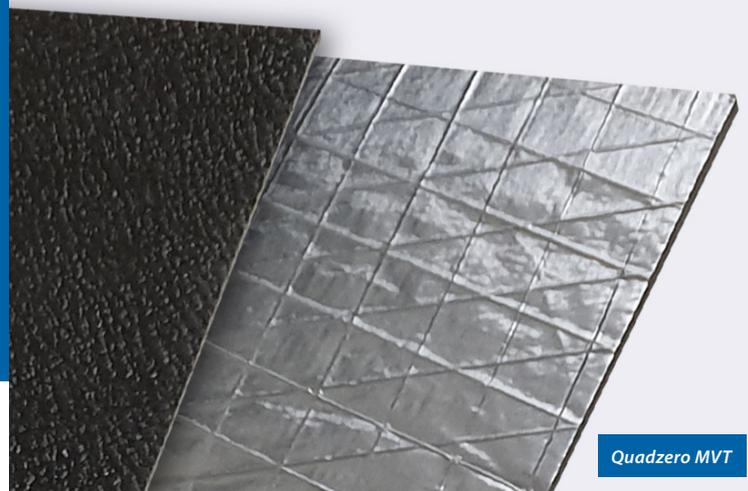


QUADZERO™ MVT

COLD AND HOT PIPE INSTALLATION GUIDE

This installation guide provides recommendations to maximize the service life of Quadzero MVT for LNG and cryogenic pipe applications.



Quadzero MVT

KEY INSTALLATION REQUIREMENTS - COLD PIPES

- Attention to detail and good workmanship in cutting, applying and fixing the product on to the pipe is essential.
- Ensure pipe and pipe insulation work surface is clean and dry before installing product.
- Coverage of the pipe insulation being treated must be continuous.
- Coverage will vary depending on the pipe or insulation diameter.
- There should be no gaps at joints or edges and adequate overlaps must be applied according to the specification as the smallest gap at any joint will result in performance loss.
- Tape PAP should be applied on all joints to hold MVT in place, in lieu of metal straps for horizontal sections.
- Do not overstretch Tape PAP when applying, as this will create buckles and voids in the contact area.
- For cold applications, Quadzero MVT should be installed with silver PAP facing outward. Metal banding is optional once Tape PAP is applied.
- For optimal performance, allow at least a 50 mm to 100 mm overlap when wrapping around the pipe or insulation being treated. A tight seal around all joints and edges is critical to attain maximum performance.

KEY INSTALLATION REQUIREMENTS - HOT PIPES

- Attention to detail and good workmanship in cutting, applying and fixing the product on to the pipe is essential.
- Ensure pipe and pipe insulation work surface is clean and dry before installing product.
- Coverage of the pipe insulation being treated must be continuous.
- Coverage will vary depending on the pipe or insulation diameter.
- There should be no gaps at joints or edges and adequate overlaps must be applied according to the specification as the smallest gap at any joint will result in performance loss.
- Metal banding should be applied to fasten the MVT against the insulation. DO NOT SEAL ANY JOINTS USING TAPE PAP.
- For hot applications, Quadzero MVT should be installed foil side down – black barrier facing outward.
- For optimal performance, allow at least a 50 mm to 100 mm overlap when wrapping around the pipe or insulation being treated. A tight seal around all joints and edges is critical to attain maximum performance.

GENERAL GUIDELINE RECOMMENDATION

HOW TO MEASURE AND CUT MATERIAL

For Straight Pipe Sections

Apply the following formula to calculate and cut the required wrapping circumference (C).

Measure the outside diameter (OD) of the pipe that requires lagging.

Overlap (OL) is determined by the consultant / technical specification on the project.

$$C = 3.14 \times (OD + (2 \times T)) + OL$$

OD = Outside Diameter of the pipe or insulation being treated.

OL = Overlap for good acoustic seal

T = Thickness of barrier product being installed

Mark the calculated wrapping circumference (C) along the length of the roll and cut material with a utility knife or equivalent.

Always cut from the foil faced side of the material.

***Installation video can be found on our website - www.pyroteknc.com/services/install-videos/*

MEASURE AND CUT

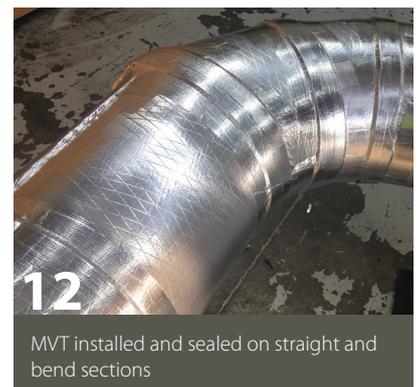
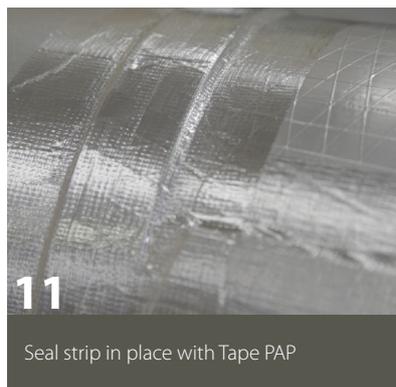
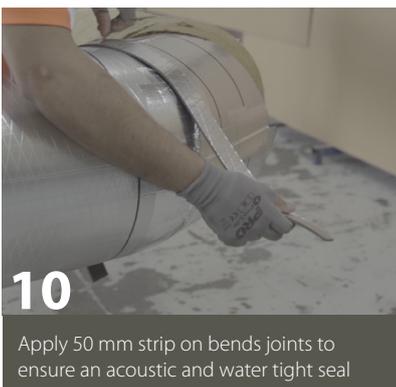
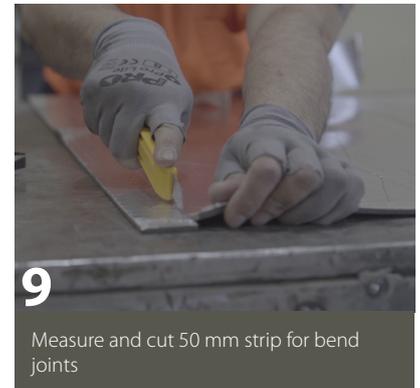
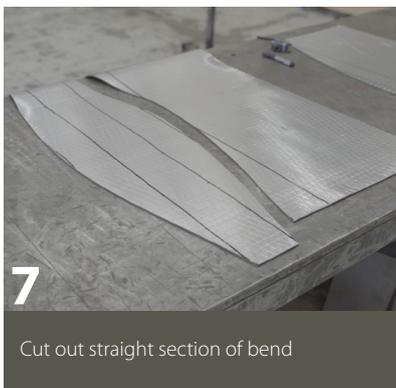
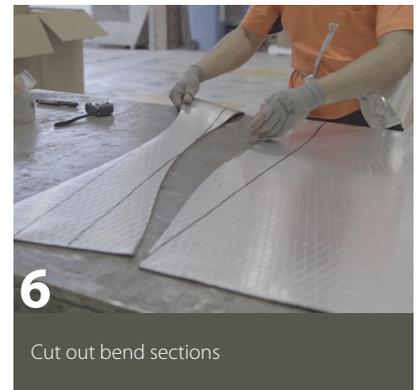
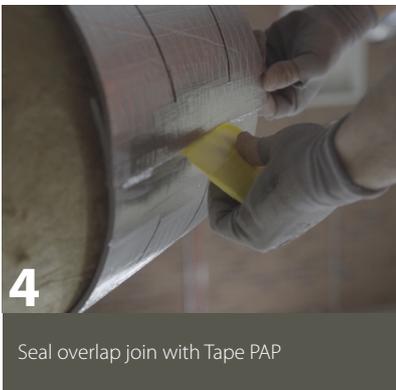
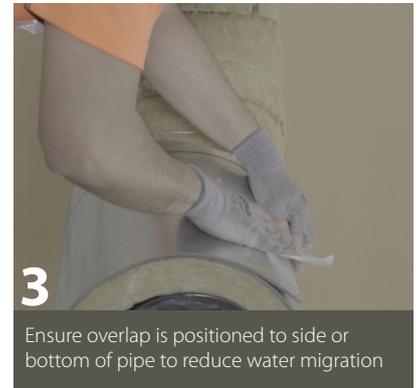
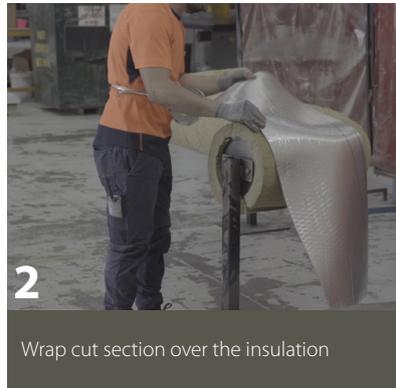
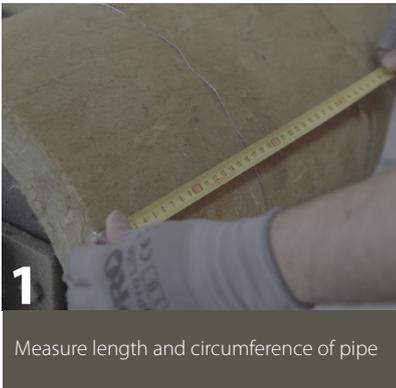
- Roll out the product to an appropriate length and measure the coverage required to fit around the pipeline insulation.
- Refer to "How to measure and cut material" formula above.
- Place and wrap the 1st section onto the pipe work.
- Tape the overlapping joint to seal and secure the product.
- Wipe or rub the tape with firm pressure across the tape with a cloth or equivalent to smooth out any air bubbles or buckles.
- All joints along each pipe section must have a 50 mm overlap on bends and radius. All straight sections should have a 100 mm overlap.
- For cold pipe applications, continue wrapping each segment and join with Tape PAP. This will provide a vapour seal and will help eliminate corrosion under installation (CUI).
- For hot pipe applications, all joints to be held in place with metal banding to ensure any residual moisture in the insulation system can escape. Do not use Tape PAP for hot pipe applications.
- Always ensure that the overlaps are positioned to shed water so that an upper piece always overlaps/fits over a lower piece.
- When wrapping vertical pipes in cold and hot applications, metal banding is required due to the weight of Quadzero MVT.

REPAIRS AND DIFFICULT JOINS

- Puncture hole and tears can be easily fixed by placing a piece of Quadzero MVT patch over the affected areas.
- The patch size must be 2 X larger than the puncture / tear area to ensure a good overlap and acoustic seal.
- The patch perimeter must be sealed using Tape PAP.
- When treating bends, simply cut strips of Quadzero MVT and place over joints and seal using Tape PAP.



COLD APPLICATION INSTALLATION IMAGES



HOT APPLICATION INSTALLATION IMAGES

- Metal banding should be applied to fasten the MVT against the insulation.
- DO NOT SEAL ANY JOINTS WITH TAPE PAP. Metal banding will allow water, vapour and steam to escape.
- Sealing strip of 50mm to be apply on bends and radius to ensure a good acoustic and water tight seal.



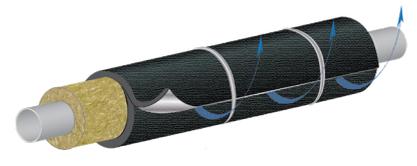
1

MVT installed around T-Sections with metal banding



2

Apply 50 mm overlap to reducing sections to ensure an acoustic and water tight seal



3

Cut and install straight pipes with metal banding to allow vapour to escape



4

Overlap eliminates rain water from penetrating through joints



5

Each section to be overlapped and installed with metal banding



6

Straight pipe with 100 mm overlap side of pipe to reduce water migration

WORKING HEALTH AND SAFETY

- Personal Protection Equipment (PPE) is recommended.
- Always follow, read and understand any information contained within the product technical datasheets and safety data sheets.
- If unsure, please consult with your local Pyrotek representative regarding the application of the product.

Note: This installation is suitable for professional and experienced users only.

NOTE: All information above only serves as a general guideline for the installation of Quadzero MVT around pipeline insulation in LNG and Offshore applications. This installation guide does not override any technical specifications written by consultants and engineers.

Please contact Pyrotek® for further information or detailed advice on your specific application.