

DEMINING NATIONAL STANDARDS 08.40

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Marking Mine and UXO hazards - Mozambique

**Director
National Demining Institute
Maputo, Mozambique
Telephone: 258-1-418577/8
Fax: 258-1-418153
Email : gm.dn@ind.gov.mz**

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Introduction

The marking of mine and UXO hazards is undertaken to provide a clear and unambiguous warning of danger to the local population to reduce the risk of unintentional entry into hazardous areas.

This National Standard (NS) draws on the only two treaties in international law which deal with landmines: the Mine Ban Treaty (Ottawa Convention) and Amended Protocol II to the UN Conventional Weaponry Convention on Prohibitions or Restrictions on the Use of Mines, Booby-Traps and Other Devices. Countries which are States Party to the Mine Ban Treaty and/or Amended Protocol II have certain specific obligations regarding the marking of mine hazards.

Each State Party to the Mine Ban Treaty is obliged '... to ensure as soon as possible that all anti-personnel mines in mined areas under its jurisdiction or control are perimeter-marked, monitored and protected by fencing or other means, to ensure the effective exclusion of civilians, until all anti-personnel mines contained therein have been destroyed.' The Mine Ban Treaty requires the marking to be '... at least to the standards set out in Amended Protocol II.'

Amended Protocol II requires States Party to ensure '... the effective exclusion of civilians from the (mined) area by fencing or other means. ... Marking must be of a distinct and durable character and must at least be visible to a person who is about to enter the perimeter-marked area.' Amended Protocol II provides an example and specifications for the marking of minefields and mined areas and requires that signs similar (but not necessarily identical) to the example and the specifications are used '... to ensure their visibility and recognition by the civilian population.'

The provisions of this NS do not replace the obligations detailed in the Mine Ban Treaty and Amended Protocol II, and States Party should be fully conversant with their legal obligations in respect to the two treaties.

Marking - Mine and UXO hazards

1. Scope

This NS specifies the minimum requirements for the marking of mine and UXO hazards and hazardous areas in Mozambique.

It does not specify marking systems used by organizations during demining operations. Standards and guidelines for marking systems used during demining are addressed in NS 08.30 (Technical survey), NS 09.40 (Mine detection dogs), NS 09.50 (Mechanically assisted clearance) and NS 10.20 (Demining worksite safety).

2. References

A list of normative references is given in Annex A. Normative references are important documents to which reference is made in this standard and which form part of the provisions of this standard.

3. Terms and definitions

A list of terms and definitions used in this standard is given in Annex B. The terms and definitions in this NS are in compliance with IMAS 04.10 (Glossary of mine action terms and abbreviations) and all terms that have been developed locally have been captured in NS 04.10 (Glossary of mine action terms and abbreviations in Mozambique).

Although the term 'national mine action authority or authorities' which usually refers to the government department(s), organization(s) or institution(s) in each mine-affected country charged with the regulation, management and co-ordination of mine action is used, in Mozambique IND has been designated to fulfill these responsibilities with regard to the supervision and implementation of all demining operations.

The term 'demining organization' refers to any organization (government, NGO or commercial entity) responsible for implementing demining projects or tasks. Demining organizations include headquarters and support elements, and comprise one or more sub-units. Demining organizations in the NS refer to those organizations that are contracted and accredited by IND to carry out demining activities in Mozambique.

4. General characteristics of hazard marking systems

The design of mine and UXO hazard marking systems shall take account of local materials freely available in the contaminated region and the period for which the marking system will be in place.

It is generally accepted that materials used in marking systems should have little, if any, intrinsic value or practical use for purposes other than mine and UXO hazard area marking. Materials with an intrinsic value, which are combustible, or have any other potential local use, are likely to be removed. Indeed, under certain circumstances, all signs may be tampered with unless precautions are taken.

4.1. Signs and markers

A hazard sign is a permanent or semi-permanent notice giving information in a written and/or symbolic form which, when placed as part of a hazard marking system, is designed to provide warning to the local population of the presence of mines and UXO. Examples of Mozambique hazard signs are given in Annex C. The words should represent the predominant hazard (mines or UXO) and the symbol should indicate 'danger' in a form that will be recognized nationally and locally.

A hazard marker may be used to indicate a mine or UXO hazard when signs are not available, or when local conditions prevent their effective use – for example when signs are repeatedly removed by the local population. An example of the use of hazard markers is given in Annex D.

Signs and hazard markers should be clearly visible in daylight at a distance of 30m, and from adjacent signs and markers. If markers are masked by vegetation or terrain, the use of a physical barrier should be considered.

Signs and hazard markers should not be constructed of munition casings, materials that may have contained explosives, or discarded weapon systems.

4.2. Marking systems

There are three general categories of marking systems:

- a) Permanent marking systems should be used to mark the perimeter of mine and UXO hazard areas, which are not be scheduled for clearance in the near future. They should employ a combination of markers and signs. Physical barriers such as fencing have proven ineffective, however other less attractive physical barriers may be used if available in conjunction with markers and signs.
- b) Temporary marking systems may be used to mark the perimeter of a mine and UXO hazard area in preparation for clearance operations. They may include the use of physical barriers of a temporary nature.
- c) Improvised marking systems are generally more effective in Mozambique such as a combination of mine signs and painting tree with red paint.

4.2.1. Permanent marking system specification

Permanent mine and UXO hazard marking systems should include a combination of markers, signs red paint on trees, and concreted Turning Point (TP) markers that clearly identify the boundary of the mine and UXO hazard area. Consideration for physical barriers may be used if the material is suitable and not likely to be stolen.

Hazard marking shall be clearly visible (See Clause 4.1 above) and clearly identify which side of the marked boundary is considered to be within the mine and UXO hazard area and which side is considered to be safe. As a guide the trees/pickets used to mark the boundary should not be more than 15m apart with mines signs not more than 30m apart.

4.2.2. Temporary marking system specification

Temporary marking systems are marked using mine signs and markers to the same specification as the permanent marking except the TP are not concreted. TP are marked using scrap steel buried 40cm below ground. Using a metal rod or similar steel product may be considered to augment the scrap metal in the ground, however this is optional. The scrap metal ensures a reliable metal target remains if the steel rod is stolen. Temporary marking may include the use of physical barriers.

4.2.3. Improvised marking systems

Improvised marking systems are many and varied depending on the material available. There are currently no standards set for improvised marking systems. Examples of Mozambique improvised marking systems may be found in the Mine Risk Education (MRE) training aid package produced by Golden West Humanitarian Foundation California. [Note: IND and most Mozambique NGO's hold limited copies that are available for loan.] When improvised marking is encountered it should be reported to IND so that either a demarcation task is added to the work plan or if the area is not included in the IND database then a General survey can be tasked as a priority. Generally improvised marking has the following features:

- a) Pile of stones or an item preventing someone accidentally walking on an item,
- b.) Wood branches in a pile or square on path or road,
- c.) Paint on the ground, wall or rock, and
- d.) An improvised barrier to a track or area.

Some suspected mined areas are not marked, likely indicators in Mozambique of potential mined areas that are not marked are:

- e.) Heavily vegetated areas,
- f.) Old military camps,
- g.) Disused military and civilian equipment, railway lines, and
- h.) Bridge abutments.

5. Marking system maintenance.

IND is responsible for the liaison and advice to the Ministry of Education at national level in regard the syllabus content of Mine Risk Education (MRE). Part of the syllabus is reinforcement of the population not to remove mine marking. Implementation at provincial level is to co-opt villages to take ownership of a MF in terms of the retention of the mine marking.

6. Misuse of Minefield Marking Danger Signs

The use of minefield marking signs is often abused by demining agencies and the general population (both individuals and organizations). Minefield danger signs shall not be displayed by demining organizations other than using them as hazard marking in accordance with this NS.

7. Responsibilities

7.1. Demining organizations

Demining organizations shall apply the NS for hazard marking systems. Provision of initial reference point markers during general survey and supply and installation of demarcation marking for technical survey.

The demining organization that conduct General and Technical survey shall:

- a) Mark the hazardous area(s) in a manner consistent with this NS, which includes Bench Mark (BM), Turning Points (TP) and mine hazard markers and signs, and
- b) Brief the affected communities and local district authorities on the marking system and to reinforce the national message delivered through MRE program in regard retention of mine hazard marking.
- c) Reinforce the IND policy of not displaying MF danger signs on vehicles.

Annex A (Normative) References

The following documents when referred to in the text of this standard, form part of the provisions of this standard.

- a) NS 08.30 Technical survey
- b) NS 09.40 Guide for the use of mine detection dogs
- c) NS 09.50 Guide for the use of mechanically-assisted clearance
- d) NS 10.20 Demining worksite safety
- e) The Protocol on Prohibitions or Restrictions on the Use of Mines, Booby-Traps and Other Devices as amended on 3 May 1996 (Protocol II to the 1980 Convention as amended on 3 May 1996)
- f) Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction.

The latest version/edition of these references should be used. IND, Maputo holds copies of all NS and IMAS references used in this NS. A register of the latest version/edition of the NS and references is maintained by IND, Maputo, and can be found at the Operations Department in the IND. Demining organizations should obtain copies before commencing demining activities in Mozambique.

Annex B (Informative) **Terms and definitions**

1.1 demining organization

any organization (government, NGO or commercial entity) responsible for implementing demining projects or tasks. The demining organization may be a prime contractor, subcontractor, consultant or agent.

1.2 hazard area (mine or UXO)

contaminated area

a generic term for an area not in productive use due to the perceived or actual presence of mines UXO or other devices.

1.3 hazard marker

object(s), other than mine signs, used to identify the limits of a mine and UXO hazard area. Hazard markers shall conform to the specification established by the national mine action authority.

1.4 hazard marking system

a combination of measures (signs and barriers) designed to provide the public with warning and protection from mine and UXO hazards. The system may include the use of signs or markers, or the erection of physical barriers.

1.5 mine sign

a sign which, when placed as part of a marking system, is designed to provide warning to the public of the presence of mines.

1.6 national mine action authority

IND is the national mine authority which is an institute in the Department of Foreign Affairs. IND has been designated to fulfill these responsibilities with regard to the supervision and implementation of all demining operations. IND is the national mine action centre (MAC)

Annex C (Normative) Mozambique Mine danger sign

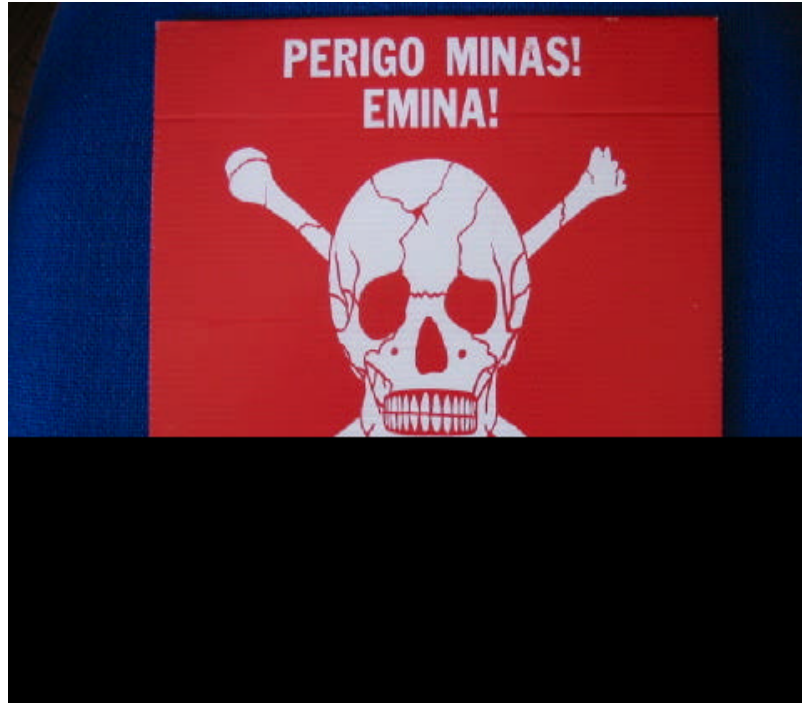


Figure C1: Mine sign - square

Notes:

1. The sign should have a red or orange background with a white symbol for danger. The universal symbol for danger is the skull and crossbones shall be used.
2. The words "Perigo! Minas!" should be the wording used. If these cannot be supplied then the English alternative "Danger Mines" is permitted. Local language dialect should be included in additional signage however shall not replace the minimum specification which shall be worded in either Portuguese or English. It is not necessary to comply with the amended Protocol II that recommends the warning should also appear in one of the six recognized UN languages (English, French, Russian, Chinese, Arabic and Spanish).
3. Amended Protocol II recommends that the sign should include a yellow border of reflective material, but this recommendation is not a requirement for the purposes of this standard.
4. The rear surface of the sign shall be white.
5. Sign dimensions; if the sign is square it should not be less than 25cm x 25cm. If the sign is a triangle the dimensions should not be less than 28cm x 20cm x 20cm.

Annex D (Informative) **Examples of marking systems**

Boundary lane using rocks

1. General Guidelines

Rocks should be used if mine signs are not available. Red rocks shall be used to signal a mine and UXO hazard and shall be placed along the edge closest to the mine or UXO hazard. The “golden rule” is that no one should cross the line indicated by red rocks.

White rocks shall be used to signal “safety” and shall be placed:

- a) along the edges of useable areas;
- b) before the line of colored rocks used to mark the edges of danger areas (i.e. on the “useable” side of the mine and UXO hazard area); and
- c) between two rows of colored rocks (e.g. a safety lane between two mine and UXO hazard areas so that the safety lane is obvious).

The spacing between rocks shall be no more than 5m except at turning points, where the spacing should be reduced to approximately 2m.

2. Boundary lane and safety lane marking

Boundary lanes and safety lanes shall be cleared and marked as follows (see Figure D1):

- a) When a lane has a useable area on one side and a hazard area on the other side, the lane shall be marked as shown in Example A in Figure D1.
- b) When a lane has hazard areas on both sides, the lane shall be marked as shown in Example B in the Figure D1.

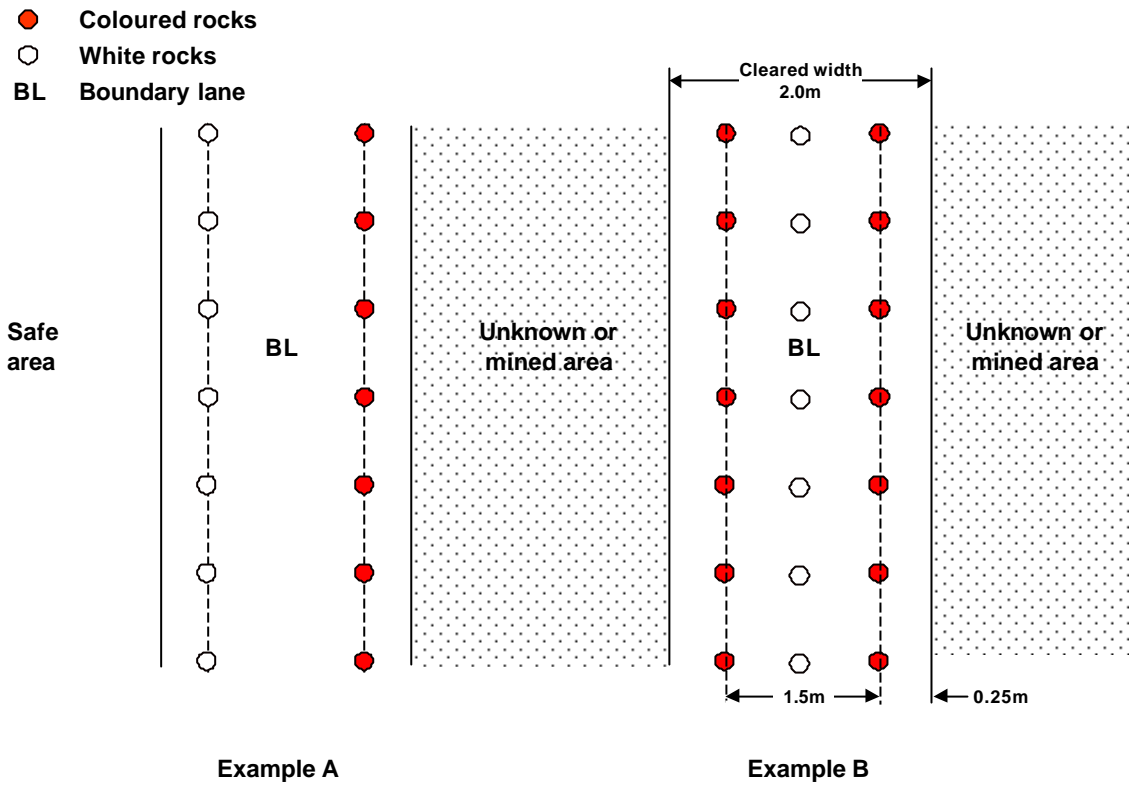


Figure D1: Example of marking using rocks