

EXPLOSIVES STORAGE HIF AUDIT PART1 SURFACE - 17/06/2003 02:55:13 PM**1. MAGAZINE CONSTRUCTION - SURFACE MAGAZINES**

| Point | Standard | Guideline |
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| 1.1 | Approved design: Chief Inspector of Explosives | Intent :To verify that any transportable magazines is designed to AS2188. Personnel : Manager superintendent etc. Method : Obtain confirmation that the magazine conforms by viewing the manufacturers specifications or similar documentation. Most transportable magazines in use are Irvine & Evans or D&F Engineering manufactured and are designed to comply with AS 2188 and as such are of an approved design. |
| 1.2 | Magazine of greater than 250kg capacity is licensed by Chief Inspector of Explosives | Intent : To verify that the magazine is currently licensed where required. Personnel : Manager, superintendent etc. Method : Obtain a copy of the current licence issued by the Chief Inspector of Explosives. Check that it is current |
| 1.3 | The magazine is located at least 50 metres away from any entrance to any underground mine. | Intent : To verify compliance with MSIA regulation 4.37. Personnel : N/A Method : Inspect the magazine location and obtain a location plan for the written report. |
| 1.4 | False roof in place to protect magazine from heat when used north of 25th parallel. | Intent : To verify compliance with AS 2188. Personnel : N/A Method : Inspect the magazine. |
| 1.5 | Air vents in place with weather protection. | Intent : To verify that the magazine has air vents that are designed to provide protection from the weather. Personnel : N/A Method : Inspect the integrity of the air vents. |
| 1.6 | The magazine is lined with close jointed timber without exposed steel or iron surfaces. | Intent : To verify compliance with AS 2188. Personnel : N/A Method : Inspect the inside of the magazine. |
| 1.7 | Mortice deadlock locking mechanism or close shackle padlock with secure fitting. | Intent : To verify that the magazine security complies with AS 2188. Personnel : Manager or superintendent etc. Method : Check design drawings where available, check manufacturer, inspect the lock mechanism. |
| 1.8 | Metal external surfaces to be electrically bonded to at least two down conductors within 15 metres of each other. | Intent : To verify that the magazine is earthed to comply with Shot Firers Notes. Personnel : N/A Method : Check earthing cables installed on the magazine. |
| 1.9 | Earthing of less than 10 Ohm checked and recorded by an electrician. | Intent : To verify good electrical practice as per Shot Firers Notes. Personnel : Manager, electrical supervisor etc. Method : Obtain records of earthing installation tests. |
| 1.10 | Metal fences are electrically bonded. | Intent : To verify that the magazine compound fences are electrically bonded to prevent flashovers in the event of a lightning strike. Personnel : N/A Method : Inspect bonding of fences as per Shot Firers Notes. |

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| 1.11 | Where required by the magazine licence lighting protection with conductor finials to provide a 45o zone of protection are provided | Intent : To verify that lightning protection is provided if required. Personnel : N/A Method : Check the licence and where required the installation as per diagram in the Shot Firers Notes. |
| 1.12 | There is no electrical wiring inside unless it has been approved by Chief Inspection of Explosives. | Intent : To verify that only wiring approved by the CIE is installed in the magazine. (No transportable magazine will have any electrical installation apart from earthing). Personnel : Manager. Method : Inspect the magazine, if any electrical wiring apart from earthing is installed then it must be approved in writing by Chief Inspector of Explosives obtain copy of such an approval. |
| 1.13 | There is no combustible or flammable material within 8 metres of the magazine. | Intent : To verify that the area within 8 metres around the magazine is free of flammable materials including plant growth as required by AS 2187. Personnel : N/A Method : Inspect the area around the magazine. |
| 1.14 | The magazine is located at least the prescribed distance from any protected works installation or facility. | Intent : To verify that the magazine is located at a prescribed safe distance from all protected works or facilities such as public roads and buildings. Personnel : Managers. Method : Prescribed distances are in Shot Firers Notes and the AS2187. Check if any protected works etc are in the area and measure distance as required. Obtain a magazine location plan for the written report. |
| 1.15 | Explosives magazine is in excess of 10 m from any detonator magazine. | Intent : To verify that explosive and detonator magazines are segregated by a distance of at least 10 metres. Personnel : N/A Method : Inspect the magazine location and measure the separation distances between magazines as required. Obtain a magazine location plan for the written report. |

2. SIGNAGE AND EMERGENCY EQUIPMENT - SURFACE MAGAZINES

| Point | Standard | Guideline |
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| 2.1 | Prominent ' EXPLOSIVES' sign displayed on magazine. | Intent : To verify that magazine signage complies with AS 2188 and MSIA regulation 4.10. Personnel : N/A Method : Inspect the magazine. |
| 2.2 | Licence number prominently displayed. | Intent : To verify that magazine signage complies with AS 2188 and MSIA regulation 4.10. Personnel : N/A Method : Inspect the magazine. |
| 2.3 | Magazine rules are posted inside the magazine. | Intent : To verify that magazine signage complies with AS 2188 and MSIA regulation 4.10. Personnel : N/A Method : Inspect the magazine. |

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| 2.4 | ' NO SMOKING' sign prominently displayed. | Intent : To verify that magazine signage complies with AS 2188 and MSIA regulation 4.10. Personnel : N/A Method : Inspect the magazine. |
| 2.5 | Fire Extinguishers are posted at the magazine access. | Intent : To verify that fire fighting equipment is provided at the magazine location. Personnel : N/A Method : Observed location and inspect the service tag of any extinguishers. |
| 2.6 | Manufacturers name and date of manufacture displayed on relocatable magazines. | Intent : To verify that magazine signage complies with AS 2188. Personnel : N/A Method : Inspect the magazine. |

3. STOCK CONTROL - SURFACE MAGAZINES

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| 3.1 | A responsible person has been appointed to control the magazine. | Intent : To verify compliance with MSIA regulation 8.6 and Section 44. Personnel : Manager. Method : Interview the manager and appointee in regard to the appointment. Sight relevant documentation. |
| 3.2 | The appointment is recorded in the record book. | Intent : To verify compliance with MSIA regulation 8.6. Personnel : Manager. Method : Check the Mine Record Book for appointment. |
| 3.3 | The keys are kept by the appointed person. | Intent : To verify that the keys to the magazine facilities are kept secure by the responsible person. Personnel : Manager, shot firer, charge crew etc. Method : Interview mine personnel. |
| 3.4 | The appointed person keeps records of incoming and outgoing stocks. | Intent : To verify that records are kept of explosive stock movements. Personnel : Manager, shot firer etc. Method : Check magazine records. |
| 3.5 | There is a system in place to rotate stocks. | Intent : To verify that stocks are rotated in the magazines. Personnel : Shot firer, stores personnel etc. Method : Check magazine records and stocks. Interview persons involved with delivery and handling. |
| 3.6 | Stock delivered is promptly secured in the magazine. | Intent : To verify that explosive deliveries are promptly placed into the magazines and secured. Personnel : Manager, stores personnel, shot firer etc. Method : Interview personnel involved in explosive deliveries, if possible inspect the procedure upon a delivery. |
| 3.7 | Stock levels are within the licence limits. | Intent : To verify that the magazine stock levels are within the licence limits. Personnel : Magazine master etc. Method : Perform a stock check and cross reference with the licence limit. |

4. HOUSEKEEPING - SURFACE MAGAZINES

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| 4.1 | A broom and doormat is available in the magazines to clean up. | Intent : To verify that magazine usage complies with AS 2188 and Magazine Rules. Personnel : N/A Method : Inspect the magazine. |
| 4.2 | No spilt material is left in the magazine | Intent : To verify that magazine usage complies with AS 2187. Personnel : N/A Method : Inspect the magazine. |
| 4.3 | The magazine floor is clean and dry. | Intent : To verify that magazine usage complies with AS 2187 and 2188. Personnel : N/A Method : Inspect the magazine. |
| 4.4 | Explosives are safely stacked to a height no greater than 2 metres. | Intent : To verify that magazine usage complies with AS 2187. Personnel : N/A Method : Inspect the magazine. |
| 4.5 | Air gaps are maintained between explosives and the magazine walls. | Intent : To verify that magazine usage complies with AS 2188. Personnel : N/A Method : Inspect the magazine. |
| 4.6 | No additional unauthorised materials are stored in the magazine. | Intent : To verify that magazine usage complies with AS 2187 and 2188. Personnel : N/A Method : Inspect the magazine. |
| 4.7 | No explosives are stored loose in the magazine. | Intent : To verify that magazine usage complies with AS 2187 and 2188. Personnel : N/A Method : Inspect the magazine. |
| 4.8 | Incompatible explosive products are not stored adjacent to each other. | Intent : To verify that magazine usage complies with AS 2187 and 2188. Personnel : N/A Method : Inspect the magazine to ensure detonators are segregated from detonating fuse and explosives. |
| 4.9 | Cladding, vent shrouds and vent gauges are in good condition. | Intent : To verify that magazine maintenance complies with AS 2188. Personnel : N/A Method : Inspect the magazine. |
| 4.10 | Mounding around the magazines is in a good condition where it is a licence requirement. | Intent : To verify that a magazine mound is in place where required. Personnel : Manager. Method : Check the licence conditions, if a mounding is required inspect its condition. |

5. PROCEDURES - SURFACE MAGAZINES

| Point | Standard | Guideline |
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| 5.1 | There is a procedure in place to maintain the magazine installation. | Intent : To verify that the magazine installation is treated similarly to other parts of the mine infrastructure and receives due consideration by the maintenance functionaries. Personnel : Maintenance Manager. Method : Obtain copy of procedures for maintenance. |

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| 5.2 | No maintenance involving hot work occurs until the magazine is empty and thoroughly cleaned. | Intent : To verify that procedures exist for hot work on magazines and that due precautions are a part of those procedures. Personnel : Maintenance manager. Method : Obtain copy of hot work procedures for magazine maintenance. |
| 5.3 | There is a procedure in place to secure and evacuate the magazine during lightning storms. | Intent : To verify that there is a written procedure to secure and evacuate the magazines during a lightning storm. Personnel : Manager, shot firer etc. Method : Obtain copies of procedures and interview personnel who access the magazine compound. |
| 5.4 | There is an emergency procedure in place to deal with fire at or near the magazine. | Intent : To verify that a fire threat to the magazine is handled by a suitable emergency procedure. Personnel : Manager, shot firer etc. Method : Obtain copies of procedures and interview personnel who access the magazine compound area. |
| 5.5 | There is a procedure for the disposal of old or damaged explosives. | Intent : To verify that there is a procedure in place to deal with old or damaged explosives. Personnel : Manager, shot firer and production personnel. Method : Obtain copies of procedures and interview relevant personnel. |
| 5.6 | Magazine is kept locked except when stock movement or other authorised activities are occurring. | Intent : To verify that the magazines are kept locked and secure. Personnel : Personnel who use explosives. Method : Inspect magazine and check that it is locked interview personnel. |