AS 1099.2
Tests

AS 1099.2.28—1994
Guidance for damp heat tests (IEC 68-2-28:1990) 14pp *EE*
Determines the ability of electrotechnical products to withstand the stresses occurring in a climate of high relative humidity, with or without condensation, with special regard to variations of electrical and mechanical characteristics. Provides guidance for Tests Ca (AS 1099.2.3), Cb (IEC 68-2-56), Db (AS 1099.2Db) and Z/AD (AS 1099.2Z/AD). The Standard is identical with, and has been reproduced from, IEC 68-2-28: 1990.
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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard for BASIC ENVIRONMENTAL TESTING PROCEDURES FOR ELECTROTECHNOLOGY

Part 3—BACKGROUND INFORMATION

SECTION 3. GUIDANCE FOR DAMP HEAT TESTS

This standard shall be read in conjunction with AS 1099.2Ca, AS 1099.2Da, AS 1099.2Db and AS 1099.2Z/AD.

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FOREWORD

This standard has been reproduced from IEC Publication 68-2-28, Basic Environmental Testing Procedures, and the assistance received from that source is acknowledged.

For the purpose of this Australian standard the text of the IEC standard reproduced herein should be modified as follows:

Reference to International Standard		*Appropriate Australian Standard*	
IEC 68	Basic environmental testing procedures	AS 1099	Basic environmental testing procedures for electrotechnology
	IEC 68-2-3		AS 1099.2Ca
	IEC 68-2-4		AS 1099.2Da
	IEC 68-2-30		AS 1099.2Db
	IEC 68-2-38		AS 1099.2Z/AD
IEC 355	An appraisal of the problems of accelerated testing for atmospheric corrosion	AS 1099.3.7	
IEC 260	Test enclose of non-injection type for constant relative humidity	AS 1113	Laboratory humidity cabinets (non-injection type)

GUIDANCE FOR DAMP HEAT TESTS

1. Scope and object

This guide includes the necessary information, especially for those experts who, when preparing a relevant specification (e.g. standards for components or equipment), have to select the appropriate tests and test severities for a particular product and possibly a given kind of application.

The object of damp heat tests is to determine the ability of electrotechnical products to withstand the stresses occurring in a climate of high relative humidity, with or without condensation, with special regard to variations of electrical and mechanical characteristics. Damp heat tests may also be applied to check the resistance of a specimen to some forms of corrosion attack (see Sub-clause 8.3).

This guide shall be used together with those parts of IEC Publication 68 which contain damp heat tests, i.e.:

68-2-3: Test Ca: Damp heat, steady state.
68-2-4: Test D: Accelerated damp heat.
68-2-30: Test Db: Damp heat, cyclic (12 + 12-hour cycle).
68-2-38: Test Z/AD: Composite temperature/humidity cyclic test.

2. Environmental influence of damp heat

Temperature and relative humidity of the air, in varying combinations, are climatic factors which always act upon a product during storage, transport and operation.

Meteorological measurements made over many years have shown that a relative humidity $\geq 95\%$ combined with a temperature > 30 C does not occur in free air conditions over long periods, except in regions with extreme climates (e.g. Persian Gulf). In dwelling rooms and workshops temperatures of > 30 C may occur but in most cases are combined with a lower relative humidity than in the open air.

Special conditions exist in certain wet rooms in the chemical industry, metallurgical plants, mines, electroplating plants, laundries, etc., where the temperature can reach as much as 45 C combined with a relative humidity of 100% over long periods.

However, it is possible that certain equipment placed under particular conditions may be subjected to relative humidities of more than 95% at higher temperatures. In particular, this may happen when the equipment is placed in enclosures, such as vehicles, tents or aircraft cockpits, since this can result in intense heating through solar radiation while, because of inadequate ventilation, any humidity which may be developed will be retained permanently within the interior.