



INSTALLATION OF MSC-1 SENSOR CABLE





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TECHNICAL DATA

Our patented solution of two double-wire MSC-1 cables enables precise detection and location of faults in pre-insulated pipes, used in district cooling and heating.

Fully insulated cables, mitigates the risk of false alarms, caused by condensation effect.

It is also great solution for monitoring of pre-insulated plastic pipes, straight or PEX type, where using of conventional alarm wires is not efficient.

General information:

Fault detection and location

Application: district heating and cooling

Pre-insulated pipes: steel and plastic

Leak location: Reflectometer (TDR)

Technical data:

Cable insulation: XLPE

Cable wires: 2 parallel copper wires 2 x 0,9mm

Dimensions: 8 x 1,9 mm

Working temperature: - 40 °C do +120 °C

Loop resistance: 20 Ω / 1000 m of wire

VoP (velocity of propagation): 88% for polyurethane foam

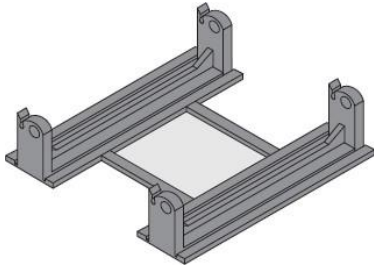
MAIN COMPONENTS AND PACKAGING

INDEX / DESCRIPTION / PACKAGING

MSC-1 / sensor cable / 500m



CLIP-1 / cable clip / 1500pcs



TAPE-1 / adhesive tape / 60m



CON-1 crimp connector / 100pcs

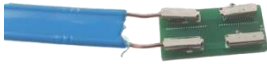


HST-1 / heat shrink tube / 100pcs





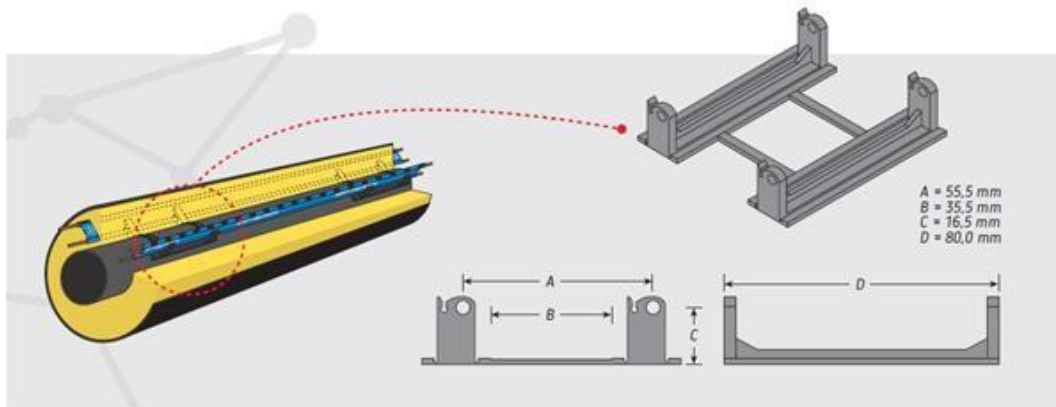
CON-2 / quick connection set /50 pcs



INSTALLATION IN THE PIPE.

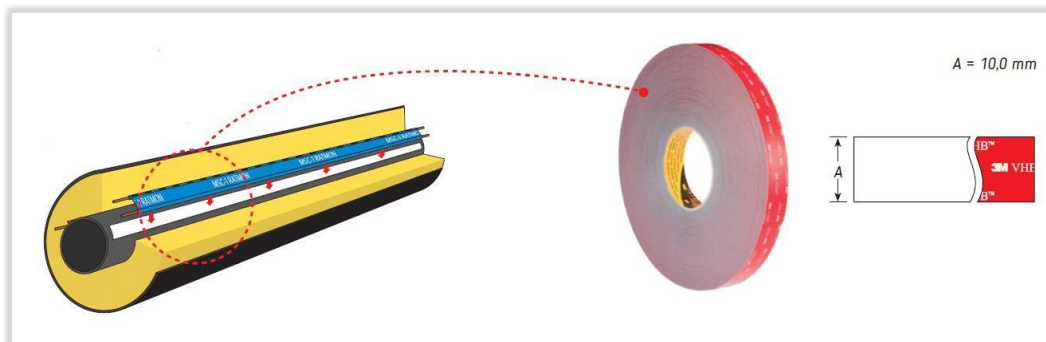
Option 1. By use of cable clip.

Glue cable clip on top of the pipe.



Option 2. By use of adhesive tape.

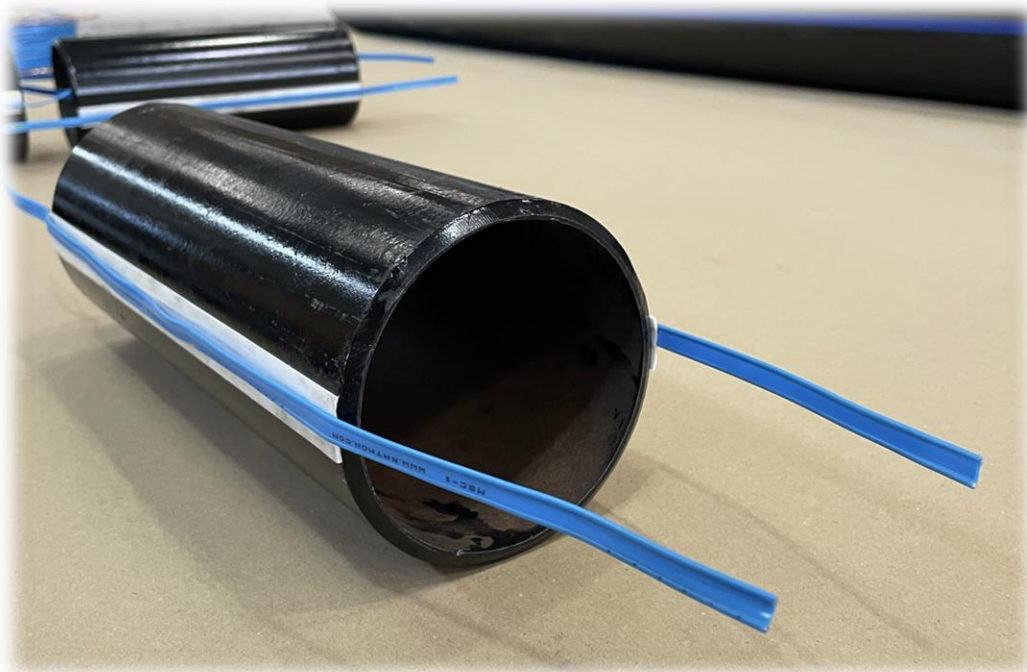
The wire is glued to the pipe with adhesive tape. The wires are laid on two opposite sides of the pipes. This allows the cable to adhere precisely to the pipe at t-joints and elbows.



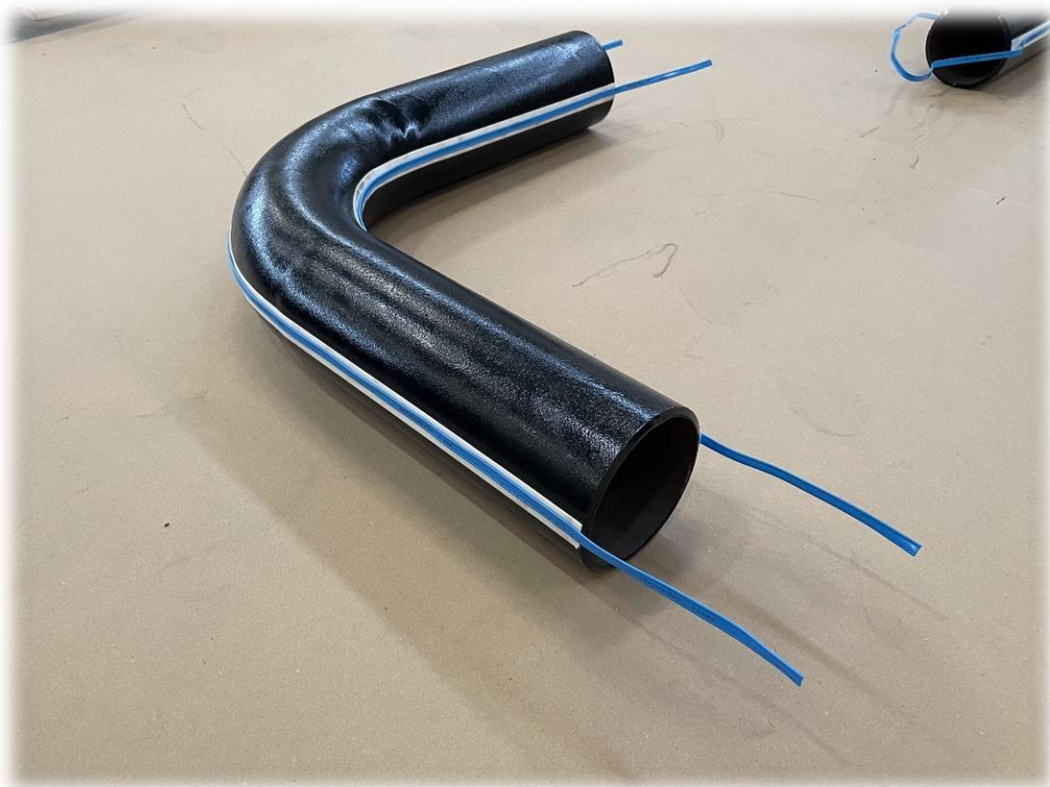
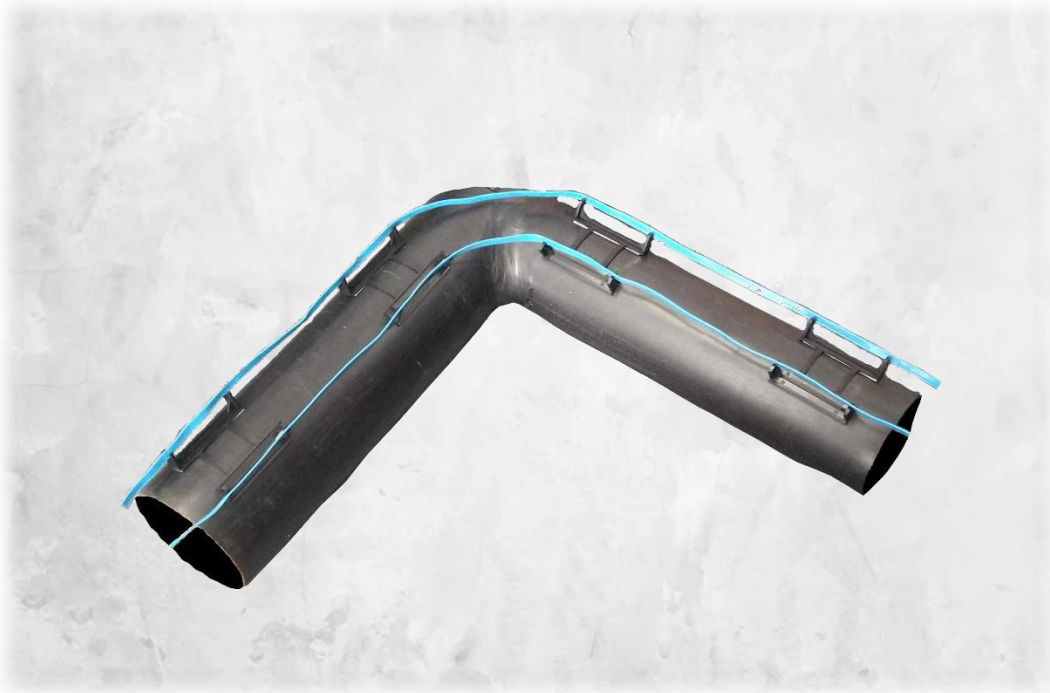
Option 3. PEX pipes – inside foam without any spacer.



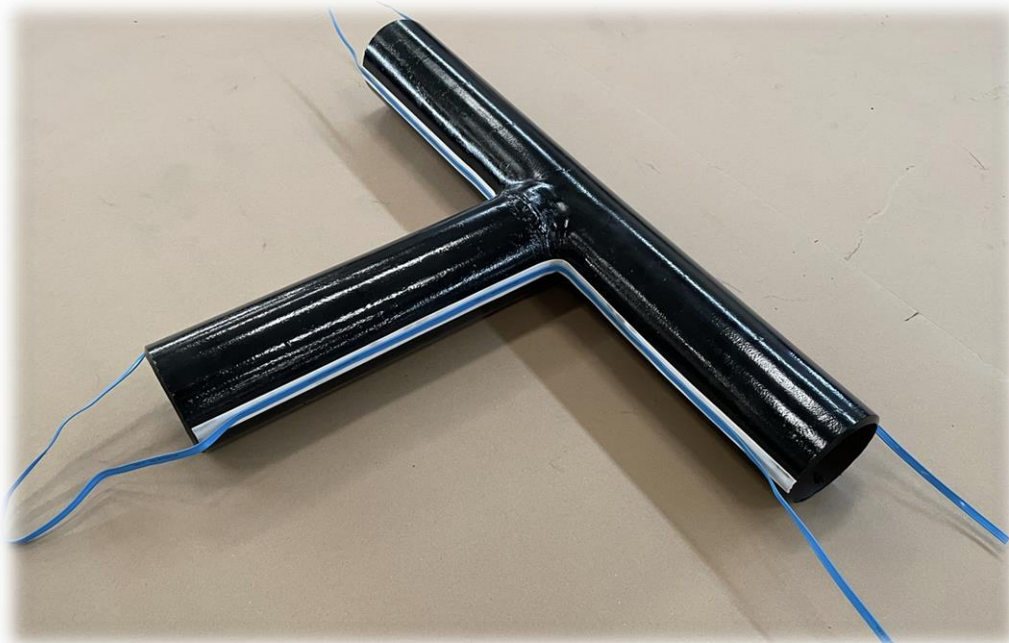
Straight pipe



Elbow



T-joint



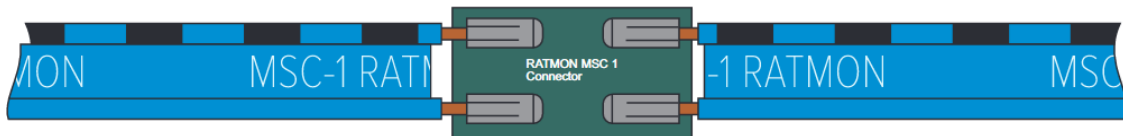
CONNECTION OF CABLES BETWEEN PIPES

Wires can be connected using one of two types of connectors.

CON-2 - quick connection set

Quick connection set uses small PCB board with push connectors. Whole connection is covered by heat shrink tube. Easy, secure installation. No crimping tool needed.

Without shrink tube



Complete connection



Video guide: https://www.youtube.com/shorts/ieEzZ_HIW7A

CON-1 + HST-1

Complete connection



Video guide: <https://www.youtube.com/watch?v=bODaOwe9KME>

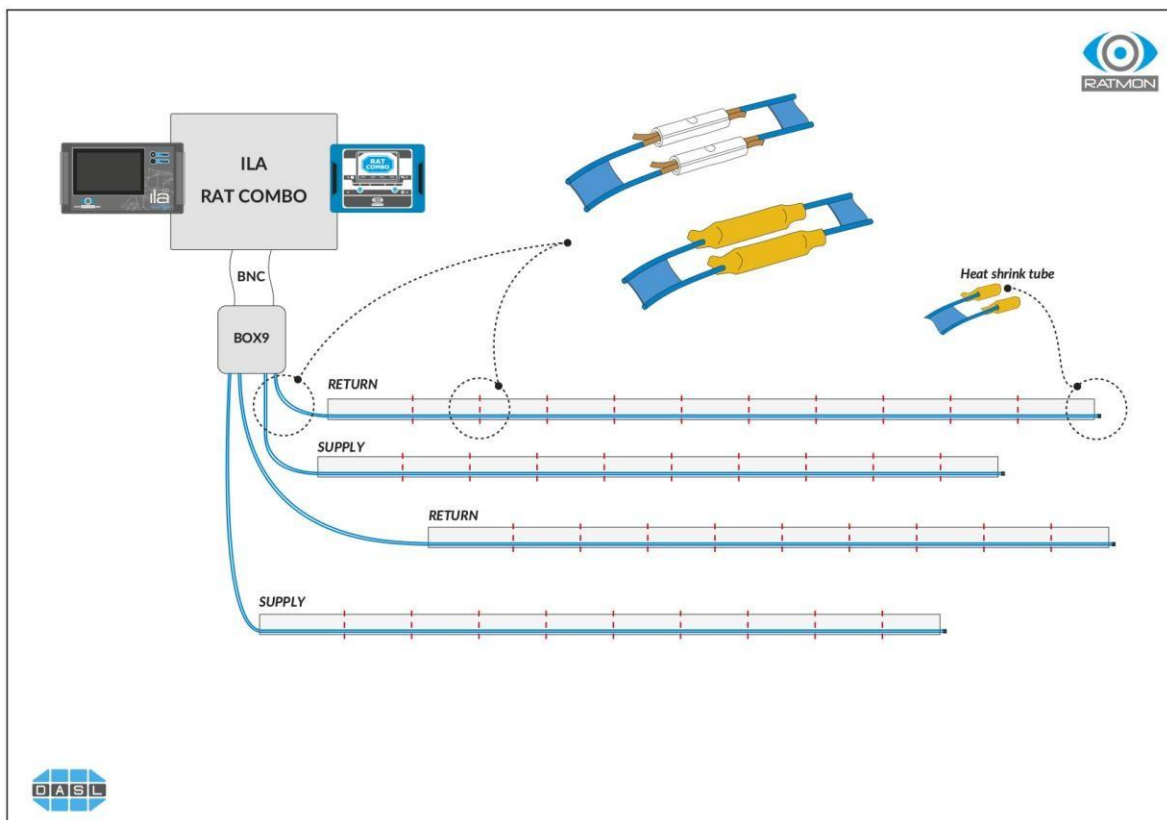
TYPES OF LEAK DETECTION SYSTEM BASED ON MSC-1.

Depending on organization of pipe network, surveillance of pipe loop is based on 1 or 2 MSC-1 cables.

Option 1. Straight pipe without any branches (T-Joints).

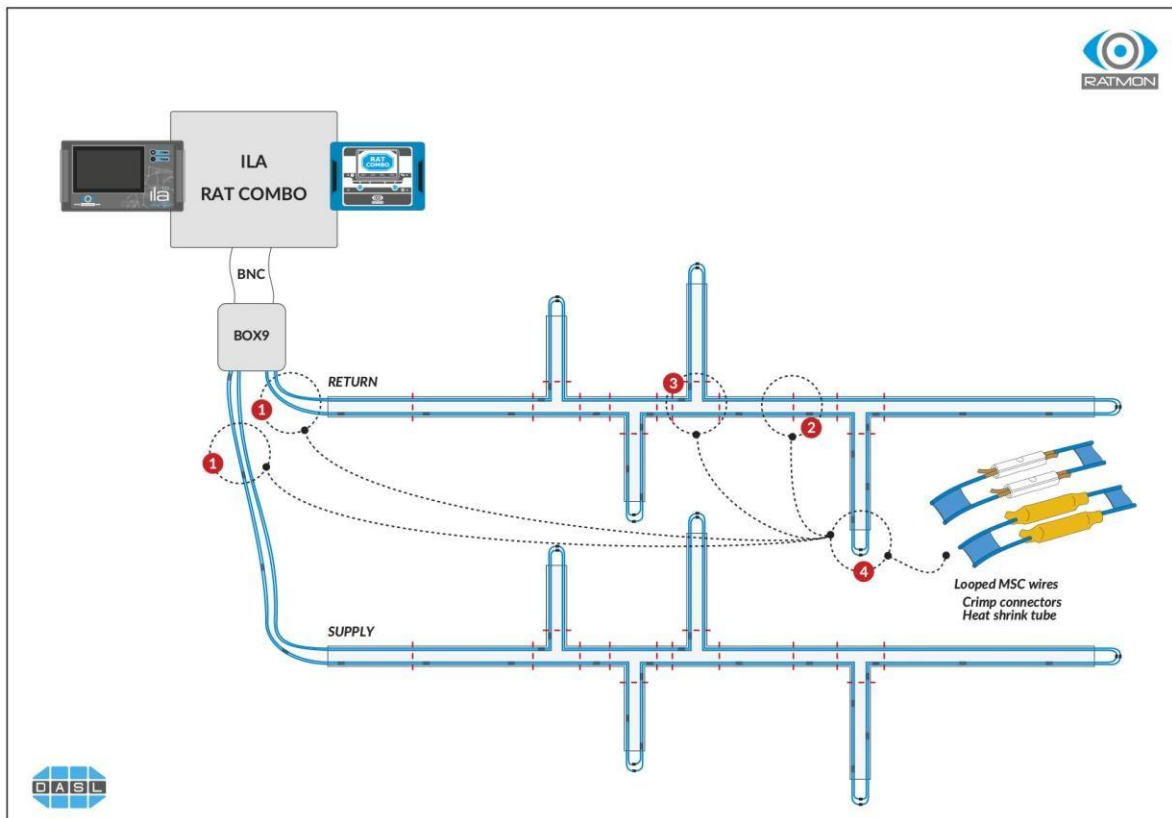
In this case fault locators (ILA or RATCombo) can monitor 4 pipes. Just one cable per pipe must be used. Individual wires of the cable MUST be left opened and insulated as show on the drawing.

Maximum measuring range of pipe/cable is 3 km.



Option 2. Pipe network with branches (T-Joints).

In this case surveillance of one pipe is based on 2 cables, looped at the end. Maximum measuring range of pipe is 3 km (6 km of MSC-1).

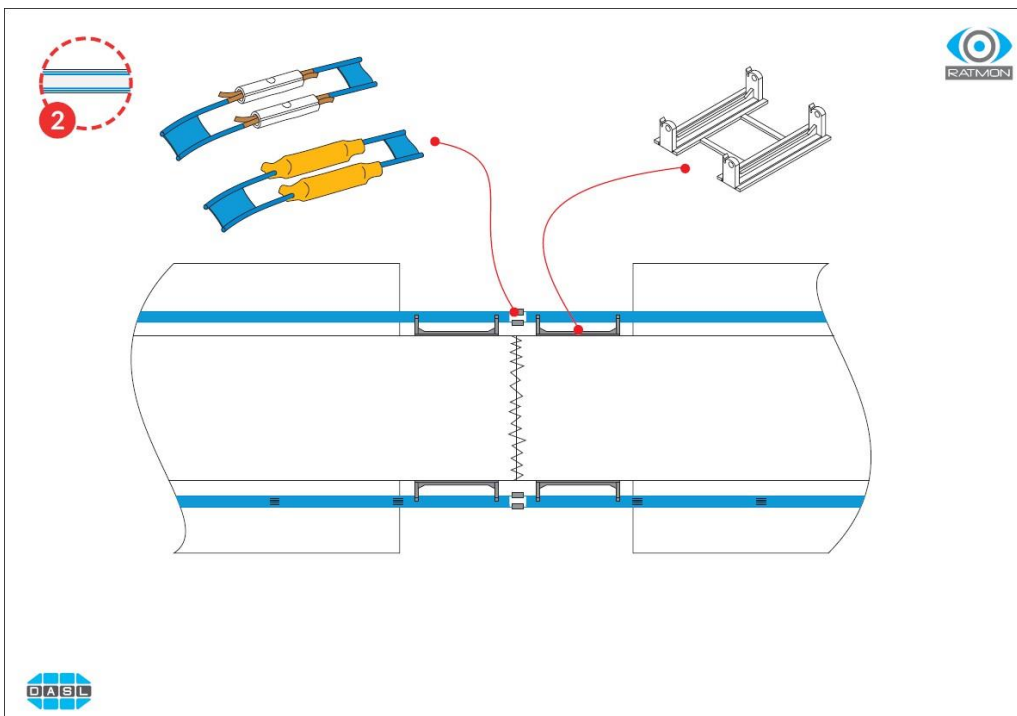
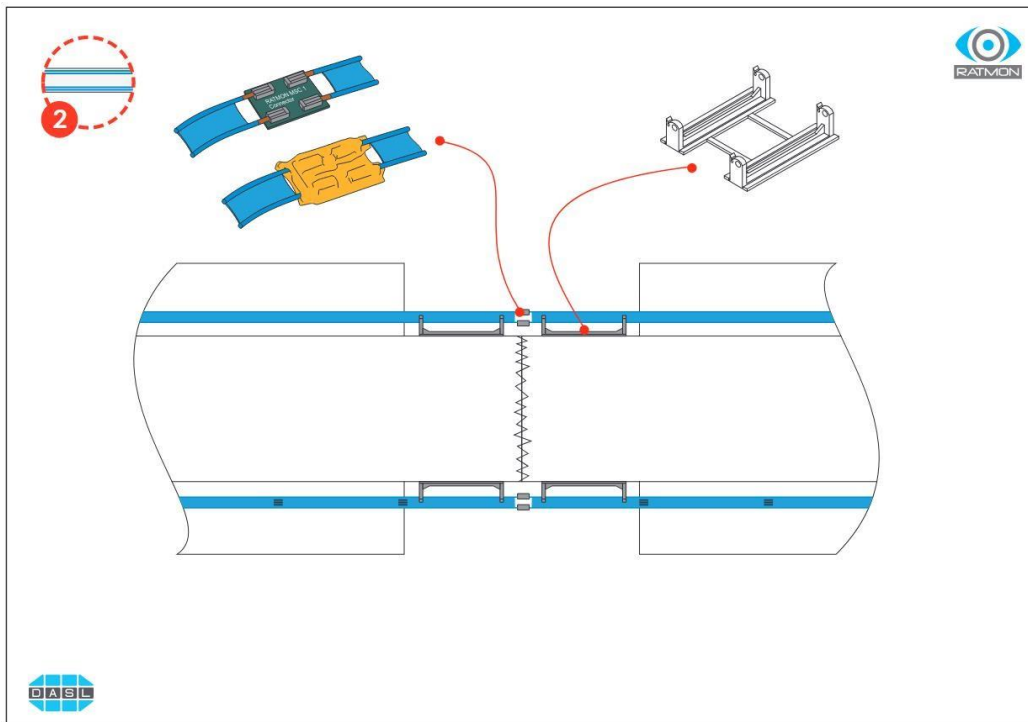


MSC-1 is marked on one side and there is dashed line on top. Always lay dashed on top and keep marking on one side at wire connection.

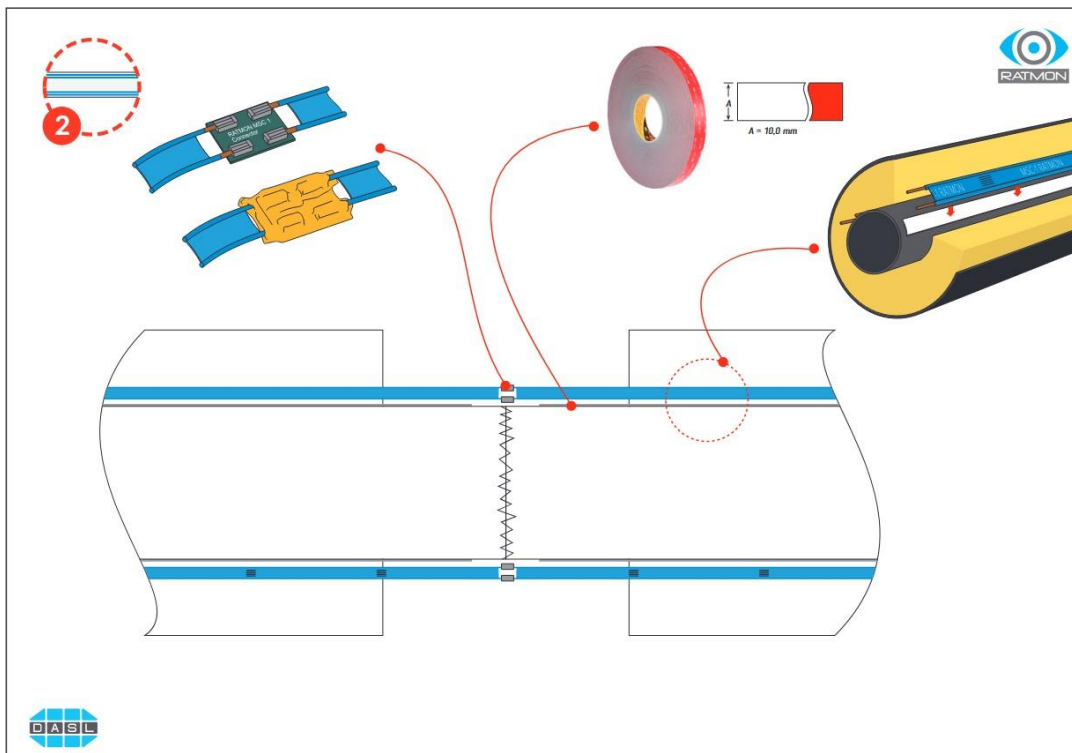
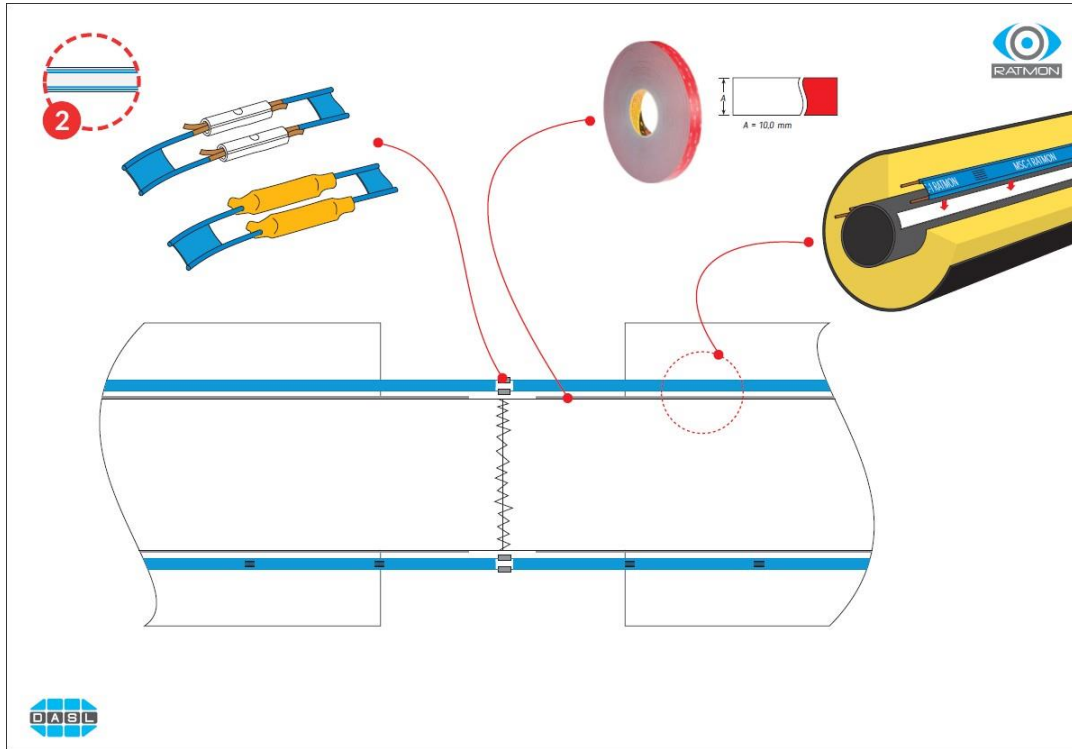


CONNECTION OF CABLES BETWEEN PIPES

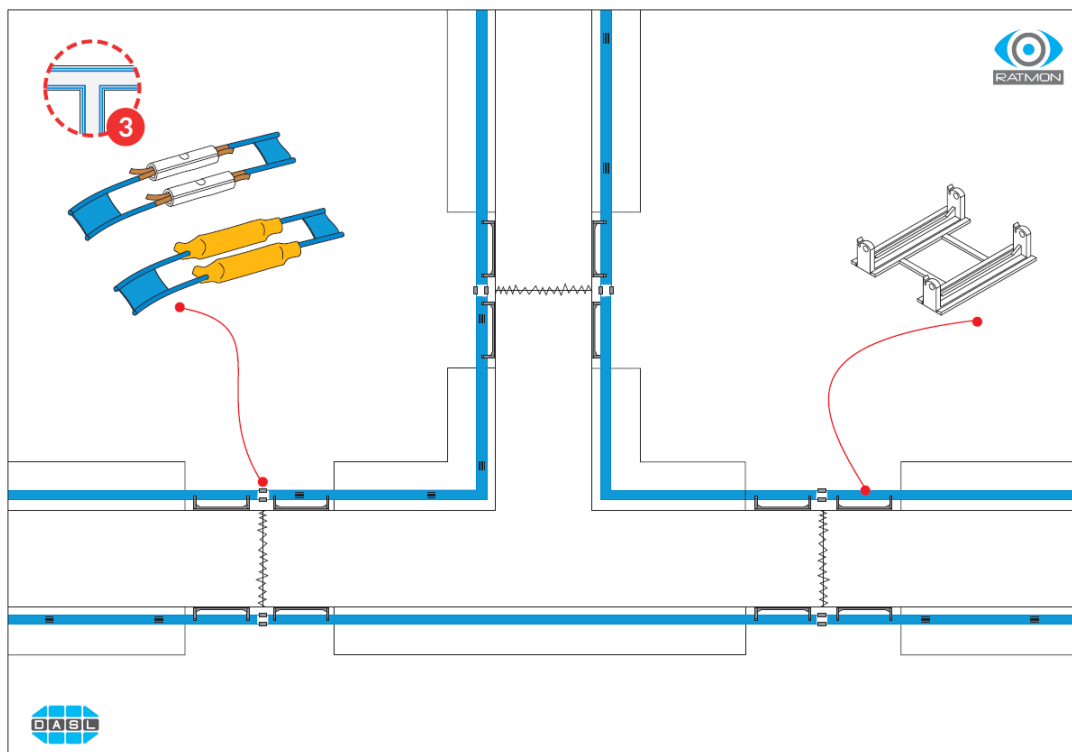
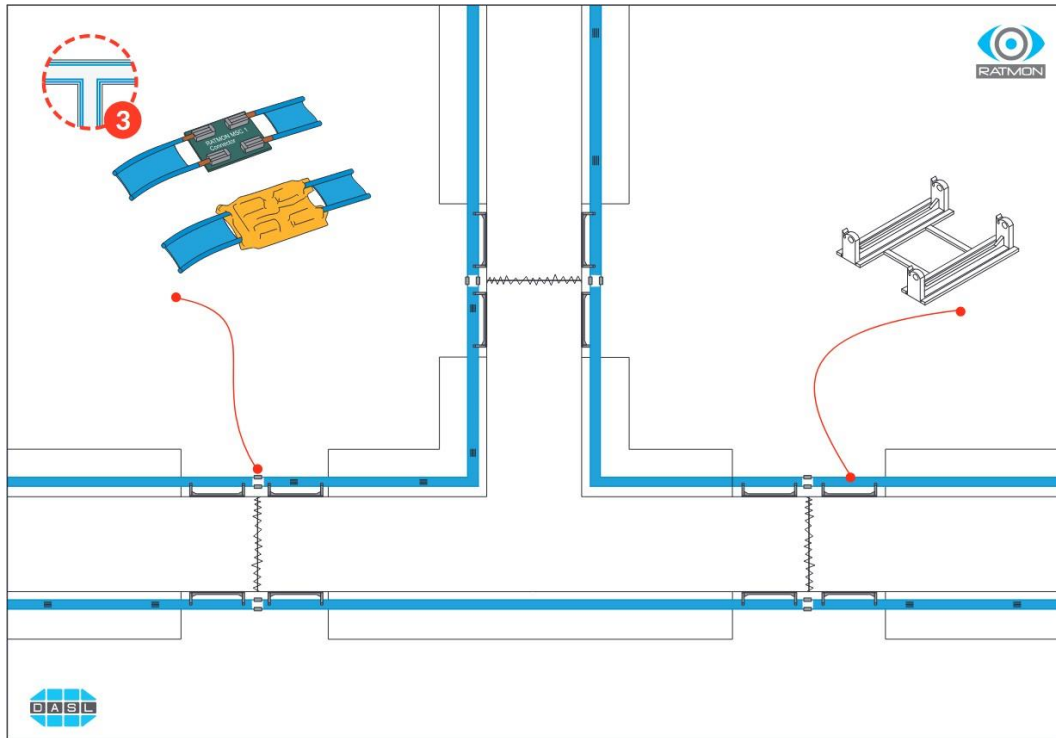
Example of connection between pipes by use of cable clip



Example of connection between pipes by use of adhesive tape



Example of connection between straight pipe and T-Joint



Example of looping the cable at pipe end.

