

# DIN EN 488:2016-02 (E)

District heating pipes - Preinsulated bonded pipe systems for directly buried hot water networks - Steel valve assembly for steel service pipes, polyurethane thermal insulation and outer casing of polyethylene

---

<b>Contents</b>		<b>Page</b>
European foreword .....		4
Introduction .....		5
<b>1</b>	<b>Scope .....</b>	<b>6</b>
<b>2</b>	<b>Normative references .....</b>	<b>6</b>
<b>3</b>	<b>Terms and definitions .....</b>	<b>7</b>
<b>4</b>	<b>Requirements .....</b>	<b>8</b>
4.1	Pressure ratings for valves .....	8
4.1.1	General .....	8
4.1.2	Valves without indicated flow direction .....	8
4.2	Service temperatures for valves .....	9
4.3	Steel parts .....	9
4.3.1	General .....	9
4.3.2	Valve .....	9
4.3.3	Valve extension pipe .....	9
4.3.4	Welding ends .....	9
4.3.5	Welding of steel parts .....	9
4.4	Casing .....	9
4.4.1	General .....	9
4.4.2	Requirements for polyethylene welding .....	9
4.4.3	Diameter and wall thickness of the casing .....	10
4.5	Polyurethane rigid foam insulation (PUR) .....	10
4.5.1	General .....	10
4.5.2	Minimum insulation thickness .....	10
4.6	Valve assembly .....	10
4.6.1	Ends of valve assembly .....	10
4.6.2	End of stem construction .....	10
4.6.3	Main dimensions of the valve assembly .....	11
4.6.4	Installation of measuring elements .....	12
4.7	Requirements for effective operation and maintenance .....	12
4.8	Resistance to axial forces and bending moments .....	12
<b>5</b>	<b>Testing, test methods and test requirements .....</b>	<b>13</b>
5.1	General .....	13
5.2	Test specimens .....	13
5.2.1	General .....	13
5.2.2	Test specimens for type testing steel parts of valve .....	13
5.2.3	Test specimens from casings and polyurethane foam .....	13
5.3	Steel parts .....	13
5.3.1	General .....	13
5.3.2	Type test of the steel parts .....	13
5.3.3	Production testing of valves .....	17
5.4	Casing .....	18
5.4.1	General .....	18
5.4.2	Leak-tightness of the welded casing .....	18

5.5	Polyurethane rigid foam insulation .....	18
5.6	Valve assembly .....	18
5.7	Surveillance system .....	18
6	Marking .....	18
6.1	General .....	18
6.2	Steel valve .....	18
6.3	Casing .....	18
6.4	Valve assembly .....	19
7	Installation and maintenance .....	19
Annex A (informative) Guidelines for inspection and testing .....		20
A.1	General .....	20
A.2	Manufacturer's type test .....	20
A.3	Manufacturer's quality control .....	20
A.4	External inspection .....	20
A.5	Extent of inspection .....	20
A.6	Manufacturer's responsibility .....	20
Annex B (normative) Resistance to axial force and bending moment .....		22
B.1	Axial strength test .....	22
B.2	Bending test .....	22
Annex C (normative) Resistance to bending forces .....		24
C.1	General .....	24
C.2	Standard test assembly (four point bending test) .....	25
Bibliography .....		29