

DIN EN 378-1:2018-04 (E)

Refrigerating systems and heat pumps - Safety and environmental requirements - Part 1: Basic requirements, definitions, classification and selection criteria

Contents		Page
European foreword.....		4
Introduction		6
1	Scope.....	7
2	Normative references.....	7
3	Terms and definitions	8
3.1	Refrigerating systems.....	8
3.2	Occupancies, locations	10
3.3	Pressures.....	11
3.4	Components of refrigerating systems.....	12
3.5	Piping and joints.....	14
3.6	Safety accessories	15
3.7	Fluids	17
3.8	Miscellaneous.....	20
4	Symbols and abbreviated terms.....	20
5	Classification.....	22
5.1	Access categories.....	22
5.1.1	General.....	22
5.1.2	More than one access category.....	23
5.2	Designation and classification of refrigerants	23
5.3	Location classification of refrigerating systems	23
5.4	Refrigerating system classification	24
5.4.1	General.....	24
5.4.2	Direct releasable systems	24
5.4.3	Indirect systems	24
5.5	Examples of systems	24
5.5.1	Direct releasable systems	24
5.5.2	Indirect systems	26
5.6	Special requirements for ice rinks.....	29
6	Quantity of refrigerant.....	29
7	Space volume calculations.....	29
Annex A (informative) Equivalent terms in English, French and German.....		30
Annex B (informative) Total equivalent warming impact (TEWI).....		34
Annex C (normative) Refrigerant charge limit requirements		37
C.1	Charge limits requirements for refrigerating systems.....	37
C.2	Charge limitations due to flammability for air conditioning systems or heat pumps for human comfort.....	43
C.2.1	Refrigerant-containing parts in a occupied space	43
C.2.2	Special requirements for non fixed factory sealed single package air conditioning systems or heat pumps with a limited charge	43
C.3	Alternative for risk management of refrigerating systems in occupied spaces.....	44
C.3.1	General.....	44
C.3.2	Allowable charge	45

Annex D (informative) Protection for people who are inside cold rooms	48
D.1 General	48
D.2 Operation of doors and emergency exit doors	48
D.3 Emergency switch or signal	48
D.4 Cold rooms with a controlled atmosphere	49
Annex E (normative) Safety classification and information about refrigerants	50
Annex F (normative) Special requirements for ice rinks	61
F.1 Indoor ice rinks	61
F.2 Outdoor ice rinks and installations for similar sporting activities	61
Annex G (informative) Potential hazards for refrigerating systems	62
Annex H (informative) Calculation examples related to C.2 and C.3	64
H.1 Example 1 for C.2.1	64
H.2 Example 2 for C.2.1	64
H.3 Example 3 for C.3	64
H.4 Example 4 for C.3	64
Bibliography	66