopping to DensDeck® Roof Boards is an acceptable method of bonding membranes. However, the product must be dry prior to commencing installation of hot asphalt application, with free moisture content less than 1% using a moisture meter that has been set to the gypsum scale.

- When using DensDeck® Roof Board or DensDeck® Prime Roof Board, Georgia-Pacific Building Products recommends maximum asphalt application temperatures of 425°F (218°C) to 450°F (232°C). Application temperatures above these recommended temperatures may adversely affect roof system performance. Consult and follow roofing system manufacturer's specifications for full mopping applications and temperature requirements.
- Follow accepted roofing industry guidelines for full mopping applications such as EVT temperature guidelines, brooming and proper application rates of asphalt.

DensDeck® Prime Roof Board and DensDeck® StormX™ Prime Roof Board may be flood mopped to a substrate followed by a flood mopped application of membrane using these guidelines:

- DensDeck® Prime Roof Board and substrate must be dry.
- Asphalt used to install DensDeck® Prime Roof Board should be allowed to cool prior to mopping base sheet to top of boards.
- Allow base ply to cool before mopping additional plies or cap sheet to limit the amount of direct heat that is applied to boards.

Wood sheathing

Plywood and oriented strand board, and nailbase insulation

Standards for wood structural panels

International Residential Code, 2024 Edition

Plywood:

- U.S. Department of Commerce PS-1, “Structural Plywood”
- CSA Group O325, “Construction Sheathing”

Oriented-strand board (OSB):

- U.S. Department of Commerce PS-2, “Performance Standard for Wood-based Structural-use Panels”
- CSA Group O437, “Standards for OSB and Waferboard”

Common, but not referenced in the Code

Plywood and OSB:

- APA-The Engineered Wood Association Standard PRP-108, “Performance Standards and Policies for Structural-Use Panels”

Attachment of Wood Panels: The *International Residential Code, 2024 Edition's* Table R602.3(1)-Fastening Schedule provides minimum fastener and fastener spacing requirements for wood structural panels into roof framing shown in Figure 6.1.

Item	Description of building elements	Number and type of fasteners	Spacing of fasteners	
			Edges (inches)	Intermediate supports (inches)
Wood structural panels, roof sheathing to framing and particle board wall sheathing to framing				
31	3/8- to 1/2-inch-thick	6d common or deformed nail (2" x 0.113" x 0.281" head)	6	6
		8d common nail (2½" x 0.131" x 0.281" head), or RSRS-01 nail (2¾" x 0.113" x 0.281" head)	6	6
32	19/32- to ¾-inch thick	8d common nail (2½" x 0.131" x 0.281" head), or RSRS-01 nail (2¾" x 0.113" x 0.281" head)	6	6
33	7/8- to 1¼-inch thick	10d common nail (3" x 0.148" x 0.281" head), or 2½" x 0.131" x 0.281" head deformed nail	6	12

Figure 6-1. Roof sheathing-specific excerpt from *International Residential Code, 2024 Edition's* Table R602.3(1)-Fastening Schedule



Roof Construction

AN EXCERPT OF THE ENGINEERED WOOD CONSTRUCTION GUIDE



APA Form E30, “Roof Construction”
--Roofing-specific excerpts from
*APA’s Engineered Wood Construction
Guide* (102 pages)

[Link](#)

Considerations

Lumber, plywood and OSB roof decks

- Be extra cautious of plywood and OSB roof decks
- Limit your deck acceptance responsibilities
- Consider more proactive plywood and OSB deck replacement
- Consider pull tests for plywood and OSB roof decks when using mechanically-attached membrane systems



Know your steep-slope roof decks

Following plywood and OSB installation guidelines can help ensure a successful roof system performance

by Mark S. Graham

Plywood or oriented strand board structural panel sheathing are integral components of many steep-slope roof assemblies, and proper use of these products can help ensure successfully performing assemblies. If you use or encounter plywood and/or OSB structural panel sheathing roof decks, it is important to be knowledgeable of the applicable code requirements and APA–The Engineered Wood Association and NRCA guidelines applicable to them.

IRC 2018

The International Residential Code® provides specific requirements applicable to plywood and OSB structural panel sheathing used as roof decks for one- and two-family dwellings. In IRC's 2018 edition, specific requirements are provided in Section R803-Roof Sheathing.

IRC 2018 requires wood structural panels conform to the Department of Commerce's PS 1, "Structural Plywood," or PS 2, "Performance Standard for Wood-based Structural-Use Panels," or CSA Group™'s O325, "Construction Sheathing," or O437, "Standards on OSB and Waferboard." PS 1 and O325 generally are recognized to apply to plywood, and PS 2 and O437 apply to OSB.

Professional Roofing December/January 2020-21



Photo courtesy of Atlas Roofing, Atlanta

Know the options

Proper specification is essential for nail-base insulation

by Mark S. Graham

In roof assembly configurations with nailable roof coverings, such as asphalt shingles and metal panels, factory-fabricated, nail-base insulation is becoming more common as a component of insulation entirely above the roof deck. Because nail-base insulation serves multiple functions, including being a roof covering substrate and thermal insulation layer, proper design and specification are essential for roof assembly performance.

The basics

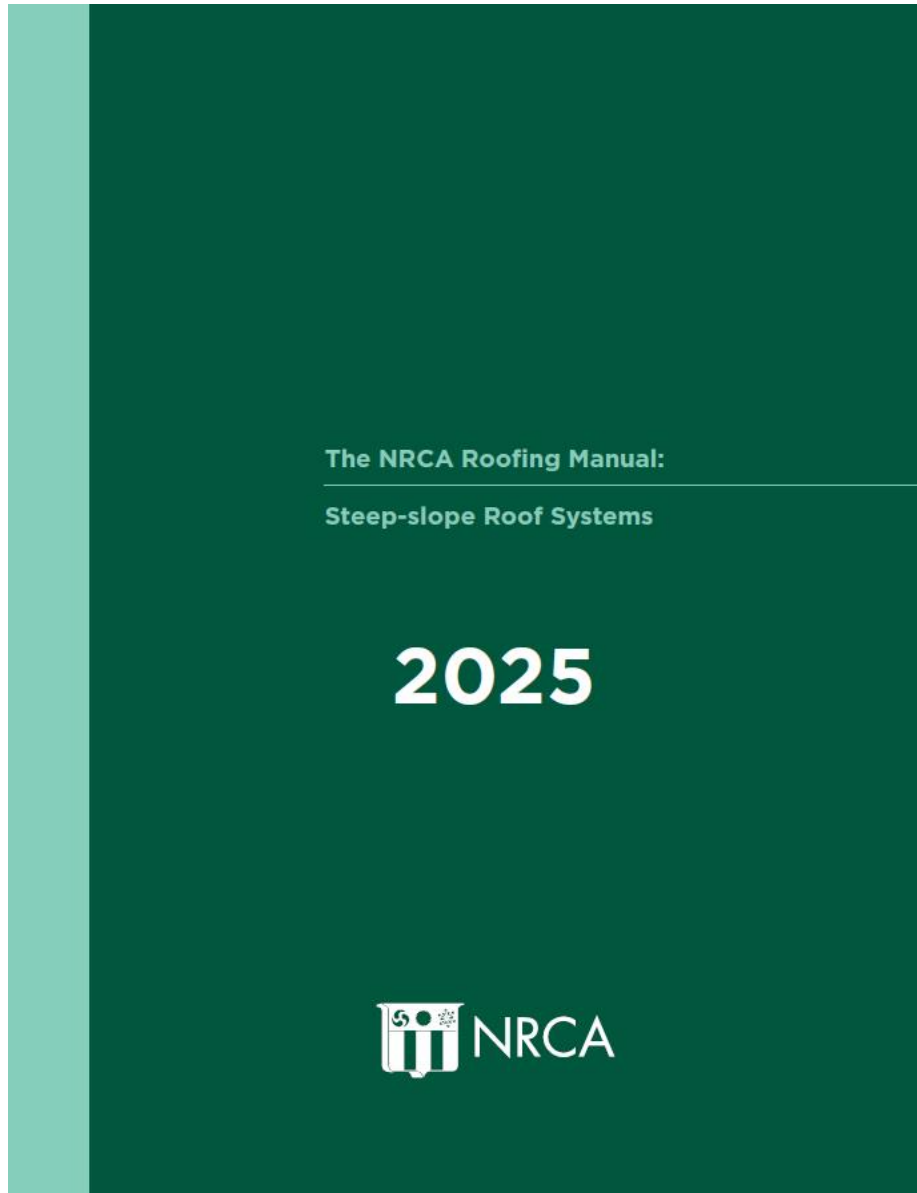
Nail-base insulation is composed of a layer of rigid board insulation factory-adhered or laminated to a layer of structural wood panel sheathing, such as plywood or oriented strand board.

The U.S. product standard for nail-base insulation is ASTM C1289, "Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board," Type V. It provides requirements for a polyisocyanurate insulation foam core

Professional Roofing September 2024

Nailbase insulation considerations

- Double layer design and application
- Taped joints can control vapor leaks/underlayment wrinkling at board joints
- Pressure-tested and FRT nailbase are not good ideas for nailbase



2025 NRCA Manual Steep-slope Roof Systems

*The Manual represents
“best practice” guidelines*

[Link](#)

NRCA has concerns about the long-term performance of OSB panels, including those addressed by PS 2 used as substrates for asphalt shingle roof systems. Although NRCA acknowledges the widespread use of OSB panels for constructing roof deck substrates, experience has shown OSB panels are subject to dimensional changes, ridging and fastener backout resulting from changing moisture conditions the roof decks typically encounter. NRCA has received reports of asphalt shingle roof assemblies constructed with OSB panel decks experiencing panel edge swelling, warping and buckling. NRCA also is concerned about the effects on OSB panels of repeated fastener removal and new fastener installation as existing roof systems are removed and replacement roof systems are installed during a roof deck's life. Because of these reasons, NRCA does not recommend using OSB panels as a substrate for asphalt shingle roof systems.

Polyiso. testing

R-value testing

Facer sheet adhesion (with the Chicago Roofing Contractors Association)



LTTR – ASTM C1303 and ASTM C518

- A 15-year time-weighted average R-value
- The predicted R-value after 5-years
(under controlled laboratory conditions)

R-value – ASTM C518

- R-value at the time of the test

- LTTR and R-value is typically tested and reported at 75 F.
- NRCA tests at 75 F, but we also test at 40 F and 110 F.

Test results

Physical properties

Manufacturer	Apparent density (lb/ft ³)	Thickness (inches)
1c	2.726	2.578
1p	2.002	2.594
2c	3.254	2.576
2p	2.024	2.585
3p	2.218	2.500
4p	2.057	2.735

Test results

R-value

Manufacturer	R-value (75 F)
1c	14.4
1p	13.9
2c	13.6
2p	15.6
3p	13.2
4p	15.3

More test results

R-value

Manufacturer	R-value (40 F)	R-value (75 F)	R-value (110 F)
1c	10.8	14.4	12.8
1p	8.9	13.9	12.0
2c	14.5	13.6	12.1
2p	15.4	15.6	13.4
3p	12.6	13.2	11.6
4p	16.9	15.3	13.1

Preliminary conclusions

- Tested R-values vary
- Some tested R-values are already lower than LTTR
- Some samples are exhibiting different characteristics

Preliminary recommendations

- Specify, purchase and sell polyisocyanurate insulation (and all insulation products) based on their thicknesses, not its R-values

Polyiso facer sheet adhesion



Designation: C1289 – 23a

Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board¹

This standard is issued under the fixed designation C1289; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope

1.1 This specification covers the general requirements for faced thermal insulation boards composed of rigid cellular polyisocyanurate surfaced with other materials. The insulation boards are intended for use at temperatures between -40 and 200°F (-40 and 93°C). This specification does not cover cryogenic applications. Consult the manufacturer for specific recommendations and properties in cryogenic conditions. For specific applications, the actual temperature limits shall be agreed upon by the manufacturer and the purchaser.

1.2 This standard is intended to apply to rigid cellular polyurethane-modified polyisocyanurate thermal insulation board products that are commercially acceptable as non-structural panels useful in building construction. The term polyisocyanurate encompasses the term polyurethane. For engineering and design purposes, users should follow specific product information provided by board manufacturers regarding physical properties, system design considerations and installation recommendations.

NOTE 1—See Appendix X1 for guidance on determining wind pressure resistance of panels when required for wall sheathing applications.

1.3 The use of thermal insulation materials covered by this specification is typically regulated by building codes, or other agencies that address fire performance. Where required, the fire performance of the material shall be addressed through standard fire test methods established by the appropriate governing documents.

1.4 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

NOTE 2—For conversion to metric units other than those contained in this standard, refer to [IEEE/ASTM SI 10](#).

¹ This specification is under the jurisdiction of ASTM Committee C16 on Thermal Insulation and is the direct responsibility of Subcommittee C16.22 on Organic and Nonhomogeneous Inorganic Thermal Insulations.

Current edition approved Sept. 1, 2023. Published October 2023. Originally approved in 1995. Last previous edition approved in 2023 as C1289 – 23. DOI: 10.1520/C1289-23A.

1.5 This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.

1.6 This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

2. Referenced Documents

2.1 The following documents, of the issue in effect on the date of material purchase, form a part of this specification to the extent specified herein:

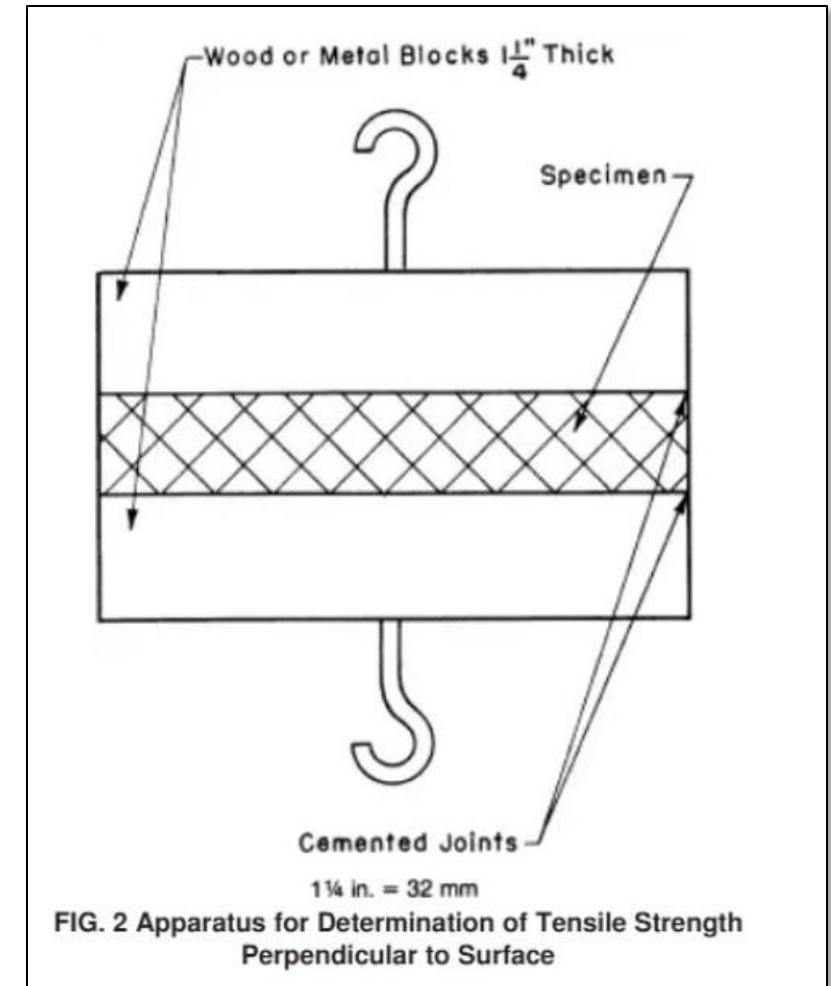
2.2 *ASTM Standards*:²

- C168 Terminology Relating to Thermal Insulation
- C177 Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus
- C203 Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation
- C208 Specification for Cellulosic Fiber Insulating Board
- C209 Test Methods for Cellulosic Fiber Insulating Board
- C303 Test Method for Dimensions and Density of Preformed Block and Board-Type Thermal Insulation
- C390 Practice for Sampling and Acceptance of Thermal Insulation Lots
- C518 Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- C550 Test Method for Measuring Trueness and Squareness of Rigid Block and Board Thermal Insulation
- C728 Specification for Perlite Thermal Insulation Board
- C1045 Practice for Calculating Thermal Transmission Properties Under Steady-State Conditions

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

ASTM C1289-23a

11.6 Tensile Strength Perpendicular to Board Surface— Tensile strength perpendicular to the major board surfaces of the faced board product shall be tested in accordance with Test Method **C209**, Tensile Strength Perpendicular to Surface, or Test Method **D1623** (Type C), utilizing a 250°F (121°C) hot melt adhesive system for sample preparation. Molten adhesive shall be uniformly applied over each faced sample surface and allowed to cool in 73°F (23°C) laboratory air for 24 h before testing.



Tensile strength, psf (kPa), min Perpendicular to board surface	500 (24)	500 (24)	500 (24)	500 (24)	500 (24)	2000 (95)
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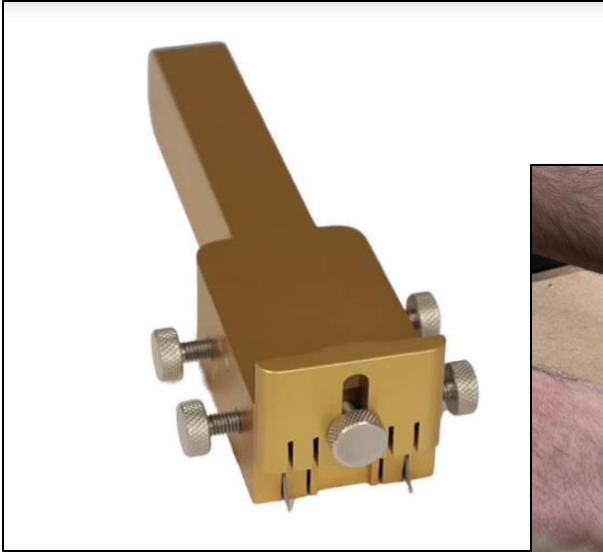
Test results

ASTM C209 tensile strength

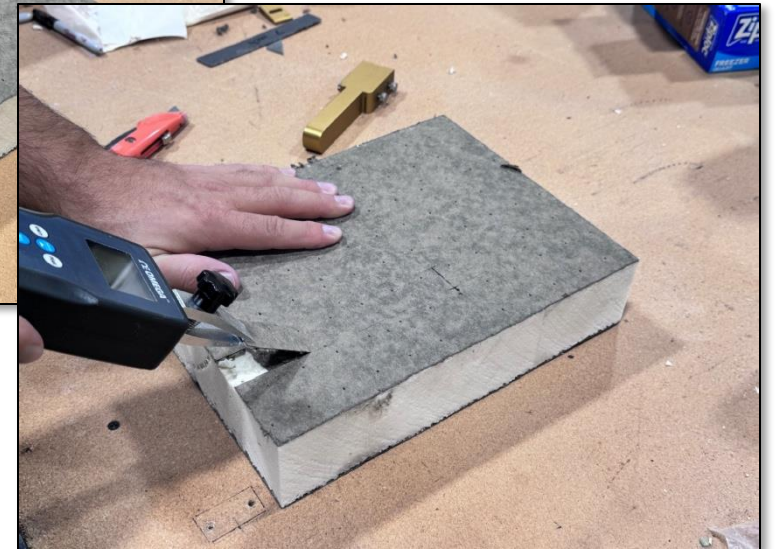
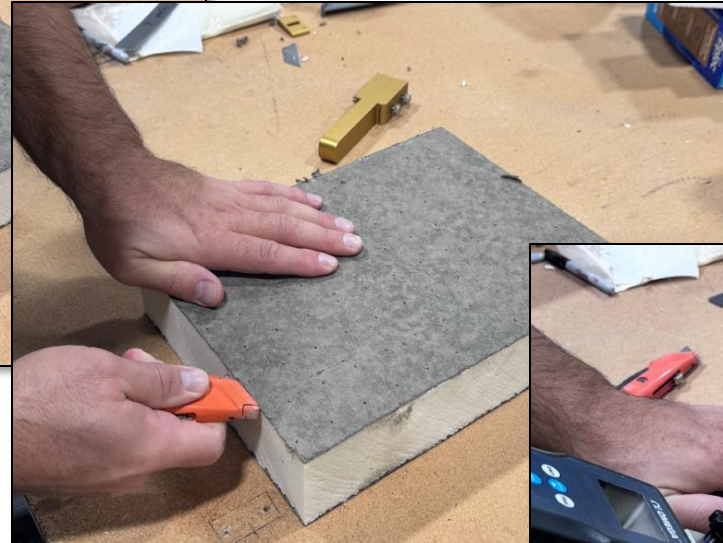
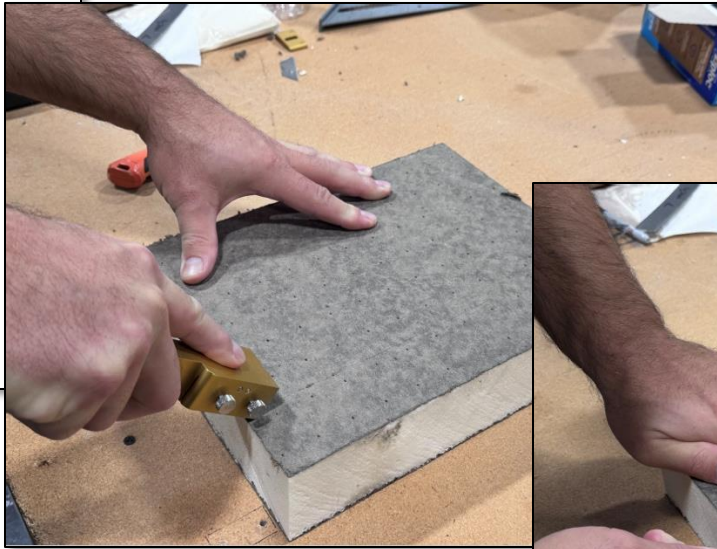
Manufacturer	Tensile strength Average (psf)	Standard deviation (psf)
1c	1,888	556
1p	2,041	909
2c	1,874	730
2p	1,301	409
3p	1,029	495
4p	1,185	327

Peel test

Internally-developed evaluation method
No ASTM standard



MTT strip cutter



Test results

Manufacturer	Peel strength Average (psi)	Standard deviation (psi)
1c	2.78 MD 3.03 XMD	0.62 MD 0.44 XMD
1p	2.52 MD 2.89 XMD	0.78 MD 0.94 XMD
2c	2.30 MD 2.30 XMD	0.31 MD 0.28 XMD
2p	2.52 MD 2.36 XMD	0.61 MD 0.53 XMD
3p	2.83 MD 2.97 XMD	0.59 MD 0.57 XMD
4p	2.61 MD 2.19 XMD	0.56 MD 0.76 XMD
Average	2.59 MD 2.62 XMD	

Preliminary conclusions

- Our peel test method seems viable
 - More refinement of the test method may be needed
- Peel values are only about 10% of tensile values
- Peel values seem low
- More testing is planned:
 - More polyiso. specimens (production lots, plants)
 - Board top vs. board bottom
 - Impact of knit lines
 - Other faced insulation boards

Polyiso. storage







Storage Recommendations for Atlas ACFoam® Products

ISSUED: 10/26/2017***UPDATED:** 08/19/2024**PAGES:** 01*SUPERSEDES EXISTING DOCUMENTS

Factory applied packaging is intended only for protection during transit. When stored outdoors or on the job site, the insulation should be stacked on pallets at least three inches above ground level and completely covered with a weatherproof covering such as a tarpaulin. The temporary factory-applied packaging should be slit or removed to prevent accumulation of condensation. Roof insulation which has become wet or damaged should be removed and replaced with solid, dry insulation, of the same type.

For additional storage and handling recommendations, see [PIMA Technical Bulletin # 109](#).



Storage and Handling Recommendations For Polyiso Roof Insulation

Storage

Polyiso insulation is typically shipped protected by a plastic wrap, plastic bag or both. This factory packaging is intended for handling the polyiso in the manufacturing plant and during transit. The factory packaging should not be relied upon as protection at jobsites or other outdoor storage locations unless specified otherwise by the manufacturer.

Note: Polyiso insulation is fully cured and fit for installation upon delivery. No additional storage time is required.

Material delivery should be carefully coordinated with the roof application schedule to minimize outdoor storage. When short-term outdoor storage is necessary, whether at grade or on the roof deck, the following precautions should be observed unless specified otherwise by the manufacturer:

- Bundles should be stored flat above the ground (or other surface) utilizing included feet or on raised pallets. If possible, the bundles should be placed on a finished surface such as gravel, pavement, or concrete rather than on dirt or grass.
- Cover the package and pallet with a breathable tarpaulin and secure cover to prevent wind displacement.



Roof deck loading
considerations

Some examples of roof loading

- Pallet of asphalt shingles (42 bundles): 2,500 to 4,200 lbs.
- Pallet of TPO membrane rolls: 1,400 to 3,450 lbs.
- Pallet of MB cap sheet (20 rolls): About 2,500 lbs.
- Pallet of glass-faced gypsum board (4 x 4): 1,600 to 2,400 lbs.
- Pallet of bonding adhesive (45 pails): 1,800 lbs.
- Bundle of polyiso. (4 x 8): 250 to 500 lbs.



Some initial considerations

Roof deck loading concerns

- Roofing operations may exceed live load capacity
- Note joist/framing orientation
- Consider avoiding adjacent load placement
- Position loads across joists/framing
- Consider added dunnage across framing
- Also consider rooftop equipment weight

Recent and common technical inquiries

Requests of NRCA for technical assistance

Fastener issues



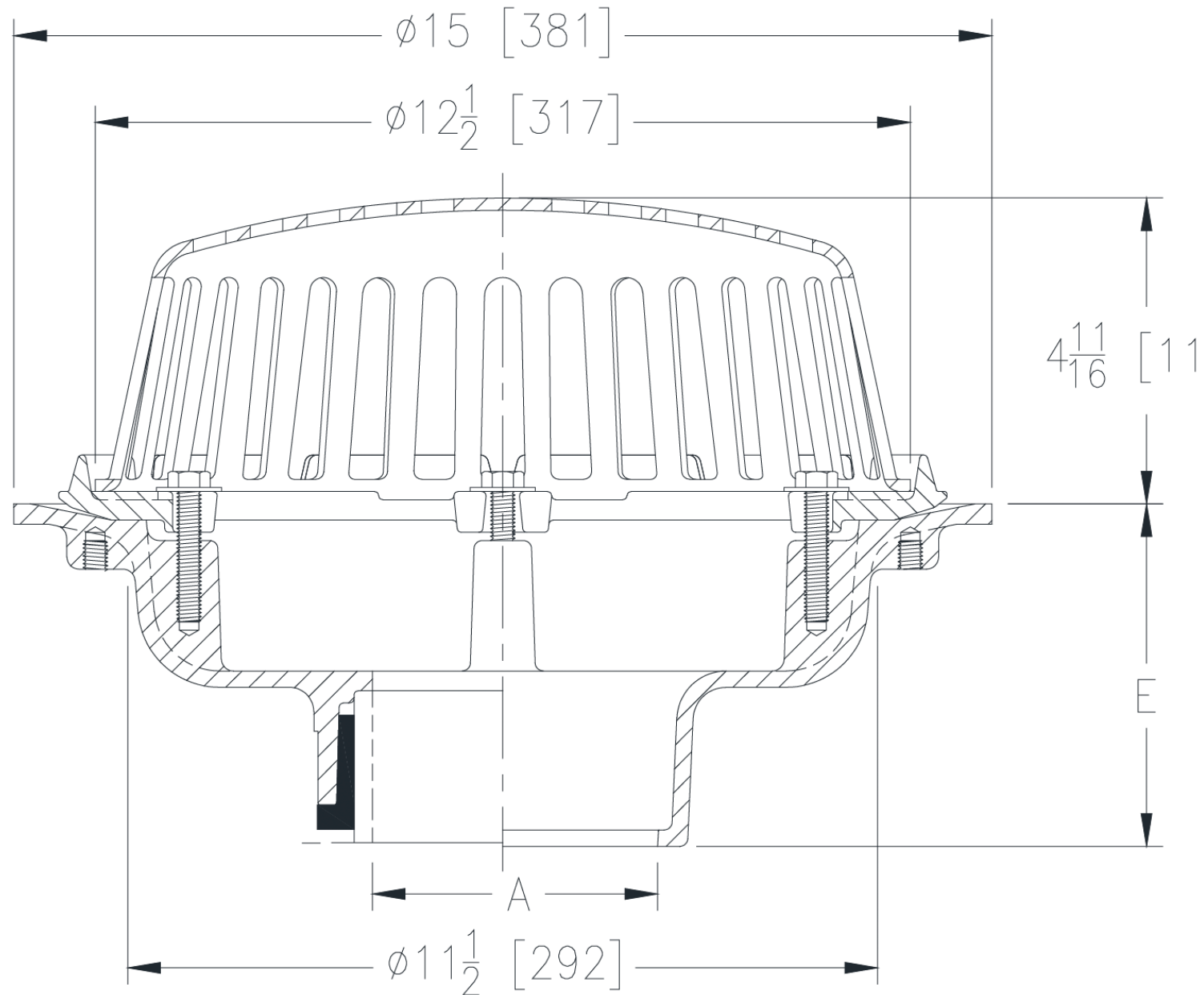
Roof drain issues



Z100
15 [381] DIAMETER MAIN DRAIN
LOW SILHOUETTE DOME

SPECIFICATION SHEET

TAG





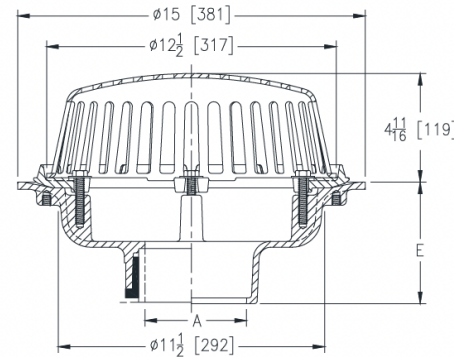
Z100

15 [381] DIAMETER MAIN DRAIN
LOW SILHOUETTE DOME

SPECIFICATION SHEET

TAG

Design and Dimensional Data (Inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice



A Pipe Size In. [mm]	Approx. Wt. Lbs. [kg]	Dome Open Area Sq. In. [cm ²]
2, 3, 4, [51, 76, 102]	26 [12]	103 [665]
5, 6 [127, 152]	27 [12]	
8 [203]	28 [13]	

ENGINEERING SPECIFICATION: ZURN Z100
15" [381mm] Diameter roof drain. Dura-Coated cast iron body with combination membrane flashing clamp/gravel guard and low silhouette Poly-Dome.

OPTIONS (Check/specify appropriate options)

PIPE SIZE

3, 4, 5, 6, [76, 102, 127, 152]
2, 3, 4, 6, 8 [51, 76, 102, 152, 203]
2, 3, 4, 5, 6, 8 [51, 76, 102, 127, 152, 203]
2, 3, 4 [51, 76, 102]
6 [102]

(Specify size/type) **OUTLET**

IC Inside Caulk
IP Threaded
NH No-Hub
NL Neo-Loc
NL Neo-Loc

'E' BODY HT. DIM.

5-1/4 [133]
3-3/4 [95]
5-1/4 [133]
4-9/16 [116]
5-7/16 [112]

PREFIXES

Z D.C.C.I. Body with Poly-Dome*
ZA D.C.C.I. Body with Aluminum Dome

ZC D.C.C.I. Body with Cast Iron Dome
ZRB D.C.C.I. Body with Plain Bronze Dome

-EA

Adjustable Extension Assembly 2-1/8 [54] thru 3-1/2 [89]

Reiver
np Collar
Mesh Screen Over Dome
Top (ZA & ZC Only)
ap Gasket
102] NL Bottom Outlet Only)
ecured Top
Water Dam

-EA Adjustable Extension Assembly
2-1/8 [54] thru 3-1/2 [89]
-EB Top-Set® Adjustable Extension Assembly
-FG Flush Grate
-G Galvanized Cast Iron
-HD 6-3/4[171] High Aluminum Dome Strainer
(148 Sq. In. [955 cm²] Open Area) (ZA Only)

-W3 3 [76] Internal Water Dam
-W4 4 [102] Internal Water Dam
-84 Stainless Steel Perforated Gravel Guard
-85 Stainless Steel Perforated Extension
-89 2 [51] High External Water Dam
-90 90° Threaded Side Outlet Body

* Regularly furnished unless otherwise specified

⚠ WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

⚠ ADVERTENCIA: Cáncer y daño reproductivo - www.P65Warnings.ca.gov

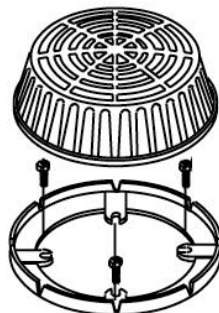
⚠ AVERTISSEMENT: Cancer et effets néfastes sur la reproduction - www.P65Warnings.ca.gov

Zurn Industries, LLC | Specification Drainage Operation
1801 Pittsburgh Avenue, Erie, PA 16502, Ph. 855.663.9876

In Canada | Zurn Industries Limited
7900 Goreway Drive, Unit 10, Brampton, Ontario L6T 5W6, Ph. 877.892.5216

www.zurn.com

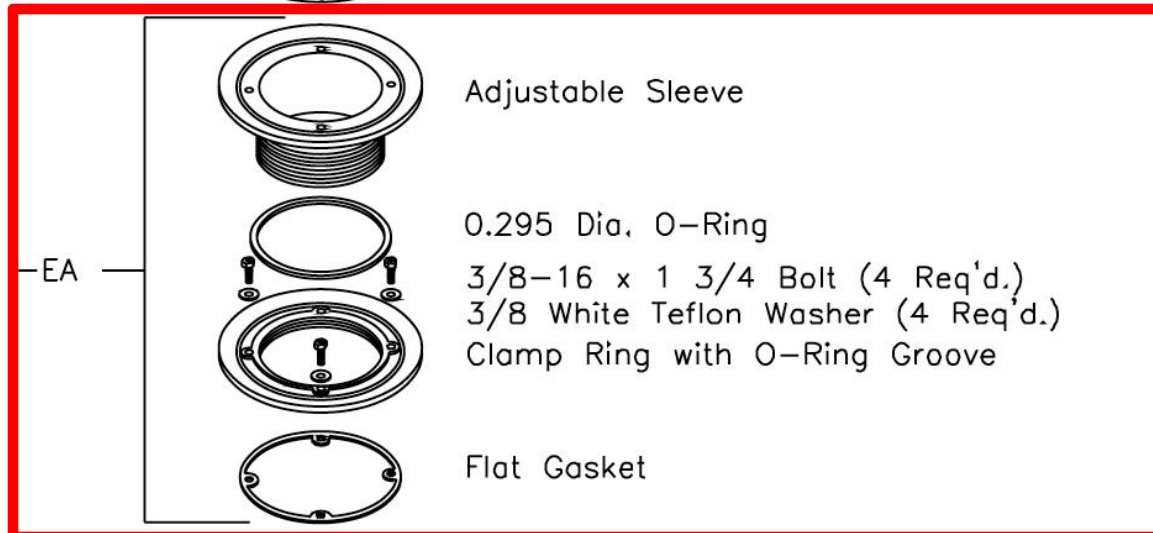
Rev. T
Date: 05/13/25
C.N. No. 146833
Patent zurn.com/patents
Prod. | Dwg. No. Z100



Dome

3/8-16 x 1 1/4 Bolt and Washer (4 Req'd.)
(Use pipe sealer on threads)

Flashing Clamp



Adjustable Sleeve

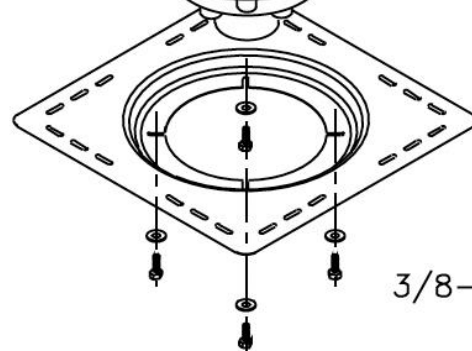
0.295 Dia. O-Ring

3/8-16 x 1 3/4 Bolt (4 Req'd.)
3/8 White Teflon Washer (4 Req'd.)
Clamp Ring with O-Ring Groove

Flat Gasket



Body



Deck Plate

3/8-16 x 1/2 Bolt and Washer (4 Req'd.)

Other topics and your questions

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LEGALCON LIVE 2025

OCT. 8-10, 2025

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Low-Slope Roofing Systems

Low-slope roofing systems require careful planning, material selection, and detailing to ensure long-term performance and weather resistance. This course covers everything from wind design and insulation to membrane systems, coatings, and moisture control. Participants will gain hands-on insights into roofing codes, warranties, and maintenance strategies to avoid common failures and extend roof life.

Learning Outcomes:

- Identify and apply best practices for designing and installing bituminous, single-ply, and liquid-applied membrane systems.
- Understand insulation types, moisture control strategies, and code requirements for low-slope roofing.
- Evaluate roofing details, warranty provisions, and maintenance programs to ensure long-term system performance.

Who Should Attend:

- Contractors, architects, and materials specifiers involved in roofing design and construction.
- Commissioning authorities, product manufacturers, and owner's representatives overseeing roofing projects.
- Anyone responsible for the maintenance, repair, or re-roofing of low-slope roofing systems.

Select from 2 upcoming dates:

Date	Format	ID	Fee	
 Dec 2-3, 2025	 Face-to-Face Madison, WI	D572	\$1,095 	ENROLL NOW
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NRCA

Mark S. Graham

Vice President, Technical Services

National Roofing Contractors Association

Two Pierce Place, Suite 1200

Itasca, Illinois 60143

(847) 299-9070

mgraham@nrca.net

www.nrca.net

Personal website: www.MarkGrahamNRCA.com

LinkedIn: [linkedin.com/in/MarkGrahamNRCA](https://www.linkedin.com/in/MarkGrahamNRCA)

Mark S. Graham

www.marksgraham.com

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