

DIN EN 1488:2021-09 (E)

Building valves - Expansion groups - Tests and requirements

Contents		Page
European foreword		4
Introduction		5
1	Scope	6
2	Normative references	6
3	Terms and definitions	7
4	Materials and surface finishes	9
4.1	General	9
4.2	Materials	10
4.3	Detection of residual stress	10
4.3.1	General	10
4.3.2	Test	10
4.3.3	Test method (Procedure)	10
4.3.4	Requirements	11
4.4	Corrosion resistance test	11
4.4.1	General	11
4.4.2	Test method	11
4.4.3	Requirements	11
4.5	Coating adherence test	12
4.5.1	General	12
4.5.2	Test method	12
4.5.3	Requirements	12
4.6	Compatibility with the products used for shock disinfection of the networks	12
4.6.1	General	12
4.6.2	Test method	12
4.6.3	Requirements	13
5	Design and dimensional requirements	13
5.1	General guidance	13
5.2	Dimensional characteristics	14
5.3	Test port and pressure measuring port	14
5.4	Expansion valve outlet connection to air break to drain	14
5.5	Expansion valve discharge connection to drain device	14
5.6	Connections	14
5.7	Replacing of the expansion valve	14
5.8	Check valve	15
6	Apparatus	15
6.1	General	15
6.2	Tolerances of parameters and accuracy of measure instruments	15
6.2.1	Tolerances on set parameters	15
6.2.2	Accuracy of measuring instruments	15
6.2.3	Test media	15
7	Hydraulic tests and requirements	15
7.1	Flow rate test	15
7.1.1	Procedure	15
7.1.2	Requirement	15

7.2	Tightness test	16
7.2.1	General	16
7.2.2	Tightness test for the isolating valve at a pressure of 1,6 MPa (16 bar)	16
7.2.3	Expansion group tightness test	16
8	Mechanical tests and requirements	16
8.1	Mechanical strength	16
8.1.1	Pressure test of the body of the expansion group	16
8.1.2	Bending moment test	17
8.2	Mechanical strength of the easing gear of the expansion valve	18
8.2.1	Procedure	18
8.2.2	Requirement	18
8.3	Torsional strength of the expansion group's body	18
8.3.1	General	18
8.3.2	Procedure	18
8.3.3	Requirement	19
8.4	Torque test of the captive rotating nuts/tail pieces	19
8.4.1	General	19
8.4.2	Procedure	19
8.4.3	Requirement	19
9	Tests and requirements of the components of the expansion group	20
9.1	Isolating valve	20
9.1.1	General	20
9.1.2	General requirements	20
9.1.3	Test of manual operation	20
9.1.4	Endurance test	20
9.2	Tightness between check valve and group's body	21
9.2.1	General	21
9.2.2	Verification of the leak tightness between the group's body and the check valve at low pressure	21
9.2.3	Verification of the leak tightness between the group's body and the check valve under high pressure	21
9.3	Expansion valve	21
9.3.1	Pressures	21
9.3.2	Cold water pressure tests	22
9.4	Endurance test	23
9.4.1	Procedure	23
9.4.2	Requirement	23
9.5	Easing gear (manual control device)	24
9.5.1	Operation of the easing gear	24
9.5.2	Easing gear endurance test	24
9.6	Air break to drain	24
10	Acoustic tests and requirements	24
11	Classification	25
12	Designation	25
13	Marking	26
14	Technical documents and presentation at delivery	26
Annex A (informative) Classification of water heaters according to heating method		27
Bibliography		29