

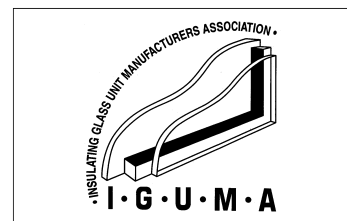
GUIDE to EN 1279 – Glass in Buildings - Insulating Glass Units

● Introduction

The following is a guide to EN 1279. It is an overview of the contents of the standard and explains some of the practical ramifications. As IGUs have a finite life span the quality of manufacture and testing standards are of critical importance when choosing a supplier.

● History

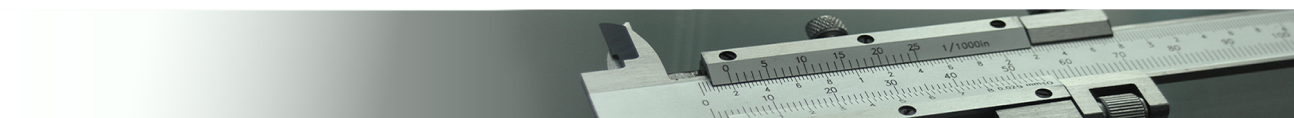
The Insulating Glass Unit Manufacturers Association of NZ (IGUMA) was formed in the late 1980s with a mission to provide the leadership required to assure the continued growth of the Insulating Glass Industry by providing superior quality product to the building industry and the consumers of New Zealand.



One of its first goals was to set the level of product quality and performance required for IGUMA membership, and this was achieved by adopting BS5713 as the testing method and developing a partnership with BRANZ as an independent testing body.

BS 5713 was replaced by the more advanced BS EN 1279 in early 2000 and IGUMA moved quickly to adopt the testing procedures set out in parts 1 to 5 and then adopted the factory production control procedures set out in Part 6.

During the implementation of the standard minor variations were made by BRANZ to some procedures and the standard is known as IGUMA-EN1279. These variations are detailed in the test reports.



● Details of EN 1279

The Standard has six parts and all are inextricably linked

● Part 1 - Generalities, dimensions tolerances and rules for system description

This part covers materials, the rules for the system description, the optical and visual quality, the dimensional tolerance, and an informative annex – installation recommendations. In essence it is a system description that should list the type of glass, the manufacturers and types of sealants (primary/secondary) and manufacturers and type of desiccants.

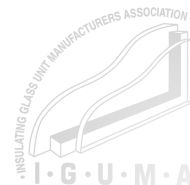
It should also include U-values and gas concentration as applicable

● Part 2 – Long term test method and requirements for moisture penetration.

This part specifies the test method for moisture penetration. It is one means of verifying whether a product made in accordance with its system description in (part 1) meets a minimum performance standard for moisture penetration which is widely regarded as the critical aspect of an IGU lifespan. An independent testing body must carry out the tests and records of the tests must be retained by the manufacturer.

If there are more than one set of components/materials or there are any significant changes to the components/materials then additional testing may be required.

Continued on next page.



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- **Part 3** – Long term test method and requirements for high performance IGUs containing special gases which enhance insulation levels, covering gas leakage rate and gas concentration levels.

This part of the standard covers;

- 1 gas leakage by testing
- 2 gas concentration tolerances

Some minor variations to the EN 1279 Part 3 have been adopted by IGUMA to recognize alternative test equipment to that specified and available in Europe.

- **Part 4** – Methods of test for the physical attributes of edge seals

This part covers evaluation of the edge seal strength, partial evaluation of moisture and gas permeation through sealant, by testing and/or report examination.

This test is carried out in conjunction with parts 2 and 3 where applicable.

- **Part 5** – Evaluation of conformity/Product standard

This part specifies requirements for the evaluation of conformity and the production control of insulating glass units for use in buildings. It is a master document for all other parts of EN 1279.

It identifies all other relevant standards that will assist in classifying the performance of a insulating glass unit. The essential characteristics cover the following;

- Safety in case of fire – resistance to fire, etc
- Safety in use – impact performance, manual attack, etc
- Acoustic performance
- Thermal performance

Note – Part 5 is the starting point for a manufacturer wishing to prove compliance with the standard. It cross references all of the other five parts. Minor amendments have been made by IGUMA to this section to allow references to Australasian reference standards.

- **Part 6** – Factory production control and periodic tests

This part covers the routine factory production control and periodic testing and fogging inspection and test to verify that the production conforms to the system description.

This part is a critical part of the standard as it requires factory production to be regularly monitored by an independent auditor and testing records have to be kept of activities carried out in accordance with the standard as evidence of compliance when required by the auditor.

- **ISO 20492**

More recently the International Standards Organization (ISO) has produced the following Standards

ISO 2049 Glass in Buildings – Insulating glass

Part 1: Durability of edge seals by climate tests

Part 2: Chemical fogging test

Part 3: Gas concentration and gas leakage test

Part 4: methods of test for physical attributes of edge seals

This Standard combines the IGU test methods and specifications of ASTM E2188, E2189, E2190 and EN 1279 Parts 2, 3, 4 and sections of Part 6.

*The IGUMA is an association within The Window Association of New Zealand Inc.
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