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SATRA reference: SPC0231120 /1452
Issue 2

Your reference:

Date of report: 6 February 2015

For the attention of: S.M. Prabhakar

Samples received: 22 December 2014 &
2 February 2015

TECHNICAL REPORT

Subject: Retesting of twin-tailed energy absorbing lanyard described as "USP 855" in accordance with VG11 sheet 63 and EN 362: 2004 corrosion resistance

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 It must not be published, for example by including it in advertisements, without the prior, written permission of SATRA.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.

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 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 Products Centre

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WORK REQUESTED

Samples of twin-tailed energy absorbing lanyard, described as “USP 855”, were received by SATRA on 22nd December 2014 & 2nd February 2015 for testing in accordance with EN 362: 2004 corrosion resistance & VG11 sheet 63.

CONCLUSIONS

SAMPLE REFERENCE	STANDARD	CLAUSE / TEST	PASS / FAIL
USP 855	EN 362: 2004	4.5 Corrosion resistance	PASS

In addition, the twin-tailed lanyard described as “USP 855” was found to pass the requirements of VG11 recommendation for use sheet 63 (additional static strength tests)

TESTING

Testing was carried out in accordance with EN 362: 2004 & VG11 recommendation for use sheet 63 between 16th January & 2nd February 2015

Samples were tested as received, and were not subject to any pre-conditioning processes other than those stated in individual test clauses



Figure 1 – Twin-tailed energy absorbing lanyard described as “USP 855”

TEST RESULTS

Table 1 – Testing of twin-tailed energy absorbing lanyard described as “USP 855” in accordance with EN 354: 2010 static strength

EN 354: 2010 CLAUSE / TEST	EN 354: 2010 REQUIREMENT	RESULT / COMMENT	UoM (See note 1)	PASS / FAIL
4.5 Static strength	4.5.1 Lanyards including any textile material or textile lanyard elements, e.g. synthetic fibre ropes or webbing, shall sustain a force of at least 22 kN 4.5.2 Lanyards made entirely of metallic elements shall sustain a force of at least 15 kN	Conditioning: 24 hours at 20°C & 65% relative humidity	± 50 N See note 2	PASS
		Static strength test carried out across both legs of lanyard (See VG11 recommendation for use sheet 63, test 1)		
		22kN sustained for 3 minutes without failure (see note 5)		
		See note 3		
		Conditioning: 24 hours at 20°C & 65% relative humidity, before 1 hour submerged in water followed by a minimum of 4 hours at -4°C		
		Static strength test carried out across both legs of lanyard (See VG11 recommendation for use sheet 63, test 1)		
		22kN sustained for 3 minutes without failure		
		See note 3		

Table 2 – Testing of twin-tailed energy absorbing lanyard described as “USP 855” in accordance with EN 362: 2004 Clause 4.4 Corrosion resistance

EN 362: 2004 CLAUSE / TEST	EN 362: 2004 REQUIREMENT	RESULT / COMMENT	UoM (See note 1)	PASS / FAIL
4.5 Corrosion resistance	No corrosion to be evident that could affect the function of the device (white scaling or tarnishing is acceptable)	Corrosion test in accordance with ISO 9227: 2012 – 24 hours Neutral Salt Spray, followed by 1 hour drying, then a further 24 hours exposure Temperature: 35 °C Fall out rate: 1.16 ml/hr pH of test solution: 4.3 Specific gravity of test solution: 1.030 See note 4 Small amount of white and black scaling on all components. No other visual evidence of any corrosion present	See table 4 See note 2	PASS

Table 3 – Testing of twin-tailed energy absorbing lanyard described as “USP 855” in accordance with VG11 recommendation for use Sheet 63 (static strength test 2)

TEST DESCRIPTION	RESULT / COMMENT	UoM (See note 1)	PASS / FAIL
Both tail attachments fixed to structure creating a horizontal line between the two tails. Force then applied to the shock absorber attachment at 90° to the line of the lanyard tails.	9kN sustained for 3 minutes without failure See note 3	± 50 N See note 2	PASS
Lanyard shall not fracture at a force of 9 kN			

ADDITIONAL INFORMATION / NOTES

Table 4 – Additional uncertainty of measurement information (see note 1)

CLAUSE / TEST	TEST / COMPONENT	UoM (see note 1)
EN 362: 2012 4.5 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 1 – ‘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 2 – 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 3 – 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 4 – pH value of test solution were found to exceed the tolerances specified in ISO 9227: 2012†. This was not considered to significantly influence results however

Note 5 – Testing carried out under job reference SPC0232040/1505

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Issue Date: 1st October 2009