

APPLICATION FOR DIRECTIVE 89/686/EEC
On Personal Protective Equipment (PPE)
On Behalf of
AMAN SAFETY LTD.
Welding Goggles
Model No.: ASL-04



Dongguan ESTEK Services Co.,Ltd.

**APPLICATION FOR DIRECTIVE 89/686/EEC
On Personal Protective Equipment (PPE)
On Behalf of
AMAN SAFETY LTD.
Welding Goggles
Model No.: ASL-04**

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Technical Construction File

File No.: Welding Goggles

According to
Directive 89/686/EEC
On Personal Protective Equipment (PPE)

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Part I: General

1.1 General description:

Description of the product:

The Welding Goggles manufactured by AMAN SAFETY LTD. has been designed and sold for many years. The goggles were equipped with imported polycarbonate oculars, with such characteristics that: good field of vision, resistance to ageing and ultraviolet radiation. The goggles would not cause discomfort or injury of wearer during normal use and no parts of the goggles provided would cause skin irritation. The headbands of the goggles were at least 10mm width and self-adjusting. The color of frames and headbands were alternative.

Manufacturer name, Address Tel. & Fax no.

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Product Name

Welding Goggles

Model No.

ASL-04

Photographs

Refer to the enclosed products brochures.

Operating Environment:

The product is used for personal eyes protection and could meet the Directive 89/686/EEC On Personal Protective Equipment (PPE)

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In order to ensure the conformity for CE marking for this **Welding Goggles**, some of the main European and /or International standards have been used to made assessment of conformity, see below:

- EN 166:2001(E) Personal eye-protection: Specification
- EN 167:2001(E) Personal eye-protection: Optical test methods
- EN 168:2001(E) Personal eye-protection: Non-optical test methods
- EN 175:1997 Personal protection- Equipment for eye and face protection during welding and allied processes

The test reports for these applicable standards in detail have been included in the relevant sub-clauses of this technical construction file.

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Part II Evaluation of conformity

2.1 Table 8: Allocation of requirements and tests for unmounted and mounted oculars

Requirement	Type of ocular								Testing	
	according to	Ocular without filtering effect	Welding filters	Ultraviolet filters	Infrared filters	Sunglare filters for industrial use	Cover plates against welding splashes	according to		
								EN	Clause	EN
Field of vision	166	7.1.1	+	+	+	+	+	+	168	18
Refractive powers	166	7.1.2.1	+	+	+	+	+	+	167	3.1 and 3.2
Transmittance	166	7.1.2.2.1	+					+	167	6
	169	4		+					167	6
	170	4			+				167	6
	171	4				+			167	6
	172	4.1					+		167	6
	379	4.3.2/4.4.2		+					167	6
Variation in transmittance	166	7.1.2.2.3		+	+	+	+		167	7
Diffusion of light	166	7.1.2.3	+	+	+	+	+	+	167	4
Quality of material and surface	166	7.1.3	+	+	+	+	+	+	167	5
Minimum robustness ^o	166	7.1.4.1		+	+	+	+	+	167	4
Increased robustness ^o	166	7.1.4.2.1	+	X	X	X	X	X	168	3.1
Temperature stability	166	7.1.5.1	+	+	+	+	+		168	5
UV-stability	166	7.1.5.2	+	+	+	+	+		168	6
Ignition	166	7.1.7	+	+	+	+	+	+	168	7
High speed particles	166	7.2.2	X	X	X	X	X	X	168	9
Molten metals and hot solids	166	7.2.3	X	X	X	X	X	X	168	10 and 11
Short circuit electric arc	166	7.2.7			+				Measurement and inspection	
Surface damage by fine particles	166	7.3.1	X	X	X	X	X	X	168	15
Fogging	166	7.3.2	X	X	X	X	X	X	168	16
High speed particles at extremes of temperature	166	7.3.4	X	X	X	X	X	X	168	9
Marking	166	9.2	+	+	+	+	+	+	Visual inspection	
Ocular reflectance	166	7.3.3	X	X	X	X	X	X	167	8

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Key	
+	Requirement is specified
Empty field	Requirement is not specified
X	Optional requirement
^a If the requirement for increased robustness is met the requirement for minimum robustness need not be assessed.	

2.2 Table 9: Allocation of requirements and tests for frames and complete eye protectors

Requirement	Field of use and symbol								Testing	
	according to	NONE	3	4	5	8	9	according to		
		Basic use	Droplets and splashes of liquids	Large dust particles	Gas and fine dust particles	Short circuit electric arc	Molten metals and hot solids			
									EN	Clause
Construction and materials	166	6.1 and 6.2	+	+	+	+	+	+	By visual inspection and manufacturer's certificates	
Headband	166	6.3	+	+	+	+	+	+	By measuring	
Field of vision	168	7.1.1	+	+	+	+	+	+	168 18	
Transmittance ^a	166	7.1.2.2.2	*	*	*	*	*	*	167 6	
Increased robustness ^b	166	7.1.4.2.2	+	+	+	+	+	+	168 3.2	
Temperature stability	168	7.1.5.1	+	+	+	+	+	+	168 5	
Corrosion	166	7.1.8	+	+	+	+	+	+	168 8	
Ignition	166	7.1.7	+	+	+	+	+	+	168 7	
High speed particles ^c	166	7.2.2	X	X	X	X	X	X	168 9	
Molten metals and hot solids ^c	166	7.2.3						+	168 10 and 11	
Droplets and splashes of liquids ^c	166	7.2.4		+					168 12	
Large dust particles ^c	166	7.2.5			+				168 13	
Gas and fine dust particles ^c	166	7.2.6				+			168 14	
Short circuit electric arc	166	7.2.7					+		Visual inspection	
Lateral protection ^d	166	7.2.8	X	X	X	X	X	X	168 19	
High speed particles at extremes of temperature ^e	166	7.3.4	X	X	X	X	X	X	168 9	
Marking	166	9.3	+	+	+	+	+	+	Visual inspection	

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Key	
+	Requirement is specified
Empty field	Requirement is not specified
X	Optional requirement
^a	Transmittance need only be assessed if the eye-protector is a goggle or face-shield, and can be fitted with a filter(s) for use against optical radiation.
^b	Complete eye-protectors fitted with oculars meeting the minimum robustness requirement only, shall only be tested for lateral impact.
^c	These requirements when applied to frames supplied without oculars shall be tested with the appropriate oculars fitted.
^d	Lateral protection assessment is mandatory if high-speed particle protection is claimed.

2.2 Table 12: Application of eye-protector types for the various fields of use

		Type of eye protector				Testing	
		Symbol	According to EN 166 clause	Spectacles	Goggles	Face-shields	According to EN 168 clause
Basic use		No symbol	a	+	+	+	o
Increased robustness		S	7.14.2	+	+	+	clause 3.1/3.2 22 mm ball at 5.1 m/s
Optical radiation		b	7.2.1	+	+	+	c
High speed particles ^d	Low energy impact	F	7.2.2	+	+	+	clause 9 6 mm ball at 45 m/s
	Medium energy impact	B	7.2.2	0	+	+	clause 9 6 mm ball at 120 m/s
	High energy impact	A	7.2.2	0	0	+	clause 9 6 mm ball at 190 m/s
Liquid droplets		3	7.2.4	0	+	0	12.1
Liquid splashes		3	7.2.4	0	0	+	12.2
Large dust particles		4	7.2.5	0	+	0	13
Gas & fine dust particles		5	7.2.6	0	+	0	14
Short circuit electric arc		8	7.2.7	0	0	+	e
Molten metals & hot solids		g ^f	7.2.3	0	+	+	10 and 11
High speed particles at extremes of temperature ^g		T	7.3.4	g	g	g	clause 9

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Key

+ Allowable application

0 Prohibited application

^a For basic use, and all other fields of use, the basic requirements specified in 6.1 shall be satisfied.

^b The symbol for optical radiation consists of the scale number defined in clause 5 for the various types of filter (welding, ultraviolet, infrared or sunglare) and is marked on the ocular. If optical radiation is the only field of use for which protection is required then the frame need only comply with the requirements for basic use. Goggle and face-shield housings, where applicable, shall be marked with the maximum compatible filter scale number.

^c See EN 169, EN 170, EN 171, EN 172, or EN 379 dependent on type of filter.

^d If the symbols F, B and A are not common to both the ocular and the frame then it is the lower level which shall be assigned to the complete eye-protector.

^e For a face-shield to comply with field of use symbol 8 it shall be fitted with a filter of scale number 2-1,2 or 3-1,2 and have a minimum thickness of 1,4 mm.

^f For an eye-protector to comply with field of use symbol 9 both the frame and ocular shall be marked with this symbol together with one of the symbols F, B or A.

^g Symbol T is used in conjunction with either F, B or A to indicate that the eye-protector conforms to the high-speed particle classification at extremes of temperature.

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Part III Test Report

3.1 EN166: 2001(E)

4	Classification	---
4.1	Function of eye-protectors	Pass
	Impacts of different severities	Pass
	Optical radiations	Not applicable
	Molten metals and hot solids	Not applicable
	Droplets and splashes	Not applicable
	Dust	Not applicable
	Gases	Not applicable
	Short circuit electric arc	Not applicable
4.2	Types of eye-protectors	---
4.2.1	Spectacles with or without lateral protection	Not applicable
4.2.2	Goggles	Pass
4.2.3	Face-shields	Not applicable
4.3	Types of ocular	---
4.3.1	Mineral oculars (glass)	Not applicable
4.3.1.1	Un-toughened mineral oculars	Not applicable
4.3.1.2	Toughened mineral oculars	Not applicable
4.3.2	Organic oculars (plastic)	Pass Polycarbonate lens.
4.3.3	Laminated oculars	Not applicable
5	Designation of filters	---
6	Design and manufacturing requirements	---
6.1	General construction	Pass The welding goggles were designed free from projections, sharp edges and other defects which were likely to cause discomfort or injury during normal use.

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6.2	Materials	Pass Material of frame of goggles: PVC; material of headband: Cotton, Elastic. No parts in contacted with wearer would cause any skin irritation.
6.3	Headbands	Not applicable
7	Basic, particular and optional requirements	---
7.1	Basic requirements	Pass See below for details.
7.1.1	Field of vision	Pass The size of the field of vision was defined in conjunction with the appropriate head-form described in clause 17 of EN168:2001, and tests were carried out in accordance with clause 18.
7.1.2	Optical requirements	Pass See below for details.
7.1.2.1	Spherical, astigmatic and prismatic refractive powers	Pass
7.1.2.1.1	Unmounted oculars covering one eye	Not applicable
7.1.2.1.2	Mounted oculars and unmounted oculars covering both eyes	Pass The refractive powers were measured according to clause 3.2 of EN167:2001.
7.1.2.1.3	Cover plates	Not applicable
7.1.2.2	Transmittance	Pass
7.1.2.2.1	Oculars without filtering action	Pass The backing ocular of welding goggles intended to protect the eyes against mechanical hazardous. Tested in accordance with clause 6 of EN167:2001.
7.1.2.2.2	Oculars with filtering action (filters) and housings for oculars with filtering action	Pass See 7.2.1
7.1.2.2.3	Variations in transmittance (Oculars without filtering action are exempt from this requirement)	Not applicable

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7.1.2.2.3.1	Oculars without corrective effect	Not applicable
7.1.2.2.3.2	Oculars with corrective effect (prescription oculars)	Not applicable
7.1.2.3	Diffusion of light	Pass Tested in accordance with clause 4 of EN167:2001
7.1.3	Quality of material and surface	Pass Assessment in accordance with clause 5 of EN167:2001 with the aid of light box. Goggles with PC lens, no significant defects likely to impair vision in use.
7.1.4	Robustness	Pass
7.1.4.1	Minimum robustness	Not applicable See 7.1.4.2 and 7.2.2, need not be assessed.
	a) Ocular fracture : an ocular shall be considered to have fractured if it cracks through its entire thickness into two or more pieces, or if more than 5mg of the ocular material becomes detached from the surface away from the one struck by the ball, or if the ball passes through the ocular	Not applicable
	b) Ocular deformation : an ocular shall be considered to have been deformed if a mark appears on the white paper on the opposite side to that struck by the ball	Not applicable
7.1.4.2	Increased robustness	Pass
7.1.4.2.1	Unmounted oculars	Not applicable
	a) Ocular fracture : an ocular shall be considered to have fractured if it cracks through its entire thickness into two or more pieces, or if more than 5mg of the ocular material becomes detached from the surface away from the one struck by the ball, or if the ball passes through the ocular	Not applicable