SINTEF Technical Approval

TG 2117

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Provided listed on
www.sintefcertification.no

SINTEF confirms that

Schlegel Q-Lon weatherseals

has been found to be fit for use in Norway and to meet the provisions regarding product documentation given in the regulation relating to the marketing of products for construction works (DOK) and regulations on technical requirements for building works (TEK), with the properties, fields of application and conditions for use as stated in this document

1. Holder of the approval

Schlegel Ltd
Unit 26-28 Henlow Industrial Estate,
Henlow, Bedfordshire, SG 16 6DS
United Kingdom

www.schlegelgiesse.com

2. Product description

Schlegel Q-Lon weatherseals have a polyurethane foam core and an outer layer of polyethylene foil. The weatherseals can also have a cast-in profile of polypropylene or glass fibre, to reduce accidental shrinkage or expansion. The seals are available in brown, white, black and grey-white colours and in various profiles with a clear height from 3.9 mm to 10.9 mm as indicated in table 2.

3. Fields of application

Schlegel Q-Lon weatherseals are used for the air tightening in operable building elements when the element is closed. Examples of building elements are casement windows, doors, hatches, etc. Figure 1 shows an example of the intended use of the product.

The geometry of the joint to be sealed determines which seal profile that should be chosen.

This approval does not cover weatherseal applications in constructions where requirements for fire resistance or smoke leakage applies.

4. Properties

SINTEF's recommended performances for weatherseals with the category of use as specified in point 3, are set out in table 1.

Table 1
SINTEF's recommended performances for weatherseals [1)]

Characteristics	Test method	Performance	Unit
Linear compression	EN 12365-2	≤ 300	N/m
Deflection recovery [1)]	EN 12365-3	≥ 60	%
Recovery after accelerated ageing	EN 12365-4	≥ 60	%

[1)] *Working temperature range*, t ≥ -10 °C; grade 2, 3, 4, or 5. See Table 2, column "Digit 4".

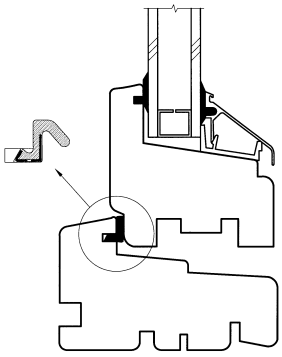


Fig. 1
Example of intended use, i.e. the weatherseal is the component between the fenestration sash (casement) and frame.

Schlegel Q-Lon weatherseals are classified according to EN 12365-1. This standard describes a *coding system with 6 positions, or categories as noted in the standard.* A digit is given for each position. The first digit applies to the category of use, where the letter "W" stands for Weatherstripping (term as used in the standard). Each of the following 5 digits gives the actual grade ("a subclass") that is referring to the category range(s) in which the achieved performance is included, or in which conditions the product should be used, to fulfil its intended function. Example of a classification, all 6 digits (positions) given: W15276. See table 2.

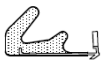
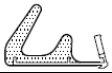
Fire and smoke tightness performance
Fire rated weatherseals are not covered by this approval. See also section 3.

Considerations regarding sound insulation and use of energy
The weather seals' main function is to avoid unnecessary air leakage through (openable) building elements.

Doors and windows must have airtight joints between the openable part (door leaf or window sash) and the frame, to achieve the best sound insulation as possible. An airtight building element will not contribute to infiltration (of "cold" outside air) when the building is heated. Less air leakage will result in less heat losses.

Durability
The Schlegel weatherseals are assessed to have satisfactory durability. See also the column *Digit 6 - Recovery after ageing* in Table 2.

Table 2
Schlegel Q-Lon weatherseals, characteristics and classification according to EN 12365-1

Sealing profile (Cross section)	Type designation	Free height a [mm]	Joint width b [mm]	**Classification** (Coding system with 6 positions; Digit 1 – Digit 6)					
				Digit 1	**Digit 2**	**Digit 3**	**Digit 4**	**Digit 5**	**Digit 6**
				Category of use	Working range Δh = (a - b) [mm]	Linear compression force [N/m]	Working temperature range [°C]	Deflection recovery [%]	Recovery after ageing [%]
	QL 3013 AQ 48	3,9	3,0	W	**1** ≤ 1 0,9	**5** >100 - ≤200	**2** > -10 - ≤ 55	**7** > 90	**6** > 80 - ≤ 90
	QL 3053	7,5	5,0	W	**3** > 2 - ≤ 4 2,5	**5** >100 - ≤200	**2** > -10 - ≤ 55	**6** > 80 - ≤ 90	**6** > 80 - ≤ 90
	QL 3056	9,0	5,0	W	**3** > 2 - ≤ 4 4,0	**4** > 50 - ≤ 100	**2** > -10 - ≤ 55	**7** > 90	**5** > 70 - ≤ 80
	QL 3073	10,4	6,0	W	**4** > 4 - ≤ 6 4,4	**4** > 50 - ≤ 100	**2** > -10 - ≤ 55	**7** > 90	**5** > 70 - ≤ 80
	QL 3078	9,0	5,0	W	**3** > 2 - ≤ 4 4,0	**3** > 20 - ≤ 50	**2** > -10 - ≤ 55	**6** > 80 - ≤ 90	**6** > 80 - ≤ 90
	QL 3082	5,6	3,0	W	**3** > 2 - ≤ 4 2,6	**5** >100 - ≤200	**2** > -10 - ≤ 55	**7** > 90	**5** > 70 - ≤ 80
	QL 3091	9,8	5,0	W	**4** > 4 - ≤ 6 4,8	**4** > 50 - ≤ 100	**2** > -10 - ≤ 55	**6** > 80 - ≤ 90	**5** > 70 - ≤ 80
	QL 3094	8,0	5,0	W	**3** > 2 - ≤ 4 3,0	**2** > 10 - ≤ 20	**2** > -10 - ≤ 55	**6** > 80 - ≤ 90	**5** > 70 - ≤ 80
	QL 3096	8,0	5,0	W	**3** > 2 - ≤ 4 3,0	**3** > 20 - ≤ 50	**2** > -10 - ≤ 55	**6** > 80 - ≤ 90	**5** > 70 - ≤ 80
	QL 3104	10,9	6,0	W	**4** > 4 - ≤ 6 4,9	**4** > 50 - ≤ 100	**2** > -10 - ≤ 55	**7** > 90	**5** > 70 - ≤ 80
	QL 3143	6,0	4,0	W	**2** > 1 - ≤ 2 2,0 2,0	**5** >100 - ≤200	**2** > -10 - ≤ 55	**7** > 90	**5** > 70 - ≤ 80

5. Environmental aspects

Chemicals hazardous to health and the environment
The product contains no hazardous substances with priority in quantities that pose any increased risk for human health and environment. Chemicals with priority include CMR, PBT or vPvB substances.

Effect on indoor environment
The product is not regarded as emitting any particles, gases or radiation that have a perceptible impact on the indoor climate, or to have any significant impact on health.

Waste treatment/recycling
The product shall be sorted as residual waste. The product shall be delivered to an authorized waste treatment plant for energy recycling.

Environmental declaration
No environmental declaration (EPD) has been worked out for the product.

6. Special conditions for use and installation

Design considerations
Each type of the sealing profiles is assumed to be used within the specified working range and working temperature range, respectively given by "Digit 2"and "Digit 4" in table 2 (the digit written in **bold font,** and the range (interval) itself is shown in the "sub-row" under the digit (sub-class). The weather seals are exposed to a compression force when an openable building element is closed, for example as shown in Figure 1. "Digit 3" expresses the appropriate range of compression force within the sealing profile is found to fulfil its function. The recovery performances, i.e. ability to win back its original shape after deflection, appears at the actual row in columns "Digit 5" and "Digit 6".

To choose the most appropriate sealing profile, given use category W, the sealing profile's height, and the building element's joint geometry, including the joint width, as well as the expected compression force must be considered carefully. If the sealing profile's *free height* is close to or less than the building element's joint width, an untight joint must be expected due to low compression force.

If the sealing profile's *free height* is too high compared with the building element's joint width, the risk is that the sealing profile will be squeezed too much. This may result in permanent deformation and the sealing profile's recovery performance is reduced. Untight joints may be caused by unsatisfactory recovery performance.

An *appropriate* sealing profile will not have negative impact on a building element's opening and closing functions.

Schlegel Q-Lon weatherseals is designed with a "foot" which is the fastening part to be placed in a milled groove in the actual part of the building element. The groove dimensions must correspond to the groove width and depth ranges given by Schlegel's technical specifications that applies to the weather seal to be assembled.

Assembling
Weatherseals should be assembled after the building element is painted or coated. The joint surfaces must be smooth. Unevenness and sharp edges should be avoided.

The weatherseal may be fastened to either the movable part (casement/sash) or the stationary frame, depending on where the milled groove is placed on the building element.

Weatherseals must be cut to the correct length. Note that stretching of the sealing strip during assembling can cause leaks if the strip returns to its original, unstretched cut length.

Maintenance
The manufacturer's instructions for maintenance shall be followed. The weatherseals can be cleaned with ordinary detergent. During painting of a building element, painting on the weather seal should be avoided. Painting and coatings may have impact on the weatherseals' characteristics.

Transport and storage
The manufacturer's instructions for transport and storage shall be followed. Care must be taken to avoid damage to the product during transport. The weatherseals must be stored in a dark and dry place and away hydrocarbon sources.

7. Factory production control

Schlegel Q-Lon weather seals are manufactured by:

Schlegel Ltd
Unit 26-28 Henlow Industrial Estate,
Henlow, Bedfordshire, SG 16 6DS
United Kingdom

The holder of the approval is responsible for the implementation of the factory production control (FPC) to ensure that the weatherseals are manufactured in accordance with the preconditions applying to this approval.

The manufacturing of the product(s) and the manufacturer's system for factory production control (FPC) is subject to continuous surveillance in accordance with the contract regarding this SINTEF Technical Approval.

Schlegel Ltd. has a *quality management system* that is certified according to EN ISO 9001 and an *environmental management system* that is certified according to EN ISO 14001.

8. Basis for the approval

The assessments of *Schlegel Q-Lon weather seals* are based on technical documentation, e.g. test and classification reports, owned by the holder of the approval.

The assessment of the weather seals is in addition based on relevant recommendations according to SINTEF's Building and Research Design Guides.

9. Marking

Schlegel Q-Lon weatherseals are marked on the surface with "Schlegel", type designation, classification and production date, i.e. 2 from 8 lines with thermal back printing, 1 metre apart. In addition to the marking on the product itself, labels on boxes and coils ensures fully traceability of the sale and transport of products.

The approval mark for SINTEF Technical Approval TG 2117 may also be used.

10. Liability

The holder/manufacturer has sole product responsibility according to existing law. Claims resulting from the use of the product cannot be brought against SINTEF beyond the provisions of Norwegian Standard NS 8402.

for SINTEF

Susanne Skjervø
Approval Manager