

 <p>sb st Section des bâtiments & des services techniques</p>	<p><u>STANDARD FOR</u> <u>INSULATION OF CHILLED</u> <u>WATER, HEATING, COLD</u> <u>WATER AND DOMESTIC HOT</u> <u>WATER PIPES</u></p>
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1. Insulation for chilled water and cold water pipes

Type of insulation for chilled water and cold water pipes (see photos below):

- Chilled water pipes must be insulated using preformed PIR sheaths. 30 mm thick sheaths must be used for pipe diameters up to DN 40; above this diameter the sheaths must be 50 mm thick and Armaflex insulation may be used in service ducts with the consent of UNOG.
- The pipes and sheaths must be coated with tar or another product with the same characteristics.
- The preformed PIR sheaths must be assembled using galvanised wire and coated with the same product as described above.

This assembly must be covered with a finishing sheet of hammered (stucco) aluminium. Connections must be made with rivets in a non-visible area (see Photos 1 and 2).

Valve bodies, filters and check valves must be insulated. This insulation must allow the valves to be operated, and be removable and replaceable for maintenance purposes. The finishing sheets must be fixed in place using strapping bands or hooks riveted to the preformed sheaths, depending on the application (see Photos 4 and 5).

- Pipes supplying pressure switches, manometers, flow meters, vents and evacuation pipes must be insulated with Armaflex (see Photos 2 and 3).
- Pipes passing through service wells or ducts may be insulated with an Armaflex-type blanket of minimum thickness 19 mm or preformed PIR sheaths coated with tar or another product with the same characteristics. In this case, the insulation must not be covered with a hammered aluminium sheet or PVC sheet. These techniques may be used only with the consent of UNOG representatives.
- All insulated parts must be completely sealed to prevent any condensation or thermal bridging. Domestic cold water pipes must be insulated using preformed PIR sheaths covered with a sheet of hard PVC. The thickness of the insulation must be identical to that used for chilled water pipes. A green sleeve must be glued to the end of each domestic cold water supply pipe (see Photo 6).

2. Photos of insulation for chilled water and domestic cold water pipes

Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



3. Insulation for domestic hot water and heating pipes

Type of insulation for domestic hot water and heating pipes (see photos below):

- Pipes for domestic hot water and heating must be insulated using preformed compressed mineral wool sheaths. 30 mm thick preformed sheaths must be used for pipe diameters of less than ¾", 40 mm thick for pipe diameters of ¾" to 40 mm, 50 mm thick for pipe diameters of 50 mm to 90 mm, and 80 mm thick for pipe diameters over 90 mm.
- The preformed sheaths must be assembled using galvanised wire (see Photos 7, 8 and 9).
- This assembly must be covered with a sheet of hammered (stucco) aluminium for all heating pipes (photos 10 and 11) and a sheet of rigid PVC for domestic hot water pipes (Photo 12). Depending on the points of passage of the pipes, a sheet of hammered (stucco) aluminium may be installed, but only at the request of the head of the mechanics subunit.
- Equipment welded to pipes (thermowells, vents, evacuation pipes, etc.) must be insulated. Valves must remain accessible and operated easily (see Photos 11 and 12).
- A coloured PVC sleeve must be glued to the end of each supply pipe, red for domestic hot water supply pipes and orange for the hot water loop circuit (see Photo 12).

All pipe insulation work must be performed according to industry standards. The thicknesses of the insulation materials used and their implementation must conform to the above description.

4. Photos of insulation for domestic hot water and heating pipes

Photo 7



Photo 8



Photo 9



Photo 10



Photo 11



Photo 12

