

DIN EN 14620-4:2025-10 (E)

Design and manufacture of site built, vertical, cylindrical, flat-bottomed tank systems for the storage of refrigerated, liquefied gases with operating temperatures between 0 °C and -196 °C - Part 4: Insulation components

Contents		Page
European foreword		4
1	Scope	5
2	Normative references	5
3	Terms and definitions	7
4	Design requirements, performance characteristics, testing and selection of insulating materials	7
4.1	General	7
4.2	Analysis of design requirements	8
4.2.1	General	8
4.2.2	Thermal resistance	8
4.2.3	Structural and tightness requirements	8
4.2.4	Ageing and deterioration	9
4.2.5	Specific design requirements	9
4.3	Assessment of the performance characteristics	9
4.3.1	General	9
4.3.2	Thermal resistance	9
4.3.3	Mechanical properties	9
4.3.4	Temperature resistance	10
4.3.5	Resistance to water and water vapour	10
4.3.6	Influences of stored product	10
4.3.7	Chemical properties	10
4.3.8	Fire behaviour	11
4.4	Testing of materials and systems	12
4.4.1	General	12
4.4.2	Test methods	12
5	Protection of insulation - vapour barrier	13
5.1	General	13
5.2	Protective structure formed by the outer tank	13
5.3	Protective cover for external insulation	13
6	Design of insulation system	14
6.1	General	14
6.2	Thermal design	14
6.3	Structural design	15
6.3.1	General	15
6.3.2	Load bearing insulation/compressive action	15
6.3.3	Other load bearing insulation materials	17
6.3.4	Load bearing insulation/other actions	17
6.4	Insulation for each tank component	17
6.4.1	General	17
6.4.2	Supporting ringbeam	18
6.4.3	Bottom insulation	18
6.4.4	Shell insulation (external)	19
6.4.5	Shell/wall insulation (internal)	20

6.4.6	Roof insulation (external)	22
6.4.7	Roof insulation on suspended roof	22
6.4.8	Insulation for penetrations and internal piping	22
7	Installation	23
7.1	General	23
7.2	Requirements	23
7.2.1	Materials	23
7.2.2	Conditions of work on site	23
7.2.3	Anti-corrosive protection	24
7.2.4	Construction tolerances	24
7.2.5	Prevention of damage	24
7.3	Inspection and testing	25
Annex A (informative) Insulation materials		26
Annex B (normative) Test methods		29
Annex C (informative) Recommendations for qualification compressive strength testing of tank insulation system made of brittle material		31
Annex D (normative) Non-metallic Liquid barrier of the Thermal Protection System		32
D.1	General	32
D.2	Performance requirements	32
D.3	Materials	33
D.4	Model Testing	33
D.5	Installation	33
D.6	Examination and tests	33
Annex E (informative)		35
Bibliography		36