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UKAS TESTING
0248

Customer details:	Snakeline BV Kritzingerlaan 61 3707 TB Zeist Netherlands	SATRA reference:	SPC0249086 /1633/1 Issue 2
		Your reference:	Visit 28 September 2016
		Date of report:	17 November 2017
		Samples received:	17 August 2016 & 2 November 2017
For the attention of:	Hans Borra	Date(s) work carried out:	Between 28 September 2016 & 17 November 2017

TECHNICAL REPORT

Subject: Testing of anchor device described as "Snakeline" in accordance with EN 795: 2012 type A

This replaces report reference SPC0249086/1633/1 dated 12 October 2016

Conditions of Issue:

This report may be forwarded to other parties provided that it is not changed in any way. It must not be published, for example by including it in advertisements, without the prior, written permission of SATRA.

Results given in this report refer only to the samples submitted for analysis and tested by SATRA. Comments are for guidance only.

Tests marked ≠ fall outside the UKAS Accreditation Schedule for SATRA. All interpretations of results of such tests and the comments based upon them are outside the scope of UKAS accreditation and are based on current SATRA knowledge.

A satisfactory test report in no way implies that the product tested is approved by SATRA and no warranty is given as to the performance of the product tested. SATRA shall not be liable for any subsequent loss or damage incurred by the client as a result of information supplied in the report.

The uncertainty of the results (UoM) in this report is based on a standard uncertainty multiplied by a coverage factor k=2, which provides for a confidence level of approximately 95%.

Report signed by: Daniel Harrison
Position: PPE Technologist
Department: Safety Product Testing

WORK REQUESTED

Samples of anchor device, described as “Snakeline”, were tested by SATRA between the 28 September 2016 & 2nd November 2017. Following the visit, a sample of this anchor was received by SATRA on 5th October 2016 & 2nd November 2017 for corrosion testing in accordance with EN 795: 2012 type A

CONCLUSIONS

SAMPLE REFERENCE	STANDARD	CLAUSE / PROPERTY	PASS / FAIL
Snakeline Anchor	EN 795: 2012	4.1 General	PASS
		4.2 Materials	PASS
		4.3 Design and ergonomics	PASS
		4.4 Specific requirements – type A	PASS

TESTING

The anchor device is intended as a type A (fixed to structure) device, intended to be used on a pitched roof with anchor installed under tiles. Samples were not subject to any pre-conditioning processes other than those stated in individual test clauses

For the purposes of testing configuration 1, the anchor device was installed at a 45° on a replica wooden roof structure 1.2m x 1.5m. The top and bottom brackets were fixed onto 18mm thick plywood board. 2cm x 5cm batons were attached to the structure which was fixed to 2 wooden purlins with centre of 77cm. The test forces applied at an angle of 45° parallel to the ‘roof surface’.

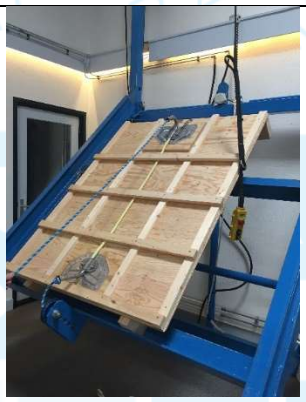	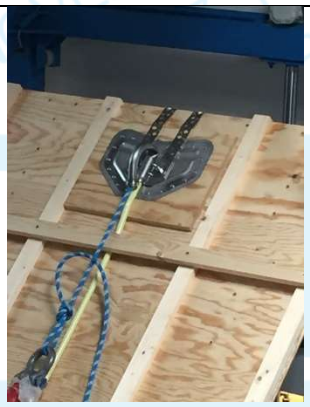	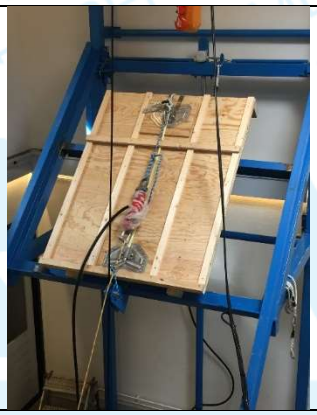
Figure 1 – Anchor device described as “Snakeline”	Figure 2 – Anchor device described as “Snakeline”	Figure 3 – Anchor device described as “Snakeline”

For the purposes of testing configuration 1, the anchor device was installed at a 45° attached to extrusion anchors placed 1m apart. These extrusions attached to wooden purlins at 77cm apart.

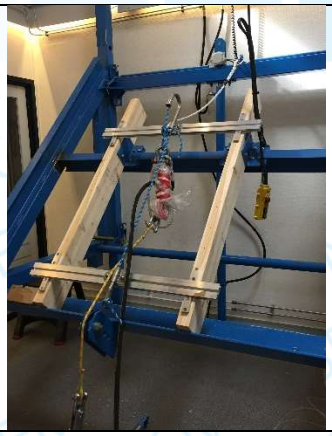	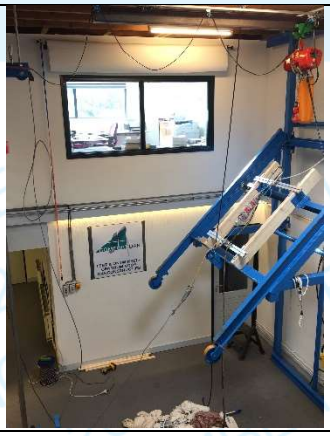	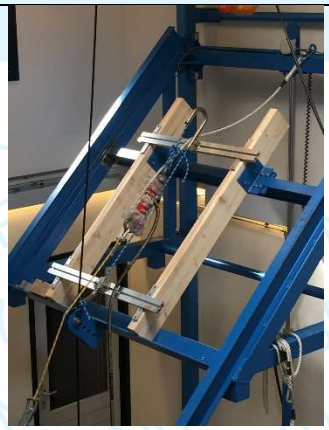
Figure 4 – Anchor device described as “Snakeline”	Figure 5 – Anchor device described as “Snakeline”	Figure 6 – Anchor device described as “Snakeline”

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Individual metal components submitted for corrosion testing

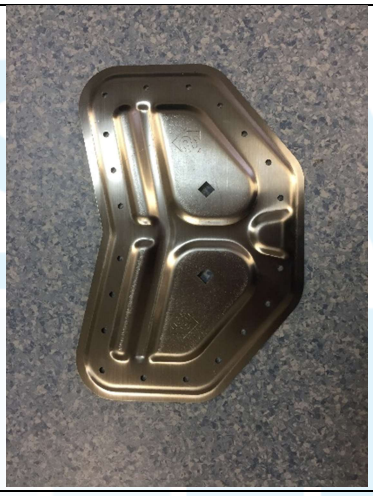


Figure 7 – Anchor device components described as "Snakeline"

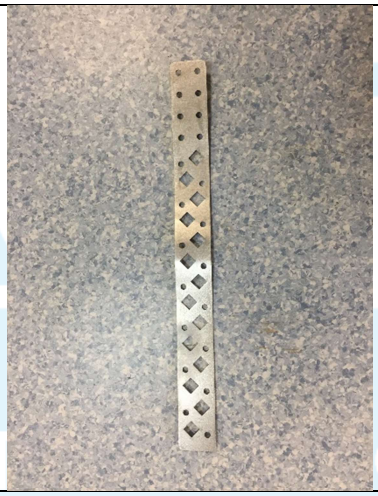


Figure 8 – Anchor device components described as "Snakeline"

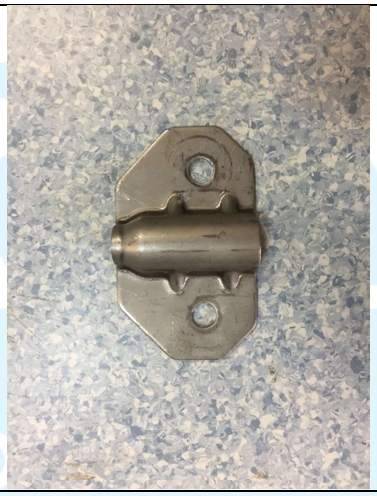


Figure 9 – Anchor device components described as "Snakeline"

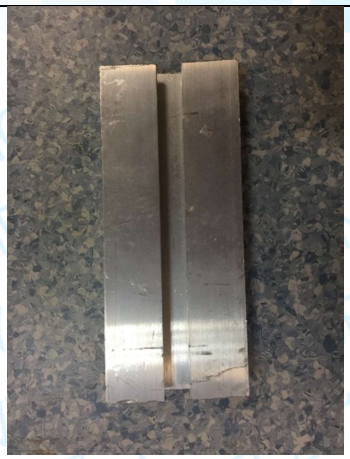


Figure 10 – Anchor device components described as "Snakeline"

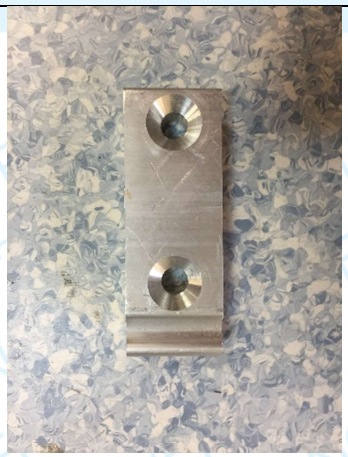


Figure 11 – Anchor device components described as "Snakeline"

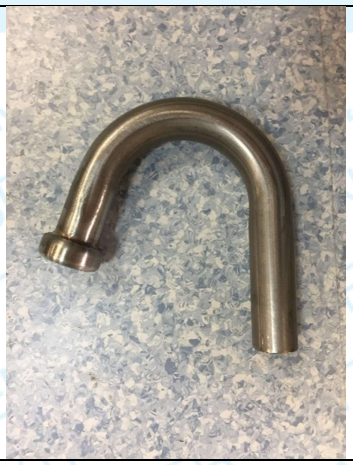


Figure 12 – Anchor device components described as "Snakeline"

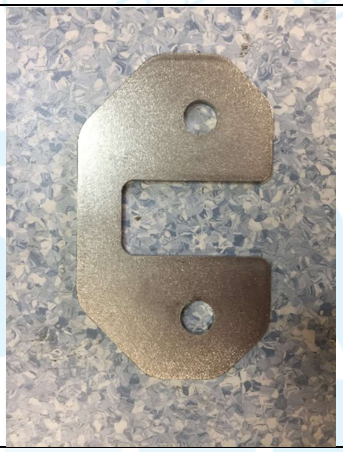
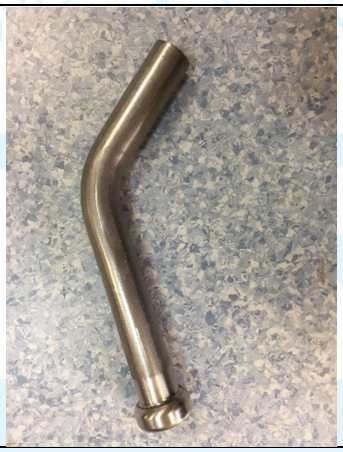
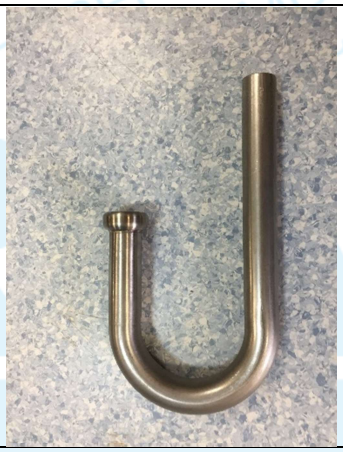
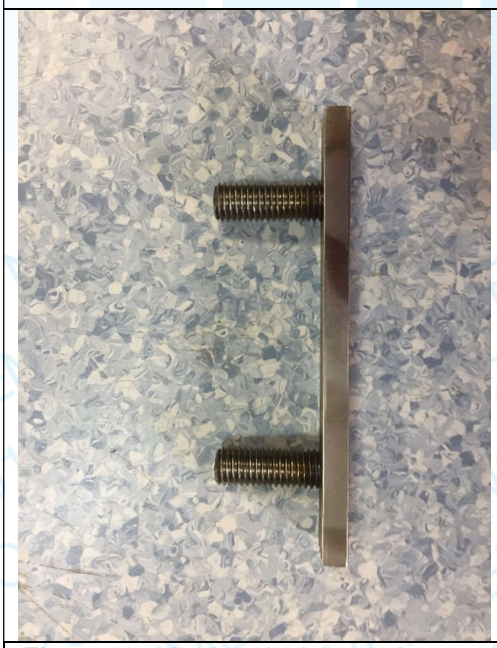
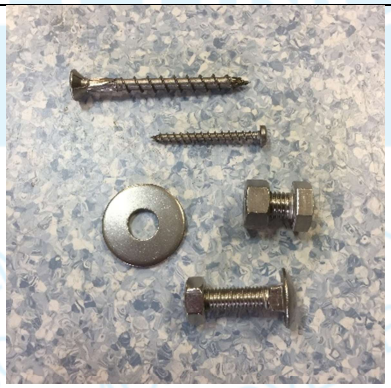
		

Figure 13 – Anchor device components described as “Snakeline”	Figure 14 – Anchor device components described as “Snakeline”	Figure 15 – Anchor device components described as “Snakeline””
		This section has been left blank
Figure 16 – Anchor device components described as “Snakeline”	Figure 17 – Anchor device components described as “Snakeline”	

TEST RESULTS

Table 1 – Testing of anchor device described as “Snakeline” in accordance with EN 795: 2012 as a type A device – configuration 1

EN 795: 2012 CLAUSE / TEST	EN 795: 2012 REQUIREMENT	RESULT / COMMENT	UoM (See note 2)	PASS / FAIL
4.1 General	Anchor devices shall be designed so that they can be removed from the structure, without damaging the structure or anchor, thus allowing reuse	Device can removed without damaging structure		PASS
	U-bolt clamps shall not be used for terminations in any part of an anchor device	No U-bolt clamps used for terminations		PASS
	It shall not be possible for elements with an anchor point to become detached unintentionally. If an element can be removed it shall be designed to have at least 2 separate deliberate manual actions	Elements cannot be removed unintentionally. Removable elements removed by at least 2 separate deliberate manual actions	N/A	PASS
	Anchor devices shall allow connectors to rotate freely and sit in the anchor in the preferred load-bearing position	Connectors can rotate freely		PASS
	Where an anchor device comprises more than one element, the design shall be such that those elements cannot appear to be correctly assembled without being positively locked together	Elements cannot be assembled incorrectly without this being evident to the user		PASS

EN 795: 2012 CLAUSE / TEST	EN 795: 2012 REQUIREMENT	RESULT / COMMENT	UoM (See note 2)	PASS / FAIL
4.1 General (continued)	The mass of any element of an anchor device that is intended to be transported shall be less than 25kg	Mass less than 25kg		PASS
	If a fall indicator is incorporated, the indicator shall clearly show when a fall has occurred	Not applicable		PASS
	If an anchor device consists of a combination of several types, it shall be tested for each type and for the combination	Not applicable – Type A only	N/A	PASS
	If the manufacturer permits loading in more than one direction, then each safety critical direction shall be tested	Not applicable – Device can only be loaded in a single direction		PASS
4.2.1 Materials – Metal parts	Metallic parts shall show no evidence of any corrosion that could affect the function of the device (white scaling or tarnishing is acceptable) If steel wire ropes are galvanised, this shall be done in accordance with ISO 2232	Corrosion test in accordance with ISO 9227: 2012 - 24 hours Neutral Salt Spray, followed by 1 hour drying, followed by a further 24 hour exposure Temperature: 35 °C Fall out rate: 1.15 ml/hr pH of test solution: 6.4 Specific gravity of test solution: 1.03 See notes 5 & 6 No visual evidence of any corrosion present	See table 2 See note 3	PASS
4.3 Design and ergonomics	Anchor devices shall not have sharp edges or burrs that may cause injury to the user or that may damage itself or any other equipment it may come into contact with	No sharp edges or burrs	N/A	PASS
4.4.1.1 Specific requirements – Type A anchor deformation test	No part of a type A anchor which is intended to deform, shall demonstrate permanent deformation of more than 10mm	Not applicable – Anchor point is not intended to deform	± 50 N See note 3	N/A

EN 795: 2012 CLAUSE / TEST	EN 795: 2012 REQUIREMENT	RESULT / COMMENT	UoM (See note 2)	PASS / FAIL
4.4.1.2 Specific requirements – Type A anchor dynamic strength & integrity test	When tested dynamically with a rigid steel mass of 100 kg, the test mass shall be arrested. The anchor must then hold an increased mass of 300kg for 3 minutes	100 kg test mass held following 2.5m free fall using a 2m EN 892 reference lanyard. Peak arrest force 8.0kN Deflection of anchor point – 0mm Residual strength: 300kg held for 3 minutes without failure	± 40 mm See note 3	PASS
4.4.1.3 Specific requirements – Type A anchor static strength test	Metallic elements shall sustain a force of at least 12 kN for 3 minutes without release, and non-metallic elements shall sustain a force of at least 18kN for 3 minutes without release	12kN held for 3 minutes without failure See note 4	± 50 N See note 3	PASS

Table 2 – Testing of anchor device described as “Snakeline” in accordance with EN 795: 2012 as a type A device – configuration 2

EN 795: 2012 CLAUSE / TEST	EN 795: 2012 REQUIREMENT	RESULT / COMMENT	UoM (See note 2)	PASS / FAIL
4.1 General	Anchor devices shall be designed so that they can be removed from the structure, without damaging the structure or anchor, thus allowing reuse	Device can removed without damaging structure		PASS
	U-bolt clamps shall not be used for terminations in any part of an anchor device	No U-bolt clamps used for terminations		PASS
	It shall not be possible for elements with an anchor point to become detached unintentionally. If an element can be removed it shall be designed to have at least 2 separate deliberate manual actions	Elements cannot be removed unintentionally. Removable elements removed by at least 2 separate deliberate manual actions	N/A	PASS
	Anchor devices shall allow connectors to rotate freely and sit in the anchor in the preferred load-bearing position	Connectors can rotate freely		PASS
	Where an anchor device comprises more than one element, the design shall be such that those elements cannot appear to be correctly assembled without being positively locked together	Elements cannot be assembled incorrectly without this being evident to the user		PASS

EN 795: 2012 CLAUSE / TEST	EN 795: 2012 REQUIREMENT	RESULT / COMMENT	UoM (See note 2)	PASS / FAIL
4.1 General (continued)	The mass of any element of an anchor device that is intended to be transported shall be less than 25kg	Mass less than 25kg		PASS
	If a fall indicator is incorporated, the indicator shall clearly show when a fall has occurred	Not applicable		PASS
	If an anchor device consists of a combination of several types, it shall be tested for each type and for the combination	Not applicable – Type A only	N/A	PASS
	If the manufacturer permits loading in more than one direction, then each safety critical direction shall be tested	Not applicable – Device can only be loaded in a single direction		PASS
4.2.1 Materials – Metal parts	Metallic parts shall show no evidence of any corrosion that could affect the function of the device (white scaling or tarnishing is acceptable) If steel wire ropes are galvanised, this shall be done in accordance with ISO 2232	Corrosion test in accordance with ISO 9227: 2012 - 24 hours Neutral Salt Spray, followed by 1 hour drying, followed by a further 24 hour exposure Temperature: 35 °C Fall out rate: 1.15 ml/hr pH of test solution: 6.4 Specific gravity of test solution: 1.03 See notes 5 & 6 No visual evidence of any corrosion present of bolts at weld. See Figure 18	See table 2 See note 3	PASS
4.3 Design and ergonomics	Anchor devices shall not have sharp edges or burrs that may cause injury to the user or that may damage itself or any other equipment it may come into contact with	No sharp edges or burrs	N/A	PASS
4.4.1.1 Specific requirements – Type A anchor deformation test	No part of a type A anchor which is intended to deform, shall demonstrate permanent deformation of more than 10mm	Not applicable – Anchor point is not intended to deform	± 50 N See note 3	N/A

EN 795: 2012 CLAUSE / TEST	EN 795: 2012 REQUIREMENT	RESULT / COMMENT	UoM (See note 2)	PASS / FAIL
4.4.1.2 Specific requirements – Type A anchor dynamic strength & integrity test	When tested dynamically with a rigid steel mass of 100 kg, the test mass shall be arrested. The anchor must then hold an increased mass of 300kg for 3 minutes	100 kg test mass held following 2.5m free fall using a 2m EN 892 reference lanyard. Peak arrest force 7.0kN Deflection of anchor point – 0mm Residual strength: 300kg held for 3 minutes without failure	± 40 mm See note 3	PASS
4.4.1.3 Specific requirements – Type A anchor static strength test	Metallic elements shall sustain a force of at least 12 kN for 3 minutes without release, and non-metallic elements shall sustain a force of at least 18kN for 3 minutes without release	12kN held for 3 minutes without failure See note 4	± 50 N See note 3	PASS

ADDITIONAL INFORMATION / NOTES

Table 2 – Additional uncertainty of measurement information (see note 2)

CLAUSE	TEST / COMPONENT	UoM (see note 2)
Corrosion resistance	Temperature	± 0.99 °C
	Fall-out rate of collected solution	± 2.25 ml (± 0.04 ml/hour for 24 hours)
	Specific gravity of collected solution	± 0.0010 g/ml
	pH value of collected solution	± 0.1
	Angle of sample mounting (if applicable)	± 1.44°

Note 2 – 'UoM' denotes estimated Uncertainty of Measurement for stated test results. This uncertainty value is based on a standard uncertainty multiplied by a coverage factor k = 2, which provides for a confidence level of approximately 95%

Note 3 – Estimated uncertainty of measurement applied at point of test (e.g. to applied force or to tolerance limits) to ensure product meets requirements of the standard

Note 4 – Static strength testing carried out by manually increasing loading, therefore rate of stressing / crosshead velocity as per EN 364: 1992 Clauses 4.1.2.1 & 4.1.2.2 cannot be accurately determined (see VG11 recommendation for use sheet CNB/P/11.023 dated 25.10.2007)

Note 5 – pH value test solution was found to exceed the tolerances specified in ISO 9227: 2012. This was not considered to significantly influence results however

Note 6: Two of the components were retested under job reference SPC0263932/1744

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2. PRICES
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9. TEST REPORTS
Results given in test reports refer only to samples submitted for analysis and tested by SATRA. A satisfactory test report in no way implies that the product tested is approved by SATRA and no warranty is given as to the performance of the product tested. SATRA shall not be liable for any subsequent loss or damage incurred by the Customer as a result of information supplied in a test report.

10. TEST SAMPLES
Unless otherwise agreed in advance, test samples will be disposed of 6 weeks after the date of the final report. If required, samples can be returned at the Customer's expense.

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ii. Where SATRA has given consent to disclosure, the Customer shall draw the attention of the third party to these terms of business and the basis on which SATRA undertakes test, reporting and advising. The Customer shall indemnify SATRA for any failure to do so.
iii. The above items are submitted to the Customer as confidential documents. Confidentiality shall continue to apply after completion of the business, but shall cease to apply to information or knowledge which may come into the public domain.

13. CONSTRUCTION AND ARBITRATION
The laws of England shall govern all contracts and the parties submit to exclusive jurisdiction of the courts of England, unless otherwise agreed.

Issue Date: 1st October 2009