

Security of licensed and registered explosives stores and registered premises

Health and Safety Executive circular to chief officers of police (No 1/2005)



Contents

Introduction 2

Background	2
Legislation	2
Alarms	2

Steel stores 2

Doors	4
Locks	6
Ventilation	9
Detonators	9
Older stores	9
Modifications	11

Construction of concrete, stone or brick buildings 11

Ventilation	12
Maintenance	12
Doors	12

Alarm/surveillance arrangements 15

Storage in buildings	16
Key security	16

Appendix A Manufacturers of steel explosives stores 17

Appendix B Locks suitable for use on explosives stores and former mode A registered premises 18

Appendix C Protection of Erebus E2553, Banham M101 and Chubb locks 19

Appendix D Recommended method for testing Erebus E2553 and Banham locks 20

Introduction

1 This note gives guidance on the recommended standards of security for licensed and registered stores holding explosives that may be attractive to terrorists or other criminals. This guidance does not contain new information, but the appendices may be copied and given to those with relevant duties.

Background

2 This guidance applies to explosives that are deemed to be attractive to terrorists or other criminals. The types of 'attractive' explosives referred to are those which require a police certificate to acquire or acquire and keep. These explosives include, but are not limited to, gunpowder, blasting explosives, detonating fuses, detonators, cutting charges and various types of military stores.

3 These recommendations apply only to those places where explosives that may be attractive to terrorists or other criminals are kept; they are not intended to apply to places which keep only shotgun cartridges, fireworks, small arms ammunition or other similar low security risk explosives.

4 The basic premise underlying the recommendations contained in this circular is that attacks on explosives storage places must be frustrated by the combination of the structure of the storage place itself together with an appropriate intruder alarm/surveillance system, so that police, or other defensive force, can be alerted promptly and can make an effective response. In effect, this means that the defensive force is alerted as soon as an attack takes place.

Legislation

5 Section 23 of the Explosives Act requires all occupiers of premises storing explosives to take due precautions to prevent access to the explosives by any unauthorised persons.

Alarms

6 Guidance on various types of construction and on basic principles of alarm systems is given in paragraphs 43–53.

Steel stores

7 This type of storage unit is in widespread use and a number of companies manufacture purpose-built stores in a range of different sizes. A list of those companies presently known to manufacture steel stores, constructed to the standards given below, is attached at Appendix A.

8 The store should be of all welded construction, using minimum 6 mm thick steel plate.

9 Steel explosives stores are generally designed to be transportable. It is, therefore, of great importance that each store should be firmly fixed to an adequate base to prevent its unlawful removal. Each store should be fitted with strong, steel channels securely welded to the base. At four points, suitably-spaced holes are

drilled through the channel and the adjacent parts of the steel base of the store. The diameter of these holes should be just sufficient to accept a 20 mm diameter bolt. The store should stand on a base of good quality concrete at least 200 mm thick. The base should extend under the whole area of the store including the area occupied by any attached detonator annex. This should hold four 20 mm ragbolts fixed firmly to a depth of at least 150 mm. The threaded upper ends of the bolts should pass through the holes in the steel channel and terminate just below the wooden floor of the store. The store should be firmly fixed to the four bolts. The concrete base should be thoroughly cured before fixing the store in position, otherwise distortion of the store may occur and doors may not fit properly. Figure 1 shows two acceptable arrangements.

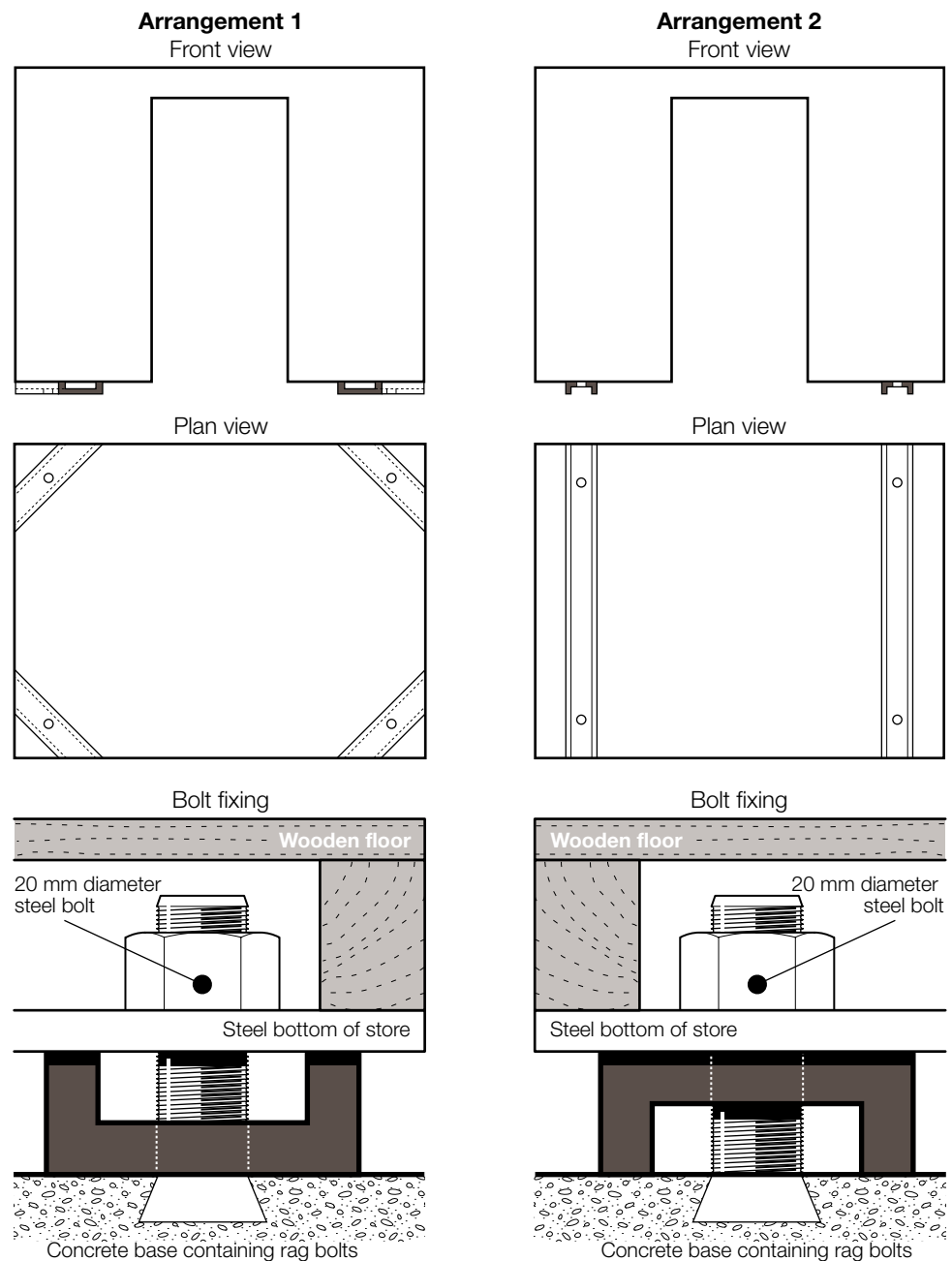


Figure 1 Arrangements for store fixing

Doors

10 The door opening should be stiffened by 50 mm x 50 mm x 6 mm steel angles welded to the walls in such positions that, when the door is closed, its inner surfaces meet at the top and at the two vertical sides for a distance of about 20 mm inwards from the edge. The horizontal parts of the framework may, alternatively, be stiffened by a 10–15 mm thick steel bar welded to the inner surface of the roof and, at each end, to the walls on either side of the door. Figure 2 depicts suitable arrangements.

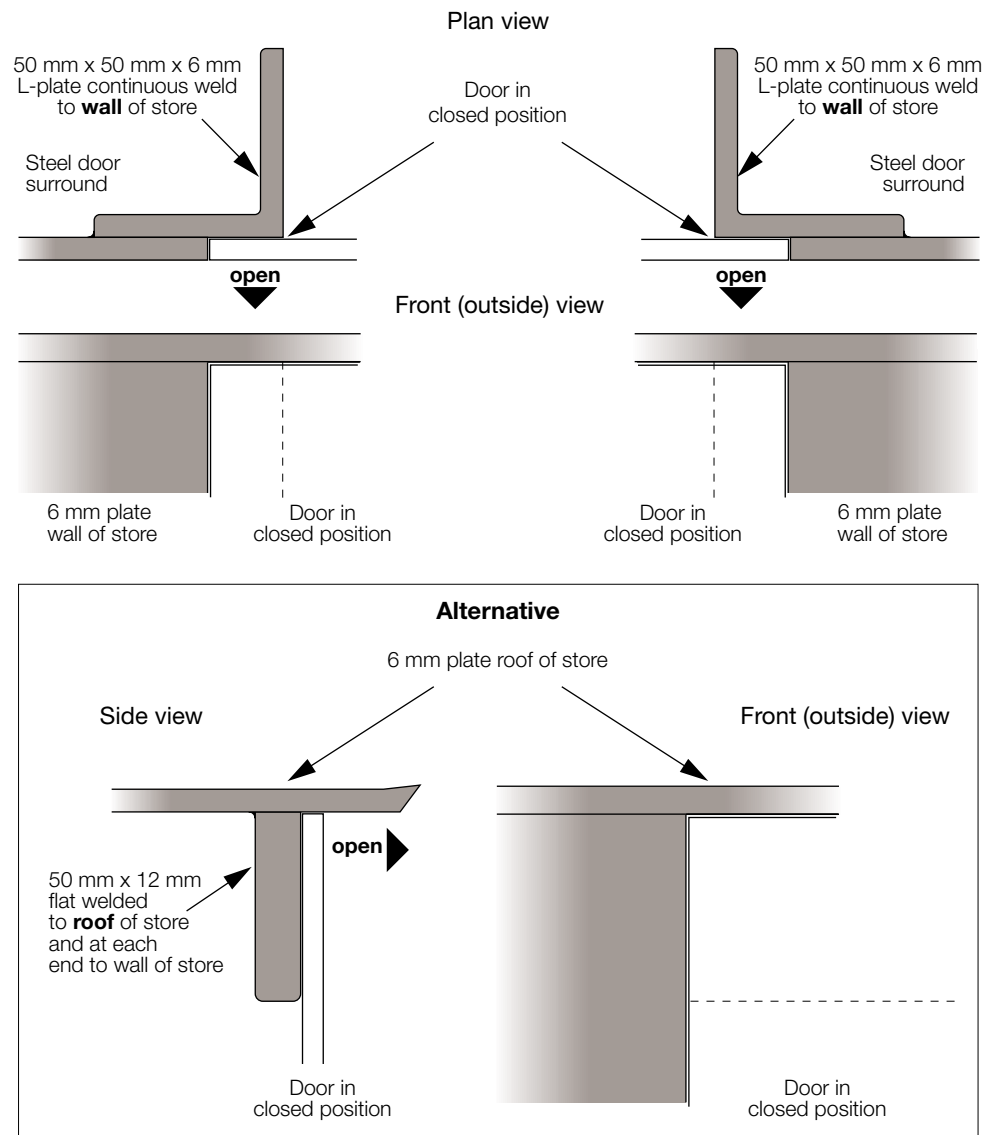


Figure 2 Door opening

11 The door should be of minimum 6 mm thick steel plate and should be stiffened by steel angles or channel (50 mm x 50 mm x 6 mm) welded to the inner surface of the door as close to the four edges as possible. This angle should be continuous and unbroken. Figure 3 shows a suitable arrangement.

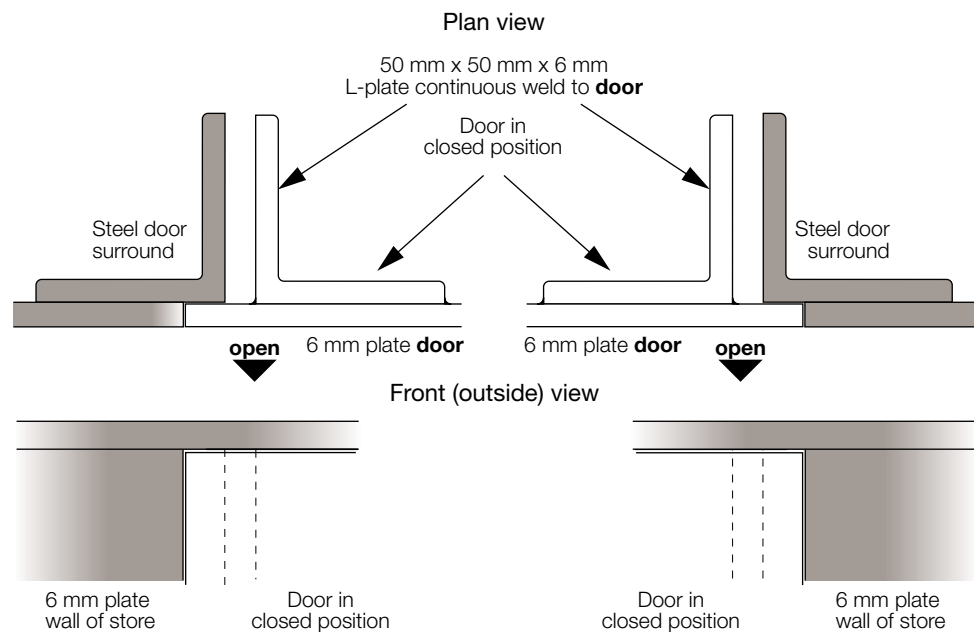


Figure 3 Suitable arrangements for door stiffening

12 The door should hang by means of robust steel hinges continuously welded both to the door and to the door surround. The hinges may be fitted internally or externally. For doors with external hinges, a number of hinge bolts (alternatively known as 'dogbolts' or 'snugs') should be provided. Their purpose is to prevent the door being opened from the hinge side, should the external hinges have been previously destroyed or partly removed. Hinge bolts should be continuously welded to the inner surface at the hinge side of the door and extended at least 20 mm behind the door surround. When the door is closed, the hinge bolts should fit snugly against the door surround. The cross-sectional areas of the hinge bolts should be no less than 40 mm x 20 mm. The upper hinge bolts should be positioned at or above the level of the hinge, with lower hinge bolts at or below the level of the lower hinge. The number of hinge bolts fitted should be dependent on the height of the door, but in no case should there be fewer than two. Where there are more than two, it is desirable that they be equally spaced.

13 The door must fit flush with the walls and any gaps around the door must be the minimum necessary to allow the door to open and close freely.

14 Some manufacturers fit internal hinges. The design of these hinges should be such that they will not straighten if the hinge side of the door is subjected to lever attack. Figure 4 gives an indication of a suitable hinge and the means by which it may be fixed to the door surround. It should be noted that, to provide additional strength, the hinge is also welded to the adjacent parts of the steel angle stiffening pieces.

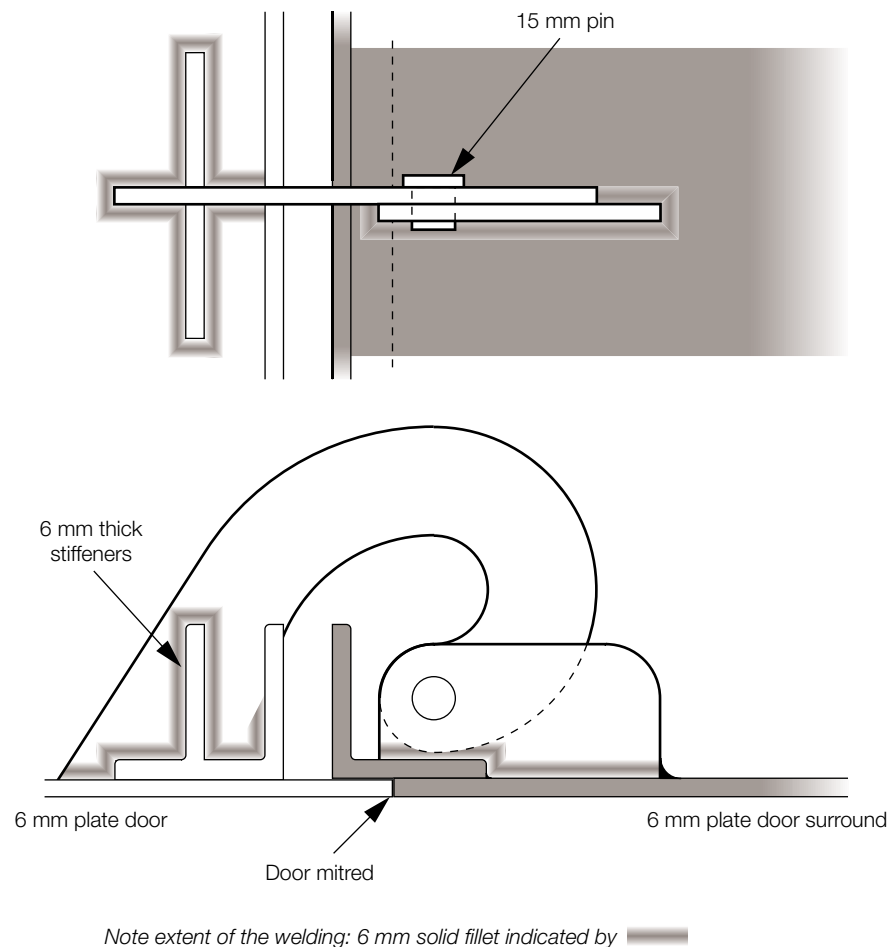


Figure 4 Internal hinge (showing strengthening arrangements)

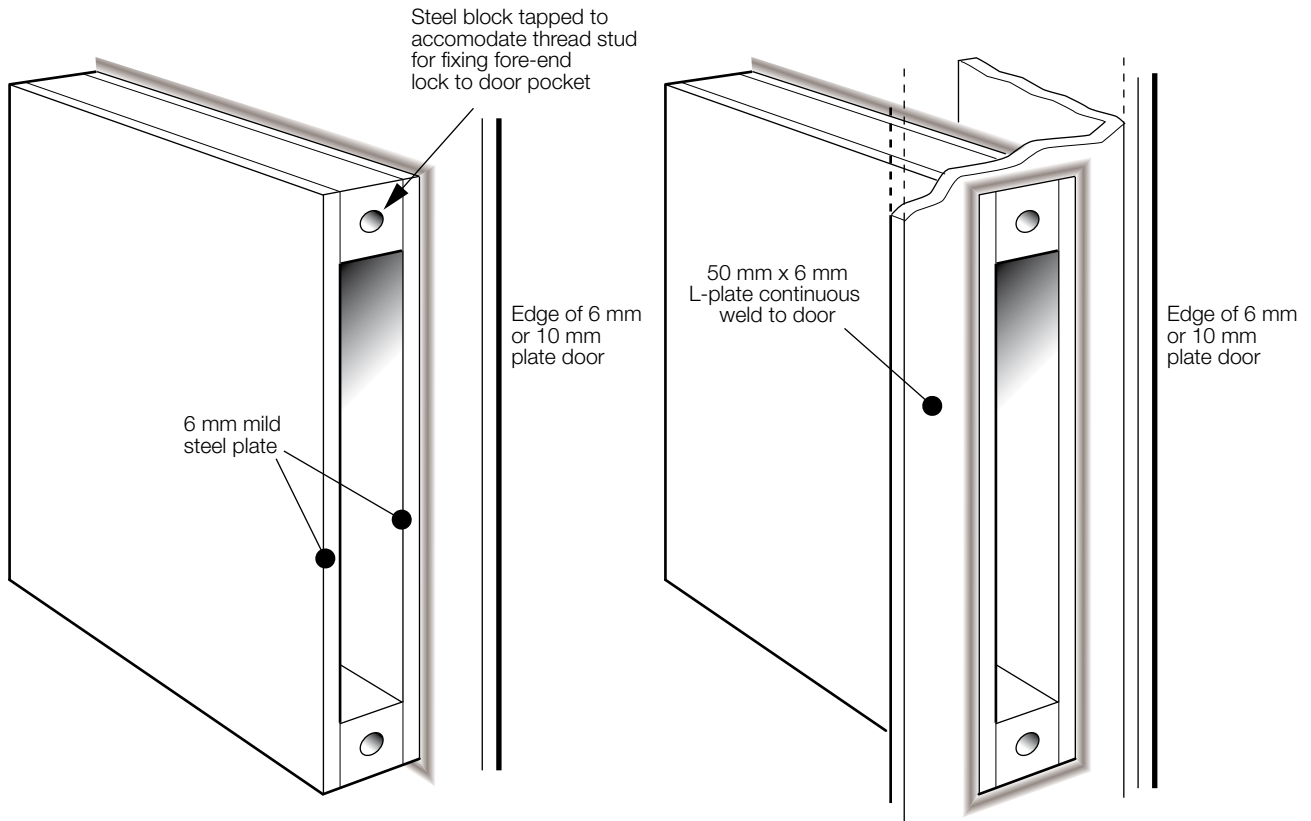
15 At least two hinges must be fitted. Doors with a height of 1.5 m or over should be fitted with three hinges, whether they be internal or external.

Locks

16 The door should be secured by at least two multilever mortice deadlocks, each having a bolt of hardened steel or which contains hardened steel cylinders. The bolt should extend a distance of at least 20 mm beyond the fore-end of the lock when it is in the thrown position. Appendix B gives details of locks that have been found suitable.

17 Each lock should be enclosed within a steel lock pocket which should be continuously welded to the inner surface of the door and to the steel angle stiffener, which will of necessity have been partially cut away at that point to permit the lock pocket to be fitted. In fitting the pocket, the edge of the angle through which the lock is passed to fit into the pocket should be slotted and not cut through. In the case of the Chubb 3G317, it is advisable to increase the width of the angle to allow this to be achieved. Where, on existing stores, a 50 mm wide angle has been cut out and then re-welded into place, it will be necessary to periodically examine these welds to ensure no deterioration has reduced the effective strength of the angle. The two side plates of the pocket should have a thickness of 6 mm. They may be separated from each other by steel blocks at the top and bottom, the whole being welded together. The internal dimensions of the pocket should be such that the lock fits snugly into it with only the absolute minimum amount of lateral movement. A suitable arrangement is illustrated in Figure 5. The pocket should be positioned

as close as possible to the vertical edge of the door, while permitting the door to be opened without obstruction. When in the thrown position, the lock bolt should pass into a hole cut for this purpose in the steel angle stiffener fitted to the adjacent part of the surround of the door. The size of the hole should be such that it forms a snug fitting for the lock bolt and does not permit any movement of the door when locked.



The pocket should be of all welded construction and should be continually welded to the inner surface of the door, and in the case of 6 mm plate door, to the adjacent portions of the locally cut-away steel angle door stiffener.


Note extent of the welding: 6 mm solid fillet indicated by 

Figure 5 Steel pocket for lock

18 The end of the lock bolt should be protected by means of a piece of steel angle or plate welded across the door surround stiffening angle in such a position to prevent end-on attack on the bolt. Figure 6 shows a suitable arrangement.

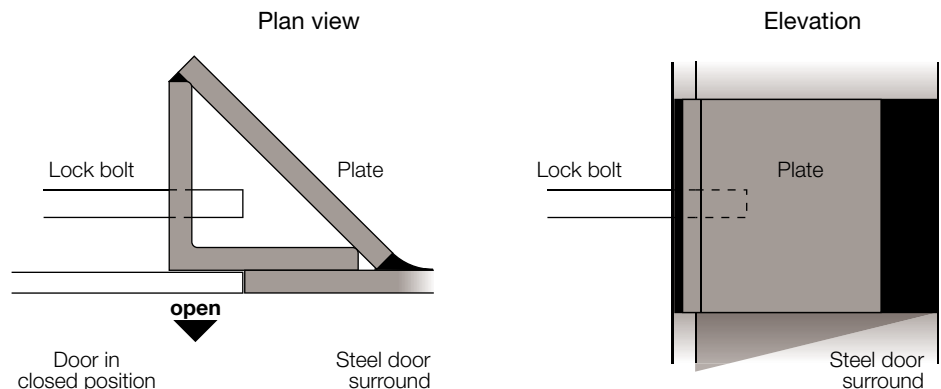


Figure 6 Additional protection for lock bolt

19 If an Erebus E2553, Banham M101, Chubb 3G317 or Chubb 3G227 lock is fitted, it must be protected by an anti-drilling plate. This plate can be built into the lock pocket or may be welded on to the outside of the door in the position shown in Figure 7. Since 1974, steel stores supplied by the manufacturers listed in Appendix A have had these plates fitted during manufacture. All doors on other stores and the previous Mode A registered premises with these locks should by now have also been fitted with these plates. However, some may have been missed. Appendix C details methods for fitting these plates. It must be noted that they are specially made and only available from the manufacturers listed in Appendix A.

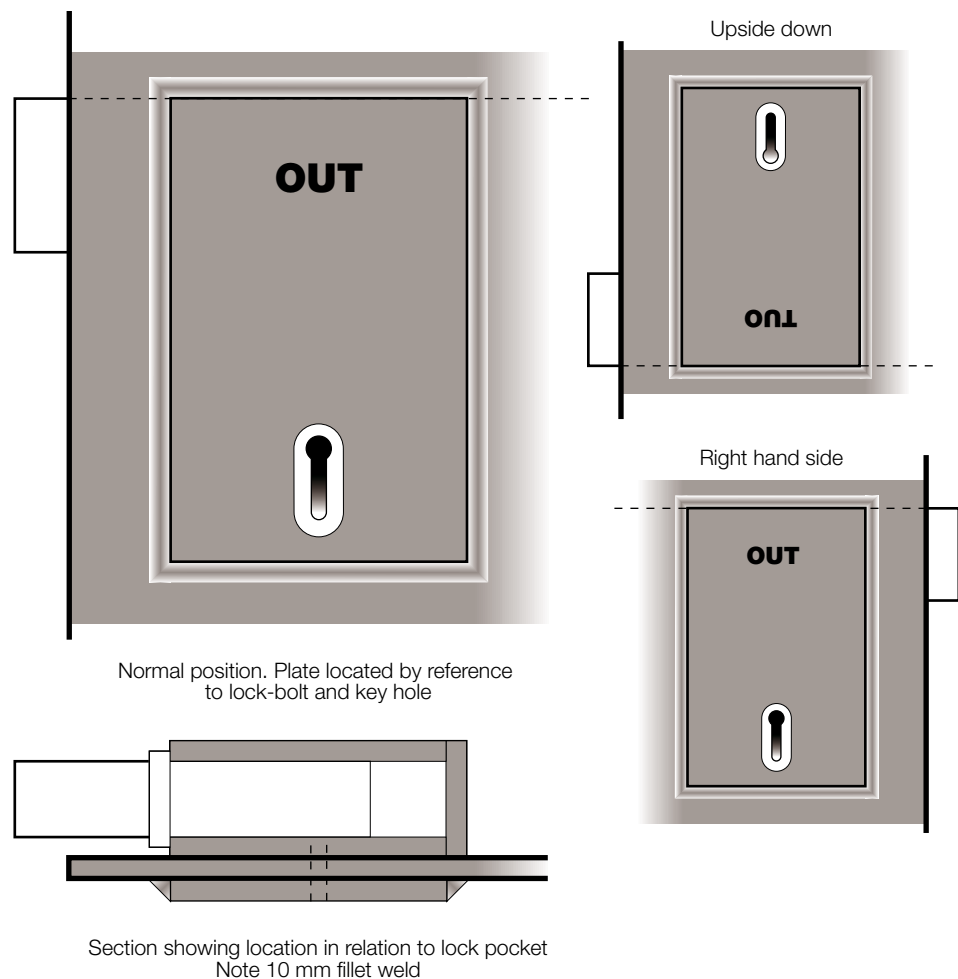


Figure 7 Location of lock protection plates

20 Some older Erebus and Banham locks have become relatively insecure, due to excessive wear, on an internal brass link. As a result, the key may fail to throw the bolt to its fullest extent and it may, therefore, not function as a deadlock. The method of testing for this condition is described in Appendix D. All types of lock should be serviced regularly and checked to ensure that they work correctly.

21 Simple escutcheon plates should be fitted over the key openings on the doors. This is not so much a security measure as to prevent intrusion of grit and dust, which could damage the locks.

22 Door handles should be of weak construction to prevent their being used to assist in an attack on the door.

Ventilation

23 For safety reasons, stores must be ventilated. The simplest form of ventilation for steel stores is a number of 5 mm diameter holes drilled through the front and rear walls of the store. But whatever form of ventilation is used, it should be protected by a 6 mm thick steel cover-plate welded to the outside of the walls, covering all ventilation spaces and open at the bottom. The corresponding ventilation holes drilled through the inner wooden lining should be located so that the group is offset from the location of those in the steel wall.

Detonators

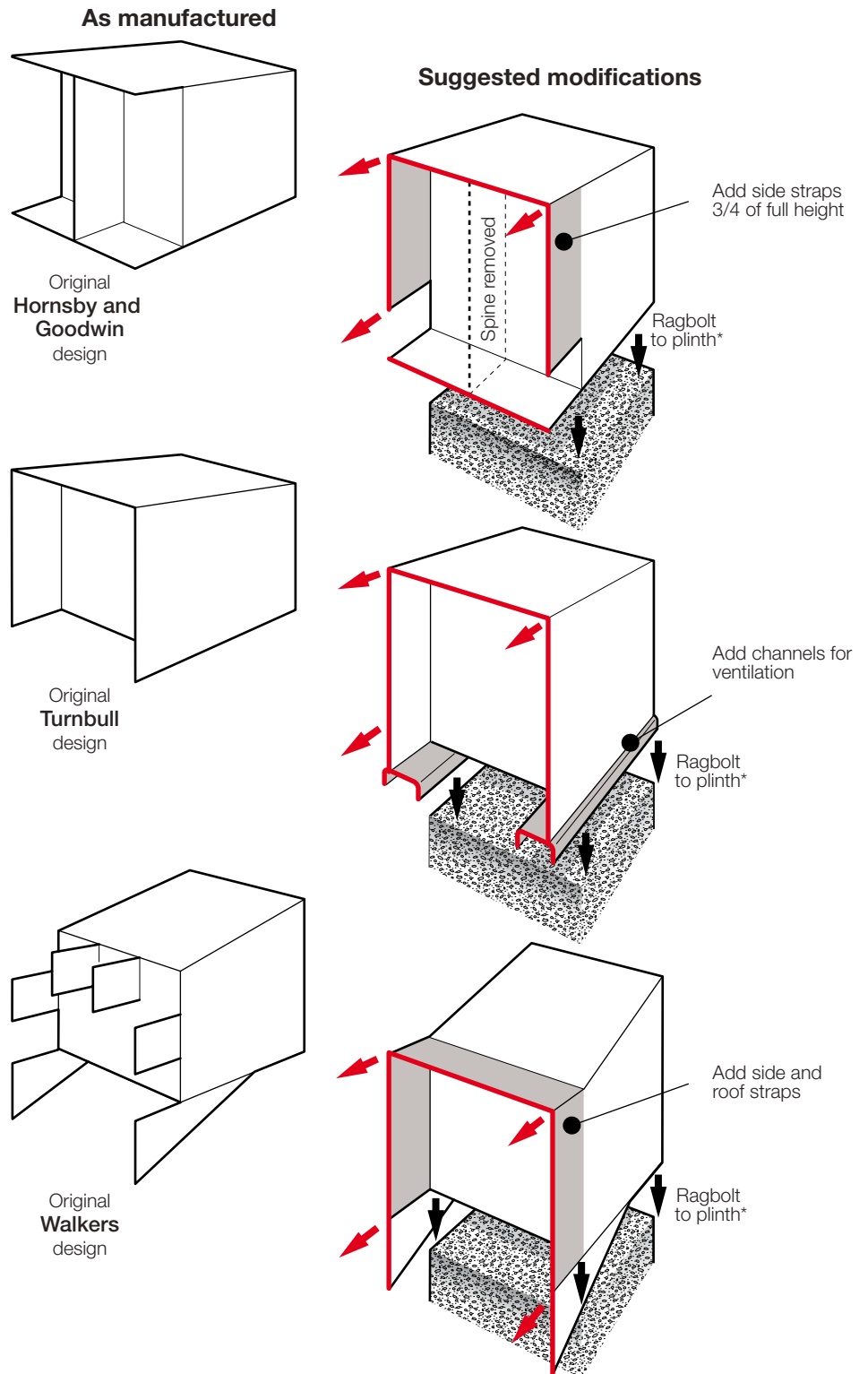
24 Detonators must be kept separate from blasting explosives and, therefore, two compartments are required by most explosives users. These compartments are preferably two separate storage units (which may be licensed as one store), but they may alternatively be incorporated in the same storage unit. If they are incorporated in the same unit, there must be an air gap between them. This is usually accomplished by fixing a smaller compartment, built to the same standards, to the rear of the main compartment. For keeping up to 1000 detonators, this smaller compartment should be separated from the main compartment by an air gap of at least 300 mm. This method of mounting the smaller compartment must be such that it is not easily removed from the main compartment. Figure 8 shows some suitable arrangements.

25 The detonator compartments on stores constructed since 1982 are double-skinned. A second steel box, fabricated from 3 mm mild steel, is fixed inside the detonator compartment so that there is a 75 mm gap between all surfaces at the top, base and sides of the two boxes. The door of the inner box should be fitted with a simple brass lock or bolt or, alternatively, arrangements are made so that the door of the outer box automatically keeps the door of the inner box shut when it is in the closed position.

26 Older stores have single-skin detonator boxes. In these cases, detonators should be kept inside a substantial inner container. This should be constructed from 18 mm thick multi-ply wood, or other substantial material. It should completely enclose the detonators and be fastened in a closed position. Its size should be such that it is free to move about inside the detonator box, and, therefore, should be at least 100 mm smaller than the inside dimensions of the detonator box. Figure 9 shows a suitable design.

Older stores

27 Steel stores have been in use for many years. During this period, recommended standards have improved and it may be that some stores currently in use do not meet all existing recommendations. Therefore, the points listed above should be carefully checked during licensing and inspection. This may entail the partial removal of the internal wooden lining. The odd minor discrepancy may be rectified by modification, but it has been found from experience that, where a number of faults exist, or major discrepancies are found, it is best to replace the store completely or have a complete new storefront fitted. This is especially so if extensive welding is required. Any welding that might be necessary must be to the highest standard and carried out by an expert, so that weld integrity is assured and no distortion of metal occurs.



All straps and plates to be fully welded to roof and walls, and welded to store along **RED** edges

*Ragbolting to a plinth is an option, not an absolute requirement

Figure 8 Strengthening detonator compartment mountings

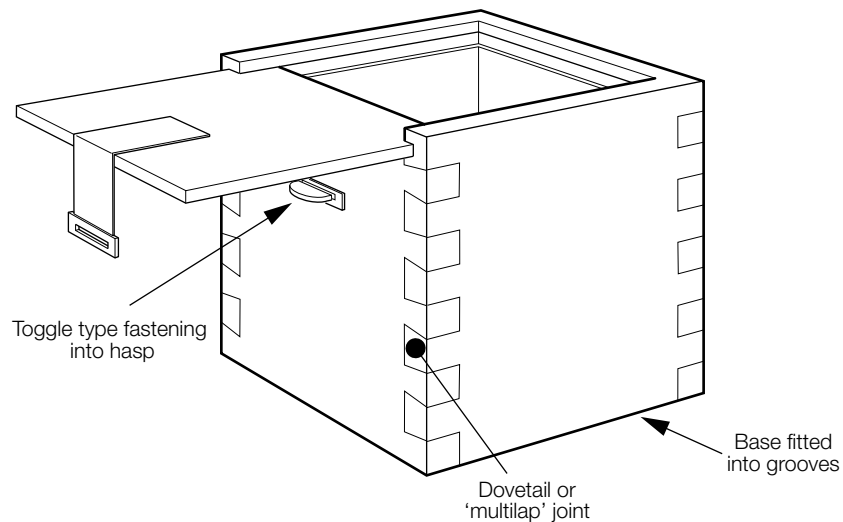


Figure 9 Detonator containers

Modifications

28 Before any modifications are undertaken on any store, it is essential that the store be first emptied of all explosives and then thoroughly washed down. The explosives so removed must be kept in a safe and secure building, or, alternatively, on and under a waterproof cover and attended constantly by a responsible person. The temporary place of keeping should be a safe distance, not only from the store being modified, but from other places of work. A good rule is to apply the relevant separation distance in the Manufacture and Storage of Explosives Regulations. For continued security the work should be carried out promptly once the store is empty.

29 Upon completion of modifications and reinstatement of the wooden lining removed to permit the alterations, internal steel surfaces which still remain exposed should be given several good coats of paint. Internal hinges should be covered by adhesive plastic tape. After the paint has dried, the store should once again be washed out and allowed to dry before it is put back into service.

30 Modification to internal surfaces involving the use of welding apparatus will probably result in external indications of the positions where the work has been undertaken. It is, therefore, suggested that before the store is returned to service it should be thoroughly wire brushed down to remove dust, deteriorated paint etc, then given several good coats of paint.

Construction of concrete, stone or brick buildings

31 No storage building should have a roof constructed of tiles or slates hanging on beams. The roof should be constructed of solid reinforced concrete, not less than 150 mm thick, but may be sloped to 125 mm at the edge to drain off water.

32 The preferred form of construction, from a security viewpoint, is a building of reinforced concrete or one of steel, as described earlier. Walls of buildings of reinforced concrete should be at least 250 mm thick and tied into the roof by means of reinforcing rods.

33 Wall thicknesses of a single brick are not secure. Existing buildings of brick, stone or concrete block construction with walls at least 230 mm in thickness, excluding the width of any cavity, are acceptable. However, it is preferable for this type of construction to be cavity wall with external leaf at least 100 mm thick brick and internal leaf either 215 mm thick brick or 200 mm dense concrete block. New buildings of this type should be constructed to this standard.

Ventilation

34 For safety reasons, storage places must be ventilated. Particular attention should be paid to the design of ventilators because of their vulnerability to attack. The inner and outer ventilating openings in brick, stone or concrete block built cavity walls should be staggered vertically so as to prevent direct access to the inside of the store. For each set of ventilators there should be built into the brickwork, at a stage midway between the two openings, a strong, perforated steel plate, in a horizontal position, spanning the cavity between the two lines of brickwork.

35 Ventilating louvres on the outside should be of steel (preferably galvanised) and not of other materials such as asbestos/cement, or earthenware. They should be firmly fixed to the surrounding walls and these fixings should be entirely concealed from the outside.

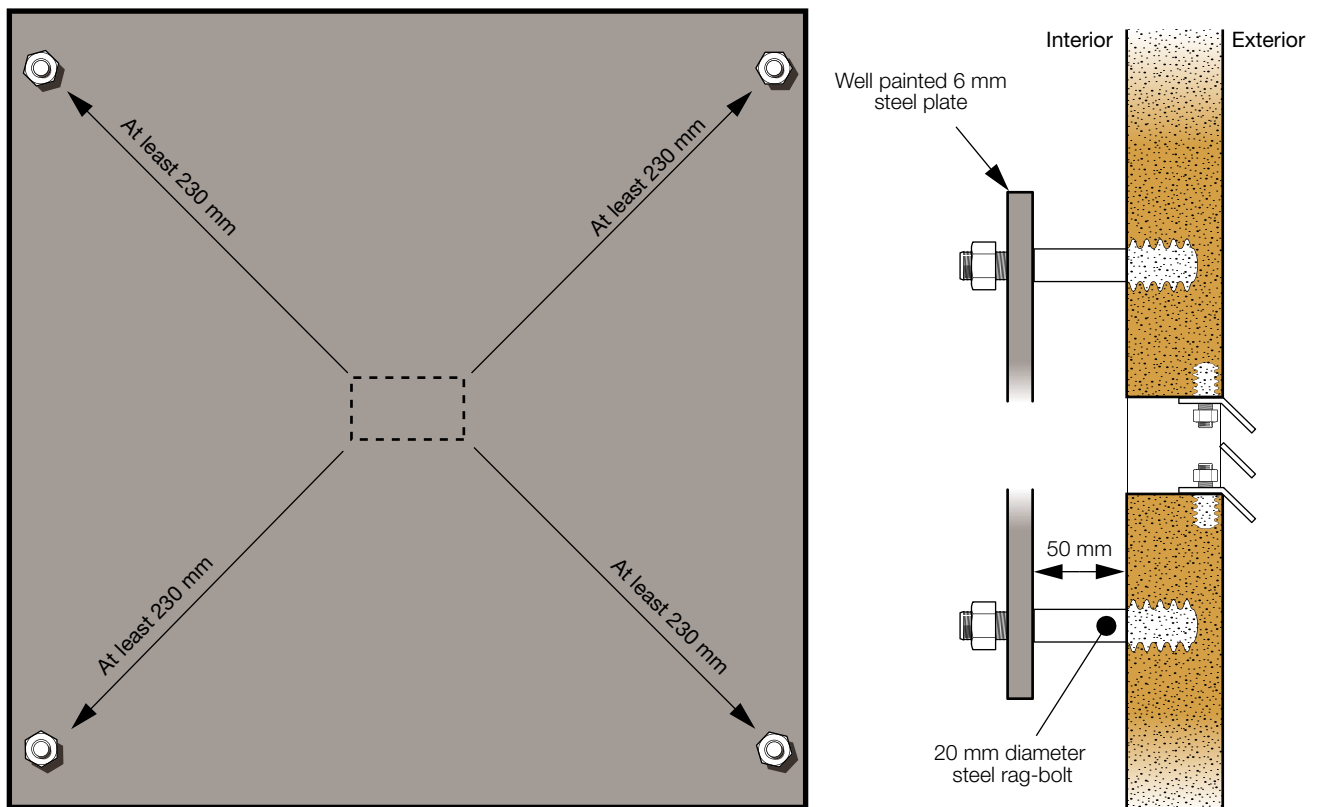
36 It is often not possible to arrange a staggered form of ventilation for solid walled stores. For 'straight through' ventilation, the outer ventilating opening should be fitted with a louvre of the type referred to in the paragraph 35. In addition, the opening on the inner surface of the wall should be faced with a robust, well-painted, steel plate fixed by means of four ragbolts to the wall. The bolts should be of 12 mm diameter and located at least 225 mm from the opening. The plate should be so fixed as to stand away from the wall at a distance of about 50 mm, to permit an adequate airflow. Figure 10 shows a suitable arrangement.

Maintenance

37 It is essential that brick, stone and concrete walls are not permitted to deteriorate to any significant extent. Some types of building-brick and stone are susceptible to deterioration by weather. Mortar and sand/cement mixtures are also subject to decay. Deteriorated bricks and stones should be removed and replaced by sound ones. Joints should be inspected regularly and deteriorated mortar or sand/cement mix should be thoroughly raked out and replaced by a good mix of sand/cement. Re-pointing alone is not an adequate measure.

Doors

38 Some of the larger storage places have two closing leaf doors. All the principles for single-leaf doors should apply to these, with the addition that 10 mm thick steel plate should be the minimum thickness requirement and that three locks must be used. The bolts securing the first closing leaf should be of either square or circular cross-section, having respectively sides or diameters of 20 mm. They should be enclosed within robust cages which should themselves be continuously welded to the door. One bolt should operate upwards to be located behind the top vertical position of the steel framework and the other should be located at the bottom of the door within or behind strong steel housing sunk in the floor. It is essential that no part of either bolt should be visible from the outside when the door is closed. Similarly, when the door is locked, no part of the lock bolts should be visible from the outside and a steel plate at least 6 mm thick should be welded to the whole length of the edge of the inner surface of the first closing leaf and extend beyond the edge for a distance of at least 15 mm.



Note: The 12 mm diameter rag bolts should be at a distance of at least 230 mm from the ventilation opening

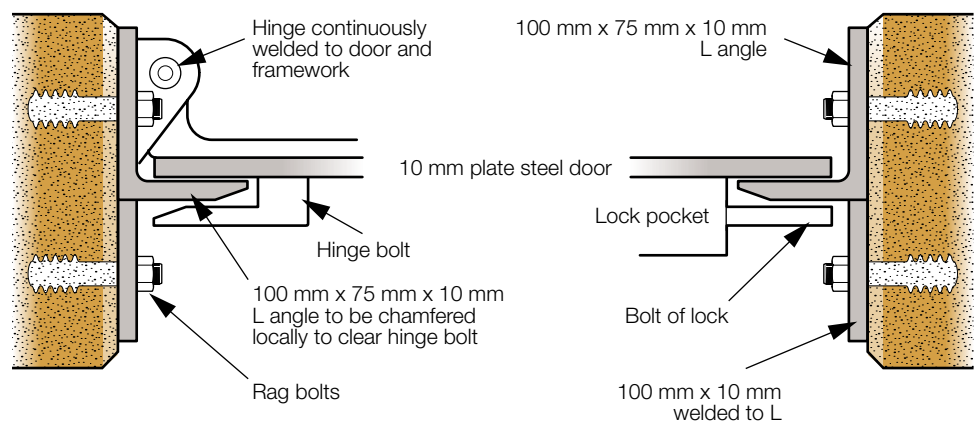
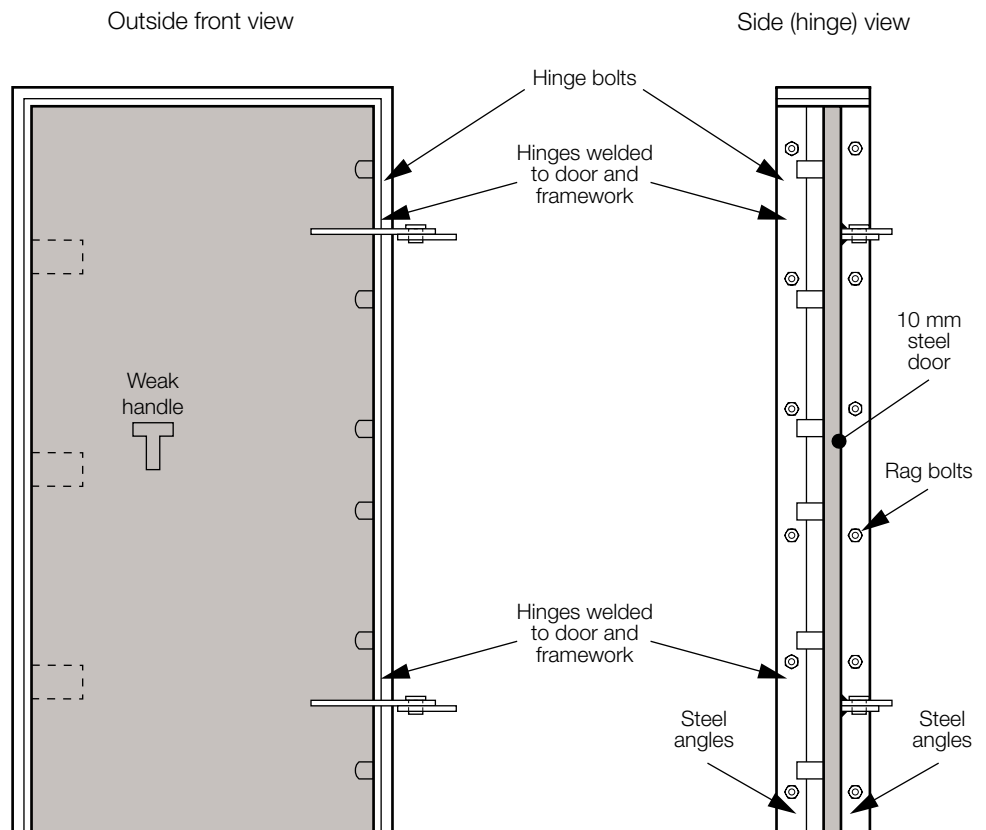
Figure 10 Protecting plate on inside of ventilating opening for solid walled store

39 Single-leaf doors for stores of these types of construction should be of steel, having a thickness of at least 6 mm, but preferably 10 mm. The principles set out in paragraphs 10–15 should be followed when consideration is being given to the doors. However, doors of 10 mm thick steel need not be stiffened, as should steel doors having a thickness of 6 mm.

40 Many doors for brick, stone and concrete walled stores are appreciably taller than those for steel stores. In these cases, even with a single-leaf door, three locks per door should be provided.

41 Door frames should be made of steel angles having a minimum thickness of 10 mm. The angle should be constructed to form a 'T-section' frame with a minimum of 200 mm width of the frame against the wall and 75 mm to form the door rest. This can be provided by either 100 mm x 75 mm angle and a 100 mm flat bar welded to form the T, or the use of T-section steel. The angles should be securely bedded and ragbolted to the surrounding walls. Where possible, the door should not protrude beyond the line of the wall and in no case should it protrude beyond that of the door frame.

Outer steel door



42 Suitable arrangements for a door are illustrated in Figure 11.

Figure 11 Outer steel door

Alarm/surveillance arrangements

43 Explosives storage places on sites that are not constantly manned should be equipped with a suitable intruder alarm system. In this context, 'constantly manned' means that any attempt to break into a storage place would be immediately detected by the workforce and appropriate action taken. The alarm system should conform to BSI standards, as appropriate. Alternatively, a system of patrols may be used, provided the system is effective and covers adequately for staff absences.

44 The objective of any alarm and/or surveillance system should be that the police, or other defensive force, can be alerted promptly. A plan for that force's response should be agreed with the occupier of the premises in each case.

45 If patrols are used for surveillance, the time for which the building can resist the expected level of attack should be at least equal to the sum of the longest interval between inspection by the patrol and the time expected for the police, or other defensive force, to make an effective response. It should be noted that it is no longer accepted that steel stores constructed in accordance with this circular will withstand an attack by people armed only with hand-tools for a period of four hours.

46 A 'failsafe' system of reporting should be employed, ie the patrol should report by telephone or radio at prearranged intervals and the defensive force will react if a report is not received.

47 If the alarm is by an electromechanical device, this should react to the first onslaught and not wait until the intruder is actually inside, because there is then much less time for the defensive force to react. The device itself must be fail-safe and signal any attack that may be made on it, or its connecting equipment and wiring. It should safeguard the walls, doors and roof.

48 The electrical alarm system must not endanger the explosives and should comply with normal arrangements for electrical apparatus in explosives danger buildings. In general, most of the explosives that are kept at mines, quarries or construction sites do not give rise to explosive dusts or vapours and, therefore, at most of these places equipment that meets category C requirements in this document will be suitable. However, it is the responsibility of the occupier to assess which category is correct in each individual case.

49 Care must also be taken to ensure that no part of the alarm system comes into contact with explosives, and that explosives in the store will not damage the alarm system. Before alarm systems are fitted, it is essential that the store be first emptied of explosives and the requirements of paragraph 28 should be followed.

50 A wide range of automatic detection and alarm systems is available and many are safe to use in explosives storage places. It should, however, be noted that while systems based on closed-circuit television are a valuable means of assessing alarms, they should not be used as a primary means of detection. Also, Doppler microwave and passive infrared systems in general only detect an intruder after they have entered a storage place. Care must be taken to ensure that, if other microwave systems are used, they do not endanger items which can be initiated by radio-frequency power, eg electrical detonators.

51 There is no British Standard on alarms specifically for explosives storage places. Alarms should comply with the relevant requirements of BS EN 50131 and BS 501361.

52 Alarm signalling systems should comply with the Association of Chief Police Officers (ACPO) alarms policy.

53 It is essential that the relevant police force be consulted before any alarm/surveillance system is installed.

Storage in buildings

54 Explosives kept in buildings must be kept just as secure against unauthorised access as explosives kept in separate stores. However, many of the previous paragraphs will not necessarily apply to all instances of this type of keeping.

55 Where explosives are kept in houses, offices, factories etc of normal construction, the curtilage of the building, or the room containing explosives, should be provided with an alarm system, or, alternatively, it may be constantly attended, or have frequent visits by security patrols. These are all acceptable, provided that the storage is of secure construction, and that paragraphs 45–47 of this circular are complied with.

56 For storage in domestic premises registered to keep gunpowder only (UN 0027 and UN 0028) where the security requirements are to be met by an alarm, a constantly monitored system is not required. Where the enforcing authority is satisfied that the storage place itself has adequate physical resistance to attack, an acceptable standard of alarming is a system installed to BS EN 50131 and BS EN 501361 with an external audible sounder. It must be emphasised that this concession only applies to the keeping of gunpowder in domestic premises.

Key security

57 It is essential that adequate key security arrangements are in operation at all places where explosives are being kept. Where premises are to be left unattended at any time, the key should be kept in the custody of a responsible person, or in a combination locked container kept under direct observation or alarm.

Appendix A Manufacturers of steel explosives stores

H & G Explosives Services Ltd,
Elsham House
1, Elwes Street, Brigg
North Lincs
DN20 8LB

info@handgexplosives.co.uk
www.handgexplosives.co.uk

Tel: 01652 688678
Fax: 01652 659345

J G Turnbull Ltd
Station Approach
East Boldon
Tyne and Wear
NE36 0AD

Tel: 0191 536 7149
Fax: 0191 5190218

Zone Power Ltd
High Road
Bressingham
Diss
Norfolk
IP22 2AT

www.zonepower.com
sales@zonepower.com

Tel: 01379 687796
Fax: 01379 687437

Appendix B Locks suitable for use on explosives stores and former mode A registered premises

Banham M7 Exp
M101 (now discontinued)

Banham's Patent Locks Ltd
233/235 Kensington High Street
London W8 6SF

Tel: 0844 482 9122
Fax: 020 7376 1232

www.banham.com
security@banham.com

Bramah MD17
Erebus E2553 (repair and manufacture – if sufficient demand)

Bramah Security Equipment Ltd
31 Oldbury Place
London W1U 5PT

Tel: 0800 970 1603
locksmiths@bramah.co.uk

Chubb 3G317 005/04 (left-hand)
3G317 006/04 (right-hand Chubb 3G227 – where door modifications in Figure 7
are present (lock production discontinued in 2005))

Chubb Lock Custodial Services
PO Box 61
Well Lane
Wolverhampton
WV11 1TB

Tel: 01902 867753
www.clcsltd.co.uk
dave.smith@clcsltd.co.uk

Appendix C Protection of Erebus E2553, Banham M101 and Chubb locks

- 1 All these locks on storage places must be protected by anti-drilling plates; it will not suffice to protect just one lock on each door. The plate must be precisely aligned with the lock to ensure that the hard facing material is located over the vulnerable area of the lock. The arrangement of the plate and the method of alignment on the outside of the door is shown in Figure 7. Fitting instructions are given below.
- 2 Remove all internal fittings, eg escutcheon plates, from the outside face of the door over the areas required for the protection plates. Ensure that the area is flat; it is vital that the plates lie closely against the surface of the door.
- 3 Operate the lock to leave the bolt in the extended position. The bolt should protrude beyond the edge of the door and act as a reference point for alignment of the plate. The edge of the bolt furthest from the keyhole, normally the top edge, is used for this alignment.
- 4 Clamp the protection plate to the door such that the plate top edge is precisely in line with the lock bolt and the keyway is placed centrally over the lock keyhole. The side of the plate marked 'OUT' or 'O' must be outermost. Check that the key can be operated; it should not be necessary to enlarge the keyway in the protection plate.
- 5 Locks are normally fitted to the left-hand side of the door. However, a small proportion may be in other positions, eg on the right-hand side, on the top edge, on the left-hand side but upside down. The main alternatives are shown in Figure 7. The correct alignment of the plate for any lock position can be deduced from this figure.
- 6 The plate must be fixed to the door by a continuous 10 mm fillet weld using a normal electric arc welding technique for mild steel. Gas welding would give no penetration and must not be attempted. It is important to use minimum heat to avoid distorting the door. The plate should be first attached with a narrow chain weld, the gaps filled and the weld finally built up to 10 mm.
- 7 The plate and the surrounding area should finally be cleaned off, primed and painted. In the case of the Chubb 3G317, it is important that the special escutcheon plate provided is fitted onto the anti-drilling plate. Note: The store must be cleared of explosives and thoroughly cleaned out before work commences.

Appendix D Recommended method for testing Erebus E2553 and Banham locks

- 1 With the door open and the bolt in the retracted position, place the thumb against the end of the bolt and turn the key as if to lock the door. If the lock is defective, it is possible that the bolt will not be thrown fully, notwithstanding that the key may be turned to the locked position and be capable of being removed from the lock.
- 2 With the door open and the bolt fully thrown, press the thumb against the end of the bolt. If the lock is defective, the bolt can be pushed back to the retracted position.

Further information

For information about health and safety, or to report inconsistencies or inaccuracies in this guidance, visit www.hse.gov.uk/. You can view HSE guidance online and order priced publications from the website. HSE priced publications are also available from bookshops.

This document contains notes on good practice which are not compulsory but which you may find helpful in considering what you need to do.

This document is available at: www.hse.gov.uk/explosives.

© *Crown copyright* If you wish to reuse this information visit www.hse.gov.uk/copyright.htm for details. First published 2005.