



# EC TYPE EXAMINATION CERTIFICATE

**CERTIFICATE NUMBER: 1170 ISSUE 1**

THIS EC TYPE EXAMINATION CERTIFICATE IS ISSUED  
TO:

**E M ORIGINAL  
S-56182 HUSKVARNA  
SWEDEN**

IN RESPECT OF:

**MODELS:**

**10,16 & 20 CM POLYCARBONATE VISORS  
HELMET & EARMUFF MOUNTED.**

ON THE BASIS OF OUR EXAMINATION, UNDER THE  
REQUIREMENT OF ARTICLE 10 OF COUNCIL DIRECTIVE  
89/686/EEC AS AMENDED BY COUNCIL DIRECTIVES  
93/68/EEC AND 93/95/EEC, AS RECORDED IN REPORT,  
NO. 0086 : 96 : 0286

FOR AND ON BEHALF OF THE BRITISH STANDARDS  
INSTITUTION, NOTIFIED BODY NUMBER 0086.

SIGNED FOR AND ON BEHALF OF BSI PRODUCT  
CERTIFICATION.

DIRECTOR

DATE: 14 FEBRUARY 1996





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## CONTINUATION SHEET

CERTIFICATE NUMBER: 1170 ISSUE 1

DATE: 14.02.96

### PRODUCT SPECIFICATION

#### DESCRIPTION

THE 10,16 OR 20CM POLYCARBONATE VISORS CAN BE FITTED IN THE COMBINATIONS SHOW BELOW.

1. 10,16 OR 20CM POLYCARBONATE VISOR  
MOUNTED ON EM ORIGINAL 5056990-12, 5049802-00  
5056856-04, 5056653-04, 5049817-10, 5056853-04,  
HEADBAND MOUNTED EARMUFFS.
2. 10,16 OR 20CM POLYCARBONATE VISORS MOUNTED ON  
BALANCE AC AND BALANCE ABS INDUSTRIAL SAFETY  
HELMETS WITH EM ORIGINAL 5056653-25, 5049817-03,  
5056853-25, HELMET MOUNTED EARMUFFS.

THE ABOVE POLYCARBONATE VISORS PROVIDE PROTECTION AGAINST IMPACT, INCLUDING LATERAL PROTECTION WHEN TESTED USING A 6.35MM DIAMETER STEEL BALL WITH AN IMPACT OF  $45.0 \pm 1.5/-0.0$  M/S.

THE 20CM POLYCARBONATE VISOR, WHEN FITTED TO THE BALANCE AC AND BALANCE ABS INDUSTRIAL SAFETY HELMETS ALSO PROVIDES PROTECTION AGAINST MOLTEN METAL & HOT SOLIDS AND AGAINST DROPLETS & SPLASHES OF LIQUID.





# REPORT

REPORT

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Sida / Page

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Translation

## Testing of face-shields

SP Swedish National Testing and Research Institute has performed testing of fogging and abrasion on Your face-shield.

### Identification

Date of arrival: Octobre 18, 2000

Status of the test object: Without complaint

Your reference: Mats Lindgren/October 16, 2000

Date of tests: November- December 2000, April 2001-05-20.

### Measurement conditions

The tests are performed in a laboratory with the temperature  $23\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ .

### Test method

The methods are in applicable parts according to European Standard EN 168. The requirements are those given in European standard EN 166. The fogging test is also made according to the method described in SP report No 1996:14, where the face-shield is placed on a dummy head.

The abrasion tests are made with brushes and cleaning sponges and falling sand. The face-shield has been tested for abrasion together with other eye protectors in a Project sponsored by the Swedish Board for Emploies Safety at Work. (SP Report 2000:22).

### Requirements according to EN 166

Fogging during 8 s: No.

After abrasion: Reduced luminance factor  $\leq 5\text{ cd}\cdot\text{m}^{-2}\cdot\text{lux}^{-1}$ .





## RAPPORT

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## Test result

The test result for fogging is presented in Table No 1 and for abrasion in Table No 2.

Table No 1: Fogging

Test object	Time to fogging	Demand
G36 - G44 inside	> 5 min	> 8 s
G36 - G44 outside	2-3 s	> 8 s

The measured values of the inside of the face-shield fulfil the requirement in EN 166.

Table No 2: Abrasion

Test object	Measured diffuseness in $\text{cd}\cdot\text{m}^{-2}\cdot\text{lux}^{-1}$			
	Brush	Fine sponge	Hard sponge	Sand
G36 - G44 outside	0,23	0,18	0,46	2,08
G36 - G44 inside	0,43	0,39	0,95	3,52

The measured values of the outside of the face-shield fulfil in applicable parts the present requirements.

## Comment

The face-shield has good qualities of the inside regarding fogging. No fogging was observed by the method of EN 168 or the SP "dummy head"-method during an exposure of 5 minutes.

The outside of the face-shield has good qualities regarding abrasion for all tested methods and was classified in the best Class 1 according to SP report No 2000:22. The inside of the face-shield is not so good and was classified in the lowest Class 3. The corresponding classification according to EN 166 shows that the outside has good resistance for abrasion and the measurement of diffuseness values are well below the requirement of  $5 \text{ cd}\cdot\text{m}^{-2}\cdot\text{lux}^{-1}$ .

## Remark

The measured results are only valid for the tested objects.

SP Swedish National testing and Research Institute  
Measurement Technology, MTo

Gösta Werner  
Technical manager

This is a translation from the Swedish original document. In the event of any dispute as to the content of the document, the Swedish text shall take precedence.

Borås May 29, 2001

SP Swedish National testing and Research Institute  
Measurement Technology, MTo

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