THERMAFLEX ®

EN

ThermaSmart® Marine 2.0 Black

ThermaMount Marine

ThermaMount Marine Flex

General Information

Installation Manual

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1. ThermaSmart® Marine 2.0 Black Tube

ThermaSmart® Marine 2.0 Black is a polyolefin insulation system covered with black aluminum foil

GLUELESS APPLICATION FOR ALL THERMASMART® MARINE 2.0 BLACK TUBES!

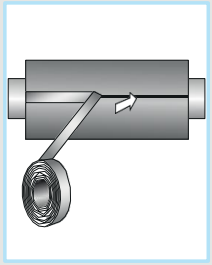
The application of ThermaSmart® Marine 2.0 Black Tube is the same as other Thermaflex tube insulation, but in this case the following rules should be applied:

1. Seam protection

- For **ThermaSmart® Marine 2.0 Black** installed insulation, all seams should be covered with **ThermaSmart® Marine 2.0 Black Tape, therfore-glueing the seems is not needed.**
- For **ThermaSmart® PRO LS** used in multilayer application all seams should be previously glued with **ThermaGlue (see ThermaSmart® Pro LS on pages 5-6)**

Important!
ThermaSmart® Marine 2.0 Black, all seams should be covered with an overlap at least **25mm wide!**

1.1



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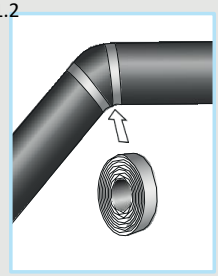
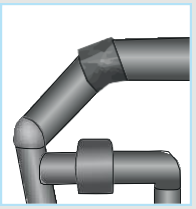


2. Applying tape

- For accurate protection of insulation, after applying ThermaSmart® Marine 2.0 Black Tape to the seam, smooth the surface thoroughly so that the tape adheres lightly to the insulation surface

2.1



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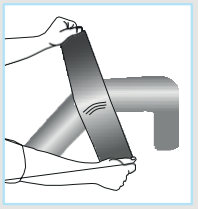

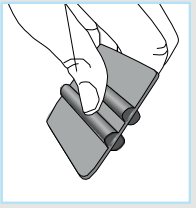

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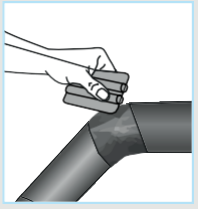
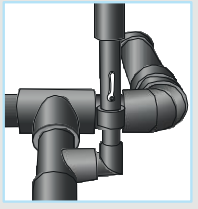


3. Finishing assembly

- After installation, make sure that the entire ThermaSmart® Marine 2.0 Black system has been coated with black aluminum foil

Important!
In the case of places without black aluminum foil they should be supplemented with **ThermaSmart® Marine Black tape**

3.1



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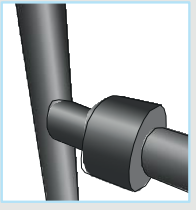

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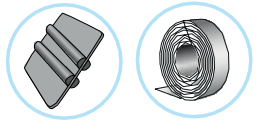


ThermaSmart® Marine 2.0 Black

ThermaSmart® PRO LS

Application thickness 50 mm

ThermaSmart® PRO LS version is produced in a maximum thickness of 30 mm.

- Applications which may require larger thickness which can and should be done in 2 layers:
    - 1st layer ThermaSmart® PRO LS version
        - ThermaGlue must be used to seal all seams
    - 2nd layer ThermaSmart® Marine 2.0 Black
        - No ThermaGlue is needed.
        - Seams can be sealed by only using ThermaSmart® Marine 2.0 Black Tape
- Combinations of all wall thicknesses from the range can be used for this with the remark that the total wall thickness does not exceed the maximum allowed 50 mm.
- After installing the 2nd layer of ThermaSmart® Marine 2.0 Black, all seams longitudinally as well as front side connections must be covered with self-adhesive ThermaSmart® Marine 2.0 Black Tape with a minimum width of 50 mm
- Gleuless application is only for the Marine tube insulation with the Black Alu foil. The ThermaSmart® LS tube used as a first layer in a double layer system should always be installed using ThermaGlue to seal the seams (see manual tube Insulation)
- If ThermaSmart® Marine 2.0 Black is used in only one layer (up to 30 mm) no Glue is needed. All seams can be sealed with only using Marine 2.0 Black Tape.
- Make sure that all seams are closed before using the ThermaSmart® Marine 2.0 Black Tape to seal and cover the seams

2nd layer ThermaSmart® Marine 2.0 Black

1st layer ThermaSmart® PRO LS version

Important!

Make sure to allow an excess length of +2% for compression joining to compensate for thermal expansion!

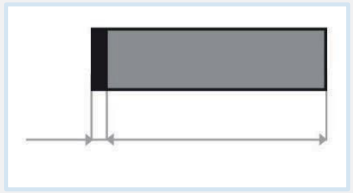
2. ThermaSmart® PRO LS Tube

Measurement & Cutting

1. *Measure length*

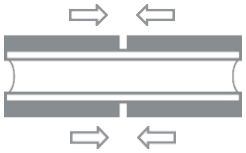
- Measure the length needed for the tube insulation.
- Add 2% extra length to compensate for thermal expansion.

1.



2. *Cut to length (Butt joint)*

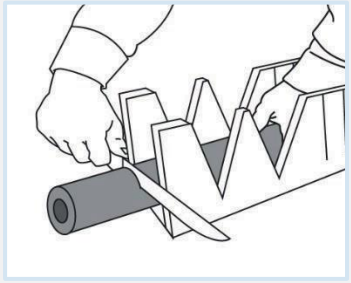
- Cut the insulation tube at a 90° angle.



TIP!

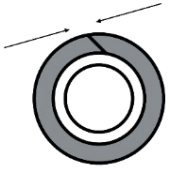
Use a miter box for a perfect 90° cut!

2.



3. *Longitudinal cut (Circumferential joining)*

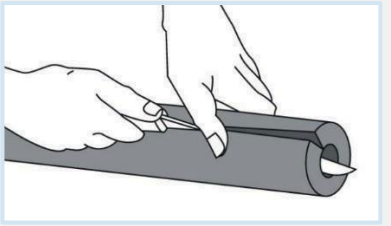
- Cut open tubular insulation along the longitudinal direction using a knife.
- Maximize the joining surface as shown in figure 3. For optimum, save and vapor- tight joining.

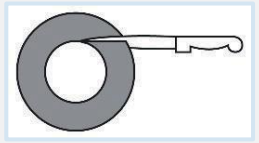


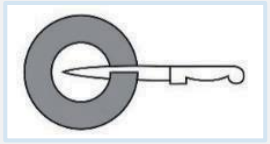
Important!

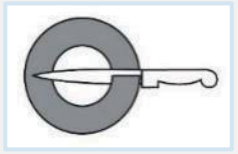
Reduce the ovality of the tube insulation by pressing on it. Always cut tubes on the flat side to minimize tension on the seam.

3.









Important!

Make sure to use the right product with the right inner diameter.

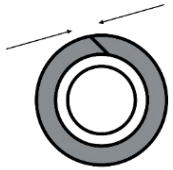
- ID too small → tension in the seam.
- ID too big → hollow space.

Required tools

Apply glue & join

1. *Circumferential joining*

- After making the longitudinal cut, open insulation using your finger.
- Wrap around the pipe.
- Cover both joining surfaces with ThermaGlue.
- Let glue dry and to the fingernail test.
- Press seam together:
  - First join edges (1,2)
  - Then join middle part (3) to prevent misalignment
  - Join the remaining parts applying light pressure.



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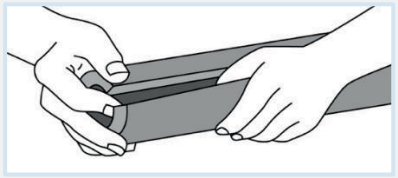
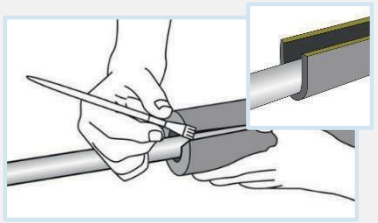
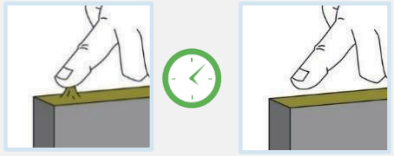
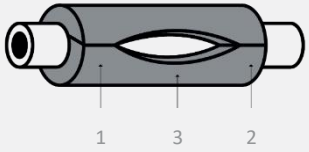


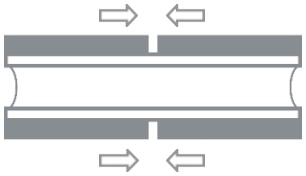






1.1 Butt joint (Option 1.)

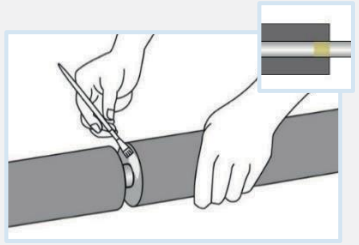
- Ensure compartmentation on the yet installed tube end.
- Apply glue on both, the surface of the installed tube end as well as on the new insulation tube.
- Wait until glue is tack-dry.
- Join both insulation tubes using light pressure onto the yet installed tube.

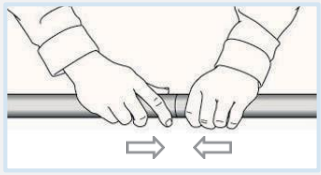


Important!

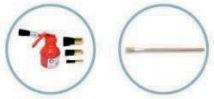
Make sure to allow an excess length of +2% for compression joining to compensate for thermal expansion!

2.1.





Required tools:



3. ThermaSmart® Marine 2.0 Black sheet

ThermaSmart® Marine 2.0 Black is a polyolefin insulation system covered with black aluminum foil

GLUE STILL REQUIRED FOR ALL THERMASMART® MARINE 2.0 BLACK SHEET

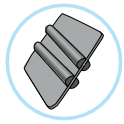
The final application of ThermaSmart® Marine 2.0 Black Tube is the same for other Thermaflex tube insulation, esspecially since *it still requires ThermaGlue* but in this case the following rules should be applied:

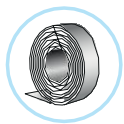
2. Seam protection

- All seams should be previously glued with ThermaGlue , and then covered with ThermaSmart® Marine 2.0 Black

Important!
All seams should be covered with an overlap at least **25mm wide!**

Required tools:

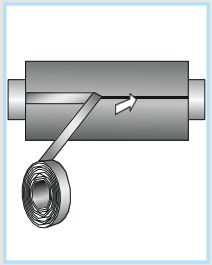




ThermaSmart® Marine 2.0 Black

ThermaSmart® PRO LS

1.1



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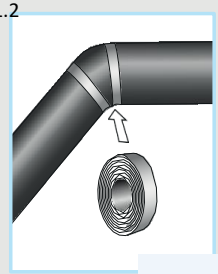


4. Applying tape

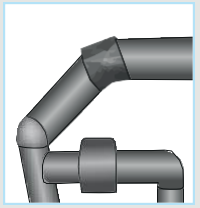
For accurate protection of insulation, after applying ThermaSmart® Marine 2.0 Black Tape to the seam, smooth the surface thoroughly so that the tape adheres lightly to the insulation surface

4. Finishing assembly

After installation, make sure that the entire ThermaSmart® Marine 2.0 Black system has been coated with black aluminum foil

Important!
In the case of places without black aluminum foil they should be supplemented with **ThermaSmart® Marine Black tape**

2.1



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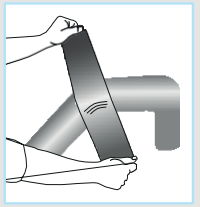

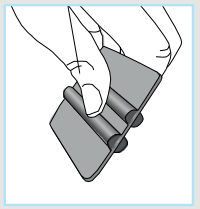

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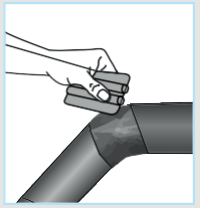
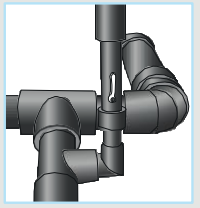


3.1



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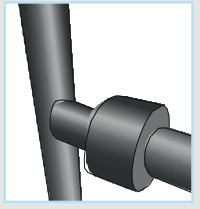


Pipes & circular ducts

Measurement & cutting

1. Measure

- Determine the circumference (C) of the pipe using a strip of the insulation material of the same thickness to be used for the insulation.

2. Outline guides & cut

(Circumferential joint)

- Plot the circumference on the sheet
  insulation and cut accordingly.

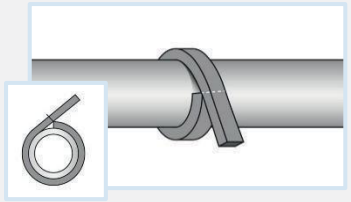
For circumferential joining, cut the sheet material in a beveled manner to maximize the joining surface

C Pipe circumference
L Length

TIP!

Before start marking, make sure the curve of the sheet material follows the curve of the pipe / circular duct for easy application.

1.



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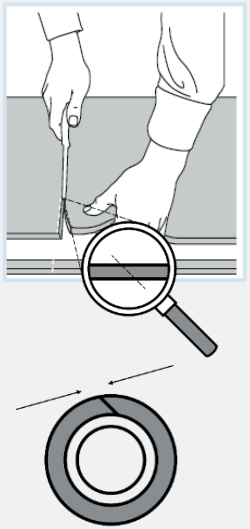
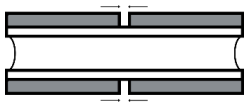


3. *Cut (Butt joint)*

- Cut the sheet insulation to length (L) for butt joining if necessary.
- For longitudinal joining cut with a 90° angle by using a knife.

Important!

Don't forget to allow an excess length of 5mm for wet sealing.



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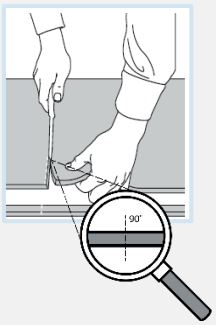
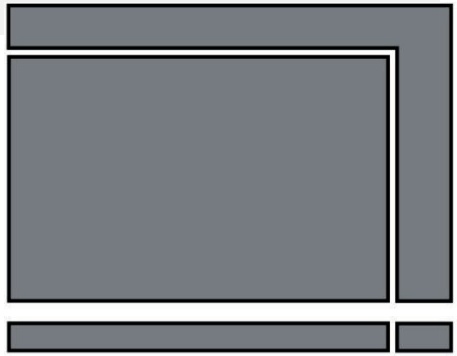




Insulation Strip (C)

Required tools:

4.ThermaSmart® PRO LS sheet

1. *Circumferential joining*

2. Wrap sheet insulation around the pipe (1,2,3).

-
- First join the edges (4,5) and then the middle part (6) to prevent misalignment of the ends.
- Join the remaining parts applying light pressure.

Important!

When securing sheet insulation material, care should be taken to avoid high tension on the sealed seam caused by the bending of the sheet. See 3. Multi-Layer-Insulation.

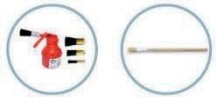
3. *Circumferential joining*

- Wrap sheet insulation around the pipe (1,2,3).
- First join the edges (4,5) and then the middle part (6) to prevent misalignment of the ends.
- Join the remaining parts applying light pressure.

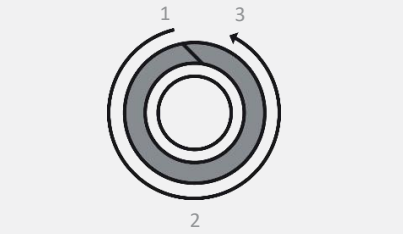
Important!

Make sure that the seam is in visible area for correct installation work and quality inspection!

Required tools:



1.



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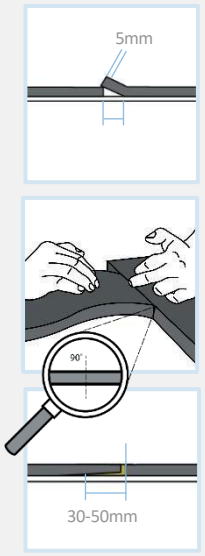


3. Multi-Layer-Insulation

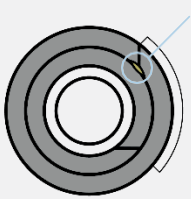
Ensure that the two layers are at least 90° apart from each other and the longitudinal seams don't overlap as shown in figure 3. **After applying the first layer, the second layer should be applied in the same manner.**

Important!

The Multi-layer technique is also needed if higher insulation thicknesses.

Apply glue beneath the seam of the 2nd layer.

3.



5.Pipe Fixation

The choice of the pipe fixation system and the insulation thickness greatly affects the spacial design during the pipework installation. Bracket spacing depends on pipe system!

1. ThermaMount Marine pipe supports

Pre-insulated pipe supports are installed together with the pipes. So designers / project planners must ensure selecting the right pipe support in the design process. That's the only way to guarantee the right components are available on site for the pipework installation.

2. Ensure space between insulated pipes

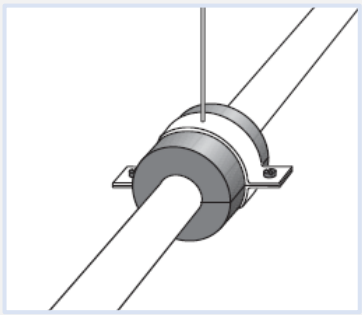
When it comes to chilled water lines or refrigeration systems, space should be allowed between the insulated system components to ensure free convection. We recommend to use at least twice the insulation wall thickness as an additional safety measure against condensation.

t = wall thickness ThermaSmart® Marine 2.0 Black insulation material

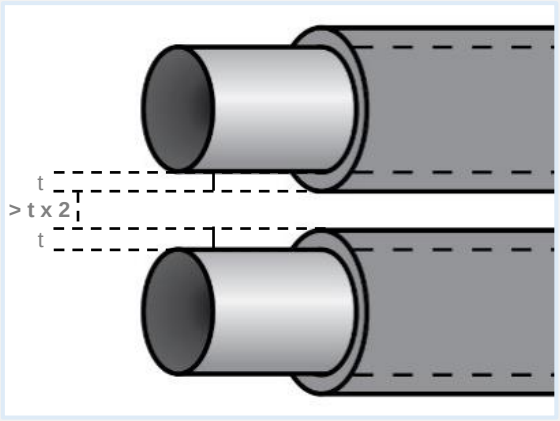
Important!

For chilled water lines and refrigeration systems we recommend ThermaMount Marine pipe support only to guarantee a vapor-tight insulated system without thermal bridges.

1.



2.



6.ThermaMount Marine

ThermaMount Marine pipe support

For a vapor-tight system

For chilled water applications, pre-insulated pipe supports are recommended to create a fully watertight and vapor-tight system. When opting for alternative pipe hangers, it is difficult to ensure that the clamp will be vapor-tight when used in combination with Thermaflex insulation.

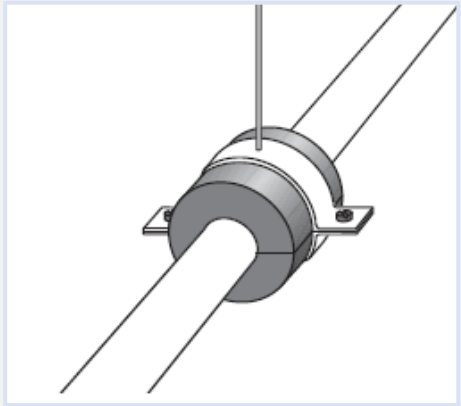
Our pre-insulated hangers prevent:

- Condensation gaps
- Thickness compression of insulation
- Undesirable influence on the system performance of chilled water applications.

Hereby ensuring an optimal, and hassle-free system performance.

TIP!

- Use a nylon locking nut / anti-vibratory fastener.
- Apply non-skid pads to the clamps to minimize movement.
- Keep in mind pre-insulated supports should be installed together with the pipes.



1. Place insulation pipe support

Wrap the ThermaMount Marine around the pipe.
Use the rigid segments to bear the load.

2. Seal ThermaMount Marine

Close the seam by joining them firmly to press.

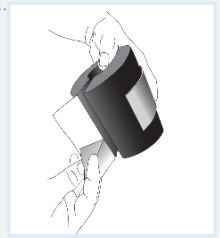
Seal the seam with the self adhesive Marine 2.0 Black Tape and smooth the surface thoroughly

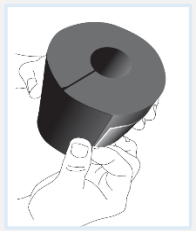
3. Place pipe support clamp

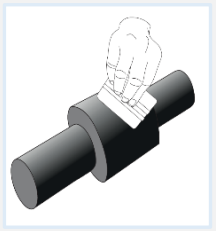
Place the clamp around the ThermaMount Marine pipe support.

1.

2.







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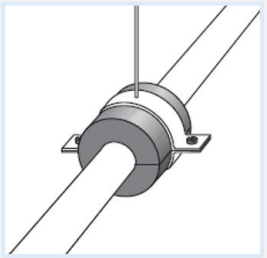


4. Coat with glue

only applicable for ThermaSmart® LS Tubes in 1st layer

Coat all joining surfaces of the pipe support and insulation tube with Thermaglue.

5. Let glue sit and join

only applicable for ThermaSmart® LS Tubes in 1st layer

Let glue sit until tack dry (fingernail test) and firmly press the insulation against the pipe hanger insulation block.

6. Seal butt joints

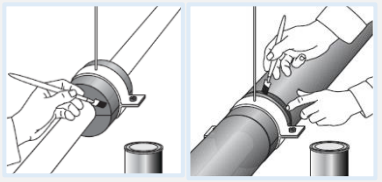
Apply ThermaSmart® Marine 2.0 Black tape to the butt joint where the Thermaflex insulation and support come together

Make sure the surface of the butt seam is free of dust before applying the aluminium tape.

Applying tape

For accurates protection of the insulation, after applying the ThermaSmart® Marine 2.0 Black Tape to the seam, smooth the surface thoroughly so that the tape adheres tightly to the insulation surface.

4.



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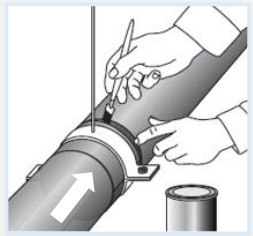

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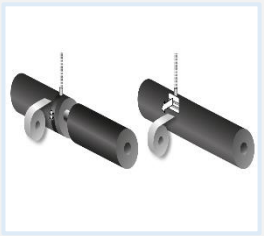
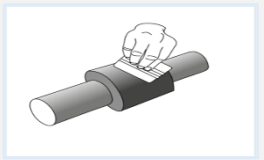




Important!

Pipe hangers are not suitable for anchoring! (sliding brackets)

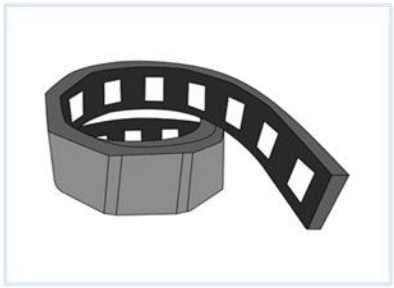
Select ThermaMount Marine pipe supports with the correct dimensions!

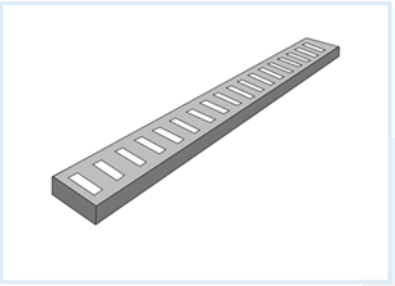
ThermaMount Marine

ThermaSmart® PRO LS

7.ThermaMount Marine flex

Flexible pipe support used for pipe diameters above diameter 114 mm



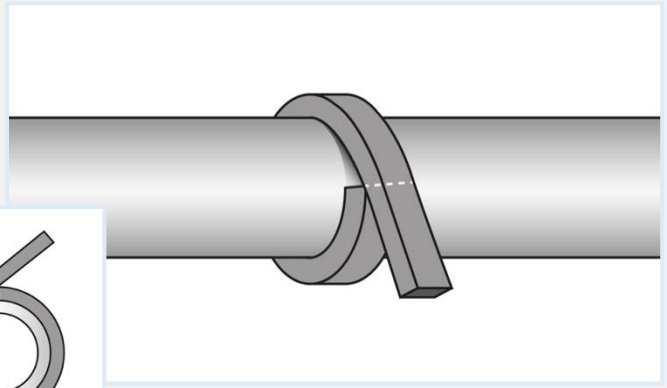


Measurement

Measure circumference for ThermaMount Marine flex

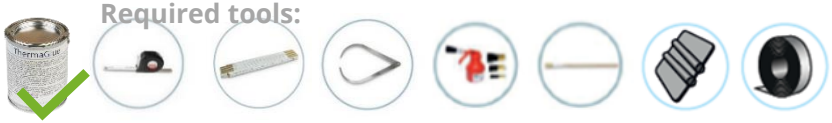
When dealing with pipes or circular ducts with a diameter of more than 114 mm, use ThermaMount Marine flex. When applying ThermaMount Marine flex, avoid tension at all costs. To guarantee measuring the required excess length, we recommend using a strip of insulation of the same thickness to determine the circumference including excess length.

IMPORTANT!
Do not stretch the strip!



Join insulation

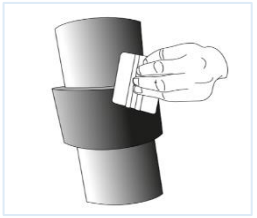
- Coat the both surfaces for circumferential joining with glue and let sealant dry before application (tack -dry consistency). (1)
- Wrap the insulation around the pipe (2)
- Join the edges by applying light pressure (2)
- Apply ThermaSmart® Marine 2.0 Black tape to the butt joint (3)



Required tools:

Applying tape

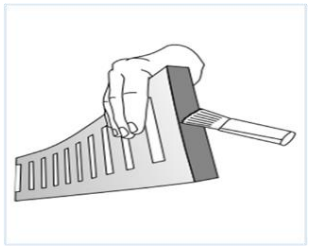
For accurates protection of the insulation, after applying the ThermaSmart® Marine 2.0 Black Tape to the seam, smooth the surface thoroughly so that the tape adheres tightly to the insulation surface.



Important!

Make sure to allow an excess length of +2% for compression joining to compensate for thermal expansion!

1



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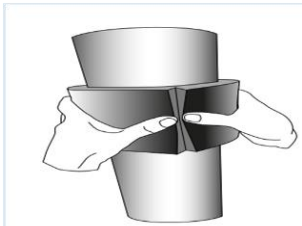

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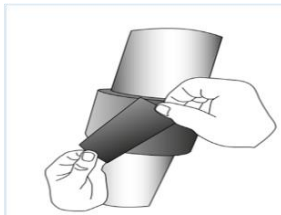

Note: Never shorten the inserts when cutting the ThermaMount Marine Flex to size.

If necessary use several strips to rach the correct diameter

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