



Notified Body 0321

Issued to: WeeTect Material Limited
#2 Building, East Jiangtian Road No. 92
Song Jiang
Shanghai
China

SATRA Client: P1306

EC Type-Examination Certificate

Number 6511 Issue 2

Date of first issue: 26th June 2013

This is to certify that the product group referenced WT-V100 Series comprising the following products

Product Reference	Description
WT-V100 Series	Foam lined Ice Hockey helmet available in white or black PP Can be used with a clear polycarbonate face guard (hockey visor) or a metal cage faceguard Sizes: Medium: 55 – 57 cm Large: 57 – 59 cm

Technical reports

SATRA: SPC0211187/1303, SPC0214349/1319/RS

SP Technical Research Institute: PX23807, PX23807A Issue 2, 4P00675

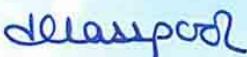
has been subject to an EC Type-examination in accordance with Article 10 of the PPE Directive (89/686/EEC) and has been shown to satisfy the relevant provisions of this Directive for the Intermediate category through:

- i Testing to the following standard: EN ISO 10256:2003
- ii Examination of the relevant technical documentation.

You are therefore licensed to mark the product(s) listed above in accordance with Article 13 of Directive (89/686/EEC) and any relevant amending Directives once you have drawn up an EC declaration of product conformity. Please note that:

1. Full details of the certification and product are contained in the manufacturer's technical file
2. This certificate is only valid if embossed with the text – "SATRA – European Notified Body 0321"
3. This certificate is issued subject to the conditions on the reverse side of this certificate

Signed:  (G Graham)

Signed: 

Date: 21st March 2014

On behalf of SATRA

SATRA Technology Centre Ltd
Wyndham Way, Telford Way Industrial
Estate
Kettering, Northants
NN16 8SD
Storbritannien

Type test of an eye protector according to SS-EN ISO 10256:2004 (2 appendices)

Conclusion

An eye protector fitted to two different sizes of an ice hockey helmet has been tested in accordance with SS-EN ISO 10256:2004. The eye protector fulfilled the requirements.

NOTE: The helmets used in this test have not been tested by SP and it is not known whether they fulfil SS-EN ISO 10256:2004 or not.

1 Introduction

At the request of SATRA Technology Centre Ltd, a type test of an eye protector for ice hockey helmets in accordance with SS-EN ISO 10256:2004 *Head and face protection for use in ice hockey*, has been performed.

2 Test object

Designation:	Helmet WT-V100 Series. A separate designation for the protector is not known by SP.
Size:	Identical eye protector attached to both helmet sizes.
Helmet sizes:	Medium and Large.
Description:	Eye protector (visor) for ice hockey players. The material is transparent plastic with a 3 mm thickness. There are 4 mounting slots to adjust the position of the visor, see photos 1 – 2 below The eye protector was delivered in one size mounted on helmets in two sizes (M and L).
Selection of test objects:	The test objects were delivered at SP by SATRA Technology Centre Ltd. The test objects have been selected by the client without SP's assistance.
Arrival date SP:	January 13, 2014.

SP Technical Research Institute of Sweden

Postal address	Office location	Phone / Fax / E-mail
SP Box 857 SE-501 15 BORÅS Sweden	Västeråsen Brinellgatan 4 SE-504 62 BORÅS	+46 10 516 50 00 +46 33 13 55 02 info@sp.se

Laboratories are accredited by the Swedish Board for Accreditation and Conformity Assessment (SWEDAC) under the terms of Swedish legislation. This report may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

3 Test method and accomplishment

Test method: SS-EN ISO 10256 *Head and face protection for use in ice hockey*, clause 5.4
Special requirements for eye protectors.

Test date: 20 February – 7 March, 2014.

Test site: SP Structural and Solid Mechanics' and SP Measurement Technology's
laboratories in Borås.



Photo 1. Tested sample, helmet size Medium



Photo 2. Tested sample

4 Test results

The test results shown in this report refer only to the tested objects.

4.1 Puck-impact resistance (SS-EN ISO 10256, clause 5.4.3)

When tested in accordance with SS-EN ISO 10256, clause 6.8, the eye protector or the puck did not touch the headform during the contact test, see table 1 below.

During the contact tests and the toughness test there were no chips, cracking or breakage of the eye protector. The eye protector did not or separate from the helmet.

During the toughness test the liner inside the helmet broke into pieces and detached from the helmet, see photos in appendix 1.

The plastic chin strap buckle broke during the toughness test and released the chin strap, see photos in appendix 1.

Requirements fulfilled for the eye protector.

Table 1 Test results

Sample No.	Helmet Size	CSA Headform	Test	Conditioning temperature	Impact site	Puck velocity [m/s]	Result
L1	Large	Adult male 50th %-ile	Contact	Ambient	Eye	10.3	No contact
L2	Large	Adult male 50th %-ile	Toughness	Low temp	Eye	28.5	No breakage of the visor
M1	Medium	Juvenile male	Contact	Ambient	Eye	10.2	No contact

4.2 Scotomas (SS-EN ISO 10256, clause 5.4.4)

There were no overlapping bilateral scotomas in the peripheral field of vision, see appendix 2 for the graph.

Requirements fulfilled.

4.3 Optical quality (SS-EN ISO 10256, clause 5.4.5)

4.3.1 Visual inspection (SS-EN ISO 10256, clause 5.4.5.1)

No localized power errors, aberrations or lens defects were observed.

Requirements fulfilled.

4.3.2 Eye-protector requirements (SS-EN ISO 10256, clause 5.4.5.2)

a) The lens was examined using the method described in Annex C and the definition was sufficient to permit resolution of a 240 s ring.

b) The luminous transmittance within the optical quality field of vision was measured to 89 %.

c) The prism imbalance within the field of view of one eye was measured to 0.2 - 0.4 dioptres. The prism imbalance for two eyes (62 mm distance) was measured to 0.5 dioptres.

d) The haze was measured to less than 0.5 % within the optical quality field of vision.

Requirements fulfilled.

5 Measurement uncertainty

The measurement uncertainty for the tests is shown in Table 2. The reported expanded uncertainty of measurement is stated as the combined standard uncertainty of measurement multiplied by the coverage factor $k = 2$, which corresponds to a coverage probability of approximately 95%.

Table 2 The measurement uncertainty of measured value

Clause in SS-EN ISO 10256	Measurement	Uncertainty
5.3.3 Puck impact test	Impact velocity	< 2 %
5.3.4 Scotomas	Luminous intensity	± 5 %
	Angle	±0.1°
5.3.5 Optical quality	Luminous transmittance	±2 %
	Prism imbalance	±0.2 dioptres
	Haze	±0.2 %

SP Technical Research Institute of Sweden
SP Structural and Solid Mechanics - Safety and Function

Performed by



Mikael Videby

Examined by



Klas-Gustaf Andersson