Australian Standard™

Refrigerated display cabinets

Part 12: Measurement of the heat extraction rate of the cabinets when the condensing unit is remote from the cabinet

Standards Australia

This Australian Standard was prepared by Committee ME/8, Refrigerated Display Cabinets. It was approved on behalf of the Council of Standards Australia on 28 April 2000 and published on 10 August 2000.

The following interests are represented on Committee ME/8:

Australian Food and Grocery Council

Australian Retailers Association

Commercial Refrigeration Manufacturers Association of Australia

Food Science Australia

New South Wales Health Department

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Part 12: Measurement of the heat extraction rate of the cabinets when the condensing unit is remote from the cabinet

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PREFACE

This Standard was prepared by Standards Australia Committee ME/8, Refrigerated Display Cabinets, to supersede (in part) AS 1731—1983, *Frozen food retail cabinets*.

The scope of the original Standard has been extended to include requirements for retail chiller cabinets as well as retail freezer cabinets.

This Standard is based on British Standard BS EN 441:1997, *Refrigerated display cabinets* (Part 12).

This Standard is Part 12 of a series of Standards for refrigerated display cabinets, as follows:

AS		
1731	Refrigerated display cabinets	
1731.1	Part 1:	Terms and definitions
1731.2	Part 2:	General mechanical and physical requirements
1731.3	Part 3:	Linear dimensions, areas and volumes
1731.4	Part 4:	General test conditions
1731.5	Part 5:	Temperature test
1731.6	Part 6:	Classification according to temperatures
1731.7	Part 7:	Defrosting test
1731.8	Part 8:	Water vapour condensation test
1731.9	Part 9:	Electrical energy consumption test
1731.10	Part 10:	Test for absence of odour and taste
1731.11	Part 11:	Installation, maintenance and user guide
1731.12	Part 12:	Measurement of the heat extraction rate of the cabinets when the condensing unit is remote from the cabinet

The objective of this series of Standards is to provide standardized construction requirements and performance assessment procedures for refrigerated display cabinets for use by manufacturers, suppliers, purchasers, operators and regulators of these systems.

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1 SCOPE

1.1 Scope of Standard

This Standard specifies terminology, general mechanical and physical requirements, test conditions as well as installation and maintenance, including a user's guide, for refrigerated display cabinets for the sale or display, or both, of food products.

This Standard does not cover refrigerated vending machines, cabinets intended for use in catering and similar non-retail applications or food service cabinets.

1.2 Scope of Part 12

This Part of AS 1731 specifies heat extraction rate measurements and conditions for refrigerated display cabinets when the condensing unit is remote from the cabinet and used with compression-type or indirect-type refrigerating systems.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS
1731 Refrigerated display cabinets
1731.4 Part 4: General test conditions
1731.5 Part 5: Temperature tests

AS/NZS
1677 Refrigerating systems
1677.1 Part 1: Refrigerant classification

3 TEST PROCEDURE

3.1 General test conditions

The cabinet shall be installed in the test room and the test shall be prepared and carried out during the temperature test, in accordance with AS 1731.4 and AS 1731.5.

The condensing unit shall be connected to the cabinet in accordance with Clauses 3.2 or 3.3 and the operating controls set to the manufacturer's instructions.

The refrigerant inlet and outlet temperatures shall be measured using temperature sensors. The sensors shall be directly inserted into the pipe or pockets, or clamped between the piping and a copper recovery half-sleeve on the inlet and outlet pipelines positioned no further than 150 mm from the cabinet exterior (see Figures 1 and 3).

Where thermocouples or similar devices are utilized, the sensor cables shall be arranged such that external influences on the connection cables are eliminated by the use of insulation.

Temperature sensors, connecting wires and pipelines shall be insulated from the outlet of the cabinet up to at least 150 mm beyond the measuring points.