



**WINDOW & GLASS ASSOCIATION  
INDUSTRY STANDARDS**

**FOR**

**GLAZING AND OTHER SEALS USED IN THE  
MANUFACTURE OF JOINERY**

**© December 2012 Window & Glass Association of New Zealand**

# **STANDARDS FOR GLAZING AND OTHER SEALS USED IN THE MANUFACTURE OF JOINERY**

## **1.1: SCOPE**

This Standard relates specifically to glazing and other seals used in the manufacture of all types window types including, but not limited to, Aluminium, Timber, uPVC, Composite, Steel and Pultruded joinery.

## **1.2: DEFINITIONS**

### **Static Seal:**

A seal that is used in a fixed position, (e.g. wedges, backing seals, channel gaskets).

### **Dynamic Seal:**

A seal that is in an active position, (e.g. sash seals, casement door seals, weatherstrips).

### **High-Rise:**

Being an installation with a height above three floors (10m).

## **1.3: DESIGN AND CONSTRUCTION**

Seals are designed to perform the following functions:

- to minimise the entry of air and water.
- to provide a cushion for the glazing media.
- to take up the tolerance between rigid components.
- to allow movement of glazing media under wind loading or temperature changes.

## 1.4: PERFORMANCE

Performance is rated in four distinct areas of use:

### A) Low-Rise Static

Materials:

Plasticised PVC

Thermoplastic Elastomers

Vulcanised Rubbers including EPDM and Silicone

Physical Properties:

Shore 'A' Hardness            70 ± 10

Tensile Strength                7.0 Mpa Min.

Elongation @ Break          300% Min.

Compression Set @ 70°C    75% Max

### B) Low-Rise Dynamic

Materials:

High Resilience PVC

Thermoplastic Elastomers

Vulcanised Rubbers including EPDM and Silicone

Physical Properties:

Shore 'A' Hardness            65 ± 10

Tensile Strength                7.0 Mpa min.

Elongation @ Break          300%. min.

Compression Set @ 70°C    65% max.

### **C) High-Rise Static**

Materials:

Thermoplastic Elastomers

Vulcanised Rubbers including EPDM and Silicone

Physical Properties:

|                                     |              |
|-------------------------------------|--------------|
| Shore 'A' Hardness                  | 70 ± 10      |
| Tensile Strength                    | 7.0 Mpa min. |
| Elongation @ Break                  | 300% min.    |
| Compression Set @ 70 <sup>0</sup> C | 35% max.     |

### **D) High-Rise Dynamic**

Materials:

Thermoplastic Elastomers

Vulcanised Rubbers including EPDM and Silicon

Physical Properties:

|                                     |              |
|-------------------------------------|--------------|
| Shore 'A' Hardness                  | 65 ± 10      |
| Tensile Strength                    | 7.0 Mpa min. |
| Elongation @ Break                  | 300% min.    |
| Compression Set @ 70 <sup>0</sup> C | 35% max      |

The glazing materials shall be designed to withstand prolonged exposure to Ultra Violet light in average New Zealand conditions without appreciable breakdown in performance. This only applies to seals that are coloured black.

Where seals are installed in combination with dark coloured aluminium and reflective glass, durability may be affected by the resulting high temperatures. The use of any plasticised PVC in this position is not recommended.

Thermoplastic Elastomers and vulcanised Rubbers as recommended by the manufacturer, are the only materials that should be used for high-rise applications (above three stories), or for other installations in extreme or exposed conditions.

## 1.5: TEST PROCEDURES

### Heat Reversion

A length of seal shall be cut (300mm-400mm) and the length recorded. The seal is then placed in a calibrated laboratory oven at the selected temperature for one hour.

The sample is removed and allowed to cool for one hour at ambient temperatures and measured again.

Shrinkage is calculated and must be less than the maximum allowable as per the tables below:

1) Products manufactured from single hardness materials used for low-rise applications:

|                     |           |
|---------------------|-----------|
| Test temperature    | 70°C      |
| Allowable shrinkage | 3.0% max. |

2) Products manufactured from dual hardness materials, products with a reinforcing spline, or single hardness materials specified for use in high-rise applications:

|                     | Test 1     | Test 2    |
|---------------------|------------|-----------|
| Test temperature    | 70°C       | 85°C      |
| Allowable shrinkage | 0.25% max. | 1.0% max. |

### Raw Material Tests

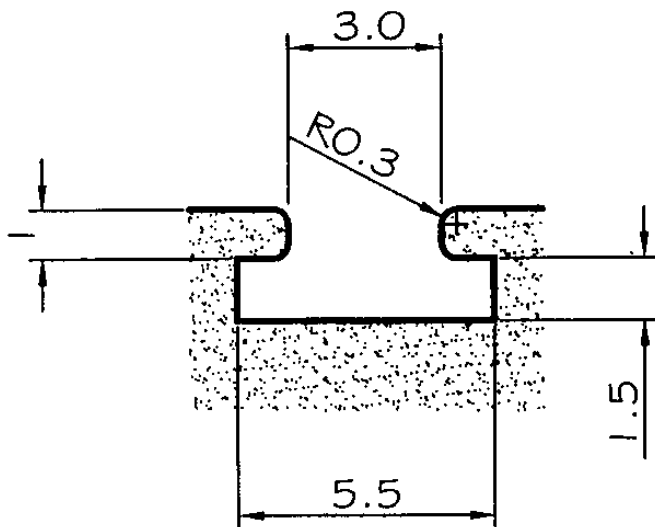
Use the following ASTM Test Methods to demonstrate compliance with the requirements of this standard:

|                      |             |
|----------------------|-------------|
| Shore Hardness       | ASTM D-2240 |
| Tensile / Elongation | ASTM D-412  |
| Compression          | ASTM D-395  |

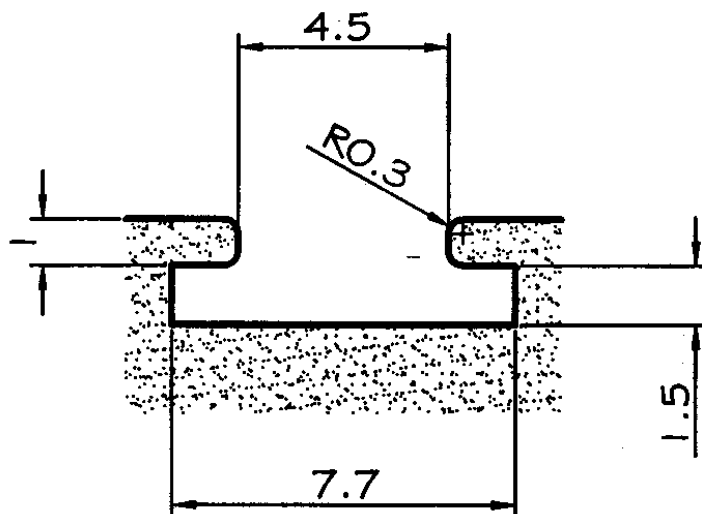
## 1.6 TEE SLOT SPECIFICATIONS

The following dimensional drawings for aluminium "T" slots have been formalised by the WANZ Component Suppliers in conjunction with the WANZ Technical Committee to create standardization within the window industry.

These standardized dimensions should be incorporated where possible in all future window system designs. However, manufacturers can specify custom dimensions.



Nominal Foot Width 4.8mm



Nominal Foot Width 6.9mm

## **1.7 QUALITY ASSURANCE**

Suppliers claiming compliance with this part undertake that they will maintain a documented system of quality assurance that ensures:

1. That the product sold will perform the same as the tested sample.
2. That the materials of manufacture will be the same as those tested.
3. That comprehensive instructions for the use of, and the maintenance requirements of the product will be available to the purchaser.

**END**