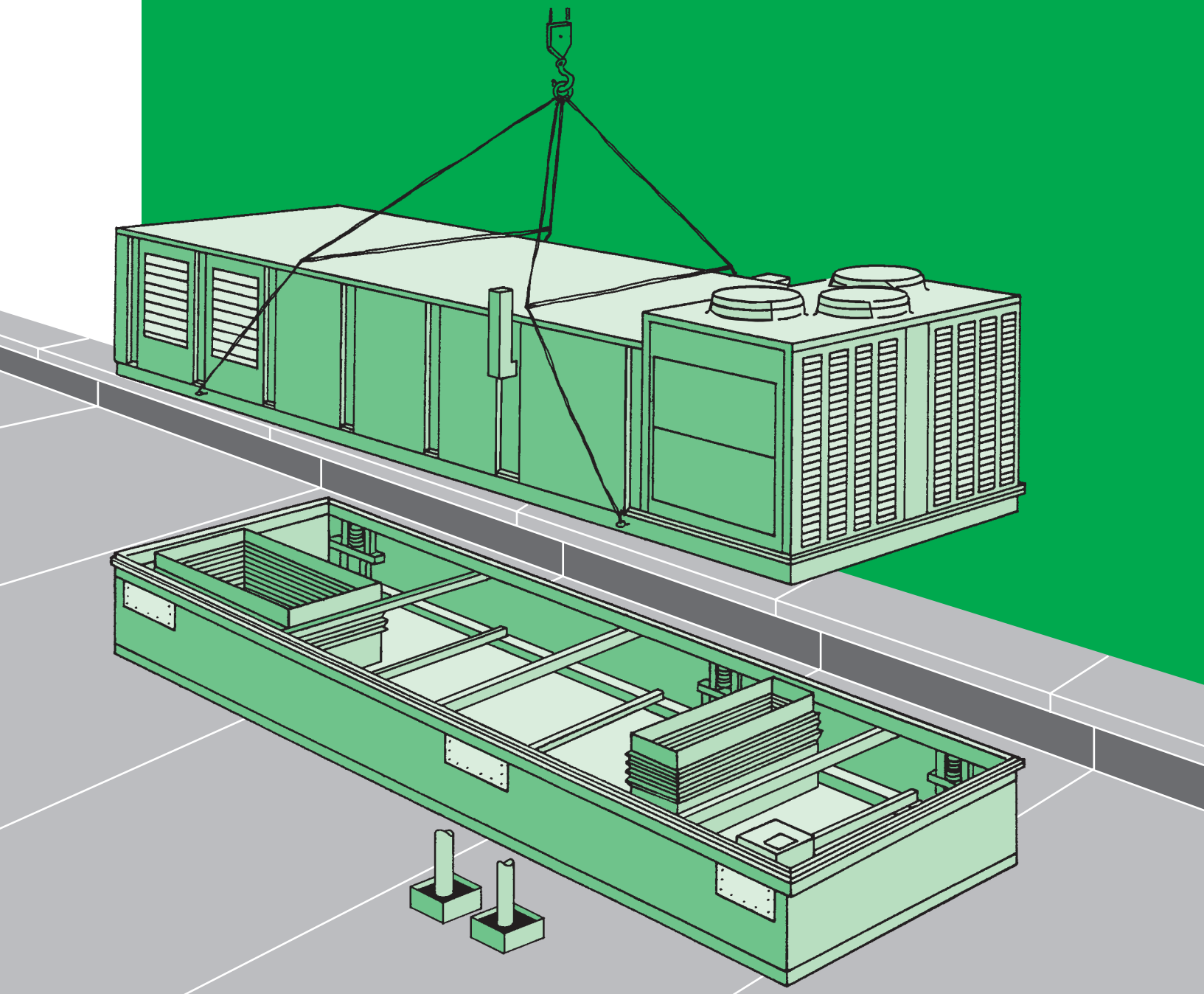
MASON

Rooftop Spring Curb

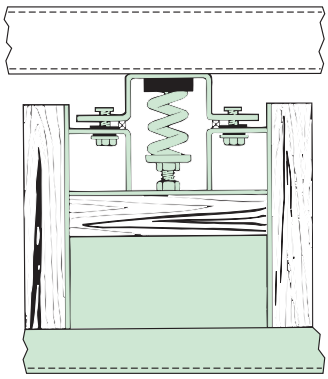
Locate Rooftop HVAC/R Equipment Anywhere

***Mason Industries**' Rooftop Spring Isolation Curb (RSC) is the state of the art in rooftop unit (RTU) vibration control. By incorporating springs with 3/4", 1 1/2" or 2 1/2" minimum specified deflection into a structural steel curb, **Mason** gives the systems designer freedom to locate equipment for maximum efficiency without undue concern for noise and vibration transmission.*

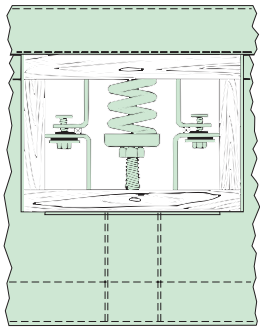


APPLICATION BULLETIN RSC-22-3

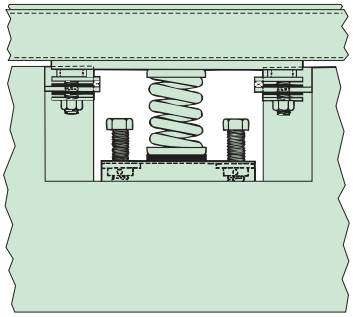
Because of the availability of higher deflection springs, the disruptive effects of a roof's own static deflection can be made insignificant. This means equipment may be positioned anywhere, even midspan, on almost any rooftop with minimal transmission of disturbing vibration and noise into the support structure. Duct runs can be shorter and more efficiently designed. Concerns about roof stiffness are relieved. Liability for vibration problems is reduced. With the RSC's many optional features, installations are made easier and quicker.



RSC-A HOUSING
for 1" deflection spring series



STANDARD RSC-C
for 1" and 2" deflection spring series



OPTIONAL RSC-3 DESIGN
for 1", 2" and 3" deflection spring series (Wood window frame removed for view)

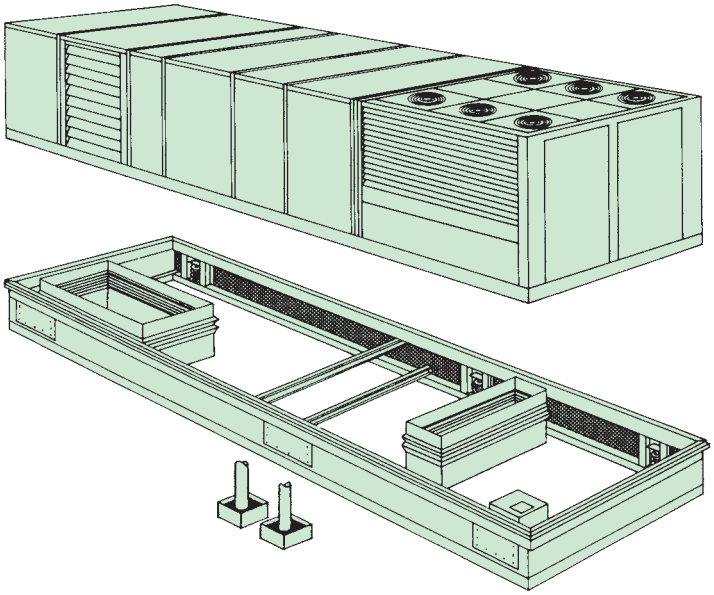
Important: For proper operation all connections to the equipment must be "soft". Flexibly connecting ductwork, piping, electrical conduit, etc. eliminates problematic "flanking paths" through which noise and vibration can travel into the valuable space below.

Mason engineers each curb to the RTU's weight and dimensions. With designer-specified deflection, we select the proper springs and load points.The RSC can even be made to accommodate severe and awkward roof slopes. Given a building's structural steel plan, we can manufacture the "piece to fit the puzzle".

In conjunction with required flexible pipe, duct and electrical conduit connections to rooftop units, Mason Industries' RSC effectively isolates vibration by resiliently "decoupling" the unit from the building structure.

Radiated noise from the unit's bottom can be minimized using Mason's RSC-dB with acoustical package. When locating units above critical areas, air flow "break-out" noise within ductwork should be attended to separately by either conventional passive or newer active means.

Mason Industries' RSC Isolation Curbs have built-in seismic and wind load resistance. Rooftop units must be solidly fastened to the RSC's "floating" steel members, and the curb bases anchored securely to the roof structures for proper restraint. Calculations documenting curb capabilities to withstand these phenomena can be computed by our professional engineers.



SERVICE	RECOMMENDED FLEXIBLE CONNECTOR
Water	Mason Industries SUPER-FLEX MFTFU
Refrigerant	Mason Industries BBF
Air Duct	Industry Approved Elastomer Impregnated Fabric
Electrical	O.Z. Gedney type U .A.G . or equivalent

RSC Assembly

Mason RSC isolation curbs are completely assembled in our New York or satellite plants and then partially disassembled for shipping. We do this to make certain that all parts fit and that on-site assembly is quick and problem-free.

The RSC is normally shipped as two long spring side sections, a crate containing cross bracing, curb end sections, hardware, etc., and packaging containing sections of the flexible weather seal.

Curb section corners are color code matched for easy assembly, and bolted together along with cross members as shown in the exploded view (see opposite page). Our flexible weather seal is screwed into place along with durable EPDM corner boots. This seal ensures a weather tight flexible junction between the fixed curb base nailer and "floating" RTU. In the case where the curb is constructed for use as a return plenum, the seal ensures airtight integrity.

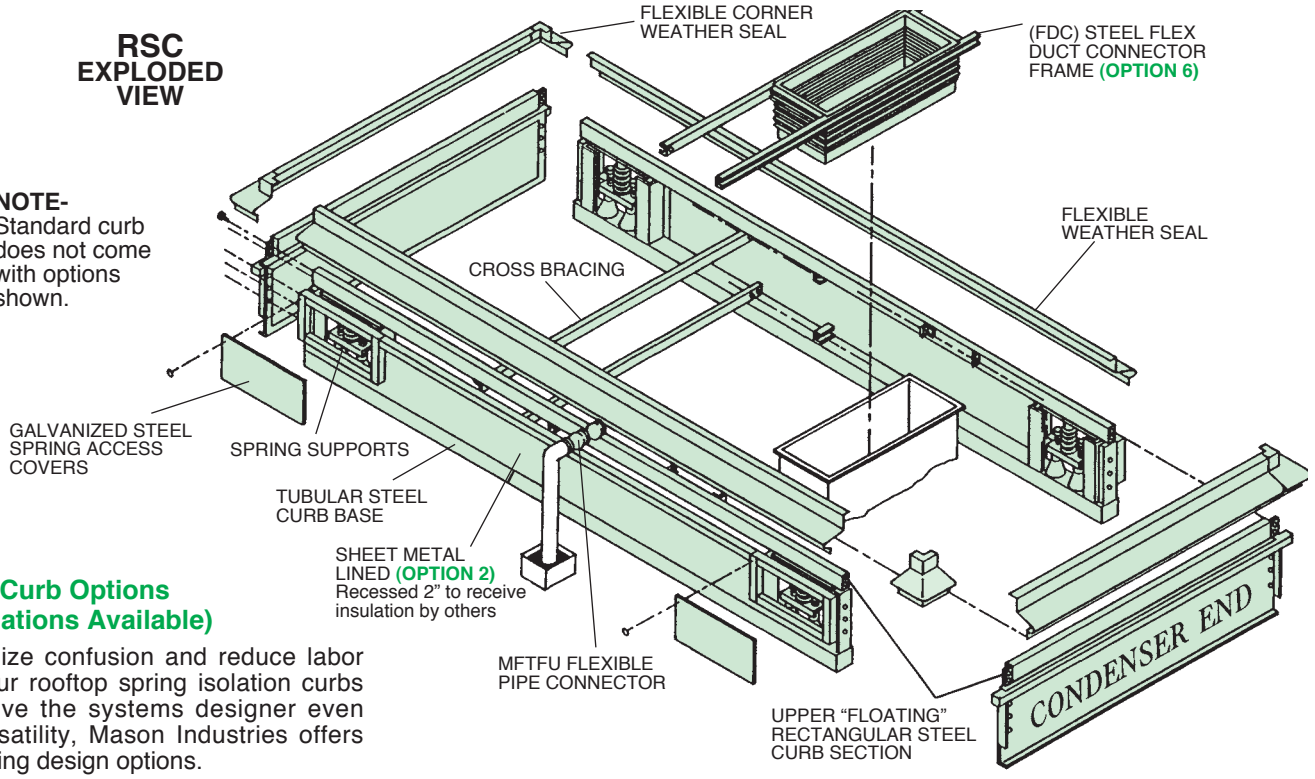
The RSC can be quickly assembled on the ground, then lifted to the roof, or assembled in place. Its form section base can either be set on the building's structural steel supports or directly on the deck. (Steel decks must be reinforced under the curb's spring locations with wood or steel channel fillers.)

One curb end is clearly labeled "CONDENSER END" to assist in proper orientation as shown on the exploded view illustration.

If spring load capacity or deflection need to be altered after installation, access windows allow springs to be exchanged quickly, without disturbing either the unit or the roofing. In the optional 3" deflection RSC, 3/4", 1 1/2" or 2 1/2" minimum static deflection springs can fit into the spring housings. Our standard RSC-C 2" deflection design can house 3/4" or 1 1/2" minimum deflection springs. The RSC-A design allows for interchangeability of 3/4" minimum deflection springs with different load capacities if weight information or spring selection is in error.

RSC EXPLODED VIEW

NOTE-
Standard curb does not come with options shown.

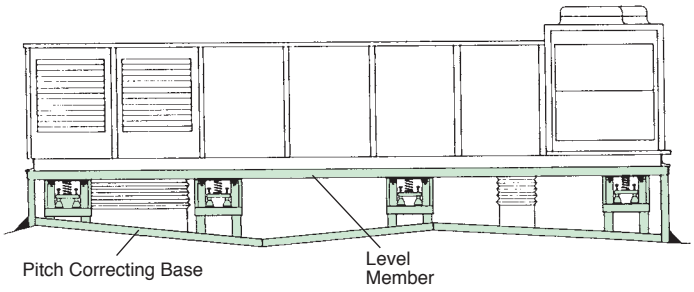


Custom Curb Options (Combinations Available)

To minimize confusion and reduce labor around our rooftop spring isolation curbs and to give the systems designer even more versatility, Mason Industries offers the following design options.

Option 1 –*Integrated Pitch Corrections*

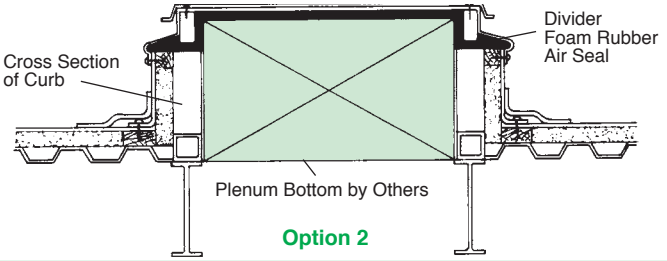
Where shimming cannot compensate for unusual roof deck pitch, Mason Industries offers Integrated Pitch Corrections. Even the most awkward combination of steep slopes under an RTU can be accommodated. Using a building's structural steel plan, we design and build a level isolation curb with lower members that follow the pitch in the roof.



Option 1

Option 2 –*Plenum Curb*

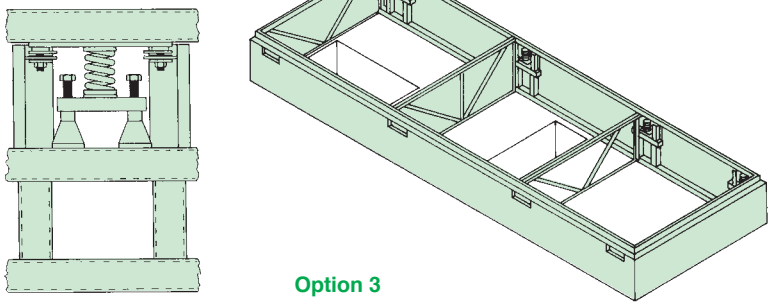
Tight fitted sheet metal siding is welded to the curb in place of the usual expanded metal, making the RSC an ideal return air plenum (see illustration above). For system designs requiring both discharge and return air plenums, an airtight plenum divider (shown below) is incorporated. It is flexibly sealed at the RTU bottom and around the upper "floating" curb section with thick foam rubber. (To prevent sweating, thermal insulation may be added to the plenum divider and/or flexible weather seal if desired.) Only the plenum bottom under the curb must be fabricated on site by others.



Option 2

Option 3 –*Tall Curb*

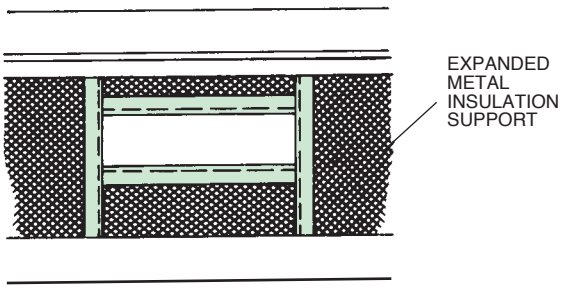
Any curb can be made taller. Steel posts are welded underneath each spring location raising the spring housing and upper "floating" curb member to the desired height. In this manner heights up to approximately 36 inches are attainable. Elevations above three feet sometimes require the use of an additional tubular steel base member, along with braces, welded below the first.



Option 3

Option 4 –*Access and Duct Openings*

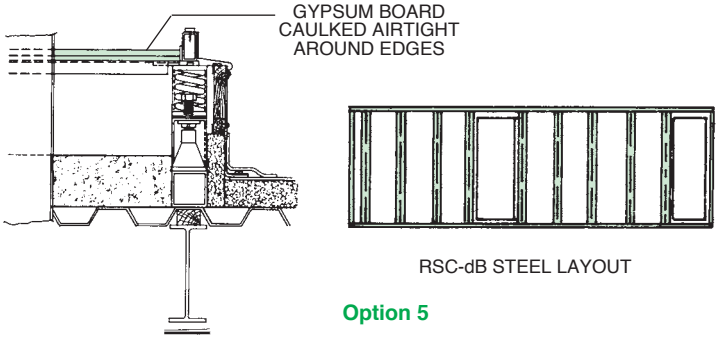
Framing horizontal openings with angle iron is another available option. These can be made with or without cover plates.



Option 4

Option 5 - *RSC-dB Acoustical Package*

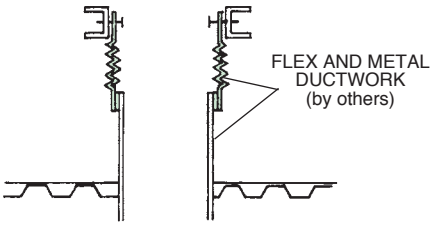
More than 8 dBA or almost half the radiated RTU noise can be reduced by installing Mason Industries RSC-dB Acoustical Package directly under the unit. Two sealed layers of gypsum board attached to the RSC's "floating" upper base member limit acoustical energy radiated from the unit's bottom. The acoustical barrier is supported by steel members running around the perimeter and across the width of the curb.



Option 5

Option 6 - *Flexible Duct Supports (FDS)*

Attachment of flexible duct is made easy by the addition of a steel frame fixed to the RSC's upper "floating" steel member. Located directly beneath the equipment's duct opening (see exploded view) the frame is dimensioned to exactly match the opening and uses a foam rubber gasket to seal against the unit's bottom. Connection from below with a flexible section is simple and quick, from above all that is needed is to set the unit in place.

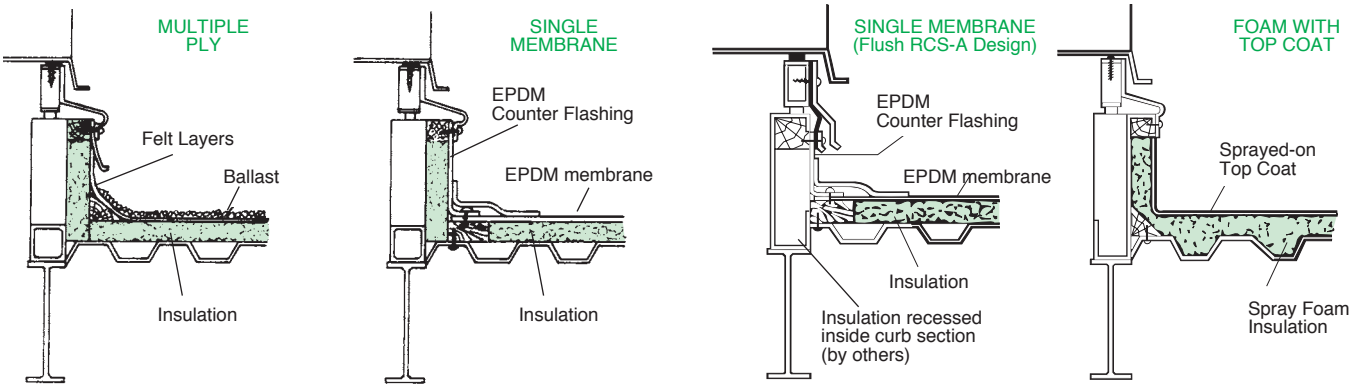


Option 6

Roofing-in the RSC

The minimum distance recommended from the top of a finished roof to a curb's wooden nailer is approximately 10 inches. The height of the standard RSC's wooden nailer is established to give this clearance when the curb is set below the roof deck on the buildings structural steel.

Typical Installations (Insulation, counter flashing and roofing materials are field supplied and guaranteed by others)



Important: Check with your roofing materials manufacturer for acceptable methods of curb flashing.

SPECIFICATION

Curb mounted rooftop equipment shall be flexibly ducted, water piping provided with double arch EPDM Expansion Joints, freon lines with flexible metal connectors and electrical lines with flexible conduits. The units shall be supported by a spring isolation cur, the lower member of which is a rigid steel tube or a specially formed steel section containing adjustable and removable steel springs that support the upper floating section. The upper frame must provide continuous support for the equipment and must remain captive when resiliently resisting wind and seismic forces. All directional neoprene snubber bushings must be a minimum of 1/4" thick. Steel springs shall rest on 1/4" neoprene acoustical pads. Minimum spring deflection shall be _____(*Engineer to insert 3/4", 11/2" or 21/2"*). Hardware must be cadmium or zinc electroplated and the springs similarly plated or provided with an approved rust resistant finish.

The curb's waterproofing shall consist of a continuous galvanized flexible counterflashing nailed over the lower curb's waterproofing and joined at the corners by EPDM bellows. All spring locations shall have access ports with removable waterproof covers. Lower curbs shall have provision for 2" insulation.

Curbs shall be type RSC, Duct Connector Type FDS, Double Arch Expansion Joints Type MFTFU all as provided by Mason Industries, Inc. or approved equal.

If additional acoustical protection is needed, please add the following paragraph.

The floating member of the roof curb shall have perimeter angle and cross members to support two layers of 5/8" waterproof sheetrock laid on with staggered joints. Sheetrock must surround ducts to provide a continuous sound break. This acoustical barrier shall be caulked to minimize sound transmission. Where the mechanical arrangement makes attachment to the floating member unfeasible, the barrier shall be attached at the highest practical elevation of the fixed curb with provision for 1" thick closed cell neoprene flexible seals around the ductwork. A four inch layer of 1.5 density fiberglass shall cover the entire solid roof surface under the unit. Ductwork shall be lined with sound absorbent material or coated with a damping compound such as Mason Industries MDC-10. Complete instructions shall be provided by the spring isolation curb manufacturer. Curbs shall be Mason Industries, Inc. Type RSC-dB or approved equal.

MASON INDUSTRIES, INC.

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