The forgotten items; the isolation valves and vents &drains

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Demands on valves in district heating applications

- Reliability
- shut off
- operating under extreme loads
- conformity with European standard EN488
Advantages of using ball valves

• safe shut-off
• low flow losses
• safe absorption of tensile and compressive forces and bending torques
The district-heating ball valve for direct underground installation
Vent and drain valves
What should be avoided?

• installing a steel ball valve without any protection against corrosion
  • The effect of water and dissolved road salt
Vent and drain valves
Which types are available?

• stainless steel ball valves
• steel extension pipe, to provide best conditions for welding (black seam)
Vent and drain valves
Which types are available?

• steel with complete pre-insulation accord. To EN 253
• Developed in cooperation with „Rheinenergie AG“
Vent Solution
Example of damaged ball valve in Cologne
What can happen to underground valves

- non-visible corrosion damage to a drain and vent tap
- after manual operation, mechanical weakening of the corroded material
- sudden dangerous discharge of hot water/steam

Fortunately, no operating personnel was in the vicinity of such a tap. However, we recommend regular inspection in order to detect any early corrosion.
Cause of damage

- Caution! End caps are only splashproof

- especially in winter, when the operating temperature is high, water & dissolved road salt can flow into the roadbox.

- water accumulates and creates micro-leak paths, penetrates into the pre-insulation and leads to corrosion damage.
Avoidance

• **for underground ball valves:** PE sleeve pipes with screw caps

• **for drain and vent ball valves:** pre-insulation up to the top edge (lowest temperature load) + additional PE protective pipe or steel-pipe, each with cover
Error to avoid at the construction phase

• Danger also exists with actuating mounting for direct buried ball valves.

• The reason for BÖHMER ball valves, however, is sealing.
Any Questions?
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