



April, 2017

Volume 48, No 7

This Month's Program:

Commercial Glass School (HSW) Wednesday, April 26

AN AIA ACCREDITED PROGRAM

Learning Objectives:

- Summarize the History of Glass
- Discuss Solar Performance as it Relates to Glass
- List at Least One Type of Coating Applied to Glass
- Restate the Features and Benefits of at Least Two Glass Fabrication Processes



SPEAKER BIO: Connor O'Neill, LEED Green Associate, CSI

Upon graduating from the University of Maine, Connor joined Viracon in 2013 as an Architectural Sales Trainee. The training program was rigorous, with exposure to every department at Viracon's headquarters in Owatonna, MN. After successfully completing the 8-month training program, he was assigned a territory based in Kansas City where he began his career as an Architectural Sales Representative. In 2016, Connor was relocated to Denver, where he resided today. Outside of work, Connor enjoys spending time outdoors as well as actively participating in industry organizations such as the Urban Land Institute, the Colorado Glazing Contractors Association, and the Building Enclosure Counsel.

Date: Wednesday, April 26, 2017
Time: 11:30 a.m. to 1:00 p.m.

The Warehouse

25 W. Cimmaron Street
Colorado Springs, CO 80903

No cost to Pikes Peak Chapter
members

Please RSVP at
www.pikespeakcsi.org
by noon on
Monday, April 24

VIRACON FACTS:

- Viracon is the **ONLY** commercial glass fabricator in North America that develops and produces high performance coatings
- Viracon performs **MORE** glass fabricating processes at a single site than any other glass fabricator
- Viracon delivers **MILLIONS** of product configurations with custom design capability
- Viracon is structured to **SUPPORT YOU** from concept through completion of each project



Spring has definitely sprung! Easter is around the corner, and we're finally getting some moisture so hopefully we will start seeing green grass, budding trees and spring flowers. April also brings us a bit closer to the end of this CSI season.

This month, Connor O'Neill with Viracon will be presenting "Glass and Glazing" – an overview of basic glass processes, glass history and fabrication techniques. As a reminder, this month's meeting will be at The Warehouse. Address and details are included in this month's meeting invite. We are still searching for a location for next season's meetings, and welcome any input from our members.

We are also very excited to announce that Forbo Flooring is our new website sponsor! Thank you so much to Cody Coppola for stepping up to be our first sponsor. Members, please make sure to thank Cody when you have a moment, and click the link on our site when you are registering for the April meeting to get more information about Forbo's product line.

If you turned in your ballot for next year's officers already, I thank you. If not, the electronic version will go out shortly so please be looking for it, and make sure you return it promptly.

Lastly, we are still looking for vendors for our May networking/mini-product show meeting at the Navajo Hogan. If you are interested in a table to display your company's products or services, please contact Shane David for additional information. Members are eligible for special rates that are extremely reasonable, and all fees associated with this event support our Herald R. Holding Scholarship for Pikes Peak Community College.

Thank you all for your continued membership in our Chapter. I look forward to seeing you all in a couple of weeks!

Joni Zimmerman, CSI Pikes Peak Chapter President

Interested in Advertising on our new Website?

Our website committee has been working very hard and we are now accepting sponsors and advertisers for our website!! For a fee of \$200 per year, we will place your company's logo and a link to your website on our homepage so that everyone that visits the site will have the opportunity to see that you are a PPCSI sponsor and can click the link to visit your website. Your company logo will also appear on all meeting invites throughout the year. This is a great way to get exposure to our members and guests for your company. If you are interested, please contact any board members for additional information.





PROFESSIONAL RESTORATION & REPAIR

STRUCTURAL & COSMETIC REPAIRS
ON
CONCRETE, MASONRY & WOOD

CRAIG L. NELSON, CDT, CSI

P.O. Box 38932 Colorado Springs, CO 80937
(719) 632-3996 • FAX: (719) 632-3997

WEB: pro-restoration-repair.com

Shane David
CSI, CDT
sdavid@hlarch.com
t: 303.298.4808

H+L Architecture
219 E. Colorado Ave
Colorado Springs, CO 80903
www.hlarch.com | 719.578.9317



shaping space. shaping lives.



Don't forget, this month's luncheon is at a new location:
The Warehouse
 25 W. Cimmaron Ave.



**ART C. KLEIN
CONSTRUCTION, INC.**

design • construction
custom residential • commercial

(719) 570-6060

3370 Chelton Loop So. • Colorado Springs, CO • 80909 • Fax (719) 570-9671
www.ackconstruction.com

Bruce W. Barr, AIA

Architect, LEED® AP

Mobile: (719) 499-1989

E-Mail: bbarr@ackconstruction.com



SPECIFICATIONS CONSULTANTS

**PAUL DeARMENT, P.E., CCS, CSI, SCIP
PRINCIPAL**

p.o. box 3010
colorado springs, colorado 80934
pdeament@specscons.com

(719) 577-9414 ofc
(719) 623-0172 fax
(719) 651-7734 cell

Upcoming Program Dates

Folks, please make sure to mark your calendars for the following dates and join us for our Monthly Meetings!

Wednesday, May 31, 2017

Don't forget to bring a friend or co-worker or send someone in your place if you can't make it!

It's Ballot Time!

As Joni mentioned in her President's Message, April is the month we vote for new board positions for next year. Please be on the lookout for an electronic ballot via email and make sure to return as soon as you can. We will also be providing paper ballots at this month's Luncheon if you didn't already get one.

HCDA
 HCDA ENGINEERING, INC.
 STRUCTURAL CONSULTANTS

Andrew B. Baturevich, P.E.

545 E. PIKES PEAK AVE., SUITE 100 (719) 633-7784
 COLORADO SPRINGS, CO 80903 FAX (719) 471-3173
 abaturevich@hcdaengineering.com


TKA ARCHITECTURE, LLC
 A VETERAN-OWNED COMPANY

Thomas J. Kapels, AIA, ASLA
LEED Green Associate
 Architect / Landscape Architect
 President, Owner

719-325-9303 (cell)
 tkapels@tk-architecture.com




STRESSCON
 Architectural and Structural Precast Concrete
 An ExCo Company

Robert D. Hixon
 Pre-Construction Services

3210 ASTROZON BOULEVARD
 COLORADO SPRINGS, CO 80910
 PHONE: **719-390-5041**
 DENVER LINE: 303-623-1323
 FAX: 719-390-5564
 CELL: 719-205-4700
 E-MAIL: rhixon@stresscon.com

Architectural LINKS
 Construction Specifications

Gregg Voos
 Registered Architect, CSI

719.231.4235 office
 719.594.4711 fax
 PO Box 7267 Colorado Springs, CO 80933-7267
gtvs@msn.com

Building Construction Knowledge & Leadership in the Southwest

**CSI SOUTHWEST REGION
 EDUCATION CONFERENCE**

APRIL 20 - 22, 2017
Lodge on the Desert, Tucson, AZ


 Building Knowledge
 Improving Project Delivery



EDUCATION from EXPERTS

- CONSTRUCTION DOCUMENTS ED
- SPECS 101
- SUBMITTALS & SUBSTITUTIONS
- BUILDING CODES
- CCPR FOR YOUR PROJECTS
- PRESENTATION SKILLS
- LEADERSHIP TRAINING



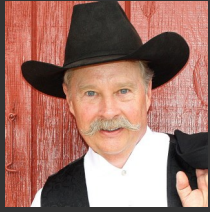
Visit www.csisouthwestregion.org for sponsor info and attendee registration, starting Jan. 16, 2017

Last month's tour of the Ent Performing Arts Center



Thank you JE Dunn !

**IF YOU'RE ORGANIZATION WOULD LIKE TO ADVERTISE
YOUR BUSINESS OR UPCOMING EVENTS IN
THE INTENT, PLEASE
CONTACT ANDY BATUREVICH AT
ABATUREVICH@HCDAENGINEERING.COM OR
719-633-7784**



CSI Pikes Peak Chapter
would like to thank
Rob Haddock

for agreeing to include his award winning seven part article series on metal roofing in the *Intent* each month. The article series won the Carl G. Cash Award from ASTM D 08 Committee on roofing and waterproofing. Part 7 of the series is included at the end of this newsletter.



Pikes Peak Chapter

President:

Joni A. Zimmerman CSI, CDT
TK-Architecture, LLC
719-393-2987

President-Elect:

Rob Hixon, CSI
Stresscon
719.390.5041

Vice-President:

Manny Mungaray
GCC of America
720-579-6288

Secretary:

Luke Bleichrodt CSI
RW Specialties
303-880-5584

Treasurer:

Larry W. Gilland, CSI, CDT, LEED AP
LGA Studios
719.635.0880

Past President:

Shane David, CSI, CDT
H+L Architecture
303.298.4808

Directors:

Charlie Lengal III,
QCP, CxA, CPD, CCA
M-E Engineers, Inc.
719.536.0036

Bob Stanton, CSI, CDT
Stanton Construction Co.
719.471.7891

Ben Pollock, CSI
Webb Design
719.344.8350

Greg Gulliksen, CSI, CDT, AIA
CSNA Architects
719.473.7225

Bruce W. Barr, CSI, AIA, LEED AP
Art C. Klein Construction, Inc.
719.570.6060

WHITE PAPER



Part 7: Metal Roofing from A (Aluminum) to Z (Zinc)

Rooftop Equipment Mounting and Penetrations for Low-Slope Standing-Seam Metal Roofs

Standing-seam metal roofing offers a durable, sustainable alternative to other roof types and can provide maintenance-free service for five to ten decades. Sadly, this exceptional lifespan often is sabotaged with the mounting of essential rooftop equipment and ancillary mechanicals.

Regardless of the roof type involved, consultants generally agree that the best way to prevent roof-related problems is to clear the rooftop of everything possible and just let it function as a roof—not a mechanical equipment platform. However, such a perfect roof continues to elude us, as it becomes necessary or convenient to mount HVAC equipment, screens to hide it, piping to fuel it, scuttles to access it and walkways to service it. The list of rooftop mountings also may include plumbing vents, satellite dishes, lightning protection,

snow retention systems, solar collectors, advertising signage, and fall-protection systems to maintain all the foregoing.

To help achieve relatively trouble-free roofs, this segment provides some basic understanding of the dos and don'ts in situations where rooftop equipment mounting is requisite.

Penetration-free Attachment

A good “first rule” about any rooftop mounting is to avoid penetrating the membrane whenever possible. While this may seem obvious, the tenet is often violated with standing-seam metal. The norm for attaching things seems to involve anchoring the item to the structure through the roof. When this happens, it not only threatens weather integrity, but can also violate the membrane's thermal-cycling behavior by inadvertently pinning the panel to the structure. Such a point of attachment will fatigue and fail from forces of thermal expansion within a short time. Fortunately, scores of items and equipment can be securely mounted to metal rooftops without any penetration whatsoever, actually making metal roofing more user-friendly than other roof types.

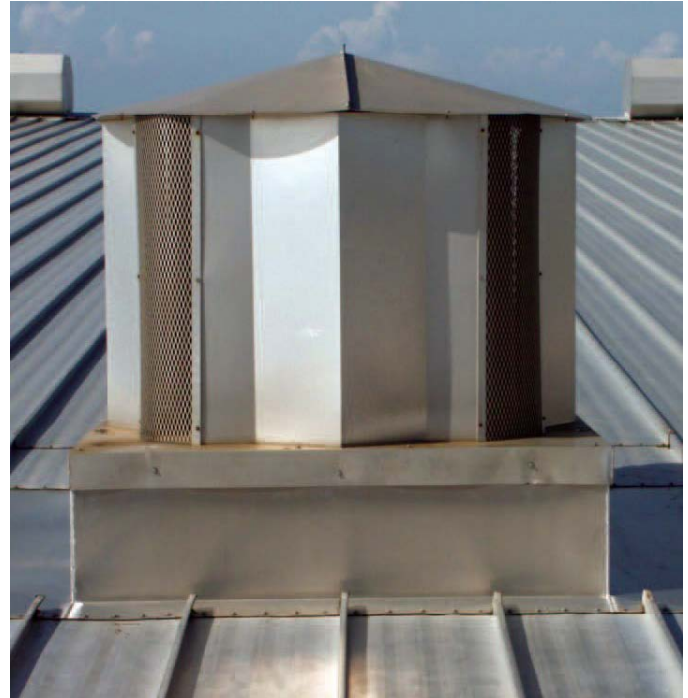
In terms of mounting ancillaries, metal roofing can use special seam-clamping hardware that grips the standing seam without puncturing the membrane. Unlike many other types of roofing, metal is a rigid, high-tensile material. The seam area creates a beam-like structure that can provide convenient anchorage for walkways, solar arrays, condensing units and gas piping without harming the roof's weathering characteristics. Mechanicals can be safely and cost-effectively secured to these seam clamps, leaving the roof membrane penetration free. Seam clamps can provide holding strength of up to several thousand pounds on some profiles and gauges, last the life of the roof and preserve thermal-cycling



▲ Metal roofing can make use of special seam-clamping hardware that grips the standing seam without puncturing the membrane. Seam clamps have made metal roofing a preferred roof type for mounting photovoltaic solar arrays.

characteristics. Using seam clamps when possible for ancillary mounting will eliminate unwanted holes and other potential problems.

Clamps should be made only of noncorrosive metals—typically, aluminum with stainless-steel mounting hardware. These metals are compatible with virtually anything found on a metal roof, except copper (with which there are dissimilar metallurgy issues.) Dissimilar metals in electrolytic contact will induce galvanic corrosion of the less noble metal. In cases involving copper roofing, brass clamps should be used with stainless-steel hardware. Seam clamps generally integrate with the profile and seam folding, and in some way “pinch” the seam material to anchor them in place. Preferred methods of doing this involve setscrews tightened against the seam causing a dent in the seam material



▲ Pre-formed structural curbs support weight and seal tightly to the roof.

that in turn creates a mechanical interlock of the setscrew, seam and clamp, providing the greatest holding strength and durability. Setscrews should have round, polished points to prevent galling metallic coatings, which can lead to corrosion. In like fashion, and regardless of the method of engagement, any clamp device should avoid any sharp points or nodes that could potentially pierce or gall metallic coatings of steel or cause fatigue and fracture points of other metals.

It also is important to remember that any loads introduced into the clamp will be transferred to the panels and their anchorage to the structure. Consequently, anchorage must be capable of withstanding the added load. The best practice is to utilize clamps that have been appropriately tested for material and seam-specific holding strength; be sure in-service load does not exceed that of the published holding strength, including factors of safety. The roof manufacturer should also be consulted with respect to approval of devices used.



▲ Seam clamps allow even cumbersome ancillary items to be attached to metal roofs without penetrating the rooftop.

©1/2014

METAL CONSTRUCTION ASSOCIATION

8735 W. Higgins Road, Suite 300, Chicago, IL 60631

847.375.4718 | mca@metalconstruction.org | www.metalconstruction.org

BUILD LEGACIES
 METAL

Mounting HVAC with Structural Curbs

In the case of HVAC and plumbing vents, the roof membrane often must be penetrated. The soil stack must carry gases from the interior to the exterior and the HVAC unit must transfer inside air out, outside air in or both. Holes in the roof are unavoidable; the challenge is to waterproof the penetration area while maintaining thermal-cycling integrity. There are a few rules about handling these kinds of rooftop penetrations in low-slope standing-seam metal that can help ensure a trouble-free installation.

Most small, bottom-ducted HVAC units are curb-mounted, using a preformed structural equipment curb specially manufactured to integrate with the specific roof profile. This curb carries the unit's weight, seals to the roof and maintains the system's thermal-cycling integrity. It is important to engage a company specializing in manufacturing curbs for the metal roofing industry; these companies typically can be identified by the metal roofing manufacturer.

In terms of mounting ancillaries, metal roofing can use special seam-clamping hardware that grips the standing seam without puncturing the membrane.

The best curb is an all-welded design using sheet aluminum at least 0.080 inch thick. Coated carbon steel tends to heat-warp when welded. Additionally, the protective Galvalume or galvanized coating is burned off at welds and cannot be suitably restored. Aluminum welds exceptionally well and does not heat-warp because of its low melting temperature. It is very compatible with sheet steels used for roofing and can provide decades of trouble-free service when correctly designed, fabricated and installed.

It is a common mistake in specification writing to place the equipment-curb scope of work into HVAC or Sheet Metal sections of the spec. Most HVAC and sheet metal contractors do not understand principles of rooftop waterproofing, nor

do they understand thermal-movement characteristics of standing-seam metal roofing. The result can be design and installation that violates thermal-cycling and/or weatherproofing issues. Installation that pins the curb flange through the roof and into the structure is a common faux pas, and the use of surface-applied sealants that are ineffective for long-term performance also is a frequent malpractice.

Another common mistake is selecting a curb/flashing design that may be appropriate for steep-slope metal roofing with underlayment, known as water-shedding (or hydrokinetic) design, but is not appropriate for low-slope, hydrostatic (or watertight) design. A suggested practice is to insist the roofing manufacturer approve all rooftop attachments, penetrations and appurtenances—curbs included. The manufacturer should know the type of curb that is compatible with the company's system. And when long-term weather-tightness warranties are specified, they should include all rooftop attachments and penetrations, including curbs.

The best curb design should provide that the curb flange underlays the roof panels at the upslope and overlays them at the downslope, allowing no "back-water" laps. This normally is accomplished by terminating the curb's side flanges by marrying them into a panel seam at either side. The curb walls are built up to a minimum height of 6 inches and flanged at the top to provide an adequate structural mounting surface for the equipment. The sides also are tapered to compensate for the roof slope and provide for level mounting of the unit. The 6-inch minimum height ensures the mechanical unit's interface to the curb is well above the drainage plane of the roof and therefore more forgiving of installation error on the part of the mechanical contractor when waterproofing the equipment to the curb.

It is a common mistake in specification writing to place the equipment-curb scope of work into HVAC or Sheet Metal sections of the spec.

©1/2014

METAL CONSTRUCTION ASSOCIATION

8735 W. Higgins Road, Suite 300, Chicago, IL 60631

847.375.4718 | mca@metalconstruction.org | www.metalconstruction.org

BUILD LEGACIES
 METAL

Because this type of structural curb is “floating,” (meaning it moves thermally with the roof), there are weight constraints. These curbs can accommodate units weighing up to about 1,000 pounds placed anywhere on the roof. Heavier units can be accommodated if they are located near the roof’s point of fixity where movement is minimal. Structural curbs are ordered from a curb manufacturer for a predetermined roof location, specific roof type and by equipment model number. Without a model number, exact equipment dimensions can be used.

The installation details that seal the panels to the curb flange at its upslope end are similar to details used to seal the roof panels at their eave end. Installation involves tape and/or tube-grade butyl polymer concealed within the joints and metal closure components, depending on the panel’s rib geometry. All details are hydrostatic in nature for low-slope roofing. Panel ribs are terminated well upslope of the curb wall to allow easy drainage to the sides of the curb. Upslope curb flange dimensions must provide for this.

At the downslope joint, the curb flange mates over the flat plane of the roof panels. Rib caps that are furnished loose or welded integrally into the curb flange serve to terminate the panel seams. This also is accomplished with butyl tape and tube seals concealed within the joints. The downslope joint that is created typically is reinforced beneath the assembly with a backup plate or channel. The side flanges are likewise sealed to the roof panels with butyl inside the mating components. All joints are completely hydrostatic with concealed sealants.

Other substructural components may be employed to facilitate the installation; often this type of curb is furnished with board stock insulation mounted to the curb walls. Installation of all critical seals, especially those at seam inter-faces, is of paramount importance, and fasteners must be to the “dry” side of sealant beads or through them. It also is important such a curb and its components are



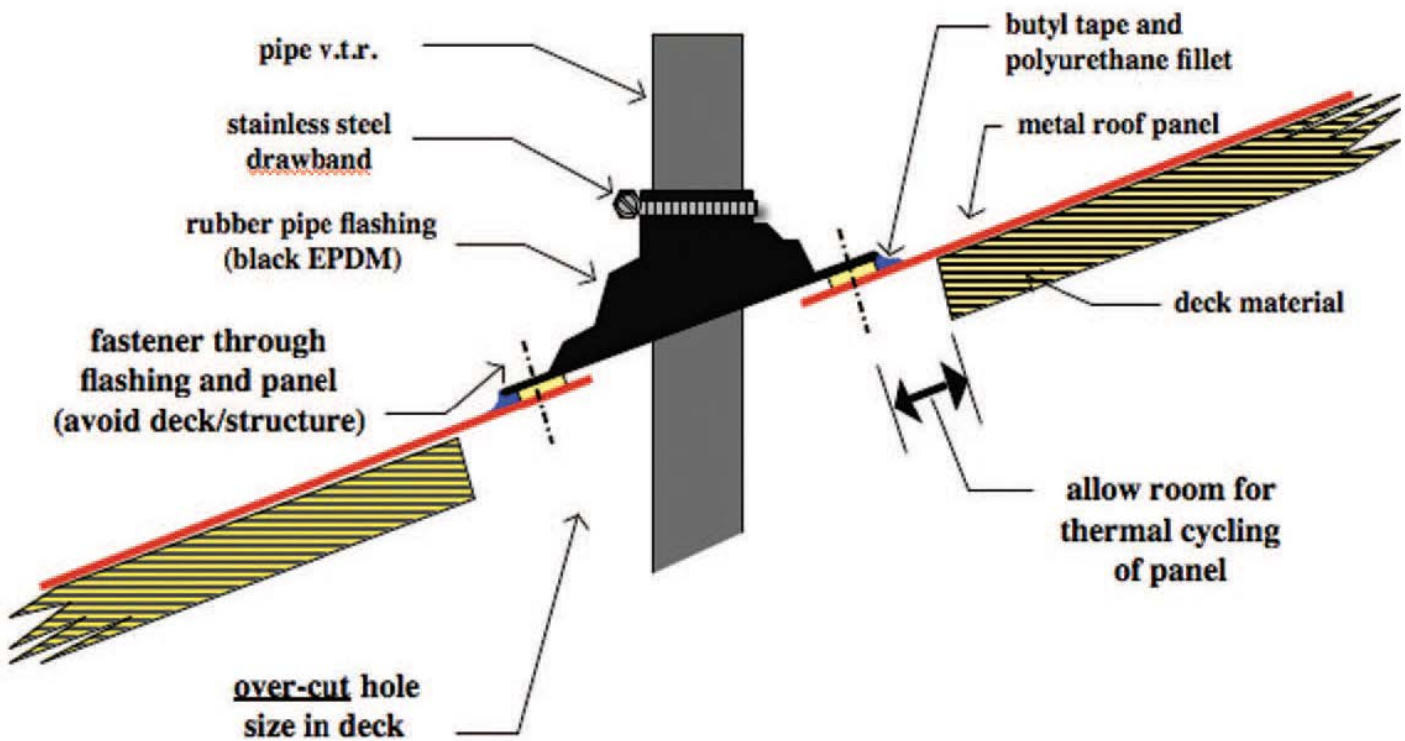
▲ This frame-mounted HVAC unit uses pipe supports that extend to the building structure and are flashed through the roof using rubber pipe flashings.



▲ A frame-mounted HVAC unit can be supported without roof penetration by using seam clamps.

fastened together without pinning to the building structure.

The resulting assembly is free to move thermally with roof panels while sealing completely into the roof “bathtub style,” in lay terms, or in accordance with ASTM International E 2140, “Standard Test Method for Water Penetration of Metal Roof Panel Systems by Static Water Pressure Head,” in more technical terms. Diverters should be used on the upslope flange of the curb and, whenever possible, the unit should be oriented so the smallest dimension opposes the flow of water. For example, if a unit is 3 by 5 feet, the 5 foot dimension should be parallel to the slope of the roof.



PIPE FLASHING DETAIL

Metal Roof Advisory Group, Ltd. ©1999

Frame-mounted HVAC

Heavier equipment is sometimes mounted above the roof surface on a galvanized steel frame. The frame is constructed using round pipe legs, so they can be flashed with rubber pipe flashings. These legs extend through the roof to supporting structural members. Such a mounting is stationary, meaning there will be differential movement between the frame and roof panels.

Depending on the unit's weight, the support frame also can be mounted on seam clamps to avoid pipe penetrations through the roof. The ribs of structural metal panels are required by ASTM E 1514, "Standard Specification for Structural Standing Seam Steel Roof Panel Systems," and E 1637, "Standard Specification for Structural Standing Seam Aluminum Roof Panel Systems" to

support point loads of at least 200 pounds. In other words, a unit weighing 1,500 pounds and spanning across five panel seams can be mounted this way, resulting in 10 bearing points on the five seams, each supporting 150 pounds and well within the ASTM requirement.

When ducting a frame-mounted unit through the roof, it is always advisable to use the smallest hole possible. That is to say, a very large unit only may require a very small duct penetration. A small, sheet-aluminum, all-welded curb is used to waterproof the ducted hole(s) in the roof as before. But in this case, the curb need not be structural because it supports no weight but acts as a flashing only around the duct passing through the roof. The curb style is the same in all other respects.

If the unit is mounted on a stationary frame, the curb must be slightly larger than the actual duct size

©1/2014

METAL CONSTRUCTION ASSOCIATION

8735 W. Higgins Road, Suite 300, Chicago, IL 60631

847.375.4718 | mca@metalconstruction.org | www.metalconstruction.org

BUILD LEGACIES
METAL

to allow differential thermal movement between the two. If the unit is mounted to seam clamps, this oversizing is unnecessary because the unit and curb move together in tandem.

Double Curbs

Large, heavy HVAC equipment often also is mounted on a structural curb, which is integral to the building's structural framing system. When such a design is employed, a second flashing curb is used for waterproofing reasons.

The concept is that the first curb, or frame, supports the weight of the unit and the second curb does the waterproofing and integrates into the roof system.

In this case, there is differential movement between the two, so the outer (flashing) curb is oversized to the first and a counter flashing of metal or flexible membrane joins the two, shedding water over the outer curb. The outer curb is of the same design and material as previously described. Again, it need not be of such a heavy gauge because it supports no weight. Installation details of the outer (flashing) curb connection to the roof also are the same as previously described with hydrostatic seals. Because there is differential movement, the joining of the counter flashing is sometimes done with hydrokinetic, or water-shedding, details. This is acceptable because the joint is sufficiently above the drainage plane of the roof. Alternatively, hydrostatic detailing also can be performed when flexible membrane flashings are used.

Using a stainless-steel draw band at the top of the flashing to further secure it will ensure the flashing never inverts itself and typically will add about five years of life to the assembly.

Round Penetrations

Round shapes, such as plumbing vents, should be flashed through the roof using EPDM or silicone rubber pipe flashings. Although these parts are widely available in various colors, black has the

greatest UV-resistance and longest life, and although more costly, silicone will far outlast EPDM.

Standard installation is to cut an undersized hole and stretch-fit the rubber to the pipe. Using a stainless-steel #14 by 7/8-inch "lap-tek" screws with #1 drill point at 2-inch centers through the compression ring, rubber and butyl, and into the metal panel.

Ideally, excess butyl tape should be trimmed away, and a bead of one-part polyurethane sealant filleted around the joint thus created (base to roof). This bead hides and protects the butyl from direct exposure to sunlight, ensuring a longer life. After a service life of 20 to 25 years (significantly longer for silicone rubber), this assembly is easily replaced.

When attaching the pipe flashing, it must be anchored solely to the roof panel and not into the building structure or deck. To do so would create an inadvertent pinning of the panel, violating freedom of thermal movement. Ideally, these flashings should be centrally located on the roof panel so there is free drainage to both sides without seam interruption.

If the location of the pipe interrupts a seam and it cannot be relocated, a preformed adapter plate can be fabricated to span both panels adjacent to the seam and the pipe flashed as mentioned above to the adapter plate. Most companies that pre-manufacture curbs will make such adapter plates on request.

Rooftop mountings and penetrations are a challenge for any roof type or material. Following these simple guidelines can help ensure trouble-free and enduring performance for a state-of-the-art low-slope metal roof system.

Rob Haddock is president of the Colorado Springs, CO-based Metal Roof Advisory Group Ltd. He is a consultant, technical writer, training curriculum author, inventor and educator. In 2012 he became a charter inductee of Modern Trade's "Metal Construction Hall of Fame" for his many contributions to the industry.

Founded in 1983, the Metal Construction Association brings together the diverse metal construction industry for the purpose of expanding the use of all metals used in construction. MCA promotes the benefits of metal in construction through:

- Technical guidance
- Product certification
- Educational and awareness programs
- Advocating for the interests of our industry
- Recognition of industry-achievement awards
- Monitoring of industry issues, such as codes and standards
- Research to develop improved metal construction products
- Promotional and marketing support for the metal construction industry
- Publications to promote use of metal wall and roof products in construction

For more information, please visit the MCA Web site at www.metalconstruction.org

Copyright © 2014 Rob Haddock. All rights reserved. Reprinted with permission.

No part of this publication may be reproduced in any form or by any means, including photocopying, or utilized by any information storage or retrieval system without permission of the copyright owner.

This bulletin is for general information only. The bulletin is designed to delineate areas requiring consideration. Information contained in the bulletin should not be used without first securing competent advice with respect to its suitability for any given application. MCA does not assume responsibility and disclaims any representation or warranty, express or implied, that such information is suitable for any general or particular use. Anyone making use of the bulletin assumes all liability resulting from such use.

The existence of the bulletin does not in any respect preclude a member or nonmember of MCA from manufacturing, selling, or specifying products not conforming to the bulletin, nor does the existence of an MCA bulletin preclude its voluntary use by persons other than MCA members. The bulletin does not purport to address all safety problems associated with its use or all applicable regulatory requirements. It is the responsibility of the user of the guideline to establish appropriate safety and health practices and to determine the applicability of regulatory limitations before use of the bulletin.

The Metal Construction Association reserves the right to change, revise, add to, or delete any data contained in the bulletin without prior notice.

It is the responsibility of the end user to verify the applicability of this information with the local building and fire officials.