DIN EN ISO 23953-2:2012-09 (E)

Refrigerated display cabinets - Part 2: Classification, requirements and test conditions (ISO 23953-2:2005 + Amd 1:2012) (inc ludes Amendment A1:2012)

Contents

Page

1 Scope 5

2 Normative references 5

3 Terms, definitions, symbols and abbreviated terms 5
3.1 General 5
3.2 Compression-type refrigeration systems 6
3.3 Indirect refrigeration-type systems 6

4 Requirements 7
4.1 Construction 7
4.1.1 General 7
4.1.2 Materials 9
4.1.3 Thermal insulation 9
4.1.4 Refrigerating system 9
4.1.5 Electrical components 10
4.1.6 Temperature display 10
4.2 Operating characteristics 11
4.2.1 Absence of odour and taste 11
4.2.2 Classification according to temperature 11
4.2.3 Defrosting 12
4.2.4 Water vapour condensation 12
4.2.5 Energy consumption 12

5 Tests 12
5.1 General 12
5.2 Tests outside test room 13
5.2.1 Seal test for doors and lids 13
5.2.2 Linear dimensions, areas and volumes 13
5.3 Tests inside test room 14
5.3.1 General conditions 14
5.3.2 Preparation of test cabinet and general test procedures 26
5.3.3 Temperature test 49
5.3.4 Water vapour condensation test 54
5.3.5 Electrical energy consumption test 55
5.3.6 Heat extraction rate measurement when condensing unit is remote from cabinet 56

6 Test report 66
6.1 General 66
6.2 Tests outside test room 66
6.2.1 Seal test of doors and lids 66
6.2.2 Linear dimensions, areas and volumes 67
6.2.3 Test for absence of odour and taste (if applicable) 67
6.3 Tests inside test room 67
6.3.1 General test conditions 67
6.3.2 Cabinet preparation 68
6.3.3 Temperature test 69
6.3.4 Water vapour condensation test 69
6.3.5 Electrical energy consumption test 70
6.3.6 Heat extraction rate measurement when the condensing unit is remote from the cabinet .71

7 Marking 72
7.1 Load limit 72
7.2 Marking plate 73
7.3 Information to be supplied by the manufacturer 74

Annex A (normative) Total display area (TDA) 75

Annex B !(informative) Comparison between laboratory and in-store conditions 85

Annex C !(informative) Test for absence of odour and taste 86

Bibliography 88