

	<b>Standard</b>	<b>Technology</b>
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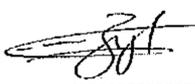
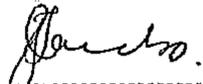
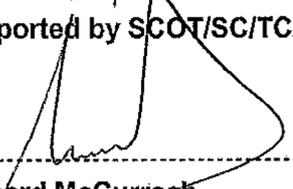
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## 1. Introduction

This document consists of the requirements for safety signs used in DC applications.

## 2. Supporting clauses

### 2.1 Scope

#### 2.1.1 Purpose

The specification details the requirements to which safety signs, placards and labels, used in DC applications shall be manufactured.

#### 2.1.2 Applicability

This document shall apply throughout Eskom Holdings Limited Divisions.

### 2.2 Normative/informative references

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

#### 2.2.1 Normative

- [1] SANS 10232-1: 2007, Transportation of dangerous goods – Emergency information systems – Part 1: Emergency information system for road transportation.
- [2] SANS 1091: 2004, National colour standards for paint.
- [3] SANS 1186-1:2008, Symbolic safety signs – Part 1: Standard signs and general requirements.

#### 2.2.2 Informative

None

### 2.3 Definitions

#### 2.3.1 General

Definition	Description
<b>Acrylonitrile-Butadiene-Styrene (ABS)</b>	A copolymer composed of two copolymers and is one of the most common polymer materials. Styrene and Acrylonitrile form a linear copolymer (SAN) that serves as a matrix. Butadiene and Styrene also form a linear copolymer (BS rubber) which acts as the filler material. The combination of the two copolymers gives ABS an excellent combination of strength, rigidity, and toughness.

#### 2.3.2 Disclosure classification

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

## 2.4 Abbreviations

Abbreviation	Description
ABS	Acrylonitrile-Butadiene-Styrene
DC	Direct Current
DC TSS	Direct Current Technical Specialist Section
S.I.N.	Substance Identification Number
SABS	South African Bureau of Standards

## 2.5 Roles and responsibilities

The Head of the DC TSS in each region shall ensure that the specified safety signs, labels and placards are used in the applicable region.

The person responsible for acquiring the safety signs, labels and placards shall ensure that it is done in accordance with the requirements of this specification.

## 2.6 Process for monitoring

Not applicable

## 2.7 Related/supporting documents

Not applicable

## 3. Requirements

### 3.1 Safety signs and warning signs

- Plain block letters (Helvetica Compact) shall be used for all wording on the safety signs.
- The sizes of the symbolic safety signs shall be in accordance with SANS 1186-1:2008, *Symbolic safety signs – Part 1: Standard signs and general requirements*.
- All colours used shall be in accordance with SANS 1186-1:2008, *Symbolic safety signs – Part 1: Standard signs and general requirements* or shall be SABS approved.
- All signs shall have the designated Eskom code (in accordance with Table 1) and the manufacturer's name or logo, displayed at the bottom on the left hand and right hand sides respectively.
- DCSS 1, DCSS 2, DCSS 3, DCSS 4 and DCSS 5 shall either be screen printed or cut from cast vinyl with a minimum lifespan of 10 years.
- The warning sign, DCSS 5 shall be displayed on the inside of the battery cabinet.

**Table 1: Detail on safety and warning signs**

Description	Eskom / SABS code	Buyers Guide number	Drawing number	Figure No.	Dimensions [mm]
Battery room sign – Hazardous	DCSS 1	D-DT-6112 Sht 1	D-DT-5022 Sht 1	Figure A.1	700 x 500 x 1.5
Battery cabinet sign	DCSS 2	D-DT-6112 Sht 2	D-DT-5022 Sht 2	Figure A.2	290 x 290 x 0.9

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Description	Eskom / SABS code	Buyers Guide number	Drawing number	Figure No.	Dimensions [mm]
Combined battery room sign	DCSS 3	D-DT-6112 Sht 2	D-DT-5022 Sht 3	Figure A.3	380 x 380 x 0.9
Emergency shower	GA 20	D-DT-6113 Sht 1	D-DT-5023 Sht 1	Figure A.4	190 x 190 x 0.9
Eyewash	GA 19	D-DT-6113 Sht 2	D-DT-5023 Sht 2	Figure A.5	190 x 190 x 0.9
Drinking of water prohibited	PV 5	D-DT-6113 Sht 2	D-DT-5023 Sht 3	Figure A.6	190 x 190 x 0.9
Battery room sign – Hazardous	DCSS 4	---	---	Figure A.14	700 x 500 x 1.5
Vantage cells top-up warning sign	DCSS 5	---	---	Figure A.15	300 x 100 x 0.9

**Note:** The substrate for the signs in Table 1 shall be ABS

### 3.2 Labels for transportation of dangerous goods

The label shall be in the form of a square, set at an angle of 45° (diamond-shaped), and with minimum dimensions of 100 mm x 100 mm. The label shall be divided into halves, with the symbol black, the letters white, the background of the upper half shall be white and the background of the lower half shall be black. See appendix A. These labels shall be in line with the requirements of SANS 10232-1: 2007, *Transportation of dangerous goods – Emergency information systems – Part 1: Emergency information system for road transportation*.

The stick-on labels shall be printed on semi-gloss laminated paper and in roll form.

### 3.3 Hazchem placards for transportation of dangerous goods

#### 3.3.1 General

A full-size and a reduced size placard may be used depending on the size of the vehicle. The placards (items 3.3.2 and 3.3.3) shall be the magnetic or stick-on label type, as they will be affixed to the vehicle body. These placards shall be in line with the requirements of SANS 10232-1: 2007, *Transportation of dangerous goods – Emergency information systems – Part 1: Emergency information system for road transportation*.

#### 3.3.2 Main full-size single-substance and mixed load placard

The details for this placard are as follows:

- Overall dimensions of the placard: 700 mm x 400 mm.
- The border and internal lines, except for the hazard-class diamond area shall be a width of 10mm.
- The material used shall be peel-and-stick plastics or silk-screened metal plate; or in the case of “once off” loads, laminated or suitably protected paper.
- Black characters and lines shall be used on orange (see colour No. B26 of SANS 1091: 2004, National colour standards for paint) and white backgrounds.
- The character height of the S.I.N. number shall be 100 mm and the characters of the initial response telephone number and specialist telephone number shall both be 50 mm in height.
- See appendix A for a drawing.

### 3.3.3 Reduced-size single-substance and mixed load placard

The details for this placard are as follows:

- a) Overall dimensions of the placard: 350 mm x 200 mm.
- b) The border and internal lines, except for the hazard-class diamond area shall be a width of 5 mm.
- c) The material used shall be peel-and-stick plastics or silk-screened metal plate; or in the case of "once off" loads, laminated or suitably protected paper.
- d) Black characters and lines shall be used on orange (see colour No. B26 of SANS 1091: 2004, National colour standards for paint) and white backgrounds.
- e) The character height of the S.I.N. number shall be 50mm and the characters of the initial response telephone number and specialist telephone number shall both be 25 mm in height.
- f) See appendix A for a drawing.

### 3.3.4 Danger warning diamond

A full-size danger warning diamond shall be of side length 300 mm and of colour No. B26 (orange) of SANS 1091: 2004, *National colour standards for paint*. The reduced-size danger warning diamond shall be half the size of a full-size danger warning diamond. The plate shall be of metal or of a plastics material. Holes with a diameter of 10 mm shall be provided on each side for fixing this sign to the front of the vehicle or if preferred this sign may also be of the magnetic type.

## 3.4 Samples

The supplier shall, at the request of Eskom, provide a sample of a sign for inspection and evaluation.

## 3.5 Tests

Not applicable.

## 3.6 Marking, labeling and packaging

- a) All signs shall have the designated Eskom code (in accordance with Table 1) on the bottom left hand side of the sign.
- b) The packaging shall protect the signs against damage from normal handling which can be expected from the point of dispatch to the point of final installation.
- c) Labels that are damaged during transportation or handling due to unsuitable packaging, shall be replaced by the manufacturer at his own expense.
- d) Each consignment of signs shall be tagged with a tag bound to the labels, indicating the following information:
  - 1) Sign description
  - 2) Eskom / SABS code
  - 3) Supplier's name
  - 4) Project name
  - 5) Order number

#### 4. Authorization

This document has been seen and accepted by:

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Lungile Malaza	Middle Manager – Electrical Plant COE
Thomas Jacobs	DC & Auxiliary Supplies SC Chairperson

#### 5. Revisions

Date	Rev	Compiler	Remarks
April 2016	2	T Jacobs	Rev 1 document contents put into the new format. No content changes made.
May 2013	1	T Jacobs	Original issue.

#### 6. Development team

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

- Thomas Jacobs

#### 7. Acknowledgements

Not applicable

**Annex A – Safety Sign Drawings**

Layout for: DCSS1 Label  
 Size/Substrate: 500x500x1.5mm White ABS Plastic  
 Font/Size: Helvetica Compact 45, 25, 15 & 12mm high  
 Symbolic Signs (SABS): PV1 & WWW4  
 Colours (SABS): Black, Signal Red (A11) & Golden Yellow (B49)  
 Black Pin strip border 3mm wide inset 5mm  
 Process: Screen Print or Cut Cast Vinyl



Figure A.1: Battery room safety sign (DCSS 1)

Layout for DCSS2 Label  
 Size/Substrate: 290x290x0.9mm White ABS Plastic  
 Font/Size: Helvetica Compact 25, 15, 10 & 7mm high  
 Symbolic Signs (SABS): PV1 & WWW4  
 Colours (SABS): Black, Signal Red (A11) & Golden Yellow (B49)  
 Black Pin strip border 2mm wide inset 3mm  
 Process: Screen Print or Cut Cast Vinyl



Figure A.2: Battery cabinet safety sign (DCSS 2)

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Layout for DCSS3 Label  
Size/Substrate: 380x380x0.9mm White ABS Plastic  
Symbolic Signs/Size (SABS): PV2, MV5, MV9 & MV10 (190x190mm)  
Colours (SABS): Black, Signal Red (A11) & Ultramarine Blue(F09)  
Process: Screen Print or Cut Cast Vinyl



Figure A.3: Combined battery room safety sign (DCSS 3)

PROPOSED LAYOUT  
SIZE: 190 X 190  
MATERIALS: GREEN ON WHITE ABS

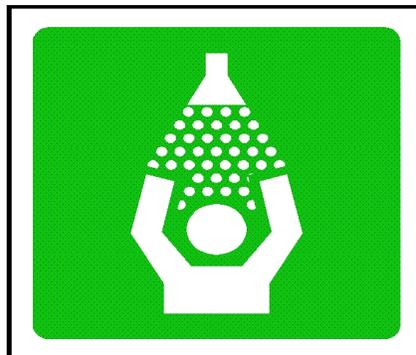


Figure A.4: Emergency shower (GA 20)

PROPOSED LAYOUT  
SIZE: 190 X 190  
MATERIALS: GREEN ON WHITE ABS



Figure A.5: Eyewash (GA 19)

PROPOSED LAYOUT  
SIZE: 190 X 190  
MATERIALS: RED & BLACK ON WHITE ABS



Figure A.6: Drinking of water prohibited (PV 5)



Figure A.7: Class 8, primary hazard-class warning diamond

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Figure A.8: subsidiary hazard-class warning diamond

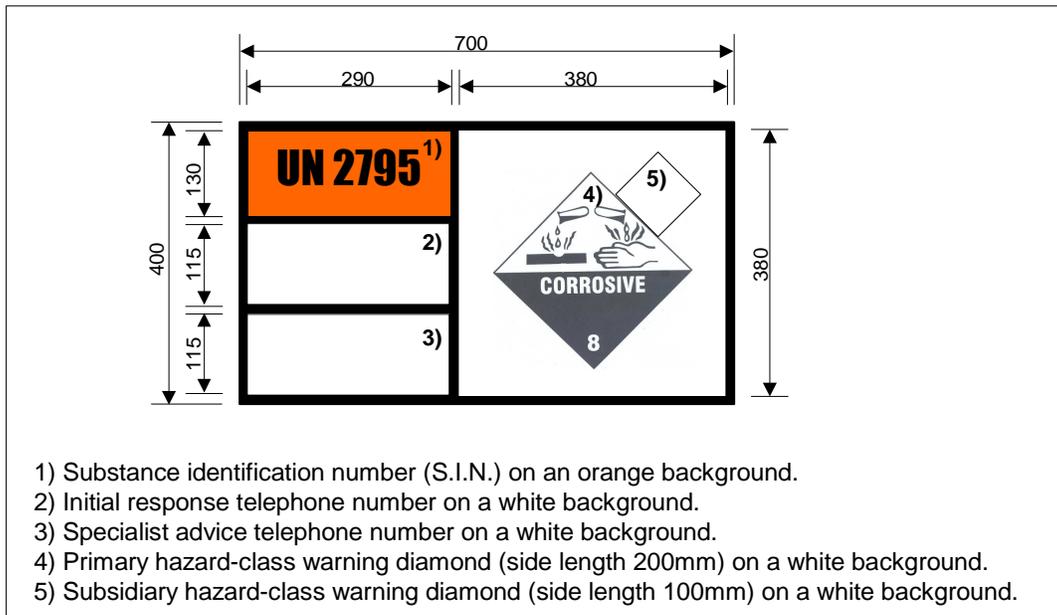


Figure A.9: Full-size, Hazchem placard for class 8 single load

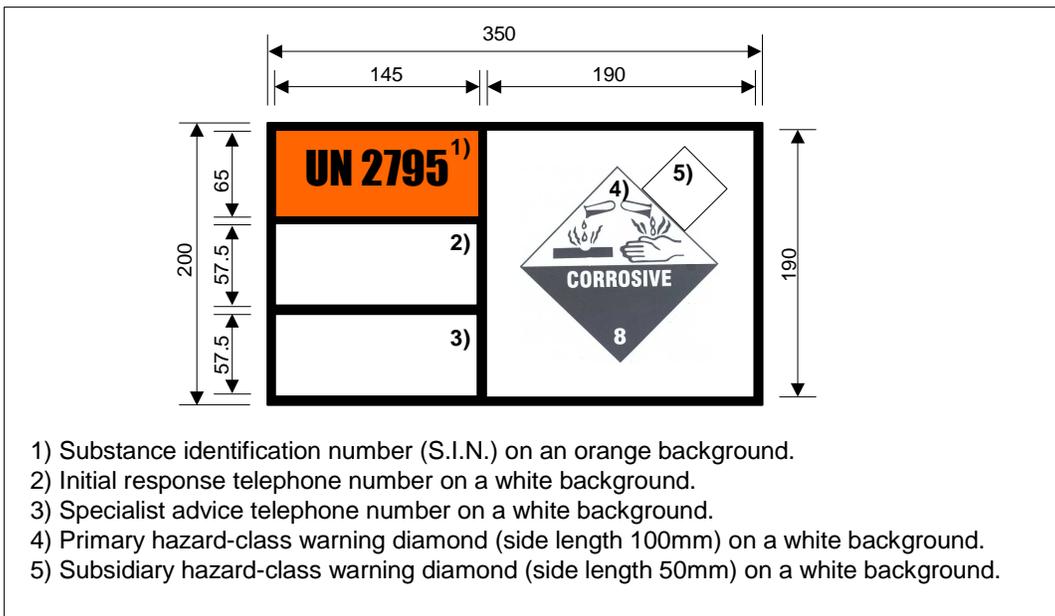


Figure A.10: Reduced-size, Hazchem placard for class 8 single load

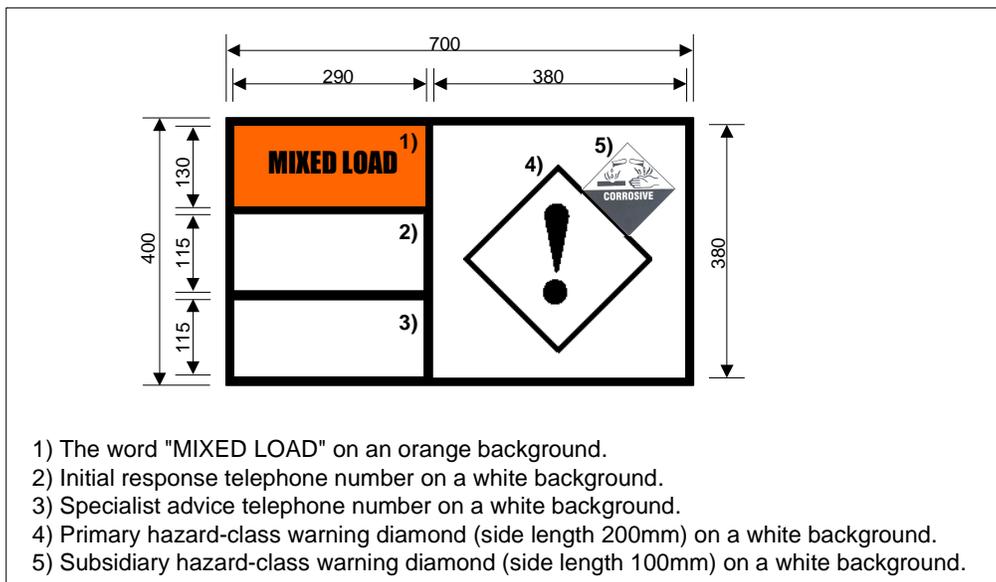


Figure A.11: Full-size, Hazchem placard for a multiload

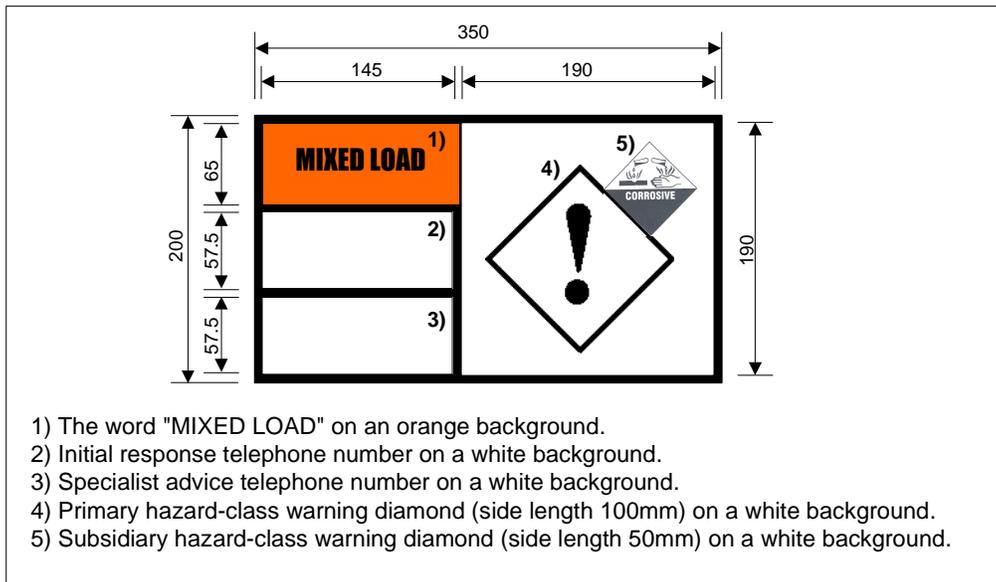


Figure A.12: Reduced-size, Hazchem placard for a multiload

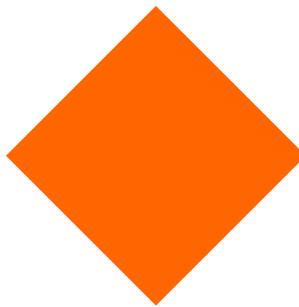


Figure A.13: Danger warning diamond - Full-size side 300mm and reduced-size side 150mm

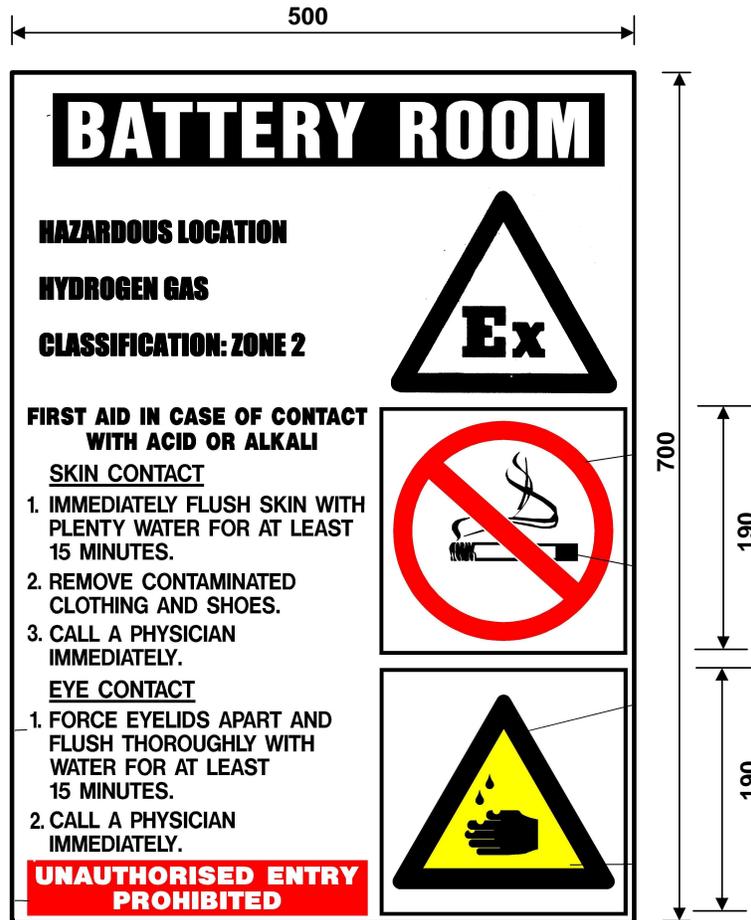


Figure A.14: Zone 2 Classified battery room safety sign (DCSS 4)



Figure A.15: Vantage cells top-up warning sign (DCSS 5)