DIN EN ISO 23953-2:2025-09 (E)

Refrigerated display cabinets - Part 2: Classification, requirements and test conditions (ISO 23953-2:2023)

Contents

Page

Foreword ..... **v**

1 Scope **1**

2 Normative references **1**

3 Terms, definitions, symbols and abbreviated terms **1**
3.1 Terms and definitions 1
3.2 Symbols 2
3.2.1 General 2
3.2.2 Compression-type refrigeration systems 3
3.2.3 Indirect refrigeration-type systems 4

4 Requirements **4**
4.1 Construction 4
4.1.1 General 4
4.1.2 Materials 5
4.1.3 Thermal insulation 6
4.1.4 Refrigerating system 6
4.1.5 Electrical components 6
4.1.6 Temperature display 7
4.2 Operating characteristics 8
4.2.1 Absence of odour and taste 8
4.2.2 Classification according to temperature 8
4.2.3 Defrosting 8
4.2.4 Water vapour condensation 9
4.2.5 Energy consumption 9
4.2.6 Specific energy consumption 9

5 Tests **9**
5.1 General 9
5.2 Tests outside test room 10
5.2.1 General 10
5.2.2 Seal test for doors and lids on low temperature applications 10
5.2.3 Linear dimensions, areas 10
5.3 Tests inside test room 10
5.3.1 General 10
5.3.2 General conditions 10
5.3.3 Preparation of test cabinet and general test procedures 21
5.3.4 Temperature test 48
5.3.5 Water vapour condensation test 56
5.3.6 Electrical energy consumption test 57
5.3.7 Heat extraction rate measurement when condensing unit is remote from cabinet 59

6 Test report **68**
6.1 General 68
6.2 Tests outside test room 68
6.2.1 Seal test of doors and lids 68
6.2.2 Linear dimensions, areas and volumes 68
6.2.3 Test for absence of odour and taste 69
6.3 Tests inside test room 69
6.3.1 General test conditions 69
6.3.2 Cabinet preparation 69

6.3.3 Temperature test 70
6.3.4 Water vapour condensation test 70
6.3.5 Electrical energy consumption test 71
6.3.6 Heat extraction rate measurement when the condensing unit is remote from the cabinet 71

7 Marking 73
7.1 Load limit 73
7.2 Marking plate 75
7.3 Information to be supplied by the manufacturer 75

Annex A (normative) **Total display area (S_{TDA}) 77**

Annex B (informative) **Comparison between laboratory and in-store conditions 90**

Annex C (informative) **Test for absence of odour and taste 92**

Annex D (normative) **Performance and energy rating of commercial refrigerated display cabinets 94**

Annex E (normative) **M and N coefficient values 107**