



National Standards Authority of Ireland

IRISH STANDARD

I.S. 513 (EN 42 : 1976) : 1981

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**METHODS OF TESTING WINDOWS - AIR  
PERMEABILITY TEST.**

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Údarás um Chaighdeáin Náisiúnta na hÉireann



**IRISH STANDARD SPECIFICATION**

**METHODS OF TESTING WINDOWS  
AIR PERMEABILITY TEST**

I.S. 513 : 1981  
(EN 42 : 1975)

*Price £2.40*

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# DECLARATION

OF

SPECIFICATION

ENTITLED

METHODS OF TESTING WINDOWS

AIR PERMEABILITY TEST

AS

THE IRISH STANDARD SPECIFICATION FOR

METHODS OF TESTING WINDOWS

AIR PERMEABILITY TEST

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The Institute for Industrial Research and Standards in exercise of the power conferred by section 20 of the Industrial Research and Standards Act, 1961 (No. 20 of 1961), and with the consent of the Minister for Industry and Energy, hereby declares as follows:

1. This instrument may be cited as the Standard Specification (Methods of Testing Windows – Air Permeability Test) Declaration, 1981.

2. (1) The Specification set forth in the Schedule to this declaration is hereby declared to be the standard specification for Methods of Testing Windows – Air Permeability Test.

(2) The said standard specification may be cited as Irish Standard 513:1981 (EN 42:1975) or as I.S. 513:1981 (EN 42:1975).

## SCHEDULE

# Methods of Testing Windows Air Permeability Test

### 1. SCOPE

This standard defines the method to be used for the air permeability test of windows to be fitted in exterior walls and supplied in the form of finished units in actual operating conditions.

### 2. FIELD OF APPLICATION

This standard applies to all windows including door height windows made of any material, in the actual operating conditions in which they should be used and fixed according to the manufacturer's recommendations as in a finished building, bearing in mind the conditions of test as defined hereafter. The standard does not apply to the joints between the windows and surrounding components and material.

### 3. TERMINOLOGY

**3.1 Pressure.** Difference between the absolute air pressure on the external surface of a window and the absolute air pressure on the internal surface of the same window.

The difference is positive when the external pressure is higher than the internal pressure. In the other case, it is negative. This pressure is expressed in Pascals (Pa) ( $1 \text{ Pa} = 1 \text{ N/m}^2 = 0.102 \text{ mm H}_2\text{O}$ ).

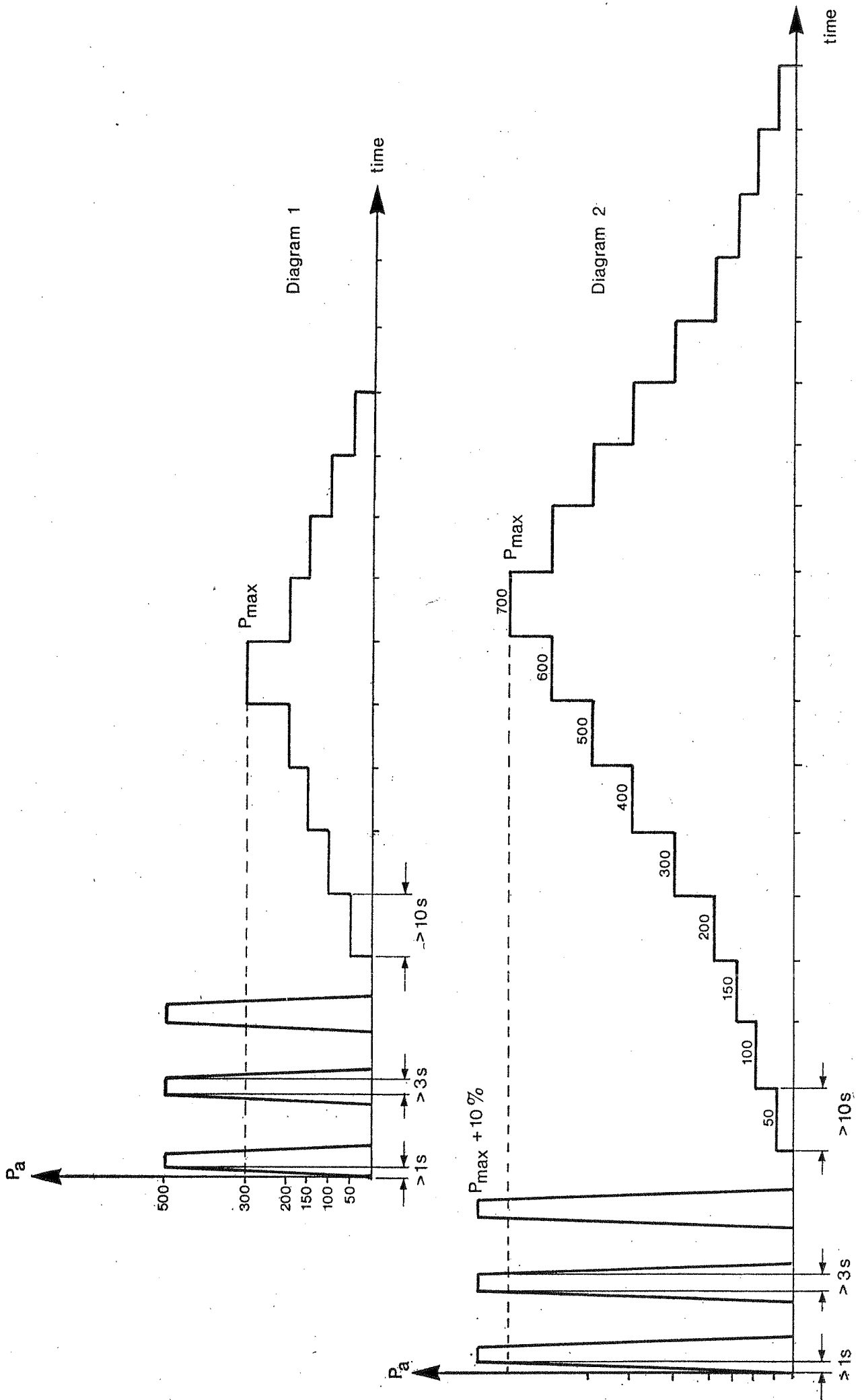
**3.2 Air permeability.** The property of a closed window to let air pass when it is submitted to a differential pressure. The air permeability is characterised by a flow of air expressed in  $\text{m}^3/\text{h}$  as a function of the pressure. This flow may be related, to the opening surface area of the window (flow per unit of surface  $\text{m}^3/\text{h.m}^2$ ), or to the length of opening joints (flow per unit of length  $\text{m}^3/\text{h.m}$ ), or to the total surface area of the window (flow per unit of surface  $\text{m}^3/\text{h.m}^2$ ).

**3.3 Opening light.** Any part of a window that can be moved within the main frame. By convention, the surface of the opening light is equal to the apparent surface, seen from inside. The length of the joints is obtained from the same dimensions as those used for calculation of the surface area.

### 4. APPARATUS

The basic test apparatus consists of the following:

- (1) a chamber with an opening to which the test window is fitted by its surround,
- (2) a means of providing a controlled differential air pressure across the window,
- (3) a device for rapid controlled changes of the differential air pressure operating between defined limits,
- (4) a means of measuring the flow of air into or out of the apparatus,
- (5) a means of measuring the difference in pressure between the two faces of the window.



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