OCTOBER 2019

thermaduct thermaround

OUTDOOR DUCT SOLVED

CONTRACTOR INSTALLATION MANUAL

LIMITED WARRANTY REGISTRATION INSIDE

www.thermaduct.com

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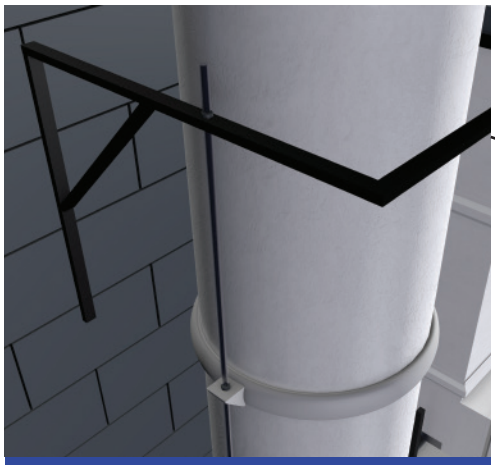
thermaduct™

Thermaduct is our rectangular outdoor ducting solution that offers high R-values and low air leakage. It provides the duct, the insulation and cladding all in one high performance product. Thermaduct is available in insulated values between R-8 and R-24 and offers extremely low air leakage. All these benefits are protected by a strong, UV stable 1000 micron vinyl cladding.

thermaround™

Thermaround is our round solution for outdoor applications. This high R-value system offers an R-12 solution with extremely low air leakage. Thermaround uses the same UV stable 1000 micron vinyl cladding for a durable solution that will naturally shed water. In the interior, air passes over a smooth aluminum surface free from loose fibers to give your building better IAQ performance.



Vertical sections are secured directly to connecting points on vertical drawband with threaded rod

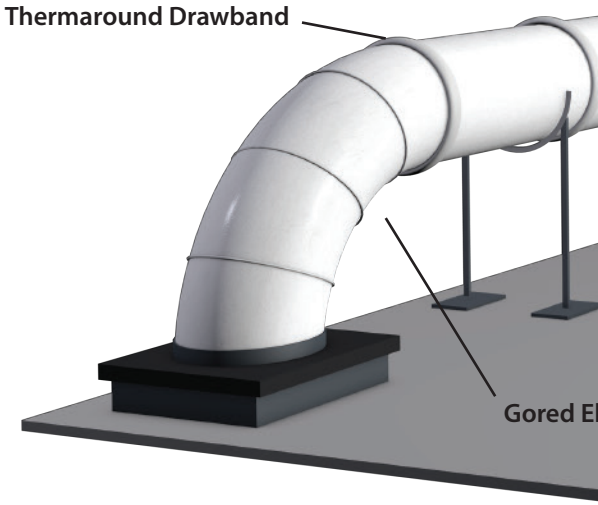
APPLICATIONS

All of Thermaduct's pre-insulated systems are designed, detailed and manufactured to provide quality control and assurance measures to meet customer specifications. Thermaduct is shipped in labeled and fully fabricated duct segments for ease of field rigging and assembly.

Thermaduct and Thermaround are specifically engineered for outdoor ducting applications that include high humidity, rain, snow, hail (less than golf ball size), salt/sea spray and other challenging applications.

Thermaduct should not be used in the following scenarios:

- Grease or Kitchen exhaust ductwork
- Air temperatures exceed 185 degrees Fahrenheit continuous
- Air velocity exceeds 5000 fpm continuous
- Static pressure may exceed 10" positive
- Air static pressure exceeds 6" negative
- Indoor applications (consult Thermaduct)
- Where you are conveying solids
- In application without maximum temperature control
- For chemical, fume or smoke exhaust (consult Thermaduct)



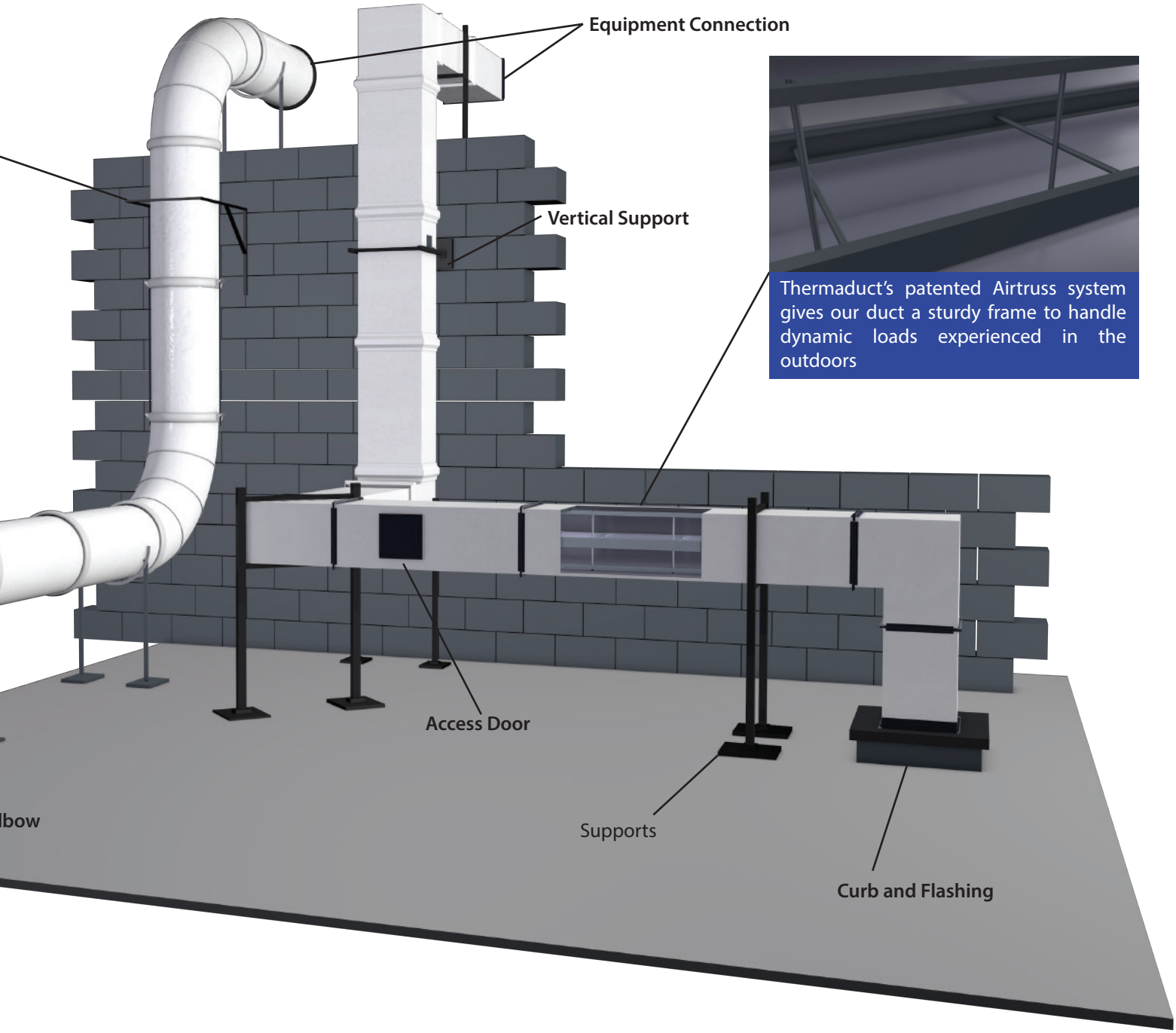
OUTDOOR DUCT SOLVED

Thermaduct™ offers two pre-insulated, pre-engineered duct systems that provides a quality outdoor solution designed for the elements. By incorporating the duct, insulation and cladding into a single integrated panel, Thermaduct offers higher efficiency than traditional outdoor ductwork due to its high R-values, low air leakage and weatherproof cladding.

Thermaduct and Thermaround use high quality closed cell phenolic insulation to provide unparalleled thermal performance that will meet or exceed future energy codes for years to come. Thermaduct's interior insulation is UL 181 listed, which offers excellent fire and smoke performance while also being highly resistant to mold growth.

Our patented vinyl cladding system is highly resistant to punctures, rips, tears and has exceptional rigidity. The outer surface of Thermaduct is laminated with a titanium infused, 1000 micron thick, UV stabilized vinyl clad that is designed specifically for the rigors of Mother Nature. This cladding provides a virtually seamless design on each piece of ductwork. Every connection employs a weatherproof covering system to eliminate water entering or air leaking from the duct.

In the following chapters you will find guidelines for the installation of Thermaduct . Should you have questions on issues not covered in this guide, please contact info@thermaduct.com.



Thermaduct's patented Airtruss system gives our duct a sturdy frame to handle dynamic loads experienced in the outdoors

INSTALLATION ACCESSORIES

Thermaduct requires field assembly of engineered duct segments. Factory specific accessories are provided to insure proper assembly of the completed system.

Thermaduct accessories shipped for field installation include:

- Gasketing materials for Thermaduct
  EDPM/Foam
- Sealant for Thermaduct vinyl seams and covers
  Cosmofen *vinyl to vinyl sealant (1 tube per 4 joints)*
  Dymonic Vinyl to Metal sealant (1 tube per Equipment Conn.)
  Kingspan KoolDuct silicone (1 tube per job)
- Flange connector insulating foam tape
  4" wide roll of foam insulation tape for full perimeter
- Flange Covers
  Rigid vinyl covers for all duct connections

Thermaround accessories shipped for field installation include:

- Sealant for Thermaround Connections
  Kingspan KoolDuct silicone (1 tube per job)
- Flange Rings
  Draw Band Rings that go over Thermaround Flange

The following are field supplied:

- Nuts and bolts
- Screws and fasteners
- Roof support frames, strut and channels
- Tie-downs or top frame members
- Installation tools
- Flashing materials
- Additional caulk and sealants

INSTALLATION TOOLS

Thermaduct's ultimate performance of the installation is shared between materials, manufacturing and the quality of the installation. We suggest the following tools be used for field assembly.

The following are field supplied:

- Angle Grinder or Circular Saw
- Power Drill/Driver
- Cleaning Cloth/Towel
- Caulk Gun
- Tape Squeegee

Suggested

- 45 Degree Blade Handle with Holder
- 90 Degree Blade Handle with Holder

RECEIVING A SHIPMENT

Installers are required to inspect all Thermaduct products received at time of delivery to verify if any of the pieces have been damaged during shipment. Recipient of damaged goods must notate damage on transportation company shipping documentation with delivery driver's signature. Installer will be deemed to have accepted the Systems unless it notifies Thermaduct, LLC in writing within 24 hours of delivery with written evidence of damage including photographs. If Thermaduct, determines that the Systems have been damaged, replacement plans will be communicated between Thermaduct, LLC, our Sales Representative and Installer in writing.

STORAGE AND HANDLING

Thermaduct and Thermaround segments are shipped in their finished state and require care to be exercised in the handling of all pieces to prevent damage.

While the finished system is designed for superior outdoor performance, unconnected Thermaduct segments should be stored inside or under cover wherever possible. Duct segments must also be kept clear from the ground to stay free from standing water. The open ends of Thermaduct segments shall be covered with a weatherproof tarp or sheet to prevent the intrusion of water or foreign materials.

If indoor storage is not possible, Thermaduct segments should be stored clear of the ground and covered with a weatherproof tarp or sheets at all times. Duct segments must be secured to prevent damage that may be caused by wind, rain, snow and hail to the interior of the duct.

Handling

- Lift - Do not slide
- Do not score, dent or de-face mating surface of flange connections
- Do not drop
- Use straps, not chains or cables, to cradle circumference

INFORMATION REQUIRED FOR INSTALLATION

COMPLETED CHECK SHEETS ARE REQUIRED FOR A THERMADUCT WARRANTY

In order for a Warranty Certificate to be issued, Thermaduct, LLC requires installers to complete both **Pre-Installation** and **Post Installation Check Sheets.** Because Thermaduct is an engineered product, the information collected will aid in making sure the duct fabrication process meets all requirements of the specified design and that installation is a smooth process.

Before fabrication begins, Thermaduct requires project information from the ductwork installer.

YOU WILL NEED THE FOLLOWING INFORMATION TO FILL OUT THE PRE-INSTALLATION CHECK SHEET

PRE-INSTALLATION

Confirmation of detailed system drawings for sizing
Required insulated value for project
Temperature range for conditioned air (inside air)
LEED details on Project (If applicable)
Supply air static pressure
Return air static pressure
External static pressure

POST INSTALLATION

Knowledge of installation
Proper installation process from this manual
Support/Hanger schedule
Air leakage testing (if applicable)
3 or more photographs of completed Installation

Thermaduct requires information from project installer to furnish a product warranty

Please fill out to the best of your ability. If you have any questions pertaining to your project please contact info@thermaduct.com for more information. We appreciate your time in providing us your project's data.

thermaduct

Thermaduct was designed to install in a similar fashion to traditional HVAC ductwork, with slight differences that need to be observed. The following pages will describe in detail proper support and connection methods for the Thermaduct rectangular duct system. Please contact Thermaduct or your local Thermaduct Representative should you have any questionsregarding installation.

These Guidelines Will Cover:

- Horizontal Supports
- Vertical Supports
- Thermaduct Connections
- Equipment Connections
- Field Modification

RIGGING DUCT SEGMENTS

Not unlike other ductwork, lifting Thermaduct and Thermaround should be done with care. All safety precautions should be taken to assure a safe and successful installation. A few precautions must be observed.

Flange is not a lifting point. Cradle ductwork with appropriate lifting straps.

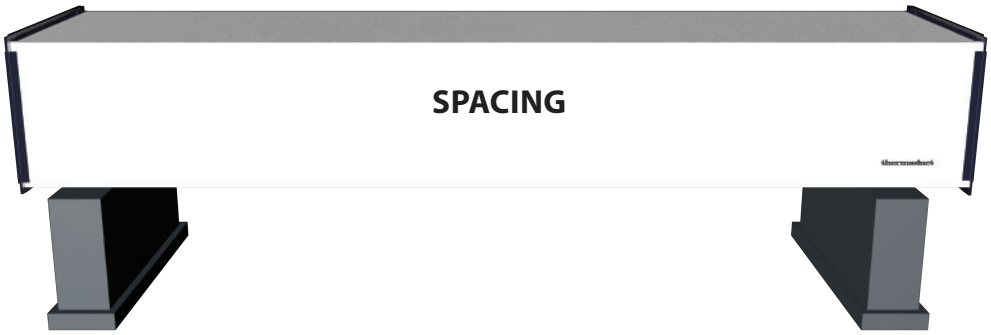
- Adhere to OSHA guidelines to insure a safe working environment
- Wear protective gear; hard hat & safety glasses as a minimum
- Do not aerial lift ductwork by its connecting flange
- Use approved lifting straps that are not outdated
- Provide necessary manpower to carry duct segments into place*
- Use cart or carry ductwork segments to installation location*
- Wear protective gloves
- Provide security to ensure items on the roof are secure (wind)
- Provide roof protection when setting duct segments on the roof

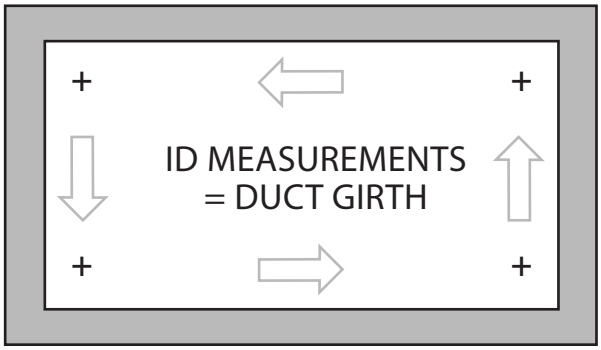
** Or utilize a crane to rig into the proper location*

RECTANGULAR ROOF SUPPORTS AND HANGERS

Thermaduct shall be installed with adequate support to insure the life of the system. Roof supports and hangers are the foundation that ensure Systems are firmly adhered to the structure and capable of providing mechanical support of the Thermaduct system. **Also refer to roof support manufacturers guidelines for their specifications as these instructions do not supersede their published data. Consult rail or support bracket manufacturer for their data relating to structural capacity & application.**

This Chapter does not deal with seismic requirements; consult a seismic engineer for requirements when applicable.



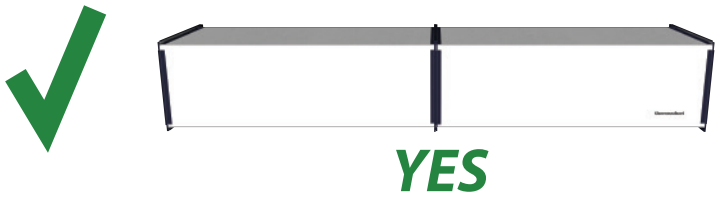


ID MEASUREMENTS = DUCT GIRTH

Duct girth ID < 84″	Spacing 13′ maximum
Duct girth ID > 85″	Spacing 8′ maximum
Duct girth ID > 232″	Spacing 6′ maximum
Duct girth ID > 360″	Consult Factory

On buildings over 20 stories, 8′ maximum spacing

ROOF SUPPORTS AND HANGERS



YES

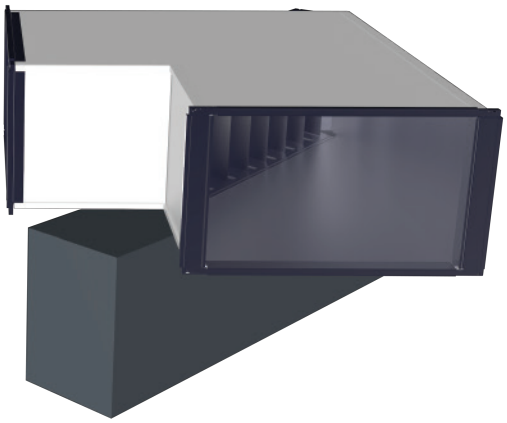
NO

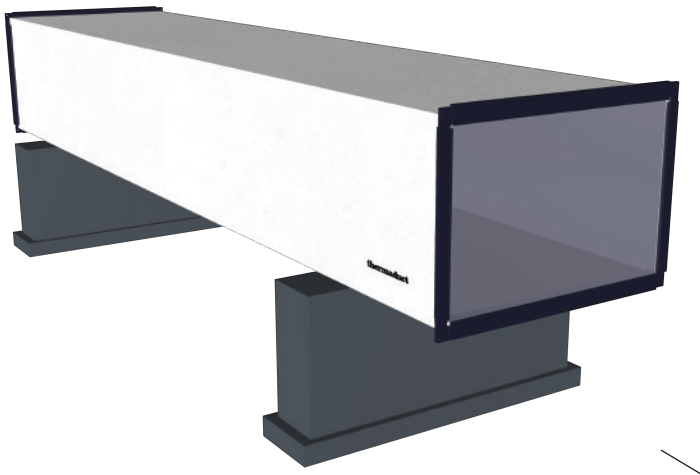
LEVEL INSTALLATION

Connected pieces of Thermaduct should be level and plumb. Seams should not have open gaps, which indicate an un-level or out of square connection.

TURNING VANE RAILS

Turning Vane Support rails or strut supports must be located directly beneath the turning vane





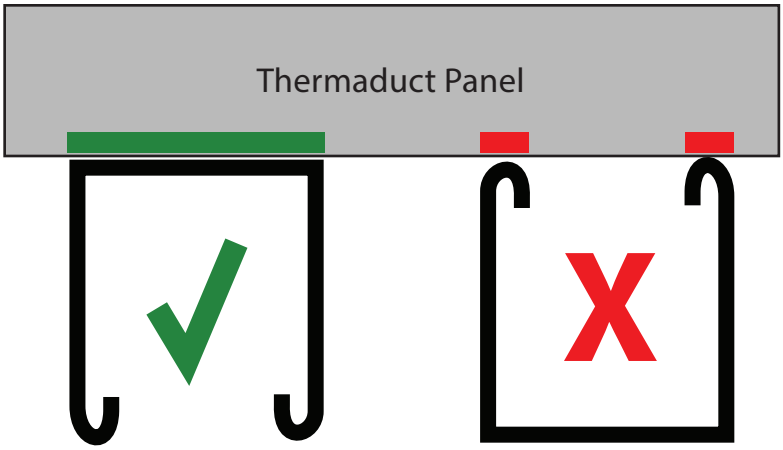
Support Rails minimum 1% larger than duct width

RAIL WIDTH

Supports must support the outside edges of duct segment and shall be wide enough to handle duct weight, which varies by duct girth.

Historically, sheet metal duct installations had very poor insulation and calculation for snow load was not a concern (the snow simply melted). With the high thermal value of Thermaduct, weight from snow load itself must be considered, not only in the duct construction, but the support framework being utilized. Snow load is observed during initial design and engineering of Thermaduct and Airtruss reinforcements.

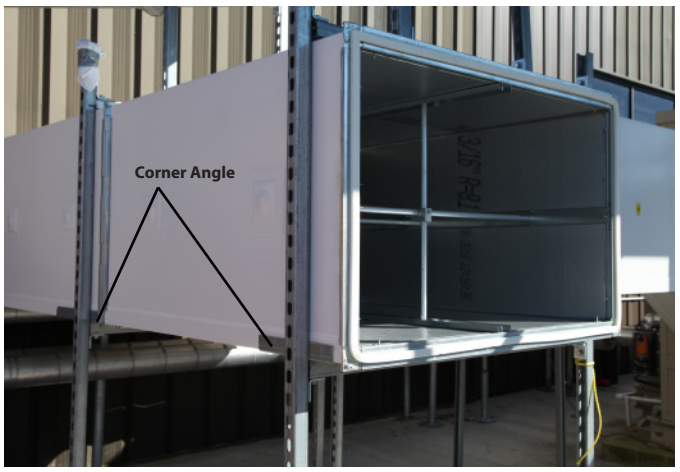
STRUT SUPPORTING



Larger duct segments will require frame supports above and below duct segments.

Strut supports shall be used in a way that the top (larger support surface) shall contact the Thermaduct ductwork. Installing strut upside down will damage the duct cladding due to point loading and inadequate support.

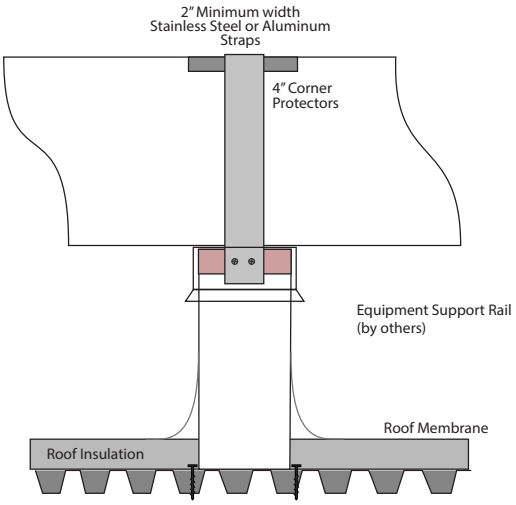
For larger duct, metal corner angles or C Channels are to be used to distribute the weight across a larger surface. These are to be made of 18 gauge galvanized or aluminum. For appropriate sizing, please refer to the graph below.



Duct Girth	Channel Width	Corner Angle
<36"	1 1/2"	
>36/<84	3"	2 x 2 x 10"
>84/<120	4"	3 x 3 x 10"
>120/<200	5"	3 x 3 x 12"
>200	6"	4 x 4 x 12"

C Channel supports may require you to adjust placement to not interfere with application of the 4-bolt flange covers. It is best to leave at least 7-8 inches from the flange and the center of the strut support when using C Channels or Corner Angles.

TIE DOWN STRAPS - SMALL DUCT

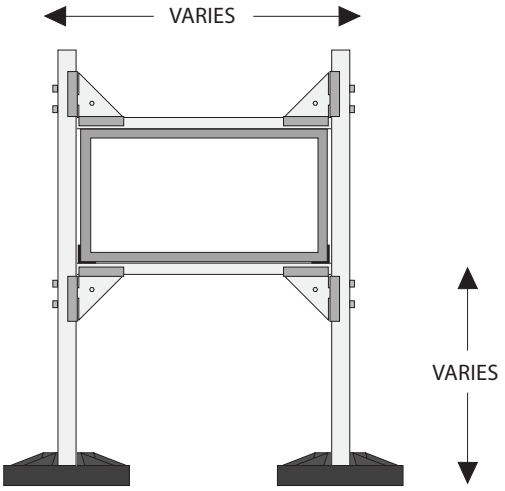


FOR <84" DUCT GIRTH

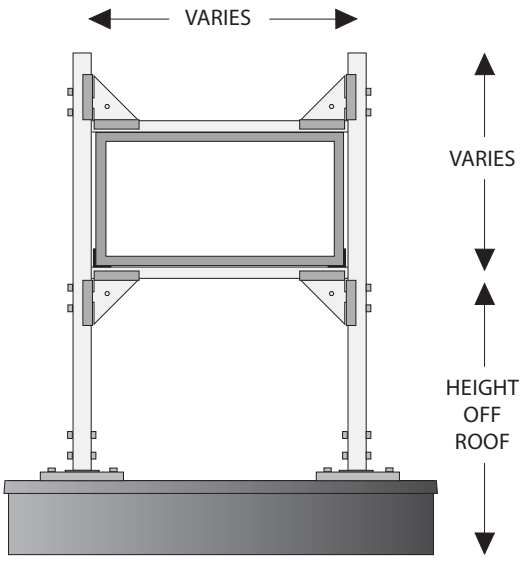
For duct segments with duct girth less than 84", Thermaduct segments can be installed with rails, metal corner protectors and straps.

ADDITIONAL SUPPORT GUIDELINES

- Every other roof support should be tied down to the roof deck unless wind loading requires added tie-down support.
- Recommended spacing is not to exceed designated spacing on page 9.
- Width and height are built job specific based on information based on manufacturer's guidelines.
- Utilize C Channels or Corner angles dependant on size of ductwork.
- Every duct tap shall be supported within 2 feet.
- Ductwork connected to flex connectors shall be supported at the connection.
- Always adhere to Support Manufacturer's Guidelines.



INTERMEDIATE SUPPORT

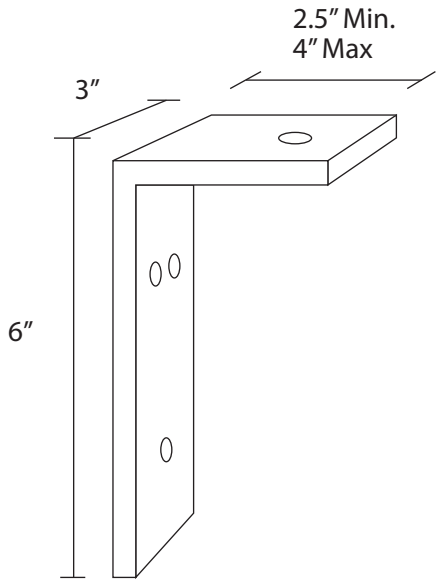


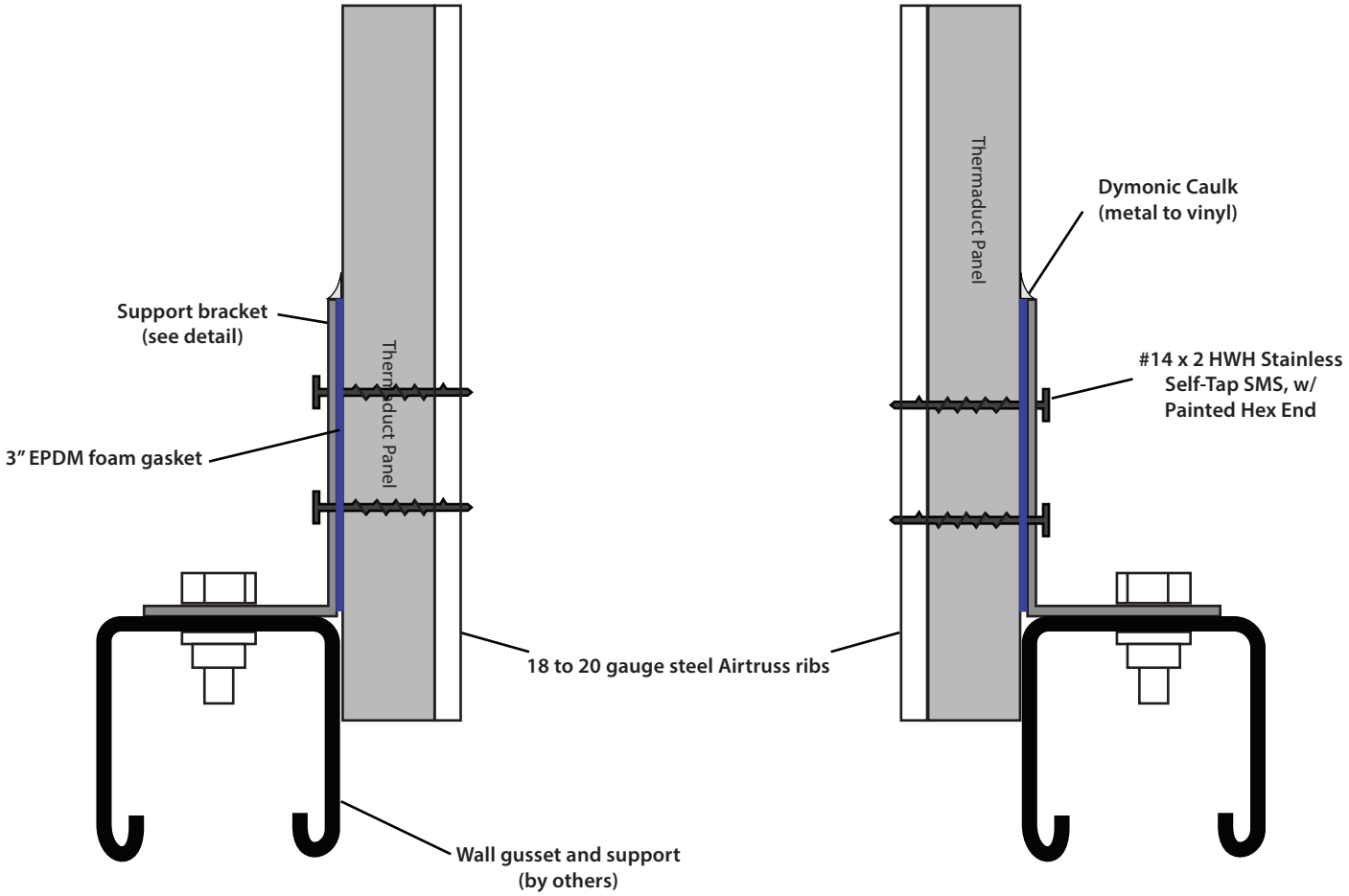
TIE DOWN SUPPORT

VERTICAL SUPPORTS

Thermaduct may be supported using strut mounted to the exterior wall of a building. Custom brackets are still to be used every 8 feet and tied into the Airtruss Ribs using 3 screws each.

- Secure strut frame to wall
- Install Thermaduct segment vertically and align between strut segments.
- Attach third strut piece, ensuring a secure hold on ductwork.
- Install brackets to strut using a bolt once aligned with Airtruss ribs in duct's interior.
- Secure bracket to Airtruss rib using 3 screws



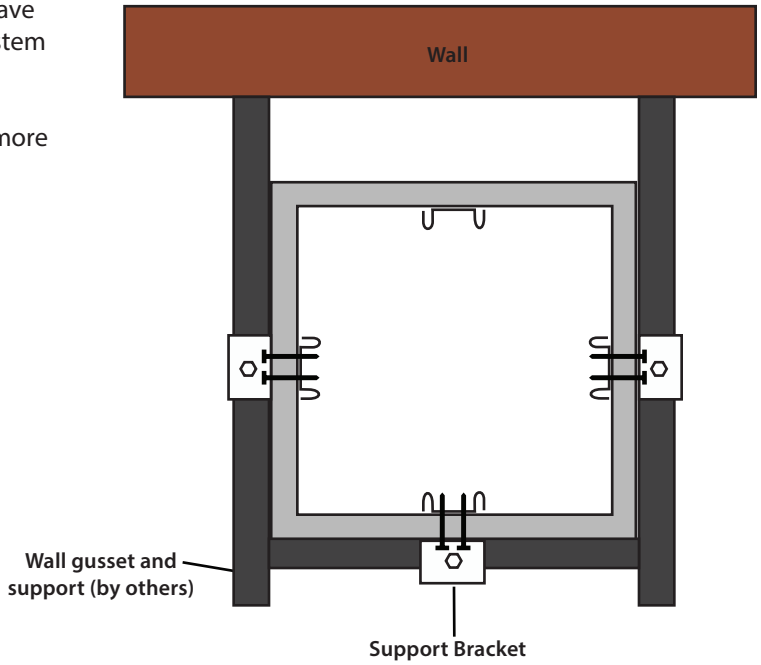


VERTICAL SUPPORT INSTALLATION

When mounting supports to the wall, it is important to leave room for the proper application of the 4-bolt covering system and sealant. Depending on the size of ductwork you are installing, a minimum of 8" must be observed. If you are installing larger ductwork, you may be required to leave more space between the building and duct for proper sealant application.

Minimum amounts of brackets must be installed per the following guidelines:

Duct Girth	Brackets
<46"	2
>46"-160"	4
>160" - 240"	6
>240 - 360"	8



Supports for vertical applications should be spaced in the same frequency as the duct's horizontal sections.

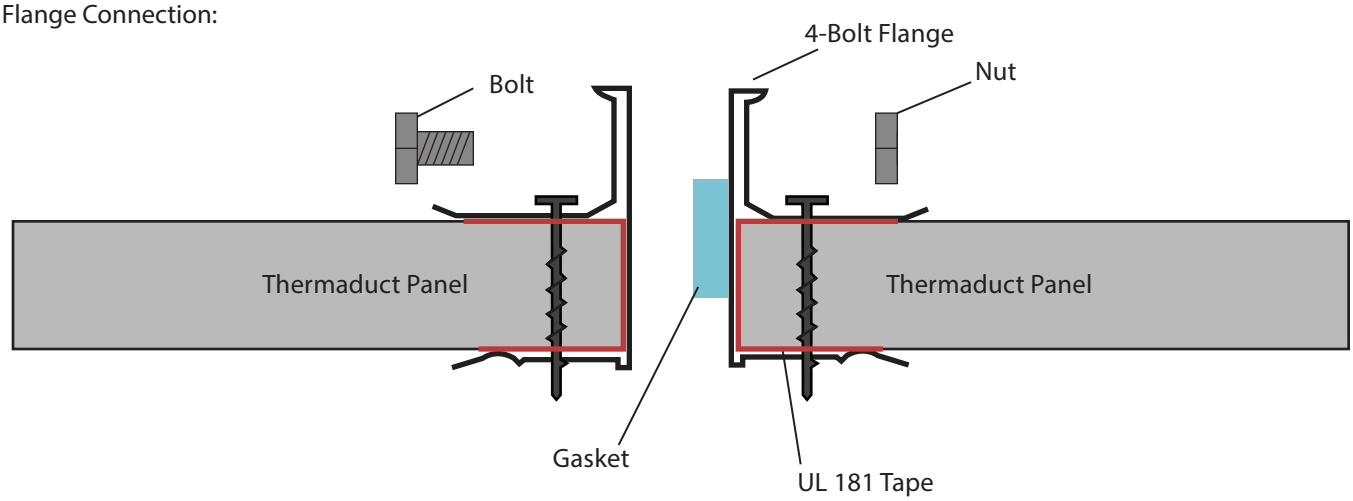
The lowest vertical elbow should always be supported underneath and employ C Channels or Corner Angles where applicable. Support frequency shall continue from this point.

FLANGE CONNECTIONS

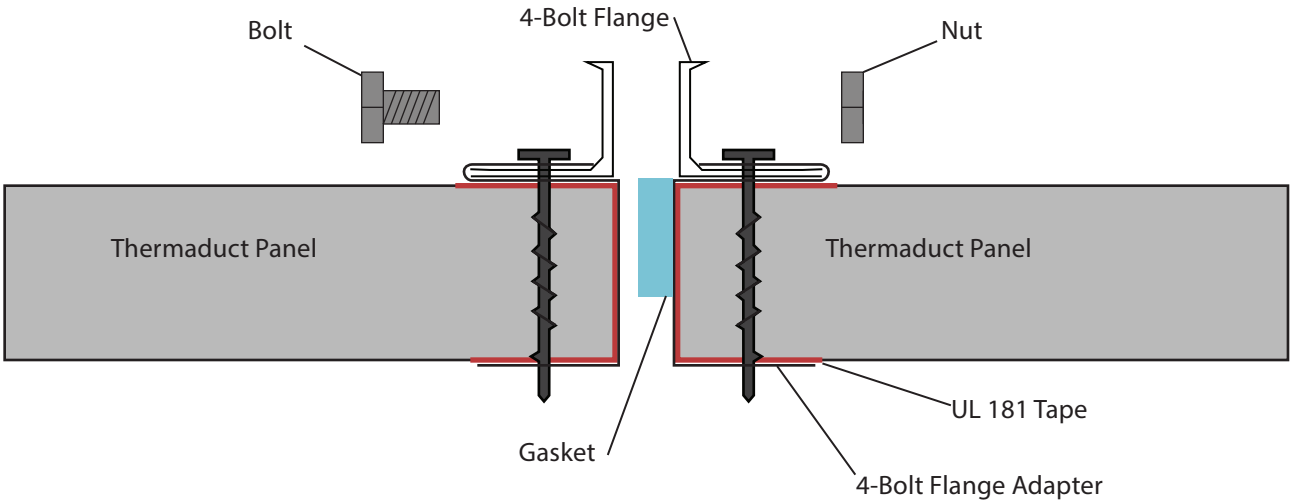
Thermaduct uses a 4-bolt flange system to connect duct segments together. The interior of the flange is gasketed before connection is made and secured with bolts and 4-bolt flange clips. To provide the best long term performance, a robust cover system is then applied to ensure each connection is as air and water tight as possible.

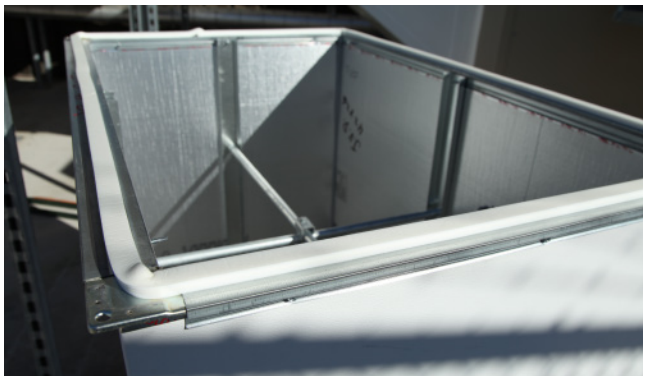
NOTE:
IT IS ADVISED THAT ANY LEAKAGE TESTING IS DONE BEFORE BLACK FOAM TAPE AND OUTER VINYL COVERS ARE APPLIED.

R8 Flange Connection:



R12 and Above Flange Connection:





To ensure an air tight seal, gasketing is a must between duct segments with Thermaduct. Keep the conditioned air in and the outdoor elements out!

Flange

After gasketing the inner portion of flange, use nuts, bolts and clips to connect all factory installed 4-bolt flanges.

Foam Tape

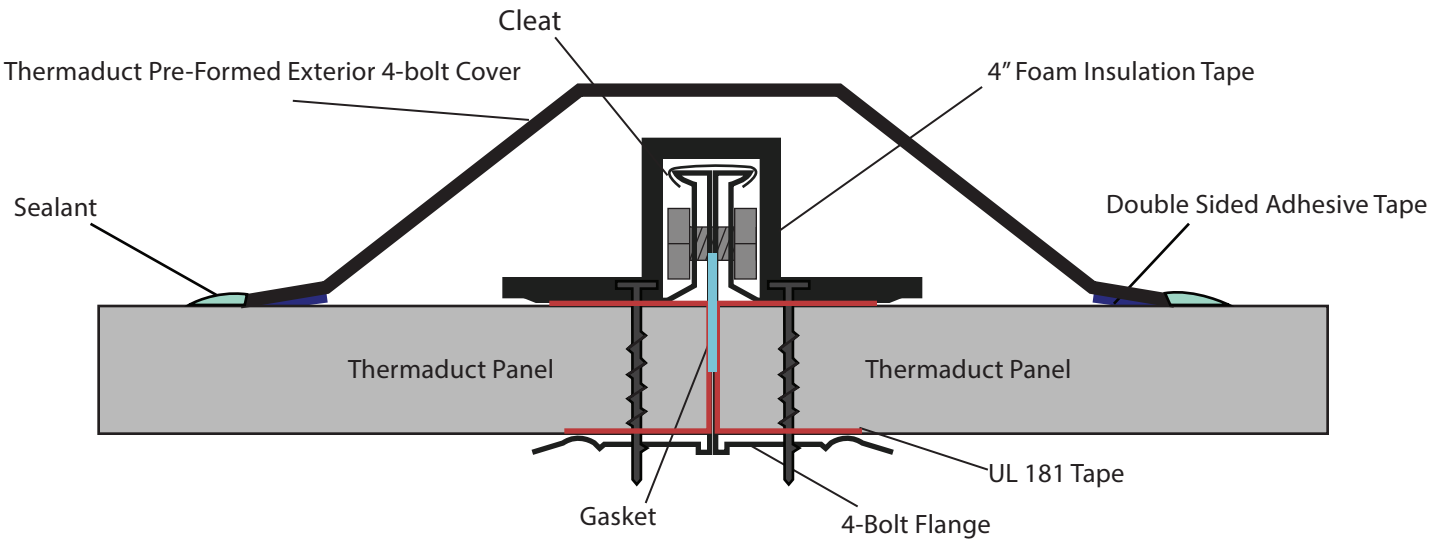
Factory supplied 4" foam tape is to be installed around all 4-bolt connectors. The foam tape provides both a thermal value and added air leakage integrity.

Cover

Factory supplied beveled connector caps are furnished to be installed around all 4-bolt connectors, providing UV protection and additional water integrity.

4-BOLT FLANGE COVER SYSTEM

R8 - R24 Flange Cover Connection



Installation steps:

- Clean 4-Bolt Flange location of any dust or residue.
- Apply outer gasketing over all 4 bolt flange.
- Measure length of each vinyl cover pieces to be cut with mitered edges, for a clean fit. The top piece will require an extra 1/4" on each end. The sides will require an extra 1/4" to overhang the bottom.
- Once cut, apply Double Sided Adhesive Tape to the inner edges of the Vinyl cover and apply.
- Confirm a solid connection by pressing the edges firmly. Apply the remaining sides.
- Caulk along the mitered edges as well as the edges applied to the duct wish Cosmofen 345 for a waterproof seal.

Covers are mitered at a 45 degree angle. The top cover is designed to overlap the sides; and the sides to overlap the bottom. This allows for adequate area to apply Cosmofen 345 to seal corners.

CAULKS AND SEALANTS

AVAILABLE FROM THERMADUCT

Kingspan Sealant

Kingspan sealant is used on the inside of the phenolic duct itself or when making a "cut" to the Thermaduct. Apply this sealant when working with sealing KoolDuct to flange or KoolDuct to KoolDuct. This sealant will not adhere to the Thermaduct cladding surfaces and is not UV rated. Kingspan sealant is part of the UL-181 application and can be used for duct interior sealing.

Dymonic FC

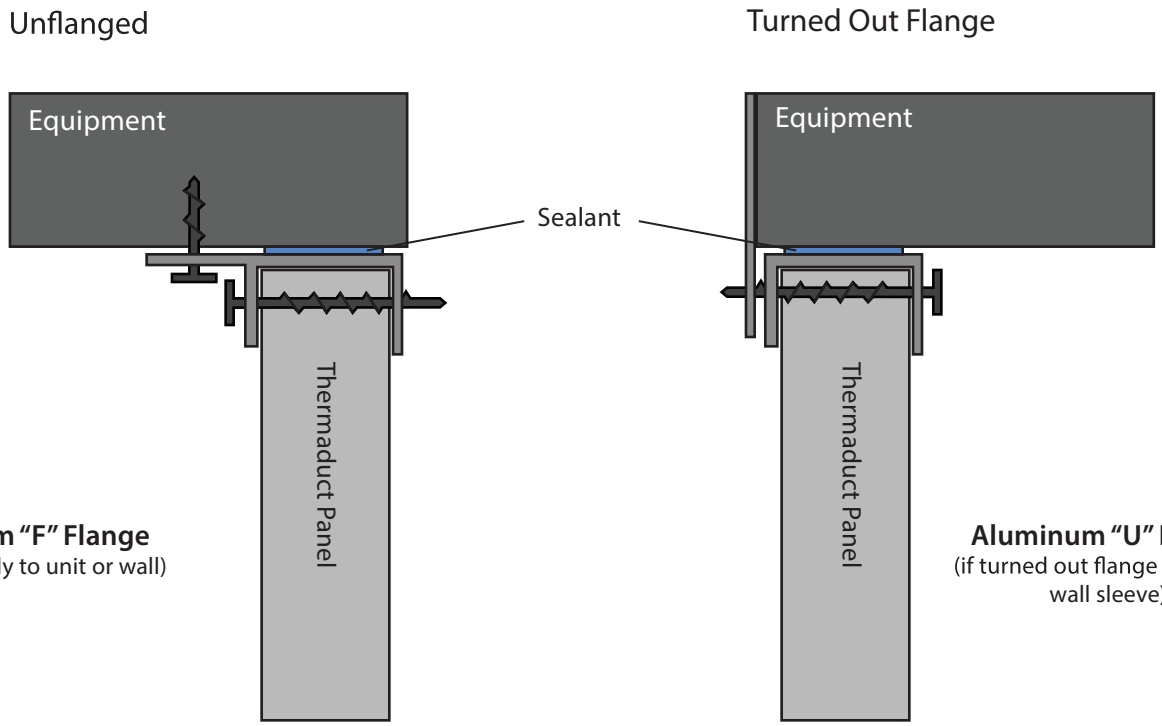
Dymonic FC sealant is used to make metal to Thermaduct connections such as when making connections from Thermaduct to flange materials. Dymonic is UV stable and can be used in direct sunlight and is intended for outdoor applications. It is best when applied to vinyl to metal and not vinyl to vinyl connections.

Cosmofen Sealant

Cosmofen sealant is used to make vinyl to vinyl connections such as when making connections from Thermaduct to 4-bolt flange covers and associated materials. Cosmofen sealant is UV stable and can be used in direct sunlight and outdoor applications. It is best when applied to vinyl to vinyl connections. Cosmofen does not stick to metal surfaces.

EQUIPMENT CONNECTIONS

EQUIPMENT CONNECTION:



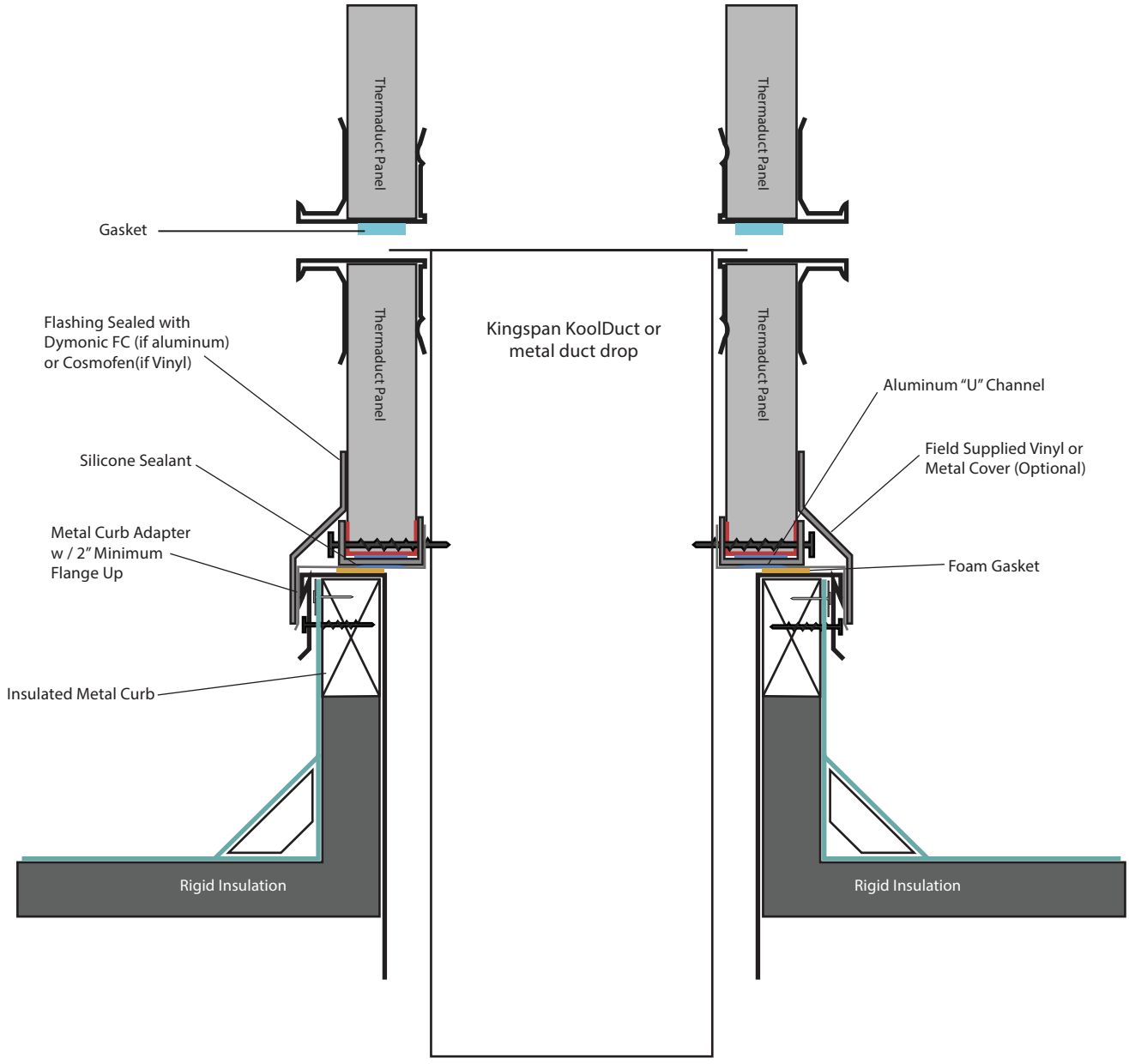
Aluminum "F" Flange
(fasten directly to unit or wall)

Aluminum "U" Flange
(if turned out flange on unit or wall sleeve)

CURB CONNECTION:

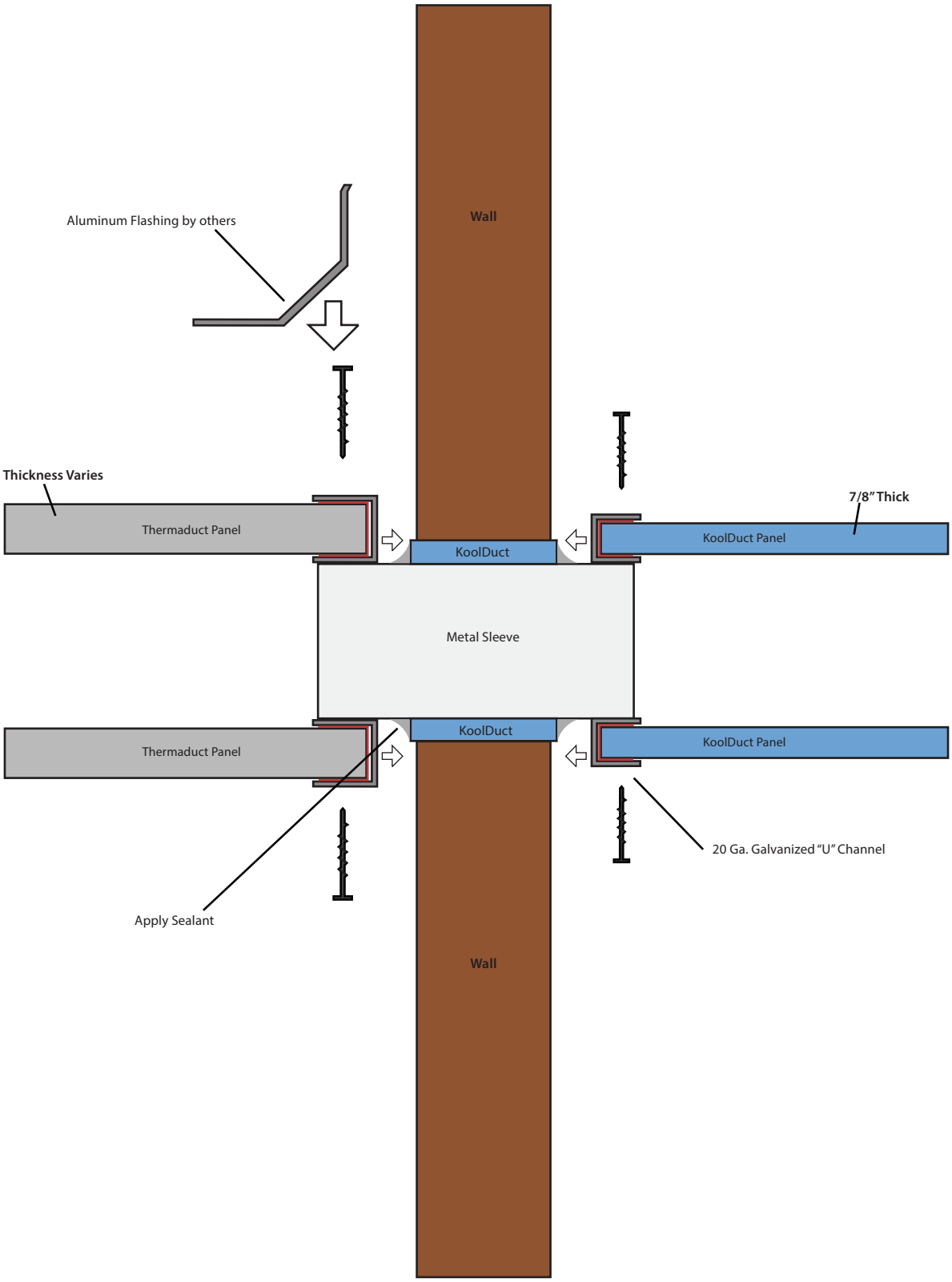
Connect Thermaduct segment to roof curb with the following steps:

- Set Thermaduct duct piece over curb to ensure correct fit
- Secure fitting into place with screws through flange
- Drop metal or KoolDuct duct drop into curb.
- Connect next section of Thermaduct over and finish as a normal flange connection.



CONNECTION THROUGH EXTERIOR WALL (SUGGESTED)

Connecting to interior duct, especially those with a different thickness than the Thermaduct segment, requires a metal sleeve to connect to the interior duct. Run a #14 screw through the metal "U Flange" to connect to metal sleeve and cover the exterior connection with an aluminum flashing.



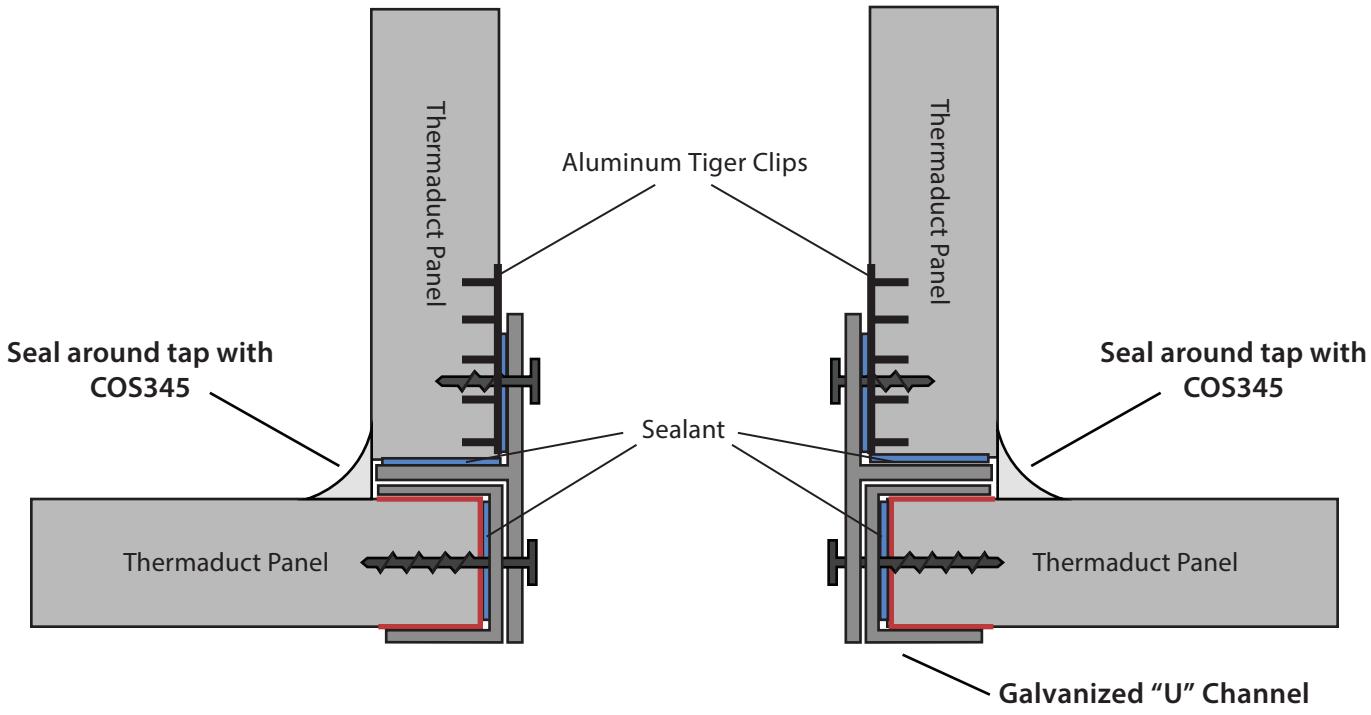
FIELD MODIFICATIONS

Typically, Thermaduct is manufactured to detailed measurements. From time-to-time, a field cut may be necessary for adjusting the length of the duct segment or to add taps for equipment or duct connections that are field assessed. When this occurs, the segments can be field cut and the flanges can be reassembled for connection.

CUTTING A TAP

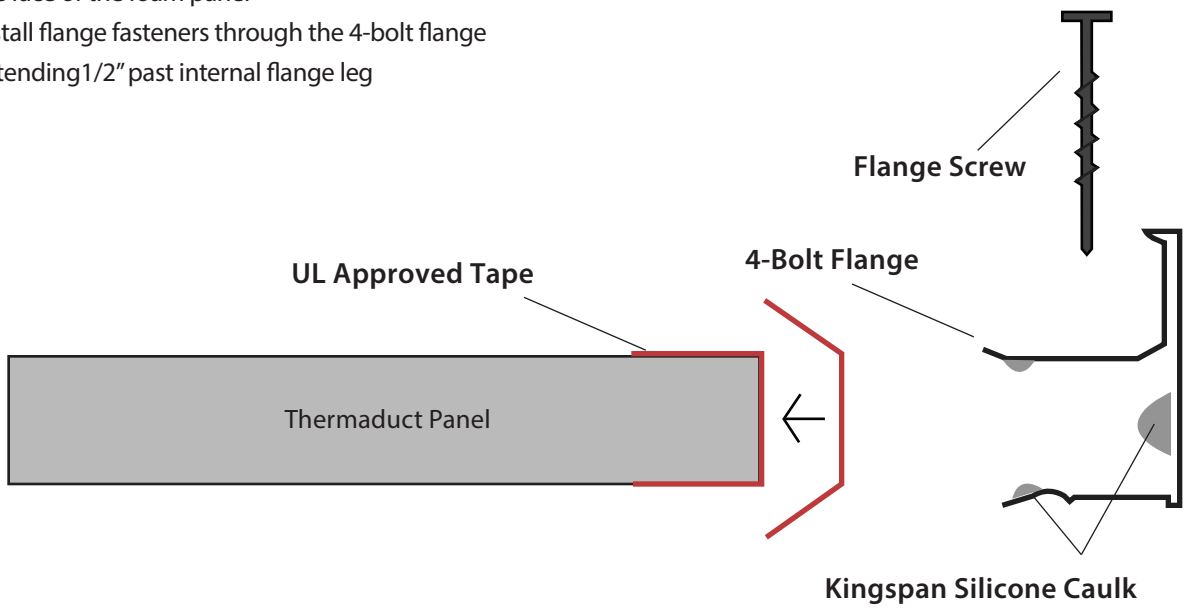
- Field cut using circular saw
- Clean the cutting area of dust and debris
- Use a knife to ensure all cuts are completely through the interior FSK
- Ensure cut is accurate with new duct piece
- Tape exposed edges with UL 181 aluminum tape
- Caulk and place "U" Channel over taped edges
- Hammer "U" Channel into place
- Caulk the edges of new fitting and place into prepared cut
- Screw into "F" Channel to secure into place
- Caulk all edges with approved caulk to ensure a waterproof seal

SHOE TAP:



FIELD CUTTING

- Measure proper distance from last flange connection to desired location
- Mark the vinyl clad with a line the full outer girth to ensure lines meet squarely
- Use a Metabo or Circular Saw and cut only through the vinyl clad layer
- Use a 90 degree cutting block to make the final cut through the foam panel
- Use 3" aluminum tape (field supplied) to cover foam end
- Use Kingspan Silicone Sealant and create a bead of flange interior surfaces
- Re-install 4-bolt flange and secure it firmly to the face of the foam panel
- Install flange fasteners through the 4-bolt flange extending1/2" past internal flange leg



ACCESS DOORS

Thermaduct now provides durable low leakage access doors for use in Thermaduct products. For more information on using these in your application, contact your Thermaduct representative.

thermaround

The following pages will guide you in your installation of Thermaround. This system uses an offset coupling system to provide unrestricted airflow and high thermal values. Handling and Care of Thermaround should be consistent with Thermaduct sections. Please contact Thermaduct or your local Thermaduct Representative should you have any questionsregarding installation.

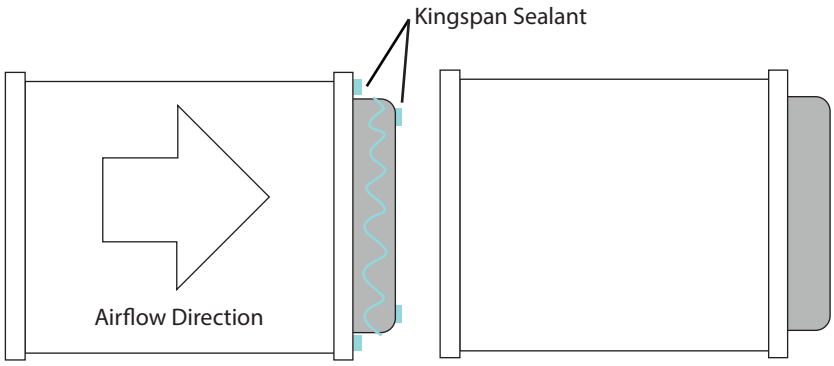
These Guidelines Will Cover:

- Thermaround Connections
- Horizontal Supports
- Vertical Supports
- Field Modification

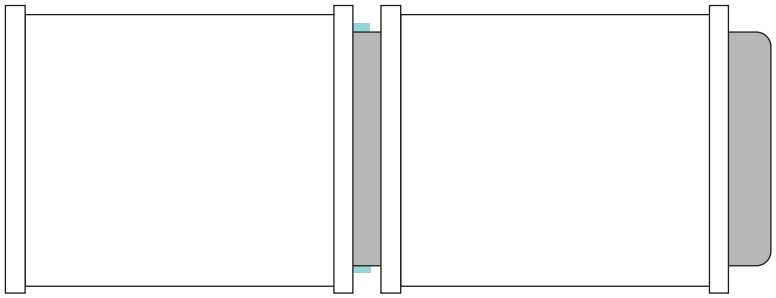
THERMAROUND CONNECTIONS

Thermaround uses a 4 stage connection system to connect duct segments together. The interior of the flange is caulked before connection is made and secured with the drawband ring. All seams should face the ground where applicable.

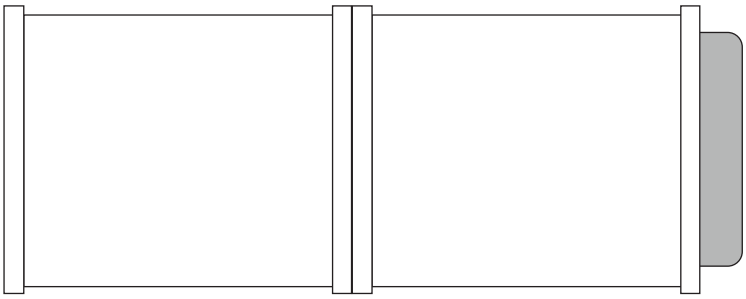
1. **Align Duct Segments and apply Kingspan Sealant**



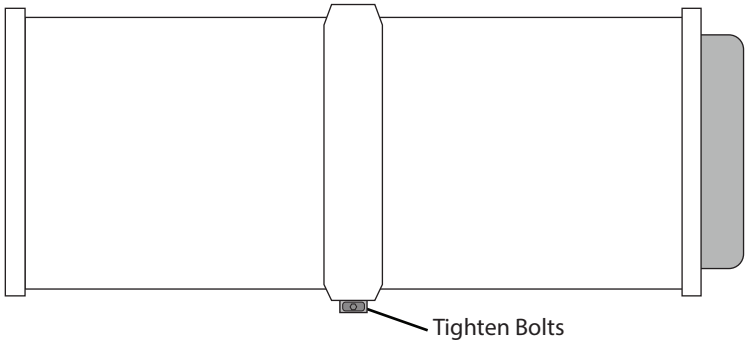
2. **Connect Duct Segments via Coupling**



3. **Ensure tight fit**



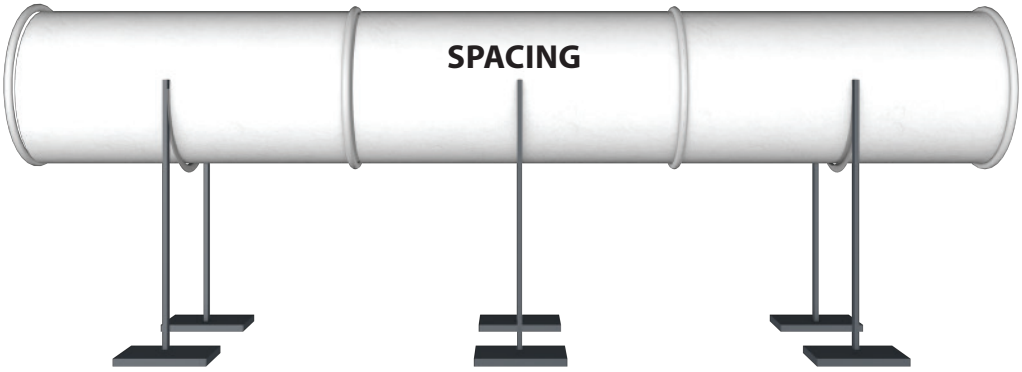
4. **Secure segments with Thermaround Drawband**

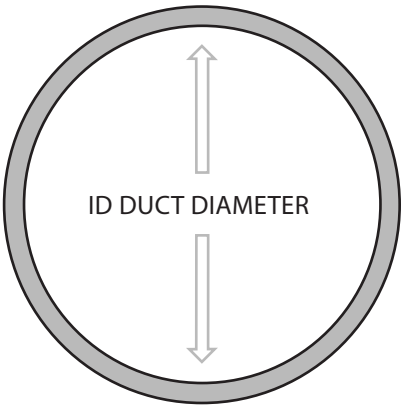


ROUND SUPPORTS AND HANGERS

Thermaround shall be installed with adequate support to insure the life of the system. Roof supports and hangers are the foundation that ensure Systems are firmly adhered to the structure and capable of providing mechanical support of the Thermaround system. **Also refer to roof support manufacturers guidelines for their specifications as these instructions do not supersede their published data. Consult rail or support bracket manufacturer for their data relating to structural capacity & application.**

This Chapter does not deal with seismic requirements; consult a seismic engineer for requirements when applicable.

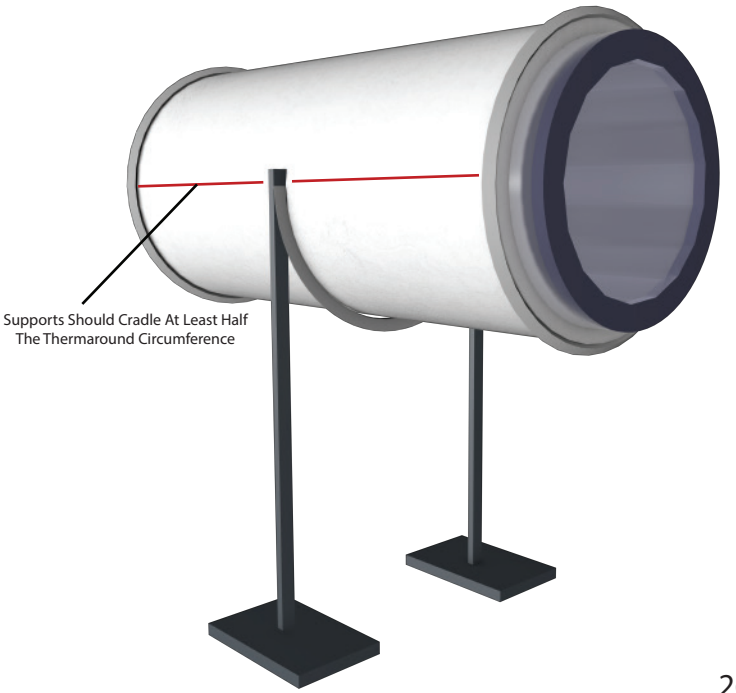




ID MEASUREMENTS = DUCT GIRTH

Duct ID Diameter < 36"	Spacing 8' maximum
Duct ID Diameter > 36"	Spacing 4' maximum

On buildings over 20 stories, 4' maximum spacing

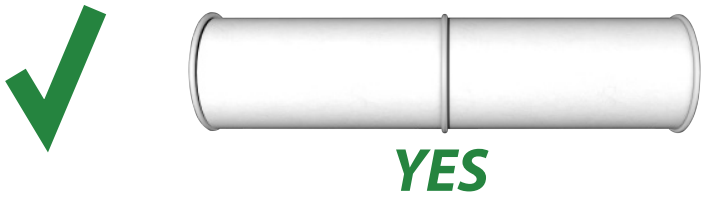


SUPPORT SIZE

Supports must be propperly sized for the outer circumference of the Thermaround segments.

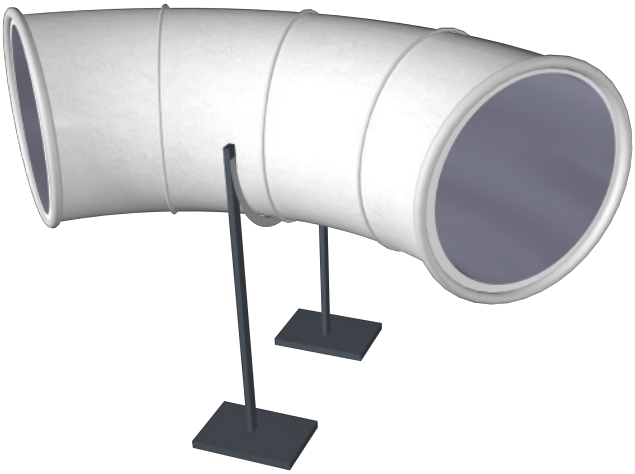
Depending on the size of your Thermaround, a wider support surface may be required to distribute weight across a larger area.

Duct Diameter	Channel Width
<24"	1 1/2"
>25"/<38"	3"
>39"/<60"	4"
>60"	5"



LEVEL INSTALLATION

Connected pieces of Thermaround should be level and plumb. Seams should not have open gaps, which indicate an un-level or out of square connection.



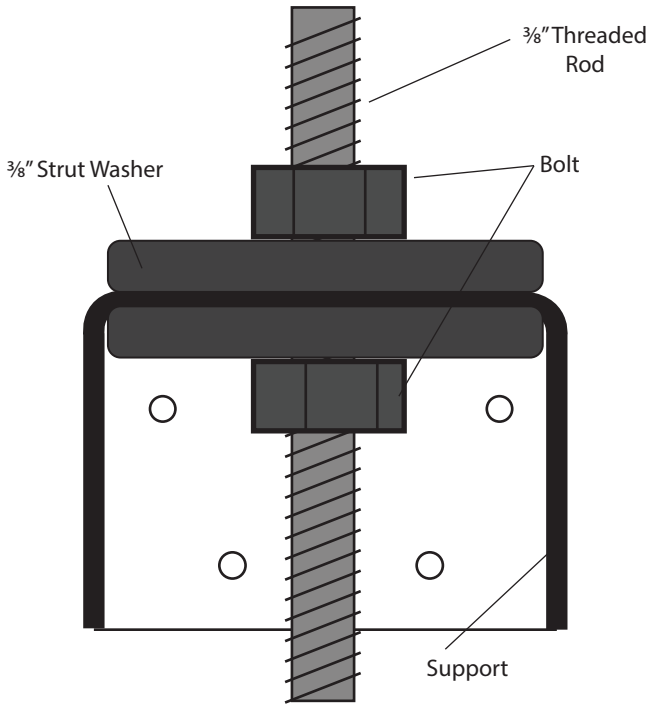
ELBOW SUPPORT

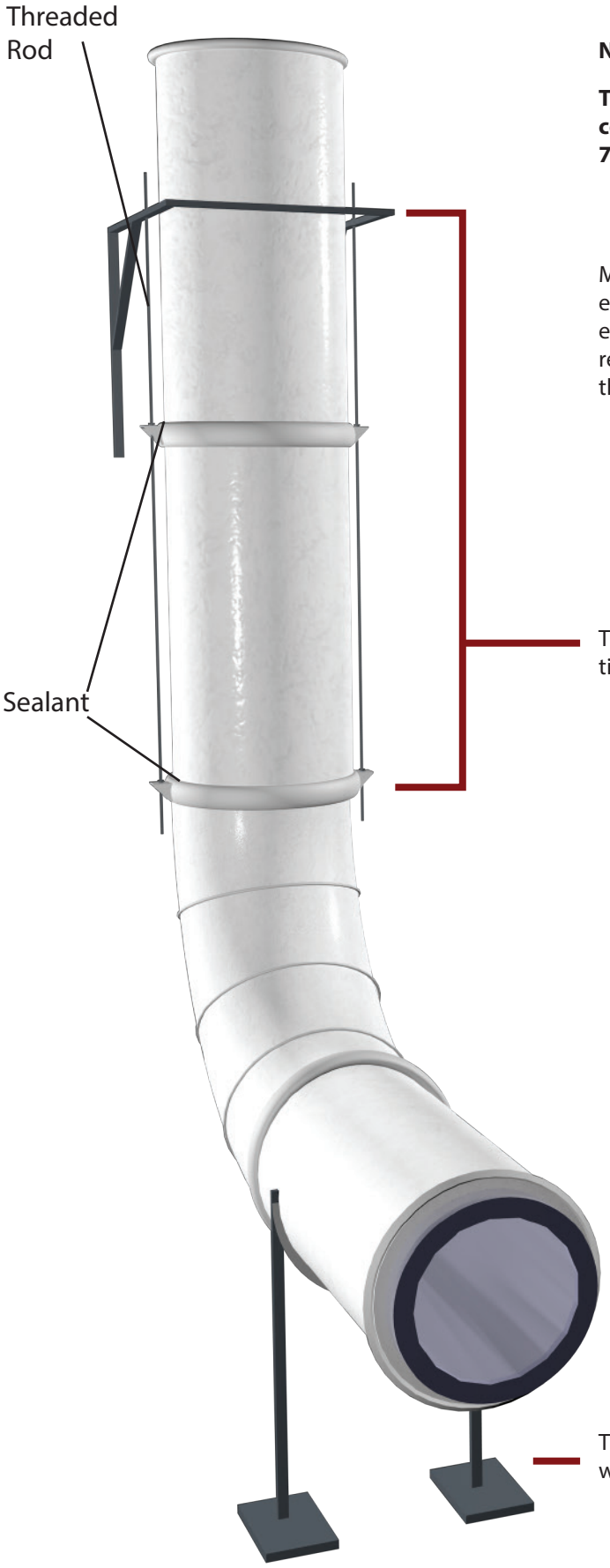
Elbow supports should follow support schedule determined by the duct diameter on the previous page.

VERTICAL SUPPORTS

Vertical sections of Thermaround should use specific draw bands that contain hanging points. Depending on the diameter of the section, there may be up to 4 hanging points.

Duct Diameter	Hanging Points
6" - 36"	2
37" - 48	3
49" - 80"	4
>80"	Consult Factory





NOTE:

Top edge of connection must be sealed on all vertical connection bands with White Industrial Grade Manus Bond 75-AMC or other high performance polyurethane sealant.

Max distances between structural vertical supports should not exceed 8 feet. Larger diameter ductwork will require supports every 4 feet by the schedule below. Should your application require duct installed beyond at a greater distance from a wall than gussets can support, consult Thermaduct.

Duct Diameter	Support Distance
6" - 36"	8'
37" - 80"	4'

Threaded rod may be used in sections to support 8 feet at a time, extending above and below the bolts at least 3".

Transitions to horizontal will require supports to be added within 8" of connection draw band.

FIELD MODIFICATION OF THERMAROUND

CUT JOINTS

Thermaround can be modified in the field in cases where measurements require some room for error. These decisions should involve Thermaduct prior to any cuts, as installers will apply the thermally formed flange to the new connection point.

Required Materials for Cut Joint:

- Thermally Formed Vinyl Flange from Thermaduct
- Coupling from Thermaduct
- 1/4" Drill Bit with Drill
- Pins from Thermaduct
- Cosmofen Plus Sealant
- Kingspan Sealant
- Angle Grinder with cutting wheel
- Knife with at least 3" Blade
- UL 181 Approved Tape

Steps:

1. Cut Male Phenolic Coupling with knife, using the outer edge of the second layer as your guide. This cut off section will be taped with UL 181 approved and held for step 10.

2. Measure and mark your intended cut location and secure Thermaround section on a clean cutting surface.

3. With your angle grinder, cut through the top layer of vinyl and insulation at intended cut location. Once the top layer has been removed, use knife to cut through the inner layer of phenolic insulation.

4. Apply UL 181 Approved tape to the inner layer, covering phenolic that would be exposed to the air stream.

5. Press Tiger Connectors into interior of duct near edge to use as a holding point for coupling.

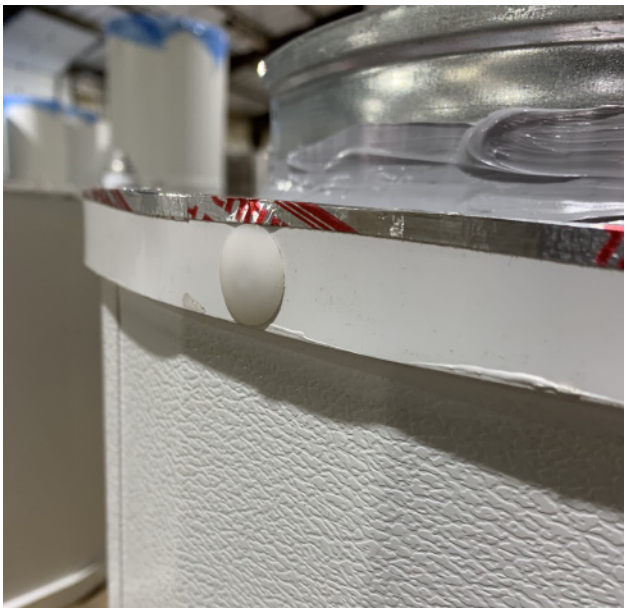
6. Insert supplied metal coupling into cut joint section of ductwork.

6. Screw Coupling to tiger connectors and apply sealant around edge of the coupling that meets the direction of airflow.

7. Apply sealant around the outer edge of the coupling for a secure hold. Allow sealant to cure.

8. Take section of thermally formed vinyl flange and run an 1/8" bead of Cosmofen Plus along the length. Place firmly on the new edge of ductwork and allow 30 seconds to adhere.

9. Using Drill, drill holes every 6-8 Inches and apply supplied pins to hold in place.



10. Apply Kingspan Sealant to female connection of next Thermaround segment and place cut male phenolic coupling from step 1 in to create a flush surface.

11. Apply Kinspan sealant around metal coupling and connect sections together.

12. Use draw band to finish connection.

CARE AND MAINTENANCE

CLEANING THERMADUCT

To remove residue the exterior surface of Thermaduct can be cleaned with a soft rag and water. Should residue be unable to be taken off, add a small amount of soap to the water. Too high of soap concentration can damage the vinyl.

The interior of the ductwork can be cleaned using established non-abrasive dry cleaning methods such as air whips, electric vacuums, air lances or air nozzles.

THERMADUCT IS NOT A SUPPORT SURFACE

Thermaduct is designed to handle loads associated with induced pressure (for the air handling appliance) and from weather related stressed (wind, snow, rain, etc.). The duct itself is not designed for human traffic unless designated. Use caution when applying weight to ductwork to allow it to maintain full structural integrity to take on its intended application. If you need to handle something extra, let us create a crossover duct segment that can be designed for the added weight and point loading.

Unless otherwise specified, Thermaduct segments are not intended for added surface loading.

DO NOT PAINT THERMADUCT

Do not paint Thermaduct. Thermaduct's white color is not only a cosmetic choice, but to help the outdoor ductwork maintain the best performance possible in all climates. Applying paint to Thermaduct can damage the UV stability and long term performance.

PRE-INSTALLATION CHECK SHEET

Complete the following check sheet and return prior to installation. This is a precautionary step that will guarantee a smooth fabrication and installation process.

1.	Application is Outdoors?	Yes	No
2.	Internal Air temperature range between -15 and 185 degrees F?	Yes	No
3.	Duct supports / hangers being installed per pages 9, 10 and/or 26, 27?	Yes	No
4.	Have you reviewed our strut support guidelines per page 11?	Yes	No
5.	What is the maximum span between any 2 roof / hanger supports?	_____	feet
6.	Is this a LEED project?	Yes	No
7.	Is the duct ordered with end covers?	Yes	No
8.	What is the design external static pressure (Supply Air)	_____	" w.c.
9.	What is the design external static pressure (Return)	_____	" w.c.
10.	What is the design external static pressure (Exhaust)	_____	" w.c.
11.	Do you have a Metabo or Circular Saw for cutting vinyl clad?	Yes	No
12.	Do you have an angle cut block knife to cut take-off's?	Yes	No
13.	Are you familiar with Thermaduct's 4-bolt flange connections?	Yes	No
14.	Are you familiar with Thermaround's connections?	Yes	No
15.	Are you just selecting yes without reading this?	Yes	No
16.	Is this duct installed in an area where wind lift might occur?	Yes	No
17.	Do you have materials / hangers to hold duct into position?	Yes	No
18.	Do you have rigging (crane, hoist, lift) to get material onto roof?	Yes	No
19.	Have you looked at the weather forecast to insure dry conditions?	Yes	No
20.	Have you studied / measured to verify detailed drawings of system?	Yes	No
21.	Have you signed off on the manufacturing submittal?	Yes	No
22.	Is snow loading in your area likely?	Yes	No
23.	Expected snow accumulation per year	_____	"

Read, fill out and return this form to warranty@thermaduct.com prior to installation. This form is invalid without a digital or handwritten signature.

Job Name	Installing Contractor
Job Address	Contractor Mailing Address
City / State / Zip	City / State / Zip
Site Contact	Installer's Name
Installation Date	Date
Comments	Signature

POST INSTALLATION CHECK SHEET

1. Did you utilize the installation guidelines outlined in this manual to install the completed duct system?	Yes	No
2. Is the duct installation free from visual damage?	Yes	No
3. Are ducts free from sagging or visible misalignment?	Yes	No
4. Is the static pressure operating within designed pressure class?	Yes	No
5. Is the maximum spacing of supports and hangers in conformance with this manual?	Yes	No
6. Are fittings supported in conformance with this manual?	Yes	No
7. If required, did you utilize C Channels or Corner Angle with supports?	Yes	No
8. Do all elbows have a support underneath the Turning Vanes?	Yes	No
9. Were you required to modify any of the duct segments?	Yes	No
10. If yes above; Were you able to utilize designated "cut joints"?	Yes	No
11. Did you utilize 4" foam insulation tape at all rectangular joints?	Yes	No
12. Did you install 4-bolt flange covers with drip edges over foam insulation at all joints?	Yes	No
13. Did you caulk 4-bolt flange covers with Cosmofen Sealant?	Yes	No
14. Is the system served by this ductwork supplying a VAV system?	Yes	No
15. If above is "yes"; Does the system contain a limiting device for air pressure in the system? (Note with low air leakage, air pressure builds quickly).	Yes	No
16. Has the property management been given a copy of this manual?	Yes	No
17. Are there any other comments regarding this installation?		

Job Name	Installing Contractor
Job Address	Contractor Mailing Address
City / State / Zip	City / State / Zip
Site Contact	Installer's Name
Installation Date	Date
Comments	Signature

Please submit this form and at least 3 photos of the installation to the following e-mail to obtain warranty certificate: warranty@thermaduct.com. This form is invalid without a digital or handwritten signature.

SUPERIOR OUTDOOR AIR DISTRIBUTION

There is simply no duct like it in the world. Thermaduct and Thermaround combine the best of air distribution technology with a choice outdoor weather barrier to create a duct that offers the highest R value and lowest air leakage rates in the industry. Unsurpassed performance was the goal to create a duct that can not only deliver every cubic foot of air it is fed, but to treat the air with the utmost respect by not exposing it to fibrous or volatile organic chemical latent liners.

Indoor, the air passes a smooth aluminum surface that is clad to Kingspan's Kooltherm closed cell phenolic core. The outer layers include factory autohesively bonded FSK aluminum with a UV stable, 1000 micron titanium infused vinyl that is vacuum pressed and laminated permanently to Kingspan KoolDuct. Our rectangular duct segments are connected together with a gasketed 4-bolt flange system. For round applications, a sealed offset coupling and external drawband are all that is needed for an airtight connection. Once installed your application will have uncompromising water and air integrity and one of the best outdoor duct limited warranties in the industry.

thermaduct FEATURES

- High R-Value
- Virtually Zero Air Leakage
- Water Tight
- Closed Cell
- Fiber Free Insulation Core
- 10 Year Limited Warranty*

Bronze Associate MEMBER SMACNA

* Warranty Registration is Required for Full Installation Warranty

thermaduct
Outdoor Duct Solution

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Perrysburg, Ohio 43551
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www.thermaduct.com