

in^{spiral}R™ & FLOVAL™



CONTRACTOR INSTALLATION MANUAL

LIMITED WARRANTY REGISTRATION INSIDE



Give your round and flat oval ductwork the increased performance with Thermaduct's InspiralR and Floval Duct Systems. These patent pending systems provide the increased air distribution efficiency of round or flat oval ductwork packaged in a light weight and high quality closed cell phenolic insulation. There's no need to insulate separately as all ductwork reaches an R-6 insulated value.

These Guidelines Will Cover:

- Introduction & Application
- Receiving a Shipment and Handling
- InspiralR & Floval Connections
- Supporting Ductwork
- Field Modification
- Warranty Form

INTRODUCTION

Thank you for choosing Thermaduct's InspiralR and Floval high efficiency systems!

Thermaduct's InspiralR and Floval are patent pending and innovative products are designed to provide high efficiency air distribution for indoor applications. Both InspiralR (round) and Floval (flat oval) are UL 181 listed and engineered and designed to provide better than SMACNA Class 1 air leakage and high R-values all with a no-fiber insulation. Because of this, our indoor systems provide excellent IAQ benefits when installed in accordance to this manual.

InspiralR and Floval use high quality closed cell phenolic insulation to provide unparalleled performance. Offering pre-insulated R-values at a minimum of R-6, both InspiralR and Floval products are designed to exceed today's and tomorrow's energy codes for years to come. InspiralR and Floval are inherently light...up to 80% lighter than insulated spiral or flat oval sheet metal ductwork! This reduction in weight does not come at a cost of performance as InspiralR and Floval offer similar airflow characteristics for friction/pressure drop, velocity and ability to overcome static pressure that rival almost any sheet metal duct system today. Use InspiralR and Floval upstream or downstream of a VAV (variable air volume) damper for high thermal value, low air leakage performance.

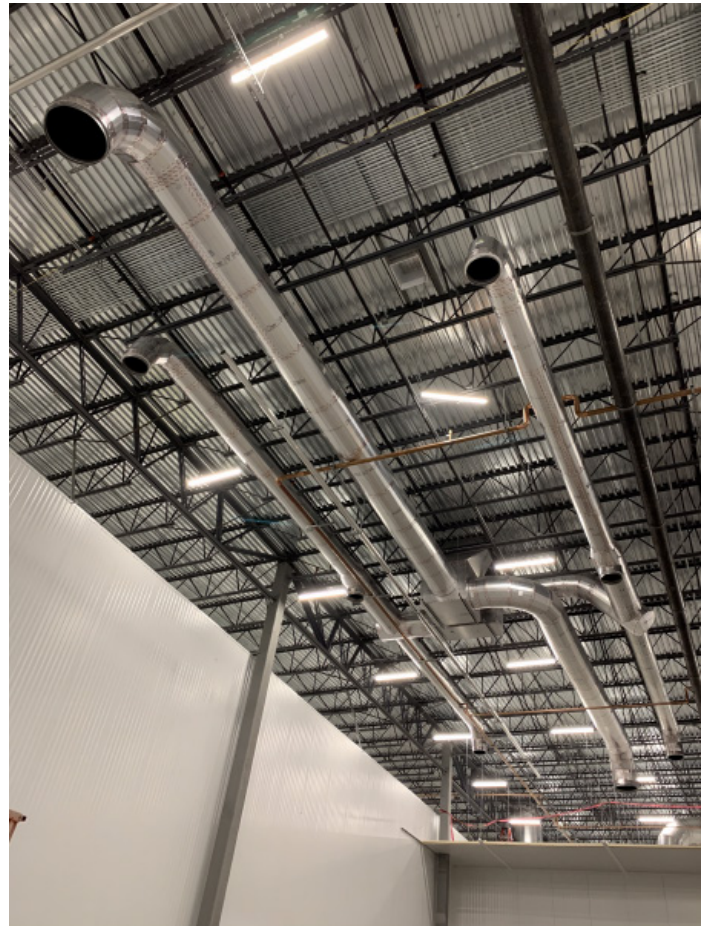
With our UL 181 listing, InspiralR and Floval ductwork is suitable for many indoor HVAC applications. InspiralR and Floval are Class 1 duct systems and offer excellent fire and smoke performance, while being highly resistant to mold growth. Both innovative and high performance in nature, these systems can contribute to LEED points on your project.

APPLICATION

InspiralR and Floval are intended for use in the following applications;

- HVAC supply and return air ductwork
- General exhaust
- Swimming pool applications
- Duct pressures up to positive 10-inch w.c. static pressure
- Duct negative pressures up to minus 8-inch w.c. static pressure
- Engineered systems for cooler or freezer applications (consult Thermaduct*)

*To contact Thermaduct, call 855-809-6903 or e-mail info@thermaduct.com
For Warranty Information contact Thermaduct@warranty@thermaduct.com



InspiralR and Floval are NOT intended for use in the following applications;

- Grease or Kitchen exhaust ductwork
- For exhausting or supplying air that exceeds 185 degrees Fahrenheit continuous
- Applications where air velocities exceed 6000 fpm continuous
- Applications exceeding 10" positive pressure (continuous)
- Applications exceeding 8" negative pressure (continuous)
- Applications where you are conveying solids/abrasives In applications without maximum temperature control
- Applications intended for chemical, fume or smoke exhaust (consult Thermaduct*)

RECEIVING A SHIPMENT

InspiralR and Floval duct segments are shipped in their finished state and require that some care to be exercised in the handling of all pieces to prevent damage.

Installing contractors are required to inspect all products received at the 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 representatives and Installer in writing.



Storage and Handling

Unconnected InspiralR 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 end of InspiralR shall be covered with a weatherproof tarp or sheet to prevent the intrusion of water or foreign materials.

- Lift - Do not slide
- Do not score, dent or deface the surface
- Do not roll
- Do not drop
- Use straps, not chains or cables, to cradle circumference

ONLINE INSTALLATION TRAINING

ALL INSTALLERS MUST WATCH ONLINE TRAINING FOR EACH PRODUCT THEY INSTALL

TRAINING OVERVIEW

Online courses can be accessed by visiting training.thermaduct.com
or by scanning the QR Code below.



Online courses can be accessed by visiting training.thermaduct.com or by scanning the QR Code below. Request access through the site and you will be able to access the courses usually within one business day. We know time on the jobsite is valuable and we are committed to respecting your time. Courses will be short summaries that highlight sections of this manual in an easy to understand way. Digital copies of our installation manual and warranty registration forms are also available to download during these courses.

WARRANTY REGISTRATION



In order for a Warranty Certificate to be issued, Thermaduct, LLC requires installers to complete a post **Installation Check Sheet**. Because Thermaduct products are engineered products, 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.

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

REQUIRED FOR INSTALLATION

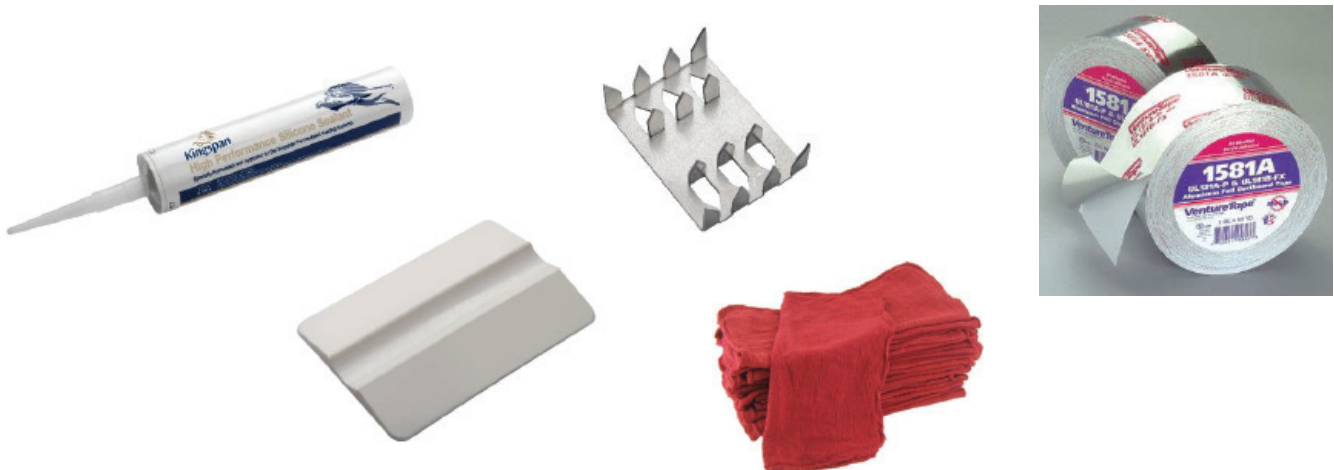
Installation of InspiralR and Floval ductwork is a simple process using familiar spiral and flat oval flange types integrated into our pre-insulated ductwork.



Suggested Tools for Installation

Installation of InspiralR and Floval ductwork is a simple process. The following are the suggested tools to assist installation;

- Caulk gun (standard or automated)
- Tape Applicator/squeegee
- Cleaning Cloth/Towel
- Impact Driver (for driving draw-band turnbuckle)
- Utility blade or ductboard knife
- Shop Vacuum

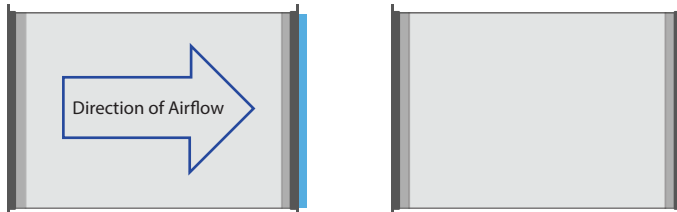


FLANGED CONNECTIONS

InspiraiR and Floval employ a flanged connection with barrel connector for easy installation. For round, two piece drawbands are used and for flat oval a four piece drawband completes the connection.

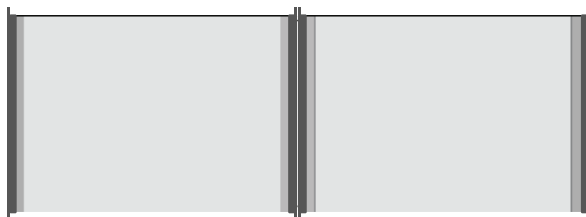
1) PREP

Kingspan Silicone Sealant Run Around One End of the Connection



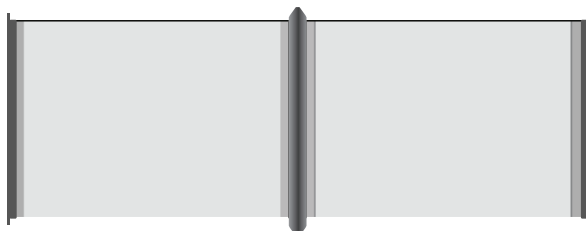
2) CONNECT

Line Up and Connect Segments Together, Ensuring No Gaps



3) FINISH

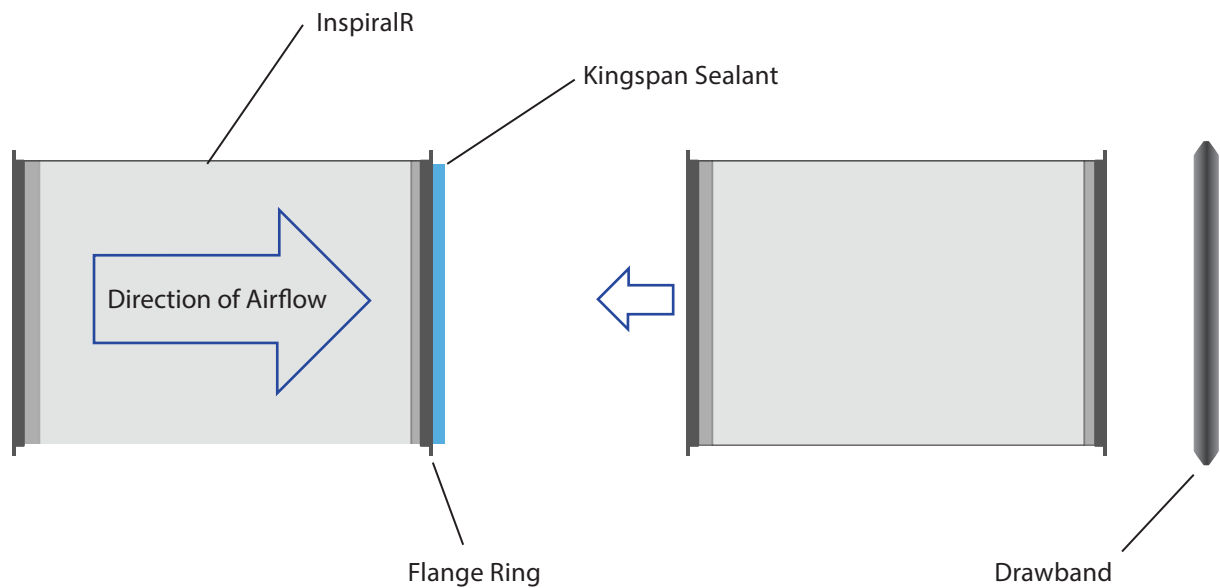
Apply InspiraiR or Folval Drawband to Secure Connection



FLANGED CONNECTIONS (CONTINUED)

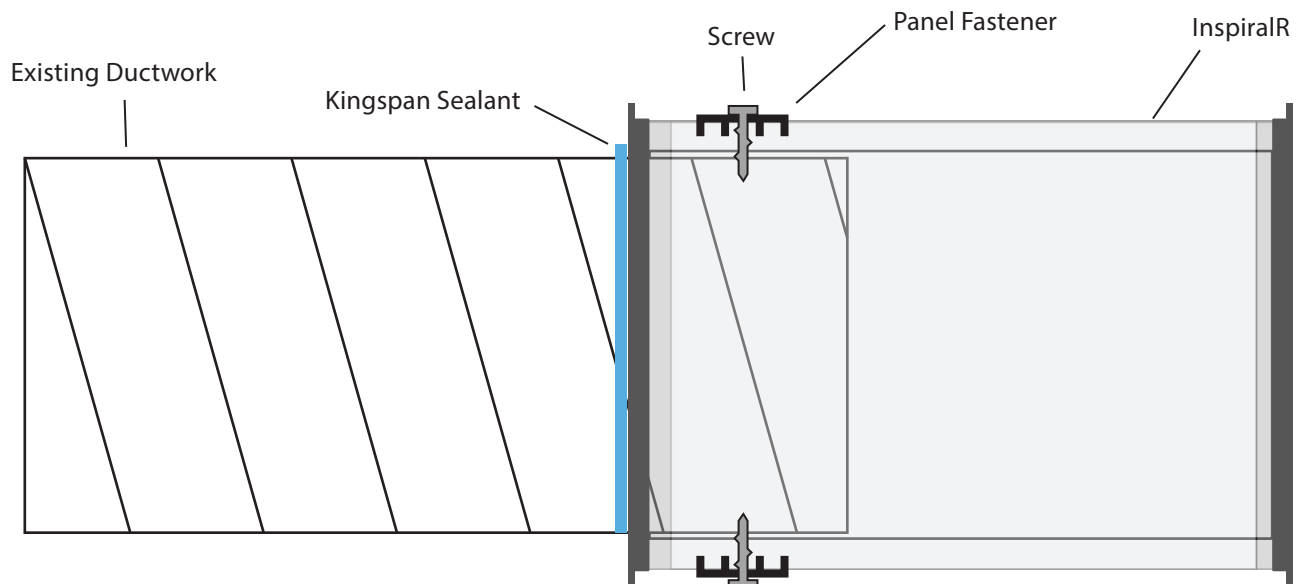
For Low Pressure applications 36" or greater in ID diameter and Medium Pressure applications;

1. Apply a 3/8" thick bead of Kingspan Sealant around the phenolic edge on one end of the connecting ductwork.
2. Line up and connect second InspiralR or Floval segment together.
3. Ensure there are no gaps in connection of the two duct segments.
4. Use factory supplied 2 piece drawband for InspiralR and 4 piece drawband for Floval and tighten bolts to complete connection.



Connecting to Existing Ductwork -

Existing ductwork should enter the ID of the InspiralR or Floval. Apply screws through panel fasteners on the exterior of the InspiralR to secure spiral or flat oval ductwork every 8-10 inches. Seal around phenolic edge with Kingspan sealant.



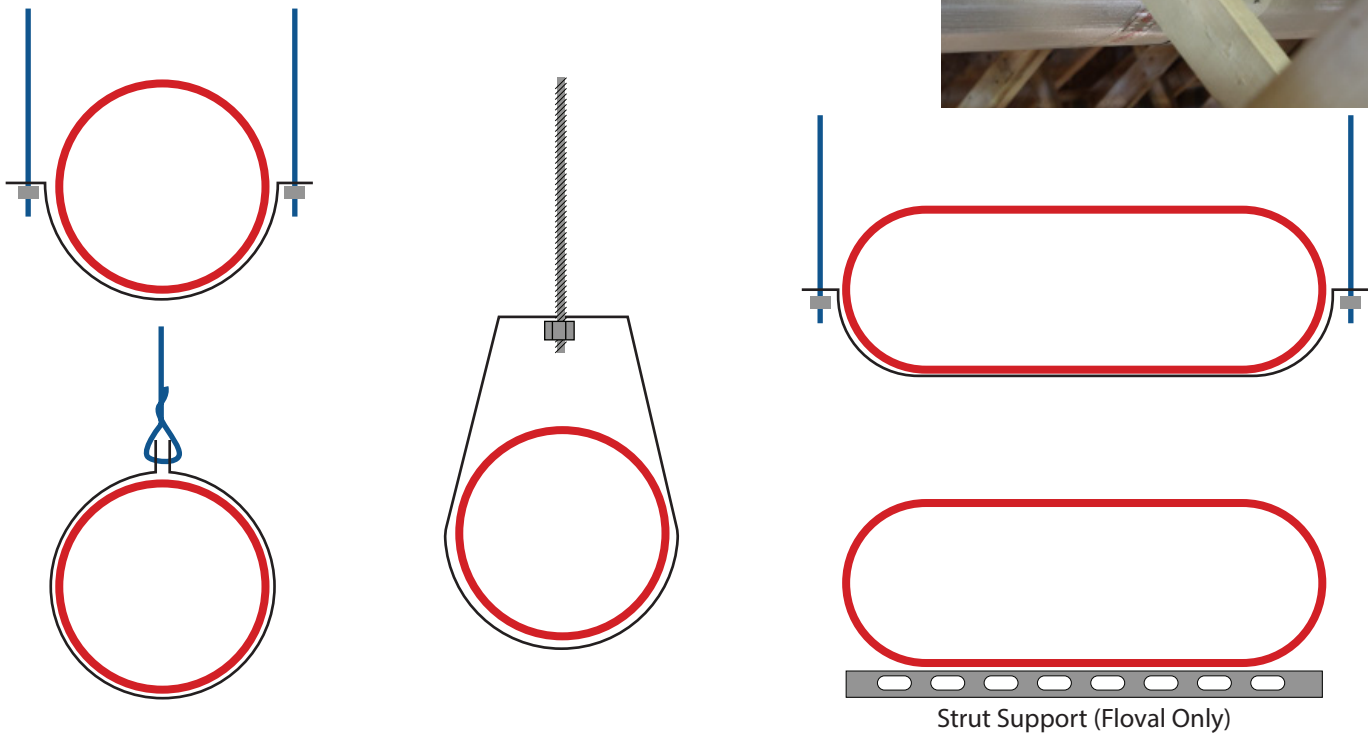
SUPPORT INSTALLATION

Because of the lightweight nature of InspiralR and Floval, supports are typically not required as frequently as traditional round ductwork. Adhere to the following guidelines to ensure your ductwork is installed properly. Support distance varies by the ID diameter or major dimension of your ductwork.

| ID Diameter or Major Dimension | Hanger Distance |
|--------------------------------|-----------------|
| ≤ 30" (Less than or equal to) | 12' |
| > 30" | 8' |
| > 80" | 6' |



Hanging Support Examples:



Acoustic ceiling Hanger Wire (Galvanized, Stainless Steel or Aluminum) or Gripple cable require support straps or Spreader Band attachment when hanging InspiralR or Floval. The support surface should be wide enough as to not point load the ductwork following the attached table.

Strut or 2x4 supports may be used for Floval ductwork so long as the support surface is the proper width and spans the entire flat oval's major dimension's surface.

| ID Diameter or Major Dimension | Hanger Support Surface Width |
|--------------------------------|-------------------------------|
| ≤ 36" (Less than or equal to) | 1.5" or Gripple Spreader Band |
| 37" – 55" | 2" |
| 56" – 80" | 3" |
| 80" – 120" | 4" |
| 120" | Consult Thermaduct |

FIELD MODIFICATION

InspiralR and Floval can be modified in the field. Adjustment to length, adding a take-off, installing a diffuser, or adding a saddle tap all come into play when installing InspiralR or Floval.

Adjusting Duct Length of InspiralR and Floval

When adjusting the length of a duct segment following the following steps;

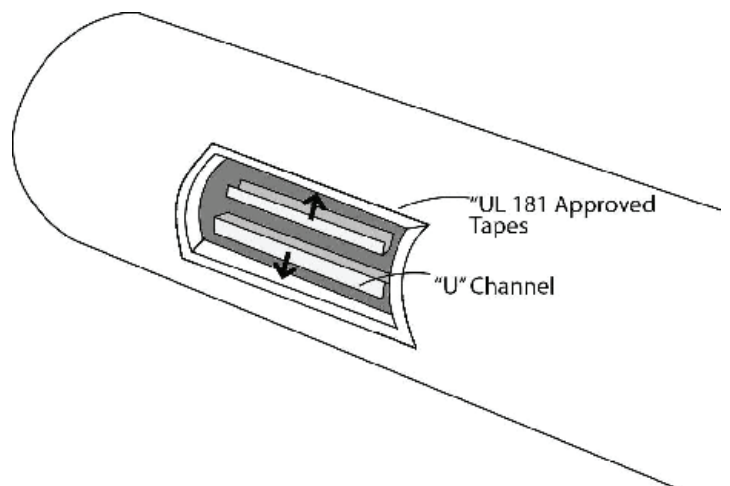
1. Measure and use a multi-tool saw or jack plane to cut desired length of duct segment. Clean cut with knife if necessary.
2. Utilize 3" wide 181A-P listed foil tape to create a vapor barrier on the exposed phenolic.
3. Squeegee the tape using tape depression apparatus with multiple passes to seal the tape to the panel.
4. Install panel clips around the outer edge of the ductwork every 8-10". Cover with UL 181 approved tape.
5. Install flange and screw into panel clips. Seal with Kingspan sealant



Installing Diffusers onto InspiralR and Floval Ductwork

When installing a diffuser in InspiralR or Floval, follow the following steps;

1. Use a multitool or jack plane to cut desired diffuser hole size in duct segment.
2. Utilize 3" wide 181A-P listed foil tape to create a vapor barrier over any exposed phenolic.
3. Squeegee the tape using tape depression apparatus with multiple passes to seal the tape.
4. Because the diffuser mounts directly to the InspiralR or Floval panel, employ metal "U" channel to provide added structural support for diffuser fasteners. If diffuser's screw holes are outside of "U" channel, apply tiger connectors to the interior of the ductwork at screw locations.





Diffusers Hanging Vertically-

Diffusers that hang in a vertical orientation should be connected with screws that penetrate panel fasteners installed on the inside of InspiralR or Floval.

Diffusers with weight above 3 lbs should be supported independently. This can serve as a supporting point for your InspiralR or Floval following the frequency for your ID Diameter or Major Dimension.

Warranty

InspiralR and Floval come with a 10-year limited warranty. See warranty statement for details.

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. Is the duct system 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 support widths in conformance with this manual? | Yes | No |
| 7. Were you required to modify any of the duct segments? | Yes | No |

| | |
|--------------------|----------------------------|
| 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 warranty@thermaduct.com to obtain a warranty certificate.