



CERTIFICATION

QB 25

Certification Technical Appendix



Identification no.: QB 25
Revision No.: 05
Effective date: 07/08/2023



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Part 1 - Certified characteristics

The certified characteristics are:

- **The composition:**
 Are concerned the flexible under-roof screens:
 - Bituminous, not permeable to water vapour;
 - Synthetic based on Polyethylene, Polypropylene, Polyester, permeable to water vapor, commonly called HPV (Highly Permeable to Water Vapor);
 - Non-HPV synthetic.
- **Technical assistance:**
 - The evaluation of the technical assistance will be done through a multiple-choice questionnaire submitted to the persons in charge of this mission and designated by the holder.
 - The minimum technical assistance validation score is 12.
 - If this score is not obtained, an action plan on the training of the technical assistance referent in the technical-regulatory context as well as in the QB25 standard – Flexible screens for under-roofing must be provided. A second evaluation will be carried out within 2 months via a new MCQ and/or a site visit for distributors/requesters, in progress, if necessary.
- **The classification IS defined below:**

Class		Meaning	Test		Requirement
E	E1	Waterproof	According to NF EN 13859-1 norm at initial state and after ageing		Class W1
S	S1	HPV	According to NF EN 13859-1 norm		$S_d \leq 0,10 \text{ m}$
	S2	Air layer under the underlay			$0,10 \text{ m} < S_d \leq 0,18 \text{ m}$
	S3	Air layer under the underlay			$S_d > 0,18 \text{ m}$
T	T1	Maximum rafter spacing 45 cm	Minimum tensile resistance (machine and cross direction) according to NF EN 13859-1 norm	Initial state	100 N/50 mm
				After ageing	70 N/50 mm
	T2	Maximum rafter spacing 60 cm	Tearing resistance (machine and cross direction) according to NF EN 13859-1 norm		75 N
			Minimum tensile resistance (machine and cross direction) according to NF EN 13859-1 norm	Initial state	200 N/50 mm
	T3	Maximum rafter spacing 90 cm		After ageing	100 N/50 mm
			Tearing resistance (machine and cross direction) according to NF EN 13859-1 norm		150 N
		Minimum tensile resistance (machine and cross direction) according to NF EN 13859-1 norm	Initial state	300 N/50 mm	
			After ageing	200 N/50 mm	
			Tearing resistance (machine and cross direction) according to NF EN 13859-1 norm		225 N

HPV = Highly permeable to water vapor: air layer on the underside not necessary.

Note 1: Tensile strength and nail tearing in both directions must be the subject of a statistical analysis incorporating at least the following values: mean, standard deviation, minimum value. The dispersion of the results will be considered in the verification of compliance with the thresholds defined by the mark reference document.

Note 2: Manufacturer's test records must be archived for 10 years.

Table 1. Class E.S.T.

Part 2 - Technical specifications

The following table describes technical specifications of underlays for discontinuous roofing:

Characteristics	U	Test methods	State of the samples	Values	Tolerances	Minimal frequency of the factory production control
Length	m	NF EN 13859-1 § 5.2.1	Initial state	MLV	-0%	Once per 40 shifts
Width	m			MDV	-0.5% / + 1,5%	Once per 40 shifts
Straightness	-			Pass	30 mm per 10 m of length	Once per 40 shifts
Surface area	g/m ²			MDV	-	Once per 40 shifts
Waterproofing	-	NF EN 13859-1 § 5.2.3	Initial state	Class E	-	Once per 40 shifts
			After ageing (1)	Class E	-	Once every 2 years
Water vapour transmission (Sd)	m	NF EN 13859-1 § 5.2.5 (2 methods)	Initial state	Class S	-	Once per 40 shifts
Tensile strength	N/50 mm	NF EN 13859-1 § 5.2.6	Initial state	Class T	VDF	Once per 10 shifts
			After ageing (1)	Class T	VDF	Once every 2 years
Elongation	%	NF EN 13859-1 § 5.2.6	Initial state	MDV	VDF	Once per 10 shifts
			After ageing (1)	MDV	VDF	
Tearing resistance	N	NF EN 13859-1 § 5.2.7	Initial state	Class T	VDF	Once per 40 shifts
Dimensional stability	%	NF EN 13859-1 § 5.2.8	Initial state	-2 < Dim. Stab. < +2	-	Once per year
Flexibility at low temperature	°C	NF EN 13859-1 § 5.2.9	Initial state	T ≤ -20	-	Once per year
Shear resistance of overlaps	N/50 mm	NF 12317-2	Initial state	MLV	VDF	The glue optimal grammage must be controlled during production process
			After ageing (1)	MLV	VDF	
MLV: Manufacturer's limit value which must be obtained during tests, which can be a minimum or maximum value.						
MDV: Declared value by the manufacturer						
(1) Artificial aging under UV radiation for 336 hours then thermal aging in a ventilated oven at 70°C for 90 days according to § 5.2.10 of standard EN 13859-1 and its Appendix C.						

Table 2. Technical specifications and control plan



Part 3 – Certification tests

Type tests can be done in the CSTB laboratory or any other external laboratory that is ISO 17025 accredited by E.A. member organization (European cooperation for Accreditation) or periodically evaluated by a CSTB internal auditor according the ISO 17025 requirements.

Tests Underlays for discontinuous roofing <i>Nota 1</i>	Unit / class	Test norm	State of the samples	Initial type tests (Admission)	Audit (Admission/ Follow-up) <i>Nota 2</i>	Mark laboratory (follow-up) <i>Nota 2</i>
				Initial	Frequency according §1.2 of QB25 reference document	Annual
Surface area	g/m ²	EN 1849-1 (bitumen) or EN 1849-2 (other materials)	Initial state	X	X	X
Waterproofing	W1	EN 1928 :2000 Method A modified by § 5.2.3 of NF EN 13859-1 norm	Initial state	X	X	
			After ageing (1)	X		
Water vapour transmission (2)	m	EN 1931 or EN ISO 12572 condition C	Initial state	X		
Tensile strength Force and elongation (3)	N/50 mm %	EN 12311-1 modified by annex A of NF EN 13859-1 norm	Initial state	X	X	X
			After ageing (1)	X		
Tearing resistance (3)	N	EN 12310-1 modified by annex B of NF EN 13859-1 norm	Initial state	X	X	X
Dimensional stability	%	EN 1107-1 (bitumen) ou EN 1107-2 (other materials)	Initial state	X	X	X
Flexibility at low temperature	°C	EN 1109	Initial state	X		
Shear resistance of overlaps (4) Test method in figure 1 or 2 in the next part of the document	N/50 mm	NF EN 12317-2	Initial state	X		
			After ageing (1)			

Greyed out = not applicable.

- (1) Artificial aging under UV radiation for 336 hours then thermal aging in a ventilated oven at 70°C for 90 days according to § 5.2.10 of standard EN 13859-1 and its Appendix C.
- (2) This water vapor transmission and its durability may, if questioned by the certification body, be presented to the members of the Evaluation Committee.
- (3) The tests which will be carried out during the follow-up audits and subsequently under the responsibility of the mark laboratory are to be carried out on each series of five test pieces sampled by the CSTB in both directions for the tensile and tear properties at nail.
- (4) In the case of printing on the screen in the bonding area of the adhesive, it will be necessary to also validate the performance of the bonding on the printing by shear strength test at initial and aged state.

Nota 1: As part of an application for admission of the right to use the QB 25 mark for flexible underlay according to the EN 13859-1 norm, the type tests carried out under standard EN 13859-2 for the QB 38 application of flexible wall membranes can be considered.
Nota 2: If one or more of an individual value is lower than the requirements, the minimum one-sided confidence interval of the mean at 95% (5% fractile) is calculated according to the ISO 2602 standard and then compared to the certified value .

Tableau 3. Certification tests

Waterproofing system joint assemblies created using adhesive tape or bonding

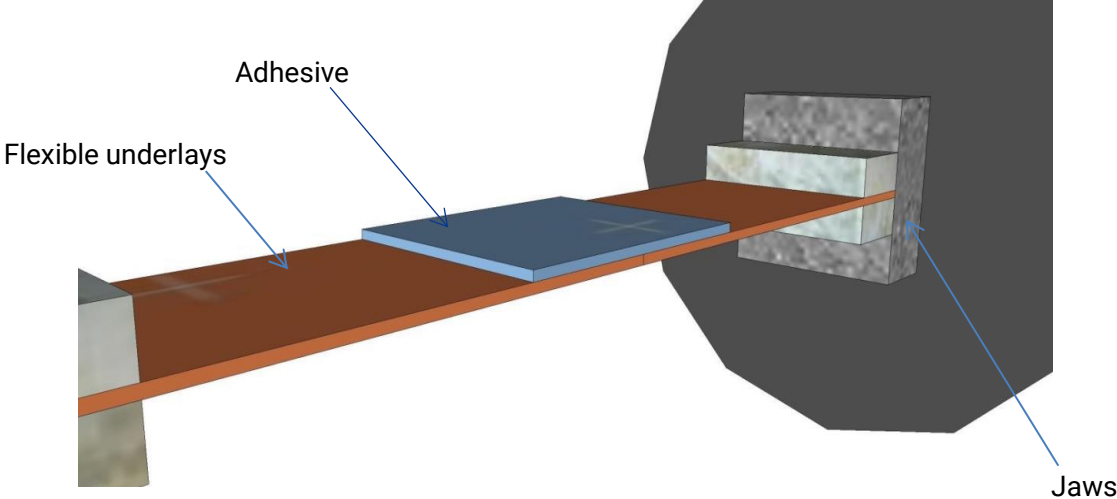


Figure 1 Shear test on membrane connected with adhesive tape bond (visible)

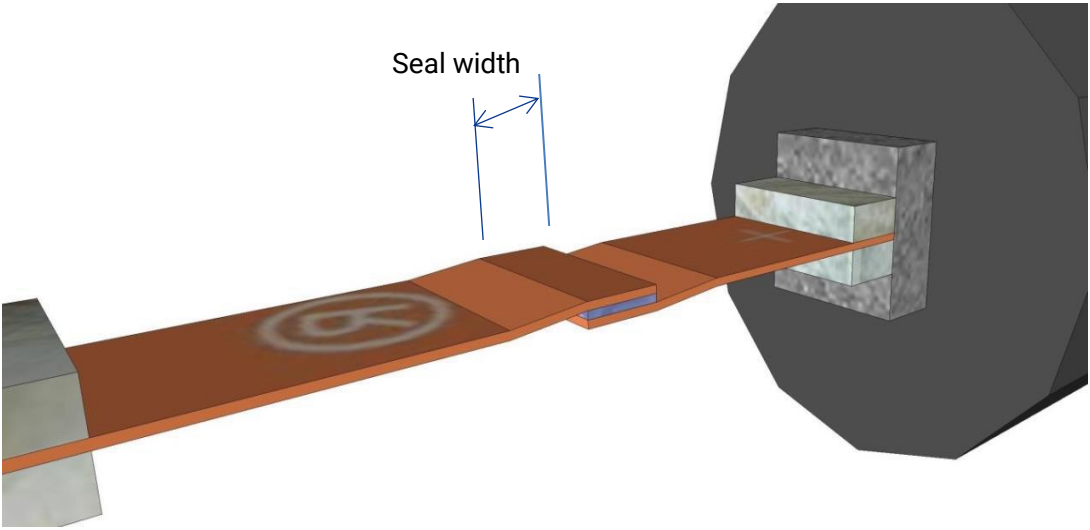


Figure 2 Shear test on membrane connected with adhesive putty bond (not visible)