PIPE SUPPORTS: COMPARISON OF THE INSTALLATION COSTS FOR VARIOUS SYSTEMS

ARMAFIX® – The easy to install and cost effective solution to prevent thermal bridging at the pipe bracket in low-temperature applications.
When insulating refrigeration pipes, it is essential to ensure that thermal bridging in the vicinity of the pipe bracket is prevented. At the same time, the following conditions must be fulfilled in order to ensure the long-term performance of this part of the insulation system:

1. The **vapour barrier** (μ-value or sd-value) of the pipe support must at least match the adjoining pipe insulation.
2. To prevent condensation forming, the load-bearing segments must be at least as thick as the adjoining layer of insulation material.
3. The load-bearing segment must be sufficiently **compression-proof** taking into account the distance between clamps and the diameter of the pipe.
4. All seams and joins must be glued and **sealed reliably** and permanently.
5. The pipe loads must be distributed equally on the load-bearing segments. The maximum permitted distances stipulated by the manufacturer must be heeded.

Just as the weakest link determines the strength of a chain, so pipe supports in low-temperature applications can be the weakest point in the insulation system.

The Armafix pipe supports fulfil all the requirements made of a practical pipe suspension system. They enable the insulation to be joined to the pipe support reliably and simply even under building site conditions. They reliably prevent thermal bridges ('cold bridges') occurring and moisture being absorbed into the insulation system.

Using the Armafix pipe support saves time and money, both in comparison to retrofitting insulation to pipe brackets (a practice which is still common) and also in comparison to other load-bearing solutions.

Armafix pipe hanger now comps with an easy, plug & play pipe clamp system.

When using other pipe supports in combination with Armaflex the following assembly instructions must be heeded:
Armafix pipe support

The reliable solution for preventing thermal bridges in the vicinity of pipe supports.

Tasks for the plumber:
1. Snap pipe support around the pipe, remove the protective film and join the longitudinal edges together. No additional glue or mastic is necessary.

Tasks for the insulation contractor:
1. Seal off the pipe support.
2. Glue Armaflex to the pipe support.

Armafix comes with a convenient self-adhesive closure.

AF Armaflex- or NH/Armaflex insulation in combination with the Armafix pipe support provides a secure system solution thanks to the perfect match.

* outer pipe diameter: 35 mm.
Pipe clamp without thermal isolation

When a pipe clamp without thermal insulation is used, additional steps with retrofit insulation need to be taken to avoid cold bridges and condensation.

Tasks for the plumber:
1. Attach clamp.

Tasks for the insulation contractor:
1. Glue Armaflex tube/sheet material professionally up to the clamp and seal off.
2. Glue strip of Armaflex in the required insulation thickness to the clamp taking care to avoid tension. Ensure that it overlaps the Armaflex tube by 5 cm.
3. Glue overlap to adjoining insulation.
4. Insulate approx. 15 cm of the threaded rod, seal off the upper surface and glue the lower surface to the jacket.

In addition: 12 cm-wide strip of Armaflex.

Risk of condensation

Average Cost

Plumber
Insulation contractor

* Outer pipe diameter: 35 mm

= synthetic rubber (Armaflex)
(Two-part) PUR/PIR shell with glass-fibre reinforced ALU facing

Tasks for the plumber:
1. Snap shell onto the pipe and carefully remove the protective film of the self-adhesive surfaces.
2. Glue seams.
3. Install clamp.
4. CAUTION: Do not damage the facing.

Tasks for the insulation contractor:
1. Check for damage to the vapour barrier; if necessary replace the pipe support.
2. Glue Armaflex professionally to the refrigeration clamp. To do so clean the faces of the clamp with Armaflex special cleaner. Apply the Armaflex adhesive to the faces and allow the prime coat to dry. Apply a thin, even layer of adhesive to the PIR and Armaflex surfaces to be glued, allow to outgas, join surfaces carefully and press together firmly. When carrying out the butt joints under compression it is also possible to use the wet-seal method.
3. Secure the butt joints with an additional strip of Armaflex in the required insulation thickness. Fully glue the strip with overlap.

Average Cost

<table>
<thead>
<tr>
<th>Total Installed Cost</th>
<th>Time / cost unit</th>
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<tbody>
<tr>
<td>Armafix</td>
<td>4</td>
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<tr>
<td>PIR shell with glass-fibre reinforced ALU facing</td>
<td>10</td>
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</tbody>
</table>

Plumber
Insulation contractor

* Outer pipe diameter: 35 mm
**Tasks for the plumber:**

1. Before installing, apply a ring of **sealing compound** to the load bearing surface and on the joining surfaces of both clamp parts and then install. Ensure that the faces are free of sealing compound.

**Tasks for the insulation contractor:**

1. Clean the surface of the refrigeration clamp which is to be glued with Armaflex special cleaner.
2. Apply Armaflex adhesive to the surface to be glued. Allow prime coat to dry.
3. Apply a thin, even coat of adhesive to the HD-PUR and Armaflex surfaces to be glued, allow it to outgas, join the surfaces carefully and press together firmly.
4. When carrying out the butt joints under compression it is also possible to use the wet-seal method if the HD-PUR surfaces to be glued have been primed.
5. Depending on the value of HD-PUR pipe support, apply a **double layer** of Armaflex to achieve the height of the HD-PUR pipe support.
6. Secure the butt joins by fully gluing an overlapping strip of Armaflex.

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**Risk of condensation**

Before the insulation material is applied the faces of the pipe support must be cleaned and roughened.

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| Risk of condensation | Metal clamp Polyurethane rigid foam |

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**Average Cost**

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<td>HD-PUR Shell</td>
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</table>

* Outer pipe diameter: 35 mm
PUR/PIR shells with thin layer of elastomeric insulation glued to the faces, covered with protective foil

Tasks for the plumber:
1. Open pipe support.
2. Apply glue to the joining surfaces of the half-shells.
3. Install pipe support and glue overlap of the covering.

Tasks for the insulation contractor:
1. Glue Armaflex to the pipe support.
2. Additionally secure the butt joints between Armaflex and the pipe support with self-adhesive Armaflex tape.

= synthetic rubber (Armaflex)
= PUR/PIR

Average Cost

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* Outer pipe diameter: 35 mm
Conclusion

The combination of Armaflex with Armafix saves a considerable amount of time and money.

In addition, if the project complies with some defined requirements, additional warranty will be given on the functionally relevant properties of the products and on the installation work.