

	<b>Technical Specification</b>	<b>Apollo and Centralised Service</b>
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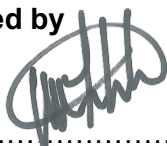
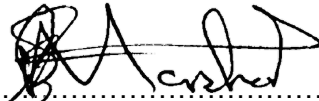

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## FOREWORD

### Revision History

Date	Rev.	Remarks
18 July 2022	Rev 1	New Document

### Authorization

This document has been seen and accepted by:

Name	Designation
Eric Marshall	Chief Engineer – Live Work
Russel Shabangu	Middle Manager – Live Line
Johan van Coller	Senior Advisor – Technical Support
Livhuwani Tshivhase	Senior Supervisor – Simmerpan
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Madoda Fihla	Senior Advisor – Technical Support

### Applicability

This document shall apply throughout Transmission Live Line Maintenance Teams.

### Development Team

The following people were involved in the development of this document:

- Madoda Fihla
- Eric Marshall
- Livhuwani Tshivhase

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## 1. SCOPE

This specification covers physical and performance requirements, methods of test and markings requirements for Airmobile Helmets.

## 2. NORMATIVE REFERENCES

Parties using this document shall use the most recent edition(s) of the document(s) listed in this section.

- [1] **240-60725816**: Standard for High Voltage Live Working
- [2] **SANS 1397: 2003** ; To Industrial Safety Helmets
- [3] **EN 397:2012+A1:2012** ; Industrial safety helmets
- [4] **EN 12492:2012** ; Mountaineering equipment - Helmets for mountaineers - Safety Requirements and test methods.

### 2.1.1 Informative references

- [1] **IEC 61477:2009**: Live working - Minimum requirements for the utilization of tools, devices and equipment
- [2] **240-114967625**: Eskom Operating Regulations for High Voltage System (ORHVS)
- [3] **240-60725817**: Standard for Aerial Live Working
- [4] **240-60725057**: Guide for the planning of live-line maintenance work
- [5] **240-105015449**: Live line risk assessment and fall protection plan

## 3. DEFINITIONS AND ABBREVIATIONS

### 3.1 DEFINITIONS

- [1] **Airmobile Helmet** - headwear primarily intended to protect the wearer's head against hazards, which might occur when performing work.
- [2] **Shell** - Hard, smoothly finished material that provides the general outer form of the helmet.
- [3] **Protective padding** – Material that is used to absorb impact energy.
- [4] **Comfort padding** – liner material provided for the wearer's comfort.
- [5] **Chin strap** - part of the retention system consisting of a strap which passes under the wearer's jaw to retain the helmet in position

### 3.1.1 Classification

**Controlled disclosure:** controlled disclosure to external parties (either enforced by law, or discretionary).

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### 3.2 ABBREVIATIONS

Abbreviation	Description
SANS	South African National Standards
EN	European Standards
Tx	Transmission
A & CS	Apollo and Centralised Services

## 4. REQUIREMENTS

### 4.1 CONSTRUCTION

#### 4.1.1 Materials

- For those parts of the helmet that come into contact with the skin, materials which are known to be likely to cause skin irritation or any adverse effect on health shall not be used.
- For a material not in general use, advice as to its suitability shall be sought before its introduction.

#### 4.1.2 Projections

- There shall be no sharp edges, roughness or projection on any part of the helmet which is in contact or potential contact with the wearer when the helmet is worn, such as is likely to cause injury to the wearer.

#### 4.1.3 Retention system

- The helmet shall be fitted with a retention system, including a chin strap.
- The retention system shall have at least three separate points of attachment to the shell.
- The chin strap shall be adjustable in length.
- That part of the chin strap which comes into contact with the jaw shall have a minimum width of 15 mm under a load of 250 N.

#### 4.1.4 Ventilation

- All helmets shall be ventilated.
- The sum of the cross-sectional areas of such ventilation shall not be less than 4 cm<sup>2</sup> when measured on the surface of the helmet.

#### 4.1.5 Ear Protection

- Helmet shall include built in ear protection and padding that cannot be detached.

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## **4.2 PERFORMANCE REQUIREMENTS**

### **4.2.1 Shock absorption**

- Shock absorption is measured by the direct measurement of the maximum force transmitted to a rigidly mounted head form on which the helmet is fitted.

### **4.2.2 Resistance to penetration**

- A test striker is allowed to fall on to the helmet which is fitted to a rigidly mounted head form.
- Note is taken of whether or not contact is made between the striker and the head form or whether the contactable surface of the head form is visibly damaged.

## **5. TESTS**

The following minimum test as specified by **EN 12492:2012** shall be conducted as part of the routine testing and the manufacturer shall issue certificates indicating compliance to the relevant standards.

No helmet that has been subjected to testing shall be offered for sale.

### **5.1 ACCEPTANCE TEST**

An acceptance test certificate shall be required for each Helmet purchased indicating compliance with **EN 12492:2012**.

Suppliers shall ensure that such acceptance tests were done before delivery to Eskom.

## **6. MARKING, LABELLING AND PACKAGING**

### **6.1 MARKING**

Each helmet shall be marked in such a way that the following information is easily legible by the user and is likely to remain legible throughout the life of the helmet:

- The number of this European Standard
- The name or trademark of the manufacturer and/or his authorized representative
- The year and quarter of manufacture
- The size or size range (in cm)

### **6.2 LABELLING**

A label shall be attached to each helmet giving the following information, provided precisely and comprehensively in the language of the country of sale:

- For adequate protection this helmet has to fit or to be adjusted to the size of the user's head.
- The helmet is made to absorb the energy of a blow by partial destruction or damage, and even though such damage may not be readily apparent, any helmet subjected to severe impact should be replaced.

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- The attention of the users is also drawn to the fact that modifying or removing any of the original component parts of the helmet is prohibited, other than as recommended by the helmet manufacturer.
- Helmets should not be adapted for the purpose of fitting attachments in any way not recommended by the helmet manufacturer.

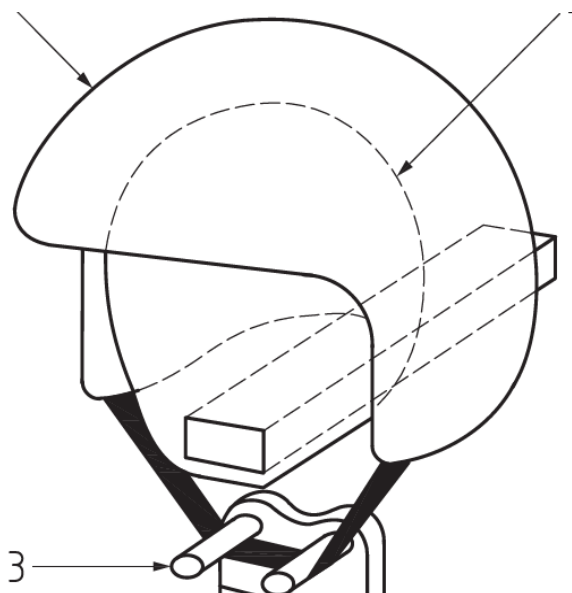
### **6.3 PACKAGING**

- Details of suitable accessories and appropriate spare parts;
- The significance of the optional requirements complied with and given guidance regarding the limits of use of the helmet, corresponding to the respective risks;
- Guidance regarding the serviceability/fit for use criteria or period of obsolescence of the helmet and its component parts;
- Guidance regarding details of the type of packaging suitable for transportation of the helmet.

### **7. IN-SERVICE MAINTENANCE AND CARE**

- Instructions or recommendations regarding adjustment, fitting, use, cleaning, disinfection, maintenance, servicing and storage;
- Guidance regarding the obsolescence deadline or period of obsolescence of the helmet and its component parts;
- It is the responsibility of the worker to exercise extreme care while wearing and handling the helmets
- Helmets should be stored in a dustproof breathable container, such as a canvas or vinyl bag

Figure 1. Example of a helmet



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**ANNEXURE A: TECHNICAL EVALUATION CRITERIA****A.1 TECHNICAL EVALUATION THRESHOLD**

The weighted final score (threshold) required for a tender to be considered from a technical perspective is 100%.

**A.2 MANDATORY TECHNICAL EVALUATION CRITERIA****Table A.1: Mandatory Technical Evaluation Criteria**

	<b>Mandatory Technical Criteria Description</b>	<b>Reference to Technical Specification / Tender Returnable</b>	<b>Motivation for use of Criteria</b>	<b>Criteria Weighting (%)</b>
1.	Shell	<b>Compliance Certificate as per EN 12492:2012.</b>	a. Fire Proof b. Ear Cover c. Ventilation	40%
2.	Shock Absorption	<b>Compliance Certificate as per EN 12492:2012.</b>	a. Protective padding b. Comfort padding	30%
3.	Chin Strap	<b>Compliance Certificate as per EN 12492:2012.</b>	a. Quick release buckle b. Adjustable strap c. 3 way attachment point	30%

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#### A.4 TET MEMBERS

Table A.2: TET Members

TET number	TET Member Name	Designation
TET 1	Livhuwani Tshivhase	Senior Supervisor Live Line
TET 2	Madoda Fihla	Senior Advisor Technical Support

#### A.5 TET MEMBER RESPONSIBILITIES

Table A.3: TET Member Responsibilities

Mandatory Criteria Number	TET 1	TET 2
1.	X	X
2.	X	X

Table A.4.: Technical evaluation outcomes

Requirement as per EN 12492:2012					
Company	Item:	Compliance Certificate as per EN 12492:2012.	Shell	Shock Absorption	Chin Strap

Technical evaluation to be done by: TET Members

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