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Section D – Media

Part 4: Pipe insulation

The following delivery specifications of Wieland-Werke AG form part of the contract.
Any deviating specifications are to be agreed upon between the supplier/contractor and Wieland, and documented.

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The following apply for

- Steam pipes: German Construction Contract Procedures (*Vergabe- und Vertragsordnung für Bauleistungen, VOB*), VGB;
- Heating and sanitary pipes: GEG, DIN 1988, part 200, DIN EN 806-2
- Cold thermal insulation: VDI guideline 2055.

Insulation materials: in acc. with DIN 4102 (non-combustible, chemically neutral, non-rotting, non-corrosive).

1. Steam and hot water pipes

1.1 Insulation thicknesses for rock wool or mineral wool mats or lagging sections, cut into strips, standing fibres, $\lambda = 0.035$ W/mK, unless the above standards specify higher requirements

DN	≤ 100 °C	≤ 200 °C	≤ 500 °C	DN	≤ 100 °C	≤ 200 °C	≤ 500 °C
15	30	40	50	100	100	100	140
20	30	40	50	125	100	100	140
25	40	40	50	150	100	120	150
32	40	50	50	200	100	120	150
40	40	50	80	250	120	120	150
50	50	70	80	300	120	120	150
65	70	70	80	400	120	120	150
80	80	80	100	500	120	120	150
				600	120	120	150

Section D – Media**Part 4: Pipe insulation**

1.2 Execution (in acc. with DIN 4140)

Mineral wool mats quilted with wire yarn onto galvanised wire mesh, alternatively aluminium-laminated or mineral wool pipe sections

Sensors, measuring elements: Receive rosettes, ensure sufficient overlap at joints of the protective shell.

Fittings: Insulation thickness in acc. with section 1.1 adapted for insulation casing parts and shapes of fittings.

Piping in installation shafts and false ceilings with low risk of damage:

Mineral wool mats, aluminium-laminated, longitudinal and round joints covered with aluminium adhesive tape.

Exposed piping which is at risk of being damaged:

Insulation with protective shell in acc. with section 3.

2. Cold water pipes and outside air ducts**2.1 Insulation thicknesses**

are dependent on water temperature, room temperature and room humidity, so that condensation is avoided. Pipe clamps must not create thermal bridges.

Guide values: >10 °C media temperature 13 mm
 <10 °C media temperature 19 mm

2.2 Execution

Insulation made of closed cell vinyl rubber tubes or sheets, flame retardant B 1 according to DIN 4102, bonded with contact adhesive in acc. with manufacturer's specifications.

3. Protective shell in acc. with DIN 18421 / VOB part C**3.1 Galvanised sheet steel**

In acc. with DIN 18421, tables 2 and 7, wall thickness 0.5-1 mm, zinc coating on both sides min. 300 gsm; use in buildings

Application:

The insulating material is wrapped in a galvanised sheet metal jacket. The joints of the sheet metal jacket, parallel to the pipe axis, are fastened using galvanised sheet metal screws. Joints perpendicular to the pipe axis should be neatly seamed.

Casing parts for fittings must be removable and held together and fastened using metal straps with patent fasteners. End caps must be provided on fittings and flange covers.

Alternative:

Aluminium-zinc sheet, steel sheet with aluminium-zinc-silicon alloy coating on both sides, type B 500 A, wall thickness 0.5-1.5 mm, coating 150 gsm on both sides; use in buildings and outdoors

Application: as above.

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3.2 Stainless steel sheet, V4A steel sheet, material no. 1.4571

Use in areas with corrosive atmospheres and outdoors; application and wall thickness as 3.1, but stainless steel jacket and fasteners must be used.

3.3 PVC sheath

in acc. with DIN 18421 table 6, wall thickness 0.35-1 mm, e.g. Isogenopack; use in buildings with media temperatures ≤ 100 °C.

Application:

The insulating material is encased in a PVC sheath, flame retardant. The joints of the PVC sheath parallel and perpendicular to the pipe axis must overlap by at least 5 cm and are taped over. Moulded PVC pieces are used to sheath the insulated pipe fittings (bends, T-pieces). Fittings (e.g. valves) are sheathed in galvanised steel sheet after being insulated. End caps must be provided on fittings and flange covers.