



# GROUP SAFETY STANDARD 7 BARRICADES, BARRIERS AND SAFETY SIGNAGE

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## TABLE OF CONTENTS

1.	PURPOSE .....	1
2.	APPLICATION .....	1
3.	RESPONSIBILITIES .....	1
4.	DEFINITIONS .....	2
5.	GENERAL REQUIREMENTS .....	2
5.1	Risk Assessment .....	3
6.	IGO REQUIREMENTS FOR BARRICADES .....	4
7.	IGO REQUIREMENTS FOR BARRIERS .....	5
7.1	Demarcation Tapes .....	5
8.	TAGS AND SIGNAGE .....	5
8.1	Tags .....	5
8.2	Sign Design and Placement .....	6
8.3	Maintenance .....	6
8.4	'No Unauthorised Entry' Signage .....	7
8.5	No Entry' Signage .....	7
9.	TRAINING .....	7
10.	RELATED DOCUMENTS .....	7
10.1	Common Management System Standards .....	7
10.2	Group Safety Standards .....	7
10.3	IGO Plans, Procedures and Forms .....	7
10.4	External Documents .....	7
	APPENDIX 1 : BARRIER SELECTION REQUIREMENTS .....	8

### LIST OF TABLES

Table 1 - Responsibilities .....	1
Table 2 - Definitions .....	2
Table 3 – Risk Category and Selection .....	4
Table 4 – Barrier Tags .....	6



## 1. PURPOSE

The purpose of this standard is to define IGOs requirements for Barricades, Barriers and Safety Signage.

## 2. APPLICATION

This standard shall apply to all IGO sites and projects (exploration, construction, mining and development) (collectively refers to as 'sites' hereafter) and to all IGO employees, contractors (including sub-contractors) and visitors to IGO sites.

This standard specifically applies to everyone working at or visiting an IGO 'Operational Area'<sup>1</sup>. Barricades, barriers and safety signage are to be used in IGO operational areas for the purpose of physically preventing access to hazardous areas, or demarking areas containing hazards.

Where the contractor has an existing process that meets or exceeds the requirements of this standard, the contractor may request authorisation from IGO to use their process in lieu of those outlined in this standard.

Where this standard identifies Australian and New Zealand Standards, IGOs international sites and projects shall ensure recognised industry standards relevant to their location meet or exceed the minimum requirements established through this standard and applicable legislation for their jurisdiction.

## 3. RESPONSIBILITIES

Table 1 - Responsibilities

Group	Responsibility
<b>All personnel in IGO Operational Areas</b>	<ul style="list-style-type: none"> <li>• must be trained in and deemed competent what the presence of a barricade or barrier means and the actions they are required to take</li> <li>• must conform to the requirements of this standard and site-specific rules</li> <li>• ensure positioning of appropriate signage / barricades are in place.</li> <li>• ensure signage and barricades are regularly maintained and cleaned for clear visibility</li> <li>• ensure barricades are removed on completion of task or when the hazard is rectified.</li> </ul>
<b>Permit Holder/ Recipient in Charge/ Job Supervisor</b>	Where a job poses a hazard associated with accidental or inadvertent access, it is the responsibility of the Permit Holder/ Recipient in Charge/Job Supervisor to ensure that the area affected by the job is demarked (either by a barrier or barricade).
<b>Persons installing and or removing barricades and barriers</b>	<ul style="list-style-type: none"> <li>• everyone is authorised to appropriate barricading and signage in accord with this standard, given the need to immediately demark a hazard</li> <li>• barricades and other barriers shall only be installed and removed by an authorised competent person.</li> </ul>

<sup>1</sup> At each site or project, the 'Operational Area' must be mapped or provision of clearly articulated descriptions are communicated to those affected. Except as otherwise approved by the site manager, an Operational Area is to include any location within 500m of any mining or beneficiating activity, 100m of any drilling or core handling activity, and any area within workshops and warehouses. Generally, offices and crib rooms are excluded from the Operational Area. Refer to *IGO CMSS 5 - Roles, Responsibilities, Accountabilities and Authorities*.

Group	Responsibility
<b>Work Area Owners</b>	Must ensure the barricades and barriers are maintained in their work areas, and that they remain fit for purpose including tags and signage.
<b>Site Management</b>	<ul style="list-style-type: none"> <li>• Site management must ensure a safe place of work is provided. Without limiting the general application of this standard, the specific processes for authorisation, installation, recording, access and removal protocols for barricades and barriers (including signage) on all IGO sites and projects shall remain the responsibility of site management.</li> <li>• ensure that all site personnel are appropriately trained in site processes and provided with suitable resources to comply with this standard.</li> </ul>

## 4. DEFINITIONS

Table 2 – Definitions

<b>Barricade</b>	A barricade is a physical device to prevent access to an area. Barricades include fences, railing, walls, and bunding.
<b>Barrier</b>	A barrier is a device to demarcate an area containing a hazard. Barriers include demarcation tape, chains, cones or bollards. Unlike barricades, barriers are intended to provide a warning and so prevent unintended or accidental access to an area.
<b>Permit Holder/ Recipient in Charge/ Job Supervisor</b>	Means any person, irrespective of position title, who assumes or is assigned responsibility for the direct supervision of a work team.
<b>Work Area Owner</b>	The manager or superintendent who is responsible for the normal day to day management of a physical area or part of an IGO site or project. The Work Area Owner must be familiar with the various activities occurring in their area.

## 5. GENERAL REQUIREMENTS

Barricading, barriers and signage shall only be used:

- when there are no other practical control measures available
- as an interim measure until a more effective way of controlling the risk can be used or the hazard is no longer present
- to supplement higher level control measures or as a secondary control measure.

IGO sites and projects shall ensure processes are in place detailing the requirements for:

- selection, erection and use
  - Types and compliance requirements for application e.g. rigid barricades, mesh barricades, earth windrows/ safety berms
- authorisation and access:
  - processes are in place to instruct workers not to enter demarcated areas unless authorized to do so
  - authorisation to access demarcated area is required from a member of the authorised work group responsible for the control of the area e.g. Permit

- Holder, Recipient in Charge, Job Supervisor or Work Area Owner, this is to be communicated by appropriate signage or tags placed at all access points
- with the exception of perimeters established for Radiography and Drop Zones, all barricaded or demarcated areas shall have designated point(s) of entry / exit
  - barricading established for the protection of personnel from falls shall be fitted with self-closing gates at the nominated entry point.
  - under no circumstances shall personnel cross under a barricade or barrier
  - if a barricade or barrier is removed for access it must be replaced once inside
- barricade and barrier signage and communication (see section 7)
  - ensuring dangerous parts of fixed plant is, as far as practicable, securely fenced or guarded.  
**Note: the term 'as far as practicable' covers situations in which it would not be practicable to completely guard all dangerous parts.**
  - maintenance and inspection
    - are reviewed periodically to make sure it remains effective in controlling the risk
  - installation and removal
    - distance erected from the hazard to prevent physical contact between personnel or equipment
    - are visible and legible to all concerned. Illumination should be considered where general lighting, either natural or artificial, does not provide suitable visibility
    - removed as soon as practicable when no longer required.
  - barricading and barriers for traffic management
  - barricading or barriers for working at heights drop zones
  - barrier requirements for demarcating Area of Control (exclusion zones see Appendix 1 )
  - barricading for defined hazardous work (exclusion zone and drop zones, refer to **IGO GSS 14 – Defined Hazardous Work and Permit to Work**).

## 5.1 Risk Assessment

Where a person could potentially be exposed to a hazard, IGO is obliged to consider both the specific statutory requirements for barricades, and those that might reasonably be identified through risk assessment.

The selection of barricades, barriers and/or signage shall be determined following the completion of a risk assessment and the determination of Risk Category (see Table 3 – Risk Category and Selection) posed by the hazard (refer to the **IGO Safety Risk Management Procedure**).

**Table 3 – Risk Category and Selection**

<b>Risk Rating</b>	
<b>Catastrophic (20 to 25)</b>	A barricade is mandatory and must be fitted with permanent fixed signage.
<b>Major (16 to 19)</b>	<ul style="list-style-type: none"> <li>• A barricade is mandatory where a permanent solution is required. Permanent fixed signage is mandatory where the hazard is permanent.</li> <li>• A barrier is acceptable (and is the mandatory minimum requirement) where a temporary solution is required.</li> </ul>
<b>Moderate</b>	A barrier is the mandatory minimum requirement.
<b>Minor</b>	No requirement
<b>Very low</b>	No requirement

## 6. IGO REQUIREMENTS FOR BARRICADES

Barricades are installed to restrict or prevent access to an area containing a hazard. In general, barricades must be erected and maintained where there is risk of a person falling, being entangled, being struck by large falling objects, or where there is risk of injury from equipment, processes or area hazards.

IGO requires that all barricades on plant conform to:

- ***AS 4024.1601 Safety of machinery- Design of controls, interlocks and guarding—Guards— General requirements for the design and construction of fixed and movable guards***
- the process specified in the ***Safe Work Australia Code of Practice: Managing risk of plant in the workplace (2016)***.

Barricades to prevent access to areas other than plant may include but are not limited to the following:

- approved free standing structures (e.g. post and rail assemblies continuously surrounding an excavation, water filled barricade structures).
- steel/concrete bollards permanently set in the ground
- barricade meshing retained through an approved free-standing or attached structure
- earth constructions (e.g. windrows, earth bunds) installed/constructed to physically prevent access of vehicles to a hazard area (e.g. open edge, tipping point). The construction shall be a minimum height equal to half the wheel height of the largest vehicle travelling adjacent to it
- other physical and continuous “hard” protection methods assessed and approved by a competent person (e.g. an engineer, qualified trades person or other suitably trained person in the relevant field as defined by site in their management plans) as being able to prevent persons from entering a hazardous or restricted area.

Barricades shall:

- be of sufficient strength and integrity to prevent accidental access. Where access points are installed in the barricading, the access points shall provide the same protection/access restriction as the barricade
- be positioned so as to be clearly visible and provide early warning prior to the hazard area
- have affixed signage (see section 7), and as appropriate, display information on how to obtain authorisation to access the affected area (if permitted).

## 7. IGO REQUIREMENTS FOR BARRIERS

In general, barriers are only to be used as a temporary solution where barricading is impractical. A barrier is installed to delineate the hazardous area, however does not physically restrict access. A barrier must be accompanied by adequate signage or other form of communication to manage access to the hazardous or restricted area.

Barriers may include the following:

- demarcation tapes (e.g. 'Danger' and 'Caution' tapes)
- cones and bollards (colour coded to aid in hazard identification and access protocols)
- steel chains
- plastic fencing mesh and plastic chains.

For surface operations, barriers must always have a completed tag affixed to the barrier.

See Appendix 1 for IGO approved barrier types.

### 7.1 Demarcation Tapes

All demarcation tapes shall be installed such that they:

- are securely fastened to prevent inadvertent dislodgement
- are clearly visible and provide early warning prior to the hazard area
- are installed at all access points to the hazard area approximately 1.5 metres above ground level
- have an information tag (i.e. a caution or danger tag) attached to the tape providing information on the potential hazard and informing personnel of the exposure risk (see section 8.1).

Demarcation tapes may be used in conjunction with other forms of barriers (e.g. strung between cones or bollards or festooned along barrier chains).

## 8. TAGS AND SIGNAGE

### 8.1 Tags

Tags must be attached in sufficient numbers at appropriate intervals (determined by a trained and Competent Person) to ensure their visibility from all entry points.

Tags shall provide the Work Area Owner's (or nominee) name and phone number.



Where appropriate, tags shall be accompanied with signage specifying the hazard e.g. 'Danger no access - persons working above'.

At IGO, two types of tags are used to accompany barriers; Danger Tags and Caution Tags<sup>2</sup>, see Table 4 – Barrier Tags.

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<sup>2</sup> The pictures of Danger and Caution tags presented above are illustrative of the general formats of tags to be used and do not constitute a design prescription.

Table 4 – Barrier Tags

Tag	Requirements
<p><b>Danger Tag</b></p> 	<ul style="list-style-type: none"> <li>• all Danger 'Do Not Enter' Tags must contain the standard black, red and white danger logo</li> <li>• a properly completed tag must contain the name of the Work Area Owner and the contact details (telephone number or radio channel).</li> </ul>
<p><b>Caution Tag</b></p> 	<ul style="list-style-type: none"> <li>• all Caution Tags must be Yellow and Black.</li> <li>• a properly completed tag must contain: <ul style="list-style-type: none"> <li>– a description of the hazard</li> <li>– the name of the person placing the tag</li> <li>– a note on any restrictions on entry</li> <li>– contact details for the Work Area Owner (or nominee).</li> </ul> </li> </ul>

## 8.2 Sign Design and Placement

Safety signs must be erected to warn workers of specific hazards and to communicate necessary precautionary measures and emergency actions. Safety signs shall meet the requirements of the relevant legislative requirement and Australian Standards.

Where applicable, safety signs shall be standardised in colour, shape, size, lettering, symbols and content in accordance with **AS 1319 Safety Signs for the Occupational Environment**.

Road signs and control devices shall at a minimum comply with **AS1742 Manual of uniform traffic control devices**.

Machinery signs and control devices shall at a minimum comply with **AS4024 Safety of Machinery**.

Specific colours will be used for the marking of physical hazards and equipment used in connection with accident prevention, as per Plant Demarcation Colour Codes YHSS061b and Australian Standard AS 1318—1985 (SAA Industrial Safety Colour Code).

## 8.3 Maintenance

Arrangements shall be made for the periodic audit and review of signage so as to ensure that all operation areas have signage that:

- meets legal requirements and current standards
- is effective and suitable for the intended purpose
- is located in the best location and within an appropriate distance from hazards
- is visible, well lighted and away from clutter or obstructions
- is not excessively overused.

Arrangements shall be made for:





- the removal of redundant or otherwise unnecessary signage
- cleaning and replacement of signage as required.

#### 8.4 'No Unauthorised Entry' Signage

Barricades and galvanised steel chains shall always be accompanied by permanent signage. In circumstances where access is permitted subject to authorisation, a 'No Unauthorised Entry' sign must be affixed to the barricade access or steel barrier chain.

The 'No Unauthorised Entry' sign must state who is responsible for authorising entry. In the underground environment, the default responsibility rests with the shift supervisor.

#### 8.5 No Entry' Signage

Barricades and galvanized steel chains must always be accompanied by permanent signage. In circumstances where access **is not authorized**, a 'No Entry' sign must be affixed to the barricade access or steel barrier chain. Nobody is permitted to pass through a No Entry unless they been formally approval by the Site Manager (RM or GM). 'No Entry' signs shall only be removed following completion of a risk assessment and verification of mitigating controls.

### 9. TRAINING

All employees and persons working in IGO Operational Areas must complete a site induction that contains information on barricades, barriers, signs and work area demarcation.

### 10. RELATED DOCUMENTS

#### 10.1 Common Management System Standards

- IGO CMSS 03 - Risk Management
- IGO CMSS 05 – Roles, Responsibilities, Accountabilities and Authorities

#### 10.2 Group Safety Standards

- IGO GSS 14 - Defined Hazardous Work & Permit to Work
- IGO GSS 19 – Electrical Safety

#### 10.3 IGO Plans, Procedures and Forms

- IGO Safety Risk Management Procedure

#### 10.4 External Documents

- AS 1319 Safety signs for the occupational environment
- AS 4687 Temporary fencing and hoardings
- AS/NZS 4994 Temporary edge protection
- AS/NZS 3845 Road safety barrier systems
- AS 4024.1601 Safety of machinery- Design of controls, interlocks and guarding— Guards— General requirements for the design and construction of fixed and movable guards
- Safe Work Australia Code of Practice: Managing risk of plant in the workplace

## APPENDIX 1: BARRIER SELECTION REQUIREMENTS

Type <sup>3</sup>	Application	Access
<b>Caution</b> 	<ul style="list-style-type: none"> <li>demarcates boundaries containing a hazard where entry is permitted but caution must be maintained at all times</li> <li>shall always be fitted with a completed Caution Tag</li> <li>in circumstance where the hazard persists for more than seven days, then;               <ul style="list-style-type: none"> <li>the Work Area Owner (or delegate) must assume responsibility for checking the ongoing integrity of the caution tape, or</li> <li>a barricade must be installed.</li> </ul> </li> </ul>	<p>Access past caution tape shall not be permitted until the Caution Tag has been read, understood, complies with and subsequently assesses as safe to proceed.</p>
<b>Danger/ Restricted Access</b>  (Red and White Tape or equivalent)	<ul style="list-style-type: none"> <li>shall only be installed as a first response control measure or where barricade installation is impractical</li> <li>delineates exclusion zone boundaries containing a hazard which has the potential to cause injury or fatality e.g. drop zones, no go zones, lifting operations</li> <li>shall always be fitted with a completed Danger Tag and other signage as appropriate</li> <li>in circumstance where the hazard persists for more than seven days:               <ul style="list-style-type: none"> <li>a barricade must be installed, or</li> <li>the Work Area Owner (or delegate) shall assume responsibility for checking the ongoing integrity of the danger tape</li> </ul> </li> <li>application must be included in a Safe Work Procedure or JSEA.</li> </ul>	<p>Access past danger tape is not permitted. Only authorised personnel approved by Work Area Owner, Permit Holder or Recipient in Charge.</p>
<b>Restricted Electrical Work Access</b> 	<ul style="list-style-type: none"> <li>used to demarcate and restrict access to electrical hazards. Commonly used for switchboard maintenance or live works</li> <li>danger tape with appropriate signage can also be utilised</li> <li>may include flagging in the same colours</li> <li>application must be included in a Safe Work Procedure or JSEA.</li> </ul> <p>Refer to <i>IGO GSS 19 – Electrical Safety</i></p>	<p>Only authorised personnel approved by the Recipient in Charge of the barricaded area (as indicated on the signage) are permitted to access through the barricade.</p>

<sup>3 3</sup> The pictures of barrier types presented in this Appendix are illustrative of the general formats to be used and do not constitute a design prescription.

Type <sup>3</sup>	Application	Access
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**Restricted Radiation Access**




- used to demarcate an area containing a radiation hazard/ radiography testing exclusion zone
- application must be included in a Safe Work Procedure or JSEA
- may include flagging in the same colours
- must be accompanied by signage with international radiation symbol including the contact details of the person responsible for the area.

Access permitted under instruction and authority given from Radiation Safety Officer or delegate.

**Cones / Bollards**



- used to demarcate an area containing a hazard as a substitute for Caution Tape.
- must always be accompanied by signage that includes the contact details of the person responsible for the area
- application must be included in a Safe Work Procedure or JSEA
- in circumstance where the hazard persists for more than seven days, then;
  - the Work Area Owner (or delegate) must assume responsibility for checking the ongoing integrity of the cone demarcated area, or
  - a barricade must be installed.

Cones and bollards should never be used to delineate the boundary of an area containing a hazard with the potential to cause injury or fatality.

**Chains**

- galvanized steel chains may be used to demark an area containing a hazard as a substitute for Danger Tape or Caution Tape.
- application must be included in a Safe Work Procedure or JSEA
- all barrier chains must be accompanied by signage including the contact details of the person responsible for the area (see sections 8.1 and 8.2).

No unauthorised access permitted.  
 Note (1) In circumstances approved by site management, barrier chains may be used as a permanent barrier.

**Barrier Mesh and Bunting Flags**



- used to demark an area containing a hazard as a substitute for Danger Tape or Caution Tape
- must be accompanied by signage including the contact details of the person responsible for the area
- in circumstance where the hazard persists for more than 4 weeks, then;
  - the Work Area Owner (or delegate) must assume responsibility for checking the ongoing integrity of the plastic mesh fencing, or chain or
  - a barricade must be installed.

Refer to access for Danger Tape and Caution Tape.