

DIN EN ISO 23953-2:2016-03 (E)

Refrigerated display cabinets - Part 2: Classification, requirements and test conditions (ISO 23953-2:2015)

Contents		Page
European foreword.....		4
Foreword.....		5
1	Scope	6
2	Normative references	6
3	Terms, definitions, symbols and abbreviated terms	6
3.1	General.....	6
3.2	Compression-type refrigeration systems.....	7
3.3	Indirect refrigeration-type systems.....	8
4	Requirements	8
4.1	Construction.....	8
4.1.1	General.....	8
4.1.2	Materials.....	10
4.1.3	Thermal insulation.....	10
4.1.4	Refrigerating system.....	11
4.1.5	Electrical components.....	11
4.1.6	Temperature display.....	11
4.2	Operating characteristics.....	12
4.2.1	Absence of odour and taste.....	12
4.2.2	Classification according to temperature.....	13
4.2.3	Defrosting.....	13
4.2.4	Water vapour condensation.....	13
4.2.5	Energy consumption.....	13
4.2.6	Specific Energy Consumption.....	14
5	Tests	14
5.1	General.....	14
5.2	Tests outside test room.....	14
5.2.1	Seal test for doors and lids on low temperature applications.....	14
5.2.2	Linear dimensions, areas.....	14
5.3	Tests inside test room.....	15
5.3.1	General conditions.....	15
5.3.2	Preparation of test cabinet and general test procedures.....	24
5.3.3	Temperature test.....	50
5.3.4	Water vapour condensation test.....	55
5.3.5	Electrical energy consumption test.....	56
5.3.6	Heat extraction rate measurement when condensing unit is remote from cabinet.....	56
6	Test report	65
6.1	General.....	65
6.2	Tests outside test room.....	65
6.2.1	Seal test of doors and lids.....	65
6.2.2	Linear dimensions, areas and volumes.....	65
6.2.3	Test for absence of odour and taste.....	66

6.3	Tests inside test room	66
6.3.1	General test conditions.....	66
6.3.2	Cabinet preparation.....	66
6.3.3	Temperature test.....	67
6.3.4	Water vapour condensation test.....	67
6.3.5	Electrical energy consumption test.....	68
6.3.6	Heat extraction rate measurement when the condensing unit is remote from the cabinet.....	68
7	Marking	70
7.1	Load limit.....	70
7.2	Marking plate.....	71
7.3	Information to be supplied by the manufacturer.....	71
	Annex A (normative) Total display area (TDA)	73
	Annex B (informative) Comparison between laboratory and in-store conditions	81
	Annex C (informative) Test for absence of odour and taste.....	83
	Annex D (normative) Performance and energy rating of commercial refrigerated display cabinets.....	85
	Bibliography.....	94