



# PIPE PORTAL SYSTEMS EQUIPMENT RAILS ROOF CURBS

Roof Products & Systems

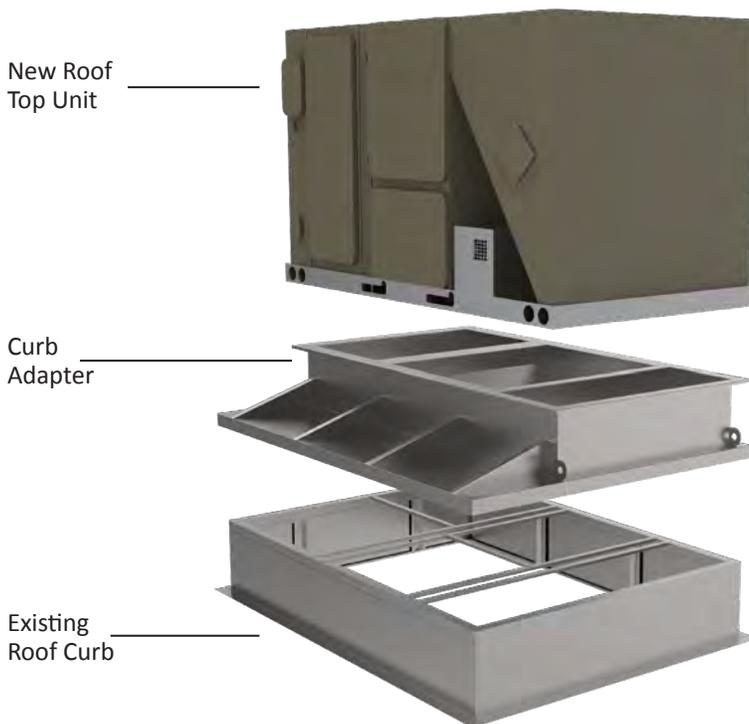
**HART** COOLEY<sup>®</sup>  
*install confidence.*





**Roof Products and Systems Curb Adapter** is designed and engineered to adapt the existing curb and ductwork to fit the new roof top unit. Labor time for retrofitting the new roof top unit is reduced from days to hours. This is accomplished by eliminating penetrations and structural changes, therefore maintaining roof integrity (no roofer needed). The short period of time required for installation of the curb adapter and the mounting of the new roof top unit drastically reduces down time and the resulting inconvenience of tenants.

Roof Products and Systems minimizes the need for field measurement. Just advise Roof Products and Systems of the manufacturer and model numbers of both old and new roof top units. Maintaining an extensive library of literature on new and discontinued roof top units enables Roof Products and Systems to accurately engineer a curb adapter matching a new roof top unit to an existing curb.



## FEATURES & BENEFITS

### Fully welded one-piece construction

- No field assembly
- No Problem of missing parts
- Saves installation time and money

### Factory installed insulation

- Prevents condensation
- Lowers operating costs
- Reduces unit noise

### Factory installed duct transitions

- No field duct assembly
- Eliminates costly sheet metal field work

### No modification to existing roof curb

- Preserves roof integrity  
(No roofer needed)
- No change in support steel needed

## SPECIFICATION

Provide Roof Products and Systems Curb Adapters for all roof top units as shown on drawings. Prefabricated Curb Adapters shall be manufactured of heavy gauge galvanized steel or as shown with all corners fully welded and all seams joined by continuous water and air tight welds for one-piece construction. Curb Adapters shall be insulated and internally reinforced to support designed equipment load. All dimensions to be coordinated by manufacturer and shop drawings furnished prior to fabrication. Contractor fabricated curb adapters will not be acceptable.



# Roof Curbs for Conventional Roofs

Custom fabricated to fit all manufacturers' skylights, HVAC units, powered roof exhausts, intake and relief vents, smoke hatches, flues, or job fabricated items with a watertight design. They provide uniform curb construction and quality that is simple to detail, requires minimal architectural supervision, is convenient to contractors and has a low known cost.

**Wood Nailers** - The sure way of attaching roof flashings, eliminates flashings from slipping, sagging, or buckling and helps eliminate vibration hum.

**Insulation** - 3 lb density rigid fiberglass board, built-in where it can't be omitted, provides condensation free openings and has sound absorption qualities.

**Welded Corners** - Continuous welded corners, monolithic construction, designed to meet all weight requirements.

**Galvanized Steel** - Provides maximum strength with minimum expansion and contraction.

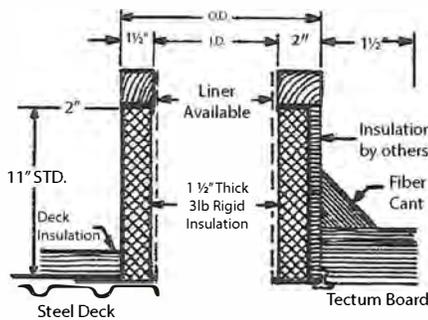


### OPTIONAL FEATURES:

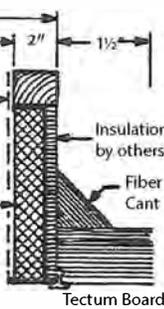
- Custom dimensions
- Roof pitch requirements
- Burglar bars
- Extended base plate
- Damper trays
- Liners
- Heavier gauge
- Aluminum construction
- Neoprene gaskets

### SPECIAL APPLICATIONS:

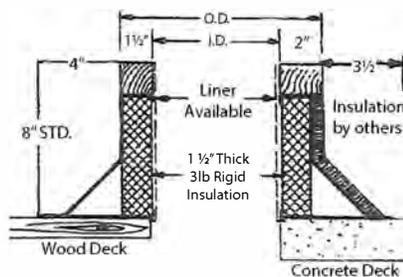
- Seismic & Vibration Isolation curbs
- Burglar Bar curbs
- Sound Reduction curbs
- Solid Top curbs
- Louvered curbs
- HVAC Equipment curbs



**RC-2A**



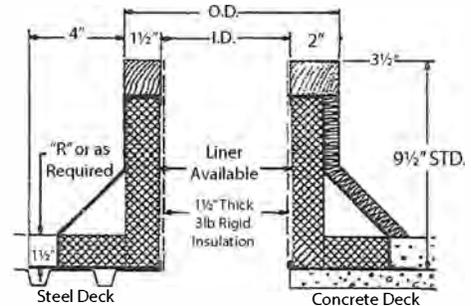
**RC-2B**



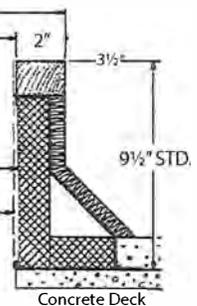
**RC-3A**



**RC-3B**



**RC-4A**



**RC-4B**

## SPECIFICATION

Provide Roof Products and Systems Roof Curbs Style RC- at all roof openings as shown on drawings. Prefabricated roof curbs shall be of box section design, constructed using minimum 18 gauge galvanized steel with fully mitered and welded corners, and a 3" cant (except styles RC-2A&B). Roof curbs shall be internally reinforced on any side longer than 3'0" and shall have factory installed integral base plate. Roof curbs to be insulated with 1 1/2" thick 3 lb density fiberglass insulation and have factory installed wood nailers. Height to be 8" above finished roof or as detailed. Roof curbs shall be level at the top with pitch built-in when deck slopes 1/4" per foot or greater, or as detailed. Contractor fabricated roof curbs will not be accepted.

\*Series RC-4A&B Roof curbs shall include an "R" (raised cant) dimension to match the thickness of the deck insulation of the roof.

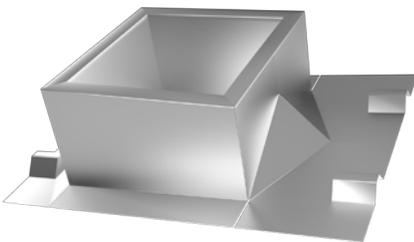
Custom fabricated to fit metal roof panel configurations and required roof pitches. Custom sized to fit all manufacturers' skylights, HVAC units, powered roof exhausters, intake and relief vents, smoke hatches, flues or any other roof mounted equipment with a watertight design. They provide uniform curb construction and quality that is simple to detail, requires minimal architectural supervision and is convenient to contractors.

**Integral Water Diverter Cricket** - The best way to promote positive water run off and eliminate water ponding.

**Insulation** - 3 lb density rigid fiberglass board, built-in to prevent omitting, provides condensation free openings, and has excellent sound absorption properties.

**Welded Corners** - Continuous watertight welds, strong monolithic construction, engineered to meet all weight requirements.

**Galvalume Steel** - Provides strength of galvanized steel with the corrosion-resistance of aluminum.

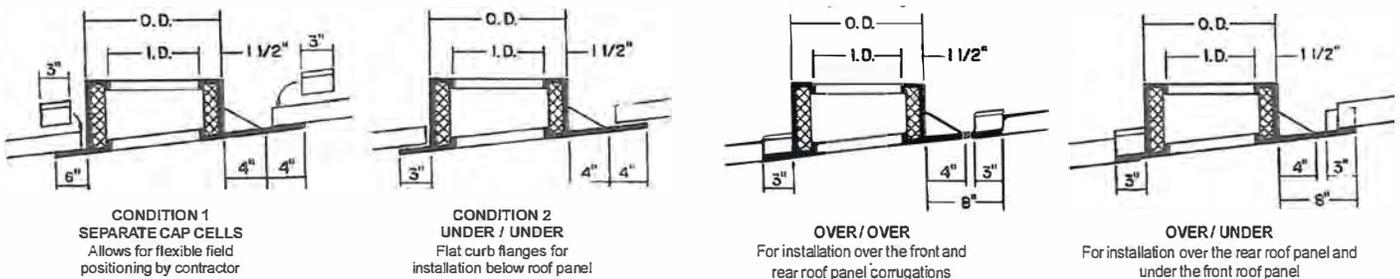


#### OPTIONAL FEATURES:

- Custom dimensions
- Roof pitch requirements
- Burglar bars
- Extended base plate
- Damper trays
- Liners
- Heavier gauge
- Aluminum construction
- Neoprene gaskets

#### SPECIAL APPLICATIONS:

- Seismic & Vibration Isolation curbs
- Burglar Bar curbs
- Sound Reduction curbs
- Solid Top curbs
- Louvered curbs
- HVAC Equipment curbs



## SPECIFICATION

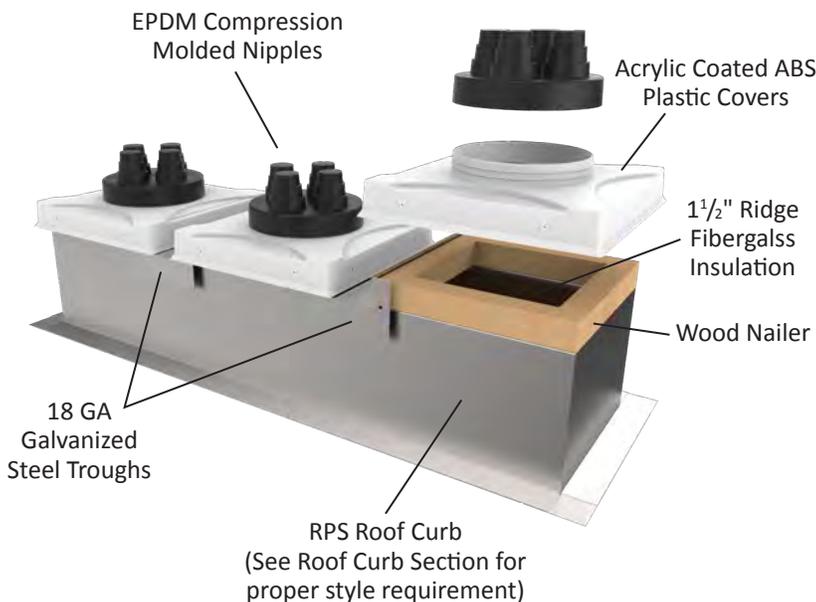
Provide Roof Products and Systems Roof Curbs Style RC-7 at all roof openings as shown on drawings. Prefabricated roof curbs shall be of box section design with integral water deflecting cricket, constructed using minimum 18 gauge galvalume steel with fully mitered and welded corners and all seams joined by continuous water and air tight welds for one-piece construction. Roof Curbs shall be internally reinforced on any side longer than 3'0" and shall have factory installed integral base plate. Roof Curbs shall be level at the top with pitch built-in. Contractor fabricated roof curbs will not be accepted. Burglar bars, liners, and other options shall be furnished where shown in accordance with Roof Products and Systems standard detail.

The Pipe Portal System is designed to allow for both vertical and horizontal pipe movement, yet provide a maintenance-free permanent installation which accommodates pipe sizes of  $\frac{3}{8}$ " up to 12".

The **Curb Cover** is molded from ABS plastic with a laminated acrylic coating which gives high resistance to both ozone and ultraviolet rays as well as a servicable temperature range of -40° F to +270° F.

The **Molded Sealing Ring** on the collared opening and the groove in the rubber cap assures a weather-tight pressure and mechanical lock.

The **Protective Rubber Caps** are compression molded of EPDM rubber with a temperature range of -60° F to +270° F and have high resistance to both ozone and ultraviolet rays. The conical shaped steps of the nipple provide a taut weatherproof seal around the pipe in addition to the swivel-action stainless steel clamps that give added protection to guarantee the pipe seal. The swivel action of the clamp cuts installation time by 75%.



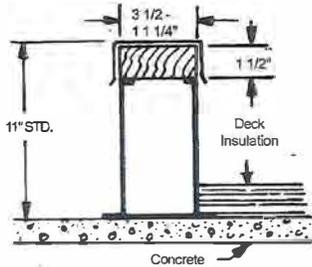
Pipe Portal Cap Selection Chart		
	N-18	Fits 4 - $\frac{3}{8}$ " to 1" pipes Fits 12" X 12" O.D. Curb
	N-21	Fits 4 - 1" to 2" pipes Fits 12" X 12" O.D. Curb
	N-28	Fits 2 - $\frac{3}{8}$ " to 1" pipes Fits 2 - 1" to 2" pipes Fits 12" X 12" O.D. Curb
	N-62	Fits 1 - 2" to 6" pipe Fits 12" X 12" O.D. Curb
	N-182	Fits 1 - 8" to 12" pipe Fits 20" X 20" O.D. Curb

## SPECIFICATION

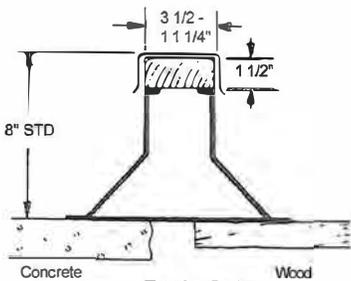
Provide Roof Products and Systems, Pipe Portal Flashing Systems at all points where pipes 12" in diameter or smaller are penetrating the roof. The Pipe Portal System shall include a heavy gauge galvanized steel roof curb with integral base plate, continuously welded corner seams, factory installed wood nailer and  $1\frac{1}{2}$ " thick 3lb rigid fiberglass insulation. The Pipe Portal System shall be furnished with a laminated acrylic ABS plastic curb cover with pre-punched holes and molded sealing ring on \*8" collared opening and an EPDM compression molded cap with stainless steel clamps. Pipe Portal System shall be Model RC-\_\_A with N-\_\_ cap as manufactured by Roof Products and Systems. Contractor fabricated pipe flashings will not be accepted.

\*Note: Large Pipe Portal collared opening is larger than 8".

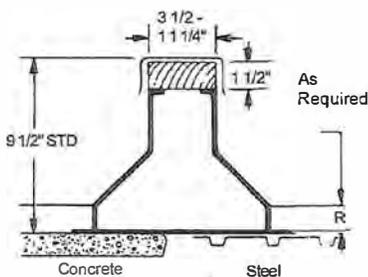
RPS Equipment Rails are prefabricated sheet steel structural members designed for all types of roof systems. Provides a uniform mounting pedestal for condensers, blowers and other roof mounted equipment. Manufactured in any length to match the equipment and to span the proper number of roof joists. RPS Equipment Rails have a high bearing capacity attained by a system of internal gussets welded into position at specific intervals along the length of the rails. A continuous wood nailer covered by a removable counterflashing provides for an effective method of attaching roof flashings and assures a watertight installation. Replaces inadequate railroad ties, wood blocks, costly pipe stubs and leaky pitch pans.



**ER-2A Style**  
For Decks with Lightweight fill or Tapered Insulation



**ER-3A Style**  
For Uninsulated Wood or Concrete Decks



**ER-4A Style**  
For Insulated Steel or Concrete Decks

### RPS Equipment Rail Loading Information

The following data is compiled with engineered internal reinforcing structurally incorporated therein

Style	Width & Height	Maximum Allowable Concentrated Load	Maximum Allowable End Reaction	Maximum Allowable Intermediate Reaction	Maximum Allowable Uniform Load
<b>18 Gauge</b>					
8" Above Roof Line					
ER-2	3 1/2" x 11"	3000 lbs	3300 lbs	3000 lbs	860 lb/ft
ER-3	3 1/2" x 8"	1450 lbs	1700 lbs	1450 lbs	450 lb/ft
ER-4	3 1/2" x 9 1/2"	1800 lbs	2200 lbs	1800 lbs	550 lb/ft
12" Above Roof Line					
ER-2	5 1/2" x 15"	4250 lbs	4000 lbs	4250 lbs	1200 lb/ft
ER-3	5 1/2" x 12"	2500 lbs	3125 lbs	2500 lbs	550 lb/ft
ER-4	5 1/2" x 13 1/2"	3200 lbs	3800 lbs	3200 lbs	680 lb/ft
16" Above Roof Line					
ER-2	7 1/2" x 19"	4700 lbs	3800 lbs	4700 lbs	2300 lb/ft
ER-3	7 1/2" x 16"	2000 lbs	2400 lbs	2000 lbs	550 lb/ft
ER-4	7 1/2" x 17 1/2"	2500 lbs	3100 lbs	2500 lbs	725 lb/ft
<b>14 Gauge</b>					
8" Above Roof Line					
ER-2	3 1/2" x 11"	5300 lbs	5800 lbs	5300 lbs	1400 lb/ft
ER-3	3 1/2" x 8"	2500 lbs	3100 lbs	2500 lbs	725 lb/ft
ER-4	3 1/2" x 9 1/2"	3200 lbs	3800 lbs	3200 lbs	925 lb/ft
12" Above Roof Line					
ER-2	5 1/2" x 15"	7300 lbs	6900 lbs	7300 lbs	1900 lb/ft
ER-3	5 1/2" x 12"	4350 lbs	5500 lbs	4350 lbs	925 lb/ft
ER-4	5 1/2" x 13 1/2"	5500 lbs	6800 lbs	5500 lbs	1200 lb/ft
16" Above Roof Line					
ER-2	7 1/2" x 19"	7500 lbs	6700 lbs	7500 lbs	3300 lb/ft
ER-3	7 1/2" x 16"	3500 lbs	4250 lbs	3500 lbs	925 lb/ft
ER-4	7 1/2" x 17 1/2"	4400 lbs	5450 lbs	4400 lbs	1200 lb/ft

(\*All concentrated loads are based on a minimum bearing surface of 4" by the width of the support). A minimum bearing width of 4" for all concentrated loads and reactions, with a minimum of 2 feet. A factor of 2 or greater is reflected by the recommended allowable loads. Figures based on 8' joist spacing.

The above is recommended weight loading information by Roof Product & Systems



## SPECIFICATION

Provide Roof Products and Systems, Equipment Rails Style ER-\_\_ at all non-ducted rooftop equipment as shown on drawings. Prefabricated equipment rails shall be manufactured from heavy gauge galvanized steel as required. Equipment rails shall have internal reinforcement with an integral base plate, fully mitered and welded corners, a 3" cant (except style ER-2A) and a factory installed wood nailer (specify 2x4, 6, 8, 10 or 12). Height to be 8" above finished roof or as detailed. Contractor fabricated equipment rails will not be accepted. Equipment rails shall span a minimum of two joists and not cantilever more than 6" beyond edge of supporting structural member. Equipment rails shall be level at the top with pitch built-in when deck slopes 1/4" per foot or greater, or as detailed. \*Series ER-4A&B Equipment Rails shall include "R" (raised cant) dimension to match the thickness of the deck insulation of the roof.

The RPS equipment rail assures the proper mounting and flashing base, while the pipe roller assembly allows for pipe movement from expansion and contraction and has 12" vertical and horizontal adjustments to mount pipes level and straight. The RPS Pipe Mounting Pedestal has a full line of features that allow for single to multi-pipe mounting with a minimum of effort and a maximum of speed.

**RPS Equipment Rail** - Refer to Equipment Rail specifications on page 7.

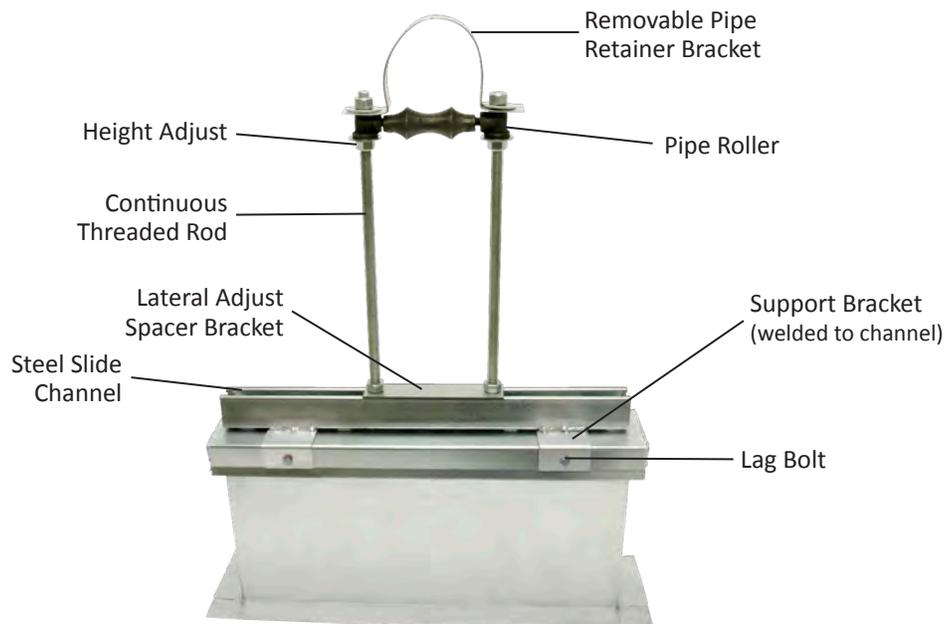
**Continuously Threaded Galvanized Rods** - Allows for height adjustment over full length of the rods.

**Steel Slide Channel** - Permits a smooth unbroken lateral adjustment over the entire length of the channel, attached to "U" shaped mounting brackets and secured through the side of the counterflashing with lag bolts.

**Removable Retainer Bracket** - Travels with vertical pipe adjustment, allows installer to lay pipe on rollers (no need to thread the needle).

**6 Roller Sizes** - 2", 4", 6", 8", 10", & 12" rollers accommodate all pipe sizes up to 12" (for heavy duty larger size pipe mounting pedestal, contact RPS).

**Optional Features** - Longer equipment rails and channels, double channels, and multi-pipe roller assembly combinations offer multiple pipe mounting on a single equipment rail, all made possible by the steel slide channel design.



## SPECIFICATION

Provide Roof Products & Systems, Pipe Mounting Pedestals at all necessary specified points or as shown on drawings. The Pipe Mounting Pedestals shall include Equipment Rails (standard 2 feet long for single pipe support, see RPS Equipment Rail Section on page 7 for proper style requirement), a single 24" long steel slide channel (or as specified) attached to "U" shaped mounting brackets and secured to side of equipment rail with lag bolts supplied. The 2", 4", 6", 8", 10", or 12" pipe roller assembly shall have galvanized 18" long continuous threaded rods to give 12" vertical adjustments, galvanized removable pipe retainer bracket, cast iron pipe roller, and lateral adjust spacer bracket for horizontal adjustment.

RPS Duct Mounting Pedestals are the ultimate solution to mounting duct runs across a flat or pitched roof. Each RPS duct mounting pedestal incorporates an RPS Equipment Rail to assure proper support and a superior flashing base for securing the roofing termination. On top of the equipment rail, the duct slide assembly allows for duct movement due to expansion and contraction while assuring that the ductwork can be secured to the support. Additionally, the duct slide assembly allows for 12" vertical and horizontal adjustments to mount ductwork level and straight. Each duct mounting pedestal has a full line of features which allows for single to multi-duct mounting with a minimum of effort and a maximum of speed.

**RPS Equipment Rail** - Refer to Equipment Rail specifications on page 7.

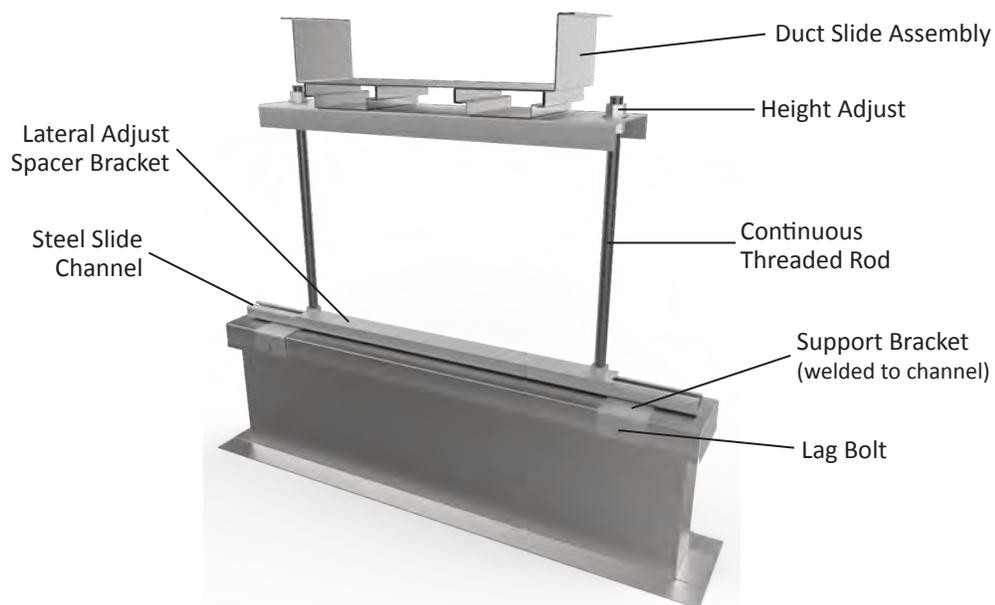
**Galvanized Steel Slide Channel** - Permits a smooth, unbroken, lateral adjustment to entire length of the channel. Attached to "U" shaped mounting brackets and secured through the side of the equipment rail cap flashing into the underlying wood nailer with lag bolts.

**Continuously Threaded Galvanized Rods** - Allows for height adjustment over full length of the rods.

**Galvanized Steel Duct Slide Assembly** - Automatically travels with the vertical duct adjustment. Allows installer to lay ductwork in a cradle and secure it at each support.

**All Sizes** - Accommodates rectangular ductwork and round ductwork up to 84" wide (heavy duty larger size assemblies also available - contact RPS).

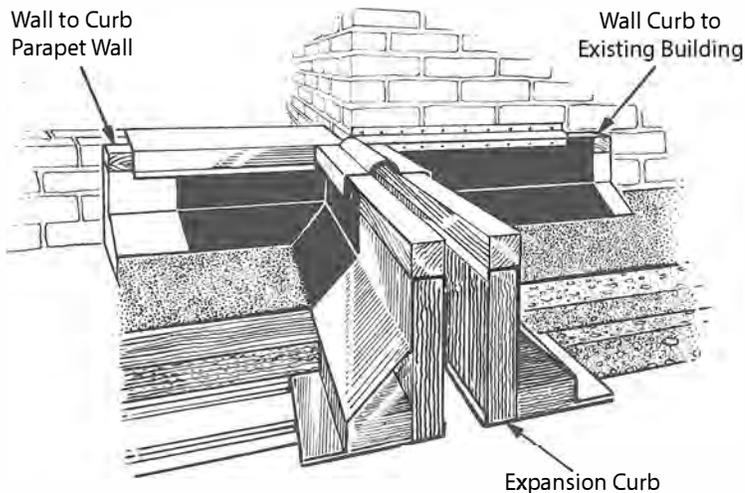
**Optional Features** - Longer equipment rails and slide channels, double slide channels and multi-duct assembly combinations available to provide multi-duct mounting side-by-side and/or piggy-back on a single equipment rail.



## SPECIFICATION

Provide Roof Products & Systems, Duct Mounting Pedestals at all necessary specified points or as shown on drawings. The Duct Mounting Pedestal shall include Equipment Rail (see RPS Equipment Rail section on page 7 for proper style requirement), matching length steel slide channel attached to "U" shaped mounting brackets and secured to side of equipment rails with lag bolts supplied. The duct mounting assembly shall have galvanized 18" long continuous threaded rods for 12" vertical adjustment, lateral spacer bracket for horizontal adjustment and a galvanized slide assembly.

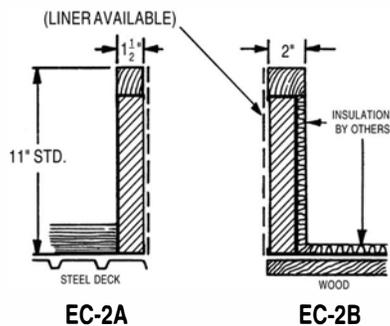
RPS Expansion & Wall Curbing allows for uniformity in method and design while also providing excellent flashing and termination points with watertight installation. This RPS system includes expansion joint curb in desired lengths, fully mitered one piece inside and outside corners and sloping end sections. By utilizing this system you can begin roofing as soon as the deck is in place. There is no need to wait for the mason or siding contractor to erect a wall to connect the roofing system. This system installs at a fraction of the time required over costly field built arrangements. It is also designed to meet any roofing system while allowing single source responsibility.



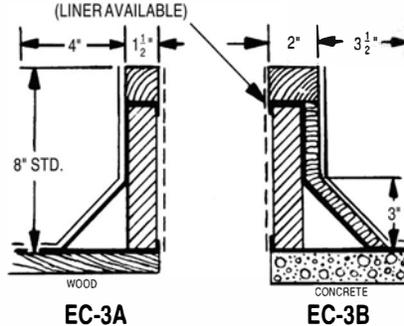
Excerpt from *N.R.C.A. Manual*  
**Are Roof Expansion Joints Necessary?**

The necessity for expansion joints, of course, depends upon the design and size of the building. We would like to point out, however, that hundreds of buildings are being constructed, from plans out of good architects' offices, without any or without enough roof expansion joints. On any rather long building, having wings extending from the main portions of the building, a roof expansion joint should be provided at each junction of the main portion of the building, with a wing. On buildings 150 feet or more long a roof expansion joint should be provided at each change in deck direction. Every building having a length of more than 200 feet should have a roof expansion joint. See that curb type expansion joints are used and/or detailed. Never use the Metal "U" type expansion joint on a roof.

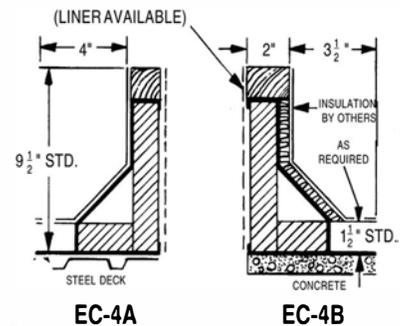
## FOR DECK WITH LIGHT WEIGHT FILL OR TAPERED INSULATION



## FOR UNINSULATED WOOD OR CONCRETE DECKS



## FOR INSULATED STEEL OR CONCRETE DECKS



## SPECIFICATION

Provide Roof Products & Systems prefabricated Expansion Curb (and/or Wall Curb) Style EC-\_\_ as detailed on drawings. Expansion Curb (and/or Wall Curb) shall be manufactured of heavy gauge galvanized steel as required, internally reinforced 36" on center, with base plate welded to shell. Expansion Curb (and/or Wall Curb) shall include factory installed wood nailer and are insulated with 1 1/2" thick 3 lb. density fiberglass insulation. Expansion Curb (and/or Wall Curb) to be supplied in 10 foot lengths and to be 8" above finished roof or as detailed. Expansion Curb (and/or Wall Curb) shall include any inside or outside corners, and any sloping end sections required, to maintain uniformity, or as shown on the drawings. Contractor fabricated Expansion Curb or Wall Curb will not be accepted.

\*Series EC4A&B Expansion and/or Wall Curbs shall include an "R" (raised cant) dimension to match the thickness of the deck insulation of the roof.

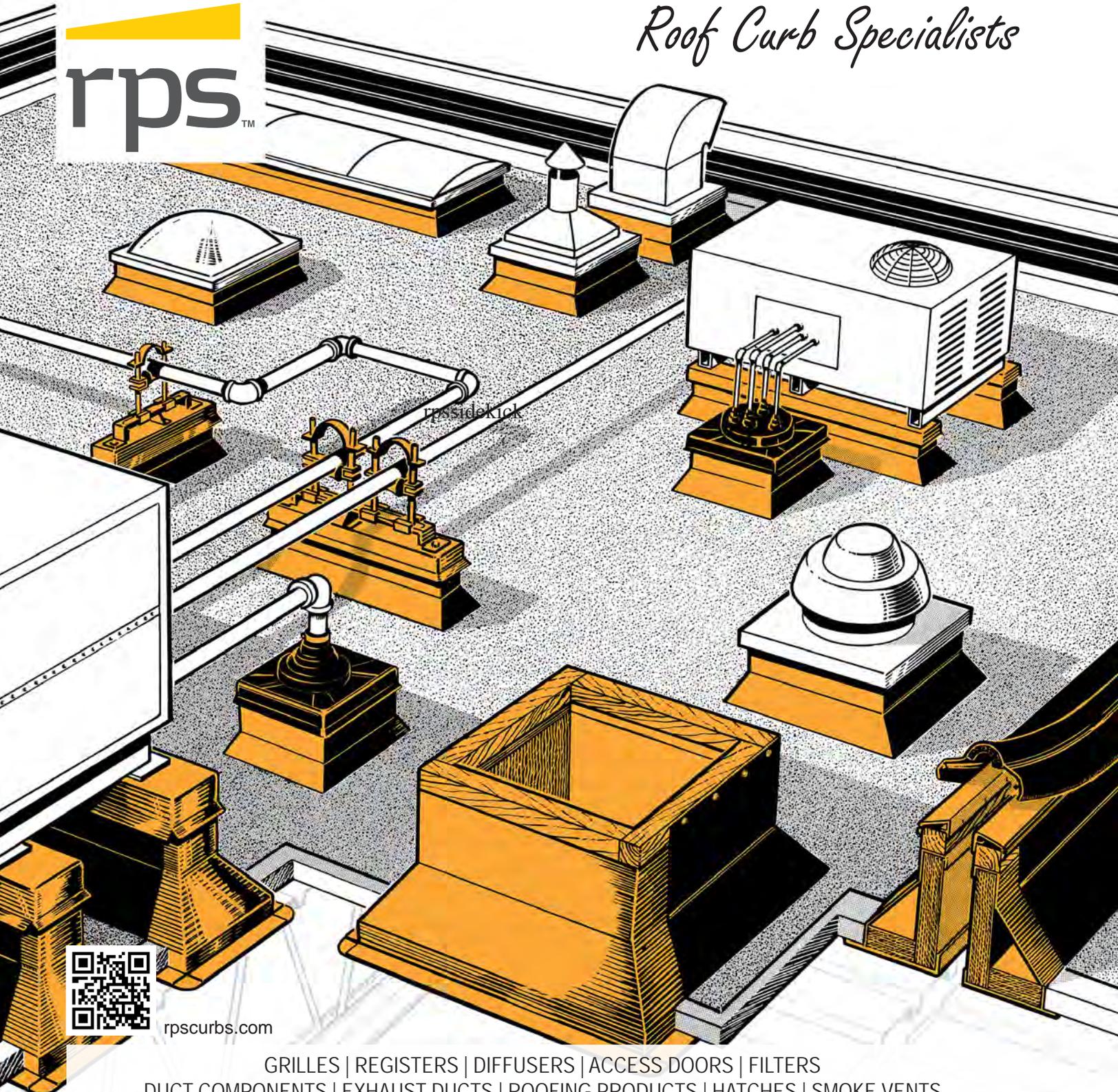


# ROOF PRODUCTS & SYSTEMS

*Roof Curb Specialists*



rps™



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GRILLES | REGISTERS | DIFFUSERS | ACCESS DOORS | FILTERS  
DUCT COMPONENTS | EXHAUST DUCTS | ROOFING PRODUCTS | HATCHES | SMOKE VENTS

## The RPS System:

Roof Curbs  
Equipment Rails  
Expansion Curbs

Pipe Portal® Systems  
Pipe Mounting Pedestals  
Duct Mounting Pedestals

## ROOF PRODUCT & SYSTEMS

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