



SATRA Technology Centre Ltd
Wyndham Way, Telford Way, Kettering,
Northamptonshire, NN16 8SD United Kingdom
Tel: +44 (0) 1536 410000
Fax +44 (0) 1536 410626
email: info@satra.com
www.satra.com



Customer details: Frontline Fall Protection Inc
1725 NW 97 Ave
Miami
FL 33172
USA

SATRA reference: SPC0260480 /1730/1
Issue 2 Ext 2

Your reference:

Date of report: 3 February 2020

Samples received: 7 September 2017

Date(s) work carried out: Between 25
September & 4
October 2017

TECHNICAL REPORT

Subject:

Qualification testing of harnesses described as " FAP15501G " & "100VMB-UN", in accordance with ANSI Z359.11 – 2014

This is an extension of report reference SPC0260480/1730/1 Issue 2 dated 18 July 2019

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 It must not be published, for example by including it in advertisements, without the prior, written permission of SATRA.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 \neq 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: Business Area Manager
Department: Safety Product Testing

Work Requested

Samples of full body harness (FBH), described as "FAP15501G" & "100VMB-UN", were received by SATRA on the 7th September 2017, for testing in accordance with ANSI Z359.11 – 2014. The harnesses are identical apart from the leg buckles and leg straps so a combination of both styles was used for testing

The variant "100VMB-UN" is also available with circular stitch patterns. These were assessed with a similar design harness under job number SPC0260480/1730/2 Issue 4

Conclusions

Sample Reference	Standard	Clause / Property	Pass / Fail
FAP15501G 100VMB-UN	ANSI Z359.11 - 2014	3.1 Design Requirements	PASS
		3.2.1 Attachment Element Requirements – Dorsal	PASS
		3.3 Component Requirements	PASS

Testing

Testing was carried out in accordance with ANSI Z359.11 – 2014 between the 25th September & 4th October 2017

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



Figure 1 – Harness described as "FAP15501G"



Figure 2 – Harness described as “100VMB-UN” (photo supplied by client)

Test Results

Table 1 – Testing of harnesses described as “FAP15501G” & “100VMB-UN” in accordance with ANSI Z359.11 – 2014

ANSI Z359.11 – 2014 Clause / Test	ANSI Z359.11 – 2014 Requirement	Result / Comment	UoM	Pass / Fail
3.1 Design Requirements	3.1.1 All FBHs shall permanently incorporate a dorsal attachment element.	Both harnesses incorporate a dorsal attachment element		PASS
	All FBHs may contain any combination of other elements but limited to those described in section 3.2	Not applicable – No other attachment elements		N/A
	3.1.2 All FBHs shall permanently include a load bearing sub-pelvic strap, except those described in 3.1.14	Both harnesses incorporate a sub-pelvic strap		PASS
	3.1.3 All shoulder straps on FBHs shall come together at the dorsal location and either cross, be connected by webbing that meets the requirements of section 3 or attach with a connector meeting Z359.12	Shoulder straps come together at the dorsal location and cross		PASS
	3.1.4 All FBHs shall permanently incorporate a waist belt or back strap, or other means of controlling the separation of the shoulder straps on the back of the FBH	A back strap is provided		PASS
	When the FBH is mounted onto the test torso, some portion of the back strap or waist belt shall be located between datum levels G and K	Back strap is positioned between datum points G and K on torso dummy		PASS
	3.1.5 Modular components or assemblies for FBHs designed for the removal of different attachment elements shall meet the specific attachment element requirements of section 3 while attached to a compatible FBH	Not applicable – No modular components present		N/A

ANSI Z359.11 – 2014 Clause / Test	ANSI Z359.11 – 2014 Requirement	Result / Comment	UoM	Pass / Fail
3.1 Design Requirements (continued)	3.1.5.1 Modular components shall be attached to the harness using connections that meet section 3 and those components shall have a minimum breaking strength of 5,000 pounds (22.2kN).	Not applicable – No modular components present		N/A
	If buckles are used, they must meet ANSI Z359.12 and at least be used in pairs	All hardware meets ANSI Z359.12		PASS
	3.1.5.2 When attached to the FBH, an attachment element extender shall be no longer than 24 inches (610mm).	Not applicable – No attachment element extender		N/A
	3.1.6 For FBHs integrated into a vest or other garment, the design of the garment shall allow visual inspection of the FBH	Not applicable – Harness is not integrated into garment		N/A
	3.1.7 All FBHs shall be equipped with a fall arrest indicator that will deploy during dynamic testing defined in section 3.2, when attached to the Dorsal element.	Fall arrest indicator provided which deployed for all tested in section 3.2	N/A	PASS
	All indicators shall be located where they can be visually inspected	Indicators can be inspected on the webbing below the Dorsal attachment point		PASS
	3.1.7.1 If fall arrest indicators are present on other attachment elements of the FBH, they must activate when tested in accordance with 4.3.6	Not applicable – No other attachment elements		N/A
	3.1.8 FBH with attached connecting subsystem combinations shall meet the requirements of ANSI Z359.11 for the FBH and the appropriate Z359 component standard for the attached sub-system(s) when tested respectfully	Not applicable – No connecting subsystem attached		N/A

ANSI Z359.11 – 2014 Clause / Test	ANSI Z359.11 – 2014 Requirement	Result / Comment	UoM	Pass / Fail
3.1 Design Requirements (continued)	3.1.9 All FBHs shall include retainers (keepers) or other components which serve to control the loose ends of straps	Retainers/keepers are present to help control loose ends of straps		PASS
	3.1.10 All FBHs shall include at least one lanyard parking attachment element having a disengagement load of not more than 120 pounds (0.5kN).	Lanyard parking attachments included Sample 1 – 0.34kN peak load Sample 2 – 0.34kN peak load Sample 3 – 0.35kN peak load See note 2		PASS
	3.1.11 It shall not be possible to remove elements of the FBH that support the shoulders/upper torso from those that support the legs/lower torso	No parts of both harnesses can be removed		PASS
	3.1.12 All single point attachment elements shall be located laterally within 2 inches (51mm) of the vertical centreline of the FBH	Attachment point is located within 2 inches of the vertical centreline of the harnesses	N/A	PASS
	3.1.13 Sternal attachments that consist of two elements intended to be connected at a single point for use shall be fixed and not adjustable vertically.	Not applicable – No sternal attachment point		N/A
	Both elements shall be clearly marked to only be used together	Not applicable – No sternal attachment point		N/A
	3.1.14 FBHs that do not include a sub-pelvic strap shall incorporate both frontal and sternal attachment elements, an integral waist belt and leg loop suspension straps, two at the front and two at the rear, all integrally attached to the waist belt	Not applicable – Harness includes a sub-pelvic strap		N/A

ANSI Z359.11 – 2014 Clause / Test	ANSI Z359.11 – 2014 Requirement	Result / Comment	UoM	Pass / Fail
3.2.1 Attachment Element Requirements - Dorsal	3.2.1 The dorsal attachment element shall be located as shown in figure 4 of ANSI Z359.11, and used as the fall arrest attachment, unless the application allows the use of an alternate attachment as defined in 3.2.2 or 3.2.3	Dorsal attachment point is located in the correct position		PASS
	3.2.1.1 The dorsal attachment may also be used in travel restraint or rescue	Dorsal attachment may be used for travel restraint or rescue		PASS
	3.2.1.2 When supported by the dorsal attachment during a fall, the design of the FBH shall direct load through the shoulder straps supporting the user around the thighs	When loaded the harness will pass the load down the shoulder straps and support the user around the thighs		PASS
	3.2.1.3.1 When tested for dynamic feet first, the FBH shall meet the following criteria: a) FBH shall not release the test torso b) FBH shall support the test torso for a period of 5 minutes post fall c) FBH shall support the test torso, post fall at an angle not greater than 30° to vertical d) At least one fall arrest indicator shall be deployed visibly and permanently e) FBH stretch shall not exceed 18 inches (457mm), or less if stated by manufacturer	Harness: FAP15501G <i>Feet first drop:</i> Dummy restrained by FBH and held for 5 minutes	See table 2	
		Angle of dummy from vertical: 7° Fall arrest indicator deployed and is visible: Yes FBH stretch: 100mm		PASS
		Harness: FAP15501G <i>Feet first drop:</i> Dummy restrained by FBH and held for 5 minutes		
		Angle of dummy from vertical: 1° Fall arrest indicator deployed and is visible: Yes FBH stretch: 180mm		PASS
		Harness: 100VMB-UN <i>Feet first drop:</i> Dummy restrained by FBH and held for 5 minutes		
		Angle of dummy from vertical: 3° Fall arrest indicator deployed and is visible: Yes FBH stretch: 200mm		PASS

ANSI Z359.11 – 2014 Clause / Test	ANSI Z359.11 – 2014 Requirement	Result / Comment	UoM	Pass / Fail
3.2.1 Attachment Element Requirements – Dorsal (continued)	3.2.1.3.2 When tested for dynamic head first, the FBH shall meet the following criteria: a) FBH shall not release the test torso b) FBH shall support the test torso for a period of 5 minutes post fall c) FBH shall support the test torso, post fall at an angle not greater than 30° to vertical d) At least one fall arrest indicator shall be deployed visibly and permanently	Harness: FAP15501G <i>Head first drop:</i> Dummy restrained by FBH and held for 5 minutes Angle of dummy from vertical: 5° Fall arrest indicator deployed and is visible: Yes		PASS
		Harness: FAP15501G <i>Head first drop:</i> Dummy restrained by FBH and held for 5 minutes Angle of dummy from vertical: 8° Fall arrest indicator deployed and is visible: Yes	See table 2	PASS
	3.2.1.3.3 When tested for static strength feet first, the FBH shall meet the following criteria: a) FBH shall not release the test torso b) Slippage through any adjuster shall not exceed 1 inch (25mm) c) The strap to which a buckle and eyelet adjuster is fitted shall not tear further than the eyelet adjacent to the one through which the tongue of the buckle originally passed or 1 inch if there is no adjacent eyelet d) Except for the straps of the buckle and eyelet adjusters, straps shall not allow any signs of tearing	Harness: 100VMB-UN <i>Head first drop:</i> Dummy restrained by FBH and held for 5 minutes Angle of dummy from vertical: 18° Fall arrest indicator deployed and is visible: Yes		PASS
		Harness: FAP15501G <i>Feet first static:</i> 3,600 pounds (16kN) sustained for 1 minute in the direction of the neck without release Slippage through adjusters: 0mm Eyelet adjusters included: Yes Eyelet adjuster tearing distance: 0mm Any sign of tearing of straps: No		PASS
		Harness: FAP15501G <i>Feet first static:</i> 3,600 pounds (16kN) sustained for 1 minute in the direction of the neck without release Slippage through adjusters: 0mm Eyelet adjusters included: Yes Eyelet adjuster tearing distance: 0mm Any sign of tearing of straps: No	± 3.498%	PASS
		Harness: 100VMB-UN <i>Feet first static:</i> 3,600 pounds (16kN) sustained for 1 minute in the direction of the neck without release Slippage through adjusters: 0mm Eyelet adjusters included: Yes Eyelet adjuster tearing distance: 0mm Any sign of tearing of straps: No		PASS

ANSI Z359.11 – 2014 Clause / Test	ANSI Z359.11 – 2014 Requirement	Result / Comment	UoM	Pass / Fail
3.2.1 Attachment Element Requirements – Dorsal (continued)	3.2.1.3.4 When tested for the fall arrest indicator test, at least one fall arrest indicator shall deploy visibly and permanently	Harness: FAP15501G Following 610mm free fall using ANSI Z359.13 6ft energy absorber, both fall indicators on dorsal attachment point deployed	± 0.712%	PASS
		Harness: FAP15501G Following 610mm free fall using ANSI Z359.13 6ft energy absorber, both fall indicators on dorsal attachment point deployed		PASS
		Harness: 100VMB-UN Following 610mm free fall using ANSI Z359.13 6ft energy absorber, both fall indicators on dorsal attachment point deployed		PASS

ANSI Z359.11 – 2014 Clause / Test	ANSI Z359.11 – 2014 Requirement	Result / Comment	UoM	Pass / Fail
3.3.1 Component Requirements – Load bearing straps	3.3.1.1 Straps shall not be less than 1-5.8 inches (41mm) in width	Webbing straps are 44mm in width		PASS
	3.3.1.2 When tested in accordance with reference 7.1.1, straps shall have a breaking strength not less than 5,000 pounds (22.2kN)	See INSPEC report 2.17.04.18 for results		PASS
	3.3.1.3 Straps shall be made from pure, non-recycled synthetic material having the strength, aging, abrasion and heat resistance characteristics equivalent or superior to polyamide or polyester. Synthetic materials other than those stated herein are permitted only when it can be demonstrated by testing that all requirements of this standard are met and additionally, that the durability, reliability and other properties pertinent to the intended uses have been evaluated and determined suitable by testing. Any restrictions on the use of such materials shall be marked on the FBH	Declaration provided stating that straps are made from pure and non-recycled polyester	N/A	PASS
	3.3.1.4 Straps shall be either hot cut, sealed, covered or stitched to prevent fraying	Straps are sealed and stitched to prevent unravelling		PASS
	3.3.1.5 After abrasion conditioning in accordance with reference 7.1.2, straps shall have a breaking strength of not less than 3,600 pounds (16.0kN) when tested in accordance with reference 7.1.1	See INSPEC report 2.17.04.18 for results		PASS
	3.3.1.6 Straps in contact with metal connectors at attachment elements and tongue buckles shall be protected from wear	Plastic sleeves and grommets used		PASS

ANSI Z359.11 – 2014 Clause / Test	ANSI Z359.11 – 2014 Requirement	Result / Comment	UoM	Pass / Fail
3.3.1 Component Requirements – Load bearing straps (continued)	3.3.1.7 The spacing between hole centres of adjacent eyelets for buckle and eyelet type adjusters used in FBHs shall be no more than 2 inches (50mm) and not less than 1-1/8 inches (29mm)	Harness FAP15501G only Spacing between hole centres is 43mm	N/A	PASS
3.3.2 Component Requirements – Thread and stitching	3.3.2.1 All thread shall be of the same material as the load bearing straps	Declaration provided stating that all threads used of the same material as the straps	N/A	PASS
	3.3.2.2 All stitching shall be lock stitched and be securely backstitched to prevent unravelling	Lock stitching and back stitching used		PASS
	3.3.2.3 All stitching used to connect load bearing members shall be contrasting in colour to the load bearing straps of the FBH to facilitate visual inspection	Yellow and black webbing used with black stitching		PASS
3.3.3 Component Requirements – Connecting components	3.3.3.1 All connecting components, except soft loop attachments, used for FBH construction shall conform to ANSI Z359.12	All hardware meets ANSI Z359.12	N/A	PASS
	3.3.3.2 Soft loop attachments may be used in place of metal connecting components at all FBH attachment element locations	Not applicable – No soft loop attachments		N/A
	3.3.3.3 Soft loop attachments shall be constructed using material that meets the requirements of section 3.3.1, excluding 3.3.1.1	Not applicable – No soft loop attachments		N/A
	3.3.3.4 Soft loop attachments shall include protection from wear over the entire inside surface	Not applicable – No soft loop attachments		N/A

ADDITIONAL INFORMATION / NOTES

Table 2 – Additional uncertainty of measurement information (see note 1)

Clause / Test	Test / Component	UoM
Dynamic performance feet first	Applied force (to test sample)	± 0.855%
	Angle measurement	± 0.161°
Dynamic performance head first	Applied force (to test sample)	± 0.894%
	Angle measurement	± 0.161°

Note 1 – 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 2 – Testing carried out under job SPC0283001/1913

TERMS AND CONDITIONS FOR THE SALE OF GOODS AND/OR THE PROVISION OF SERVICES

1. GENERAL

- 1.1 Work done, Services undertaken or the sale of Goods are subject to the terms and conditions detailed below and (subject to clause 5.2) all other conditions, warranties and representations, expressed or implied by statute relating thereto are hereby excluded.
- 1.2 SATRA Technology Centre Limited, its subsidiaries and associated companies (hereinafter referred to as "SATRA") may perform Services for or supply Goods to persons or entities (public, private or governmental) issuing instructions (hereinafter termed the "Client"). Each also known individually as a Party, or jointly as Parties.
- 1.3 These terms and conditions will apply to the Contract between SATRA and the Client to the exclusion of any other terms which the Client may seek to impose or which may be implied by trade, custom, practice or course of dealing
- 1.4 Unless otherwise agreed in writing no party other than the Client is entitled to provide instructions or information relating to the Goods or Services required or to the delivery of goods, results, reports or certificates.
- 1.5 All references in these terms and conditions to:
- (a) the "Contract" is the contract between SATRA and the Client for the supply of Goods or Services which is made subject to these terms and conditions; and
 - (b) "Services" are the work or services to be supplied or performed under the Contract (including where relevant the supply of software, components and consumables); and
 - (c) "Goods" are the equipment, consumables or other physical items sold under the Contract (including documents, drawings or other information required in order to operate the equipment).
- 1.6 All drawings, descriptive matter, specifications and advertising material (including brochures and catalogues) are issued or published with the sole purpose of giving an indication of the goods or services being described and shall not form part of the Contract.
- 1.7 Where SATRA and the Client agree that the sale of Goods shall be governed by Incoterms 2010 (or any subsequent revision thereto) then the sale shall be governed by the relevant Incoterms mode of transport which is agreed by SATRA and the Client.

2. FEES AND PAYMENT

- 2.1 Where SATRA has agreed to perform the Services or supply the Goods on the basis of credit then payment terms are net 21 days from date of invoice, unless otherwise specified and may require part payment prior to delivery of the Services or Goods. In the event of the Client failing to make payment as agreed SATRA will be entitled to withhold delivery of the Goods or Services or cancel the Contract. SATRA reserves the right to charge interest on any overdue payments at a rate of 1.5% per month accruing on a daily basis from the date the invoice is due until the date payment is received.
- 2.2 Where the provision of Services or the sale of Goods is subject to a proforma invoice then SATRA shall not be obliged to start working on the provision of the Goods or Services until after payment in full has been made as cleared funds to SATRA.
- 2.3 SATRA reserves the right to charge for any and all expenses incurred as a result of performing the Services required by the Client. Although SATRA will try and provide an estimate of such expenses these may change as a result of circumstances out of SATRA's control.
- 2.4 Unless otherwise agreed in writing, the price for the Goods or Services shall be the price set in the order acknowledgement. SATRA shall not be bound by any price quoted which is not in writing. Prices for the sale of Goods include packing cases and materials but not carriage or installation which will be quoted separately and as agreed with the Client.
- 2.5 Quotations are valid from the date of issue for a period of 90 days unless otherwise specified or agreed in writing.
- 2.6 Should the Client become insolvent, bankrupt, subject to an administration order, enter into liquidation or receivership, or make arrangements with creditors SATRA reserves the right to cancel the Contract and terminate the supply of the Goods or Services. Where the Contract with SATRA is terminated all outstanding monies due from the Client to SATRA shall be immediately payable, and any materials supplied by SATRA to the Client returned. Termination of the Contract shall be without prejudice to any of SATRA's accrued rights.
- 2.7 All invoices issued by SATRA are payable in full. The Client is responsible for payment of withholding and any other taxes and all import duties. Payments made to SATRA shall not be reduced by such amounts.
- 2.8 The Client shall not be entitled to withhold or defer payment due to SATRA as a result of any dispute or counter claim that it may allege against SATRA.
- 2.9 SATRA reserves the right to bring action against the Client in order to collect unpaid fees, including court action. All fees associated with such actions shall be paid for by the Client including legal fees and related costs.
- 2.10 Where unforeseen costs arise as a result of provision of the Goods or carrying out the Services SATRA shall inform the Client immediately but reserves the right to charge additional costs to cover said costs and expenses.

3. INTELLECTUAL PROPERTY RIGHTS

- 3.1 All intellectual property rights belonging to a Party prior to entry into the Contract shall remain with that Party. Nothing in this Contract shall allow transfer of any intellectual property rights from one Party to the other.
- 3.2 In the event of certification services the use of certification marks by the Client may be subject to national and international laws and regulations. The responsibility for the use of these certification marks lies solely with the Client.
- 3.3 All intellectual property rights in reports, drawings, graphs, charts, photographs or any other material (in whatever medium) produced by SATRA pursuant to this Contract shall belong to SATRA. The Client shall have the right to use said material in accordance with the terms of this Contract.
- 3.4 The Client agrees and acknowledges that SATRA retains any and all propriety rights in concepts, ideas and inventions that may arise during the preparation or provision of any report (including any deliverables provided by SATRA to the Client) and the provision of the Services to the Client.
- 3.5 All intellectual property rights in any software supplied to the Client shall belong to SATRA or SATRA's licensors. With respect to the sale of SATRA Timeline, SATRASUMM and SATRA Visionsstitch, provided that the Client is a member of SATRA and has paid its annual Smartcare fee then the Client will be entitled to use the software for its own internal use and will be entitled to receive minor software upgrades and fixes. SATRA may however terminate the supply of software upgrades and fixes for older versions of software which it no longer considers viable to support. The Client's rights to use the software and receive software upgrades and fixes will terminate if the Client has not paid its annual Smartcare fee. Major upgrades are not included within the entitlement to upgrades but may be offered by SATRA from time to time for an additional fee.
- 3.6 SATRA shall observe all statutory provisions with regard to data protection including but not limited to the provisions of the Data Protection Act 1998. To the extent that SATRA processes or gets access to personal data in connection with the Services or otherwise in connection with this Contract, it shall take all reasonable technical and organisational measures to ensure the security of such data (and guard against unauthorised or unlawful processing, accidental loss, destruction or damage to such data).

4. SUSPENSION OR TERMINATION OF SERVICES

- 4.1 Cancellation by the Client of orders for Goods or Services will only be acceptable by prior agreement with SATRA and a charge will usually be made.
- 4.2 SATRA shall not be liable for any delay or failure in providing the Goods or Services due to circumstances beyond its reasonable control (including any failure by the Client to comply with its obligations). If any such circumstances arise which prevent SATRA from delivering the Goods or completing the Services, then SATRA will be entitled to cancel or reschedule the delivery of Goods or Services at its discretion. In the event of cancellation SATRA will be entitled to retain all fees paid by the Client for Goods or Services already supplied but will refund to the Client any fees paid by the Client for Goods or Services which have not yet been supplied. The Client will not be liable for any non-refundable expenses already incurred by SATRA in relation to Goods or Services not yet supplied unless the cancellation is due to the Client's failure to comply with its obligations under the Contract.

5. LIABILITY AND INDEMNIFICATION

- 5.1 Reports are issued on the basis of information, documents and or samples submitted to SATRA by the Client, or on behalf of the Client and are provided solely for the benefit of the Client who is responsible for acting as it sees fit on the basis of such reports and findings. Subject to clause 5.2, neither SATRA nor any of its employees, agents or subcontractors shall be liable to the Client or any third party for any actions taken or not taken on the basis of such findings and reports, nor for any incorrect results arising as a result of unclear, erroneous, incomplete, misleading or false information provided to SATRA.
- 5.2 Nothing in these terms and conditions shall limit or exclude SATRA's liability for:
- (a) death or personal injury caused by its negligence or the negligence of its employees or agents;
 - (b) fraud or fraudulent misrepresentation;
 - (c) breach of the terms implied by Section 12 of the Sale of Goods Act 1979;
 - (d) defective products under the Consumer Protection Act 1987; or
 - (e) any other liability which cannot be limited or excluded by applicable law.
- 5.3 Subject to clause 5.2 SATRA shall not be liable to the Client whether in contract, tort (including negligence), breach of statutory duty or otherwise arising under or in connection with the Contract for loss of profits, sales, contracts, anticipated savings, loss or damage to goodwill or any indirect or consequential loss.
- 5.4 Subject to clause 5.2 SATRA's total aggregate liability to the Client, whether in contract, tort (including negligence), breach of statutory duty or otherwise arising under or in connection with the Contract shall be limited to the total amount of fees for the Services or the price of the Goods (excluding any value added tax or other sales tax or expenses) payable by the Client to SATRA under the Contract or £100,000 whichever is the lower figure.

6. MISCELLANEOUS

- 6.1 If any one or more provisions of these conditions are found to be illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.
- 6.2 During the course of providing the Goods or Services and for a period of one year thereafter the Client shall not directly or indirectly entice, encourage or make any offer to SATRA's employees to leave their employment with SATRA.
- 6.3 The use of SATRA's corporate name or registered marks for advertising purposes is not permitted without SATRA's prior written authorisation.
- 6.4 All reports and documentation which are supplied to the Client under the Contract remain the property of SATRA until paid in full. Under no circumstances will a Client's purchase order override SATRA's retention of title in accordance with this clause.
- 6.5 The Client acknowledges that in entering into this Contract it has not relied on any representation, warranty, collateral contract or other assurance (except those set out or referred to in these terms and conditions) made by or on behalf of SATRA or any other party before entering into the Contract. The Client waives all rights and remedies that, but for this clause, might otherwise be available to it in respect of any such representation, warranty, collateral contract or other assurance.
- 6.6 All provisions of the Contract that limit or exclude the liability of SATRA are intended also to be for the benefit of SATRA's holding company (called SATRA, and being a company limited by guarantee and incorporated in England and Wales with company number 00153475), and shall accordingly be enforceable by such holding company as well as or instead of by SATRA, and on the basis that any limit on the liability of SATRA shall apply to it and to such holding company in the aggregate.

7. CONFIDENTIALITY

- 7.1 Unless specifically excluded in the terms of an individual contract between SATRA and the Client, the following shall apply to all deliverables including, reports, advice, drawings, photographs, specifications, data or other forms of media.
- 7.2 Deliverables referred to in clause 7.1 shall not be disclosed to third parties or used in litigation without the consent of SATRA.
- 7.3 Where SATRA has given consent to disclosure of any service deliverables referred to in clause 7.1, the Client shall draw the attention of the third party to these terms of business and the basis on which SATRA undertakes testing, reporting and advising. The Client shall indemnify SATRA for any failure to do so.
- 7.4 The service deliverables referred to in clause 7.1 are submitted to the Client as confidential documents. Confidentiality shall continue to apply after completion of the business, but shall cease to apply to information or knowledge which has come into the public domain through no breach of this Contract by the Client.
- 7.5 The Client shall not disassemble, remove parts or carry out any form of analysis on goods or materials sold by SATRA for the purposes of reverse engineering or obtaining information on the construction, content or composition of the item without the consent of SATRA.

8. AMENDMENT

- 8.1 No amendment to this Contract shall be effective unless it is in writing, expressly stated to amend this Contract and signed by an authorised signatory of both Parties.

9. DISPUTE RESOLUTION

- 9.1 If there should be a dispute between the parties to this Agreement they undertake to act with goodwill and to use all reasonable endeavours to resolve that dispute.
- 9.2 Failure to resolve any dispute by discussions between the parties shall, in the first instance, be referred to a mediator for resolution. The parties shall attempt to agree upon the appointment of a mediator, upon receipt, by either of them, of a written notice to concur in such appointment. Should the parties fail to agree within 21 days, either party, upon giving written notice, may apply to the President or the Vice President, for the time being, of the Chartered Institute of Arbitrators, for the appointment of a mediator.
- 9.3 Should the mediation fail, in whole or in part, either party may, upon giving written notice, and within twenty-eight days thereof, apply to the President or the Vice President, for the time being, of the Chartered Institute of Arbitrators, for the appointment of a single arbitrator, for final resolution. The arbitrator shall have no connection with the mediator or the mediation proceedings, unless both parties have consented in writing. The arbitration shall be governed by both the Arbitration Act 1996 and the Controlled Cost Rules of the Chartered Institute of Arbitrators (2000 Edition), or any amendments thereof, which Rules are deemed to be incorporated by reference into this clause. The seat of the arbitration shall be England and Wales.

TERMS AND CONDITIONS FOR THE SALE OF GOODS AND/OR THE PROVISION OF SERVICES

- 9.4 The laws of England shall govern the interpretation of this Contract. Subject to clauses 9.1, 9.2 and 9.3 any dispute arising out of or in connection with the Contract shall be subject to the exclusive jurisdiction of the courts of England. However, the Party obtaining a judgement in such courts shall be entitled to enforce it in any court it chooses.
- 10. PROVISION OF SERVICES**
- 10.1 SATRA shall provide Services using reasonable care and skill and in accordance with the Clients specific instructions and as confirmed by SATRA as part of the Contract review process.
- 10.2 Estimates for completion of the Services are made in good faith and date from receipt of a written order, payment of a proforma invoice if required, full information and samples to enable SATRA to proceed. While SATRA will make every effort to fulfil them, such estimates are subject to unforeseen events and if not achieved, cannot give rise to any claim. Time will not be of the essence in relation to the performance of the Services.
- 10.3 Results given in test reports or certificates refer only to samples submitted for analysis to 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.
- 10.4 SATRA may delegate all or part of the Services to a subcontractor and the Client authorises SATRA to disclose all information required to undertake the Services.
- 10.5 Where the Client requests SATRA to witness testing of other services being undertaken by a third party the Client agrees that SATRA's sole responsibility is to be present at the time of the work and to forward the results or confirm that the service has been undertaken. The Client agrees that unless otherwise agreed SATRA is not responsible for the condition or calibration of any equipment unless provided by SATRA.
- 10.6 Unless otherwise agreed in advance, test samples will be retained for 6 weeks from the date of the final report after which time they will be disposed of and SATRA shall cease to have any responsibility for such samples.
- Where the nature of the samples or the Services undertaken results in specialist disposal then SATRA reserves the right to pass the cost of such disposal onto the Client. Storage for longer periods may be possible only if agreed in advance and may incur a storage charge payable by the Client.
- Where practical and agreed in advance, samples may be returned at the Client's expense. However, samples are in most instances partially or fully destroyed as part of the work undertaken and SATRA cannot guarantee that samples will be returned in an "as new" condition.
- 10.7 Where SATRA receives documents reflecting engagements between the Client and third parties or documents belonging to third parties, such documents shall be considered as being for information only and shall not release the Client from any or all obligations to SATRA.
- 10.8 SATRA reserves the right to make changes to the Services, provided that such changes do not materially affect the nature or quality of the provision of these Services or where they are necessary in order to ensure that any applicable laws or safety requirements are complied with.
- 10.9 The Client acknowledges that SATRA by providing the Services, neither takes the place of the Client or any third party or releases them from any of their obligations.
- 11. CLIENT RESPONSIBILITIES RELATING TO THE PROVISION OF SERVICES**
- 11.1 The Client shall provide sufficient samples, information, instructions and documents as required to enable SATRA to carry out the Services in accordance with the methods, standards or other specifications as agreed.
- 11.2 Where applicable the Client shall allow access by members of SATRA staff to such premises where the Services are to be performed and provide any specialist equipment and personnel.
- 11.3 The Client shall inform SATRA in advance of any known hazards, dangers or other safety matters relating to samples submitted to SATRA or on site visits made by SATRA.
- 11.4 Where the Client fails to comply with any of its responsibilities SATRA reserves the right to suspend any Services until such time as the Client has complied and may require the Client to reimburse SATRA the amount of any additional costs arising from the suspension.
- 12. DELIVERY AND NON-DELIVERY OF GOODS**
- 12.1 Delivery dates for the supply of the Goods are approximate only and not guaranteed. Time of delivery is not of the essence of the Contract and SATRA shall not be liable for any delay in delivery of Goods.
- 12.2 Should expedited delivery be requested and agreed, SATRA shall be entitled to make additional charges to cover overtime or any other additional costs.
- 12.3 Delivery of the Goods shall take place at such location as SATRA and the Client agree. If the Client agrees to collect the Goods from SATRA's premises, then delivery will take place at those premises in which case the consignment of Goods as recorded by SATRA upon dispatch shall be evidence of the Goods received by the Client unless the Client can provide conclusive evidence to the contrary.
- 12.4 SATRA shall not be liable for the non-delivery of Goods (even if caused by SATRA) unless the Client provides written notice of non-delivery in accordance with clause 13.2. Liability for non-delivery of Goods shall in any event be limited to replacing the Goods within a reasonable time frame or the issue of a credit note to the value of the Goods not delivered.
- 12.5 Should delivery of the Goods be suspended or delayed by the Client for any reason SATRA reserves the right to charge for storage and for all expenses incurred, including loss of or wastage of resources that cannot otherwise be used. If the delay extends beyond 30 days SATRA shall be entitled to immediate payment for any Goods that are ready for delivery, and any other additional costs.
- 12.6 If for any reason the Client fails to accept delivery of any of the Goods when they are ready for delivery, or SATRA is unable to deliver the Goods on time because the Client has not provided appropriate instructions, documents, licenses or authorisations then risk in the Goods shall pass to the Client, the Goods and/or Services shall be deemed to have been delivered; and SATRA may store the Goods until delivery, whereupon the Client shall be liable for all related costs and expenses (including, without limitation, storage and insurance).
- 13. RISK/TITLE OF GOODS**
- 13.1 Subject to clause 12.6 the risk in the Goods will transfer to the Client on delivery of the Goods unless SATRA and the Client have agreed that the sale of the Goods will be governed by Incoterms 2010 (or any subsequent revision thereto) in which case risk will transfer to the Client in accordance with the Incoterms mode of transport which is agreed by SATRA and the Client.
- 13.2 The Company shall not accept responsibility for loss or damage in transit unless:
- In the case of sales where delivery of Goods is made in the United Kingdom SATRA is notified by the Client within 10 days of the invoice date of non-arrival of Goods and within 3 days of the invoice date of receipt of Goods damaged in transit; or
 - In all other cases the Client notifies SATRA on the non-arrival or damage in transit within a reasonable period of time as determined by SATRA.
- 13.3 Title to the Goods shall not pass to the Client until the earlier of when: -
- SATRA receives payment in full (in cash or cleared funds) for the Goods and any other Goods that SATRA has supplied to the Client in which case title to the Goods shall pass at the time of payment of all such sums; and
 - the Client resells the Goods in accordance with clause 13.5 in which case title shall pass to the Client immediately before the time at which the resale by the Client occurs.
- 13.4 Until ownership of Goods has passed to the Client, the Client shall:
- hold the Goods as SATRA's bailee;
 - store the Goods (at no cost to SATRA) separately from all other goods belonging to the Client or any third party in such a way that they remain readily identifiable as SATRA's property (including where the Goods have been sold to a 3rd party);
 - not destroy, deface or obscure any identifying mark or packaging on or relating to the Goods; and
 - maintain the Goods in satisfactory condition and keep them insured on SATRA's behalf for their full price against all risks to the reasonable satisfaction of SATRA. The Client shall obtain an endorsement of SATRA's interest in the goods on its insurance policy. On request the Client shall allow SATRA to inspect such Goods and shall produce the policy of insurance.
- 13.5 The Client may resell the Goods before ownership has passed to it solely on condition that sale shall be effected in the ordinary course of the Client's business at full market value.
- 13.6 If before title to the Goods passes to the Client, the Client becomes subject to any of the events referred to in clause 2.6 then without limiting any other right or remedy SATRA may have:
- the Client's right to resell the Goods or use them in the ordinary course of its business ceases immediately; and
 - SATRA may at any time require the Client to deliver up all Goods in its possession that have not been resold or irrevocably incorporated into another product; and
 - if the Client fails to do so promptly SATRA may exercise its rights under clause 13.7.
- 13.7 The Client grants SATRA, its agents and employees an irrevocable licence at any time to enter any premises where the Goods are or may be stored in order to inspect them, or, where the Client's right to possession has terminated, to recover them.
- 13.8 On termination of the Contract, howsoever caused, SATRA's (but not the Client's) rights contained in this clause 13 shall remain in effect.
- 14. PATENTS**
- 14.1 SATRA gives no indemnity against any claim of infringement of Letters Patent, Registered Design, Trade Mark or Copyright by the use of or sale of any article or material supplied to the Client. If its use is impossible without infringement of Letters Patent, Registered Design, Trade Mark or Copyright published at the date of the contract, SATRA will refund to the Client the purchase price of the said article or material provided that it is returned to SATRA free of charge. The Client warrants that any design or instruction furnished or given by the Client shall not be such as will cause SATRA to infringe any Letters Patent, Registered Design, Trade Mark or Copyright in the execution of the Client's order.
- 15. WARRANTY OF GOODS**
- 15.1 SATRA warrants that on delivery and for a period of 12 months from the date of delivery or within the shelf life of the Goods (whichever is the shorter period) the Goods shall be free from defects in design, material and workmanship.
- 16. DEFECTIVE GOODS**
- 16.1 Subject to clauses 16.6 and 16.7 if:
- the Client gives notice in writing to SATRA in accordance with clause 16.3 and during the period referred to in clause 15.1 that the Goods do not comply with the warranty in that clause; and
 - SATRA is given a reasonable opportunity of examining such Goods; and
 - the Client (if asked to do so by SATRA) returns such Goods to SATRA's place of business then SATRA will, at its option, repair or replace the defective Goods or refund the price of the defective Goods in full. SATRA reserves the right to repair the Goods at the Client's premises.
- 16.2 The Client must inspect all Goods upon delivery. Failure to do so may result in further charges being applied in the event of a return.
- 16.3 If Goods are found to be faulty, defective or damaged the Client must inform SATRA in writing as soon as reasonably possible and in any event within 10 working days of the fault, damage or defect being discovered.
- 16.4 Without prejudice to clause 16.1 if no notice of rejection has been received by SATRA within 3 months of delivery, the Client shall be deemed to have accepted the Goods.
- 16.5 SATRA will pay the reasonable costs of carriage, packaging and insurance for any defective Goods which are returned by the Client provided that SATRA is liable under clause 16.1 to repair or replace the defective Goods. If SATRA determines that the Goods are not defective or if SATRA is not liable to repair or replace the Goods due to the circumstances under clauses 16.6 or 16.7 then the Client will be responsible for the payment of such costs.
- 16.6 SATRA shall not be under any liability to repair or at its option replace or pay for the repair or replacement of any Goods which are found to be defective if:
- the defect is caused or substantially caused by wear and tear, overloading, misuse, neglect, modification or attempted modification carried out by any organisation other than by SATRA or their approved agents, or use with ancillary equipment not approved in writing by SATRA, or default in proper maintenance or cleaning; or
 - the Client authorises or carries out any repair or replacement of any Goods without first affording SATRA a reasonable opportunity to replace or repair them; or
 - the Client has breached any of the terms of the Contract under which the Goods were supplied; or
 - the Goods have been manufactured to a design or specification or in compliance with other information provided by the Client and the defect has arisen as a result of that design, specification or information;
- 16.7 Where Goods or parts of Goods are not manufactured by SATRA then SATRA shall be liable for defects only to the extent that SATRA obtains redress from the manufacturer or supplier thereof provided that:
- SATRA shall not be obliged to take any step to attempt to obtain such redress except at the request and expense of the Client and upon provision by the Client of a full indemnity as to costs for which SATRA may thereby become liable;
 - nothing in this condition 16.7 shall have effect as to impose upon SATRA any additional liability or obligations other than those referred to in condition 16.1.
- 16.8 Except as provided in clause 16.1 SATRA shall have no liability to the Client arising from any failure of the Goods to comply with the warranty in clause 15.1.

Terms and conditions – December 2016