

# SECURITY OF AMMONIUM NITRATE



**A Guide to the  
Security of  
Ammonium Nitrate  
used in Blasting**



## Essential Guidelines

- Throughout this document AN means any ammonium nitrate used for blasting purposes.
  - This document seeks to offer practical and cost effective guidance, in line with HSE safety recommendations, to prevent the unlawful acquisition of ammonium nitrate from quarries, mines and opencast sites.
  - It is recommended that sites using AN for blasting purposes should consider carefully the acquisition and storage of the product. Coordinating deliveries of AN with blasting operations should allow you to limit the amounts of AN that are required to be stored at the site. Where possible, existing stocks of AN should be depleted before fresh stocks are acquired.
  - Consider using other blasting methods such as a blend supplied by contractors on the day of blasting so that AN need not be stored on site at all.
- Avoid storing outside where there is public access or where it is visible from a place to which the public have access.
  - Do not transfer/sell AN to others.
  - Be familiar with and observe the guidance in the HSE safety document 'Storing and Handling Ammonium Nitrate' INDG230.
  - Record all AN deliveries - amounts, type and manufacturer.
  - On receipt and if practical, consider marking AN bags with a unique reference (i.e. postcode) - this may assist the authorities in identifying any recovered AN.
  - Record accurately all usage and returns.
  - Carry out regular stock checks against written inventory.
  - Report any theft/stock loss or suspicious activity to police immediately.



- Wherever possible and with regard to HSE guidance store AN in a **locked** compound or building.
- Where AN is stored outside, always fully cover to conceal the product and to assist in detecting any tampering.
- Maintain a list of persons authorised by the site manager to access the AN store and deny access to those who are not authorised.
- Maintain **strict** key control for access to stores of AN and ensure that the store keys are themselves secured and can be accounted for.
- Where AN stores are accessed by a key-code ensure that the code does not become known by unauthorised persons and change the code regularly.
- Ensure that existing security measures are well maintained, regularly inspected and working correctly e.g. fences, lighting, locks, alarms, CCTV systems.



## Fencing

If AN is to be secured in an external compound within the site then an effective way is to construct the compound using security fencing (recommended standards listed below), correctly installed and fitted with appropriate locking gate(s).

The service life of fences will vary depending on the type of fence, the incidence of accidental or deliberate damage combined with environmental factors and any maintenance programme.

Consideration should be given to HSE guidance relating to vehicle access and egress (in particular the risks associated with reversing/manoeuvring large vehicles).

It is strongly recommended that such fences are fitted with a hostile topping such as barbed wire, barbed tape or revolving spikes to discourage climbing. Similarly, it is recommended that where appropriate, a concrete sill is constructed beneath the fenceline to prevent access by digging.

Note that planning permission may be required for such fenced enclosures and there are restrictions and conditions imposed by the Occupiers Liability Acts 1957 and 1984 and Section 164 of the Highways Act 1980.



### Welded Mesh Anti-Intruder Fence

Welded Mesh Anti-Intruder Fence should have a service life of at least 10 years if properly maintained. It should be 3m high. The fence should comply with BS 1722 Part 10: 1990



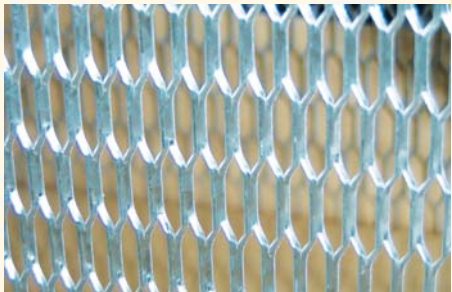
### Palisade Anti-Intruder Fence

Palisade Anti-Intruder Fence should have a service life of at least 20 years if properly maintained. It should be 3m high. The fence should comply with BS 1722 Part 12



### Expanded Metal Fence

Expanded Metal Fence should have a service life of at least 10 years if properly maintained. The fence should be attached to steel posts and be 3m high. The fence should comply with BS 1722 Part 10: 1990



## Gates

Gates should be of the same security standard as the fence that they are attached to and be fitted with anti-lift hinges. Consideration should be given to minimising gaps between posts and in particular the clearance beneath the bottom edge of the gate(s) to prevent unauthorised access.

Padlocks used to secure gates should be of the closed or concealed shackle type (unless a shroud is provided on the gate itself), be suitable for external use and be tested or evaluated to BS EN Standard 12320 or equivalent.

## Storage in Buildings

AN may be stored in buildings but careful consideration must be given to HSE safety guidance relating to confinement, ignition and fuel sources, ventilation and drainage.

## Doors

External door-sets (which includes the door itself, door-frame, hinges and locks) giving access to buildings used to store AN should be certified to a minimum of LPS (Loss Prevention Standard) 1175 Security Rating 2 or equivalent. Glazing within external doors should be a minimum thickness of 7.5mm of laminated glass.



Existing doors which may not meet these standards can be reinforced using external steel sheeting, hinge bolts and ensuring that fitted locks comply with BS 3621 (5 lever mortise) or equivalent.

## Windows

Windows which are accessible (such as those on the ground floor or adjacent to flat roofs) should be protected by key-operated window locks (tested to BS EN 12051), opening restrictors and fitted with 7.5mm laminated glass.

Existing glazing can be retro-fitted with anti-bandit film together with a window anchoring system to deter entry via breaking through glass.

Window frames should conform to BS 7950. Windows which are particularly vulnerable may be protected by external security grilles which should meet LPS 1175 SR 2 or equivalent.

## ISO Shipping Containers

A fenced compound is recommended since it offers the best combination of both security and safety. If ISO shipping containers are used they should be provided with a vent with an open area of at least 1m<sup>2</sup>. Although this vent will reduce the likelihood that a fire in the container will cause conditions that may lead to an explosion, storage in fenced compounds is preferable. Measures to secure the container so that it cannot be moved must be taken.



## On-Site Plant and Machinery

It is important that steps are taken to properly secure any on-site tools, plant and vehicles that might be used to gain access to your AN store. Where possible tools should be locked away and mobile plant (such as ANFO mixers) and vehicles should be immobilised. It is recommended that, where possible, ANFO mixers are drained of AN and oil when not in use to prevent misuse.



## Useful Websites

[www.hse.gov.uk](http://www.hse.gov.uk)

[www.mi5.gov.uk](http://www.mi5.gov.uk)

[www.securedbydesign.com](http://www.securedbydesign.com)

[www.acpo.police.uk](http://www.acpo.police.uk)

FOR FURTHER SPECIFIC ADVICE,  
PLEASE CONTACT YOUR LOCAL POLICE

