



Ministry
of Defence

Defence Infrastructure Fire Standards

Relating to Asset and Property Protection

Defence Fire Risk Management
Organisation

DFRMO

AMENDMENT RECORD

Amd No	Date	Text Affected	Authority and Date

HISTORICAL RECORD

The Standards were published in 2017 to replace Crown Fire Standards (Dec 97 with subsequent amendments)

POINTS OF CONTACT

The owner of this Standard is;

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REFERENCE DOCUMENTS

Previously applied Fire Standard	Crown Fire Standards
Statute	Regulatory Reform (Fire Safety) Order 2005
Statute	Fire (Scotland) Act 2005
MOD Policy	DIO Policy Instruction 02/10 – MOD Building Regulations Compliance System
MOD Policy	DIO Policy Instruction 05/10 – Automatic Fire Detection in Dwellings occupied by MOD personnel.
MOD Policy	DIO Policy Instruction 2015/04 – Fire safety related works on the MOD estate
MOD Policy	JSP 411 Chemical, Biological, Radiological and Nuclear (CBRN Guide for Protected Buildings (CBRN Guide)
MOD Policy	JSP 440, Pt 2, Vol 3 – Resilience Defence Critical National Infrastructure.
MOD Policy	JSP 482 – MOD Explosives Regulations
MOD Policy	JSP 503 – Business Continuity Management
MOD Policy	JSP 604 – Defence Manual of Information and Communications Technology (ICT)

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1.0 DEFENCE STANDARDS

- 1.1 The Defence Infrastructure Fire Standards (DIFS) have been published to replace the requirement to apply Crown Fire Standards. They are intended to provide asset and property protection to MOD Buildings where a level of importance is implied that relates to the need to maintain a capability or the availability of an asset. Other agencies or areas operating on behalf of MOD may also adopt the fire standards contained within this document.

2.0 ROLES AND IMPLEMENTATION

- 2.1 In consultation with DIO, the Defence Chief Fire & Rescue Adviser (DCFRA) and Hd of DFRMO has accepted ownership of the document. Due to the technical nature of these Standards, DIO are appointed as the Technical Author by the DCFRA; and under the authority of DFRMO will reserve the right to carry out assurance assessments including site visits of any work relating to the standards contained within the document. If a project has been selected for an assurance assessment, advanced notification will be provided by the DIO Senior Fire Safety Manager (SFSM) .
- 2.2 The responsibility for providing assurance against compliance with the Defence Infrastructure Fire Standard lies with the Project Team delivering the works. This will be verified by the issue of a Certificate A, confirming design compliance and a completion Certificate confirming compliance of the works on site, issued by the Relevant Fire Officer.
- 2.3 Any non-compliance with the standards, deviations or alternative methods of compliance must be approved by the DIO SFSM prior to the commencement of such works. The DIO SFSM approvals process is initiated by completion and submission of the determination form detailed at Annex B.

3.0 APPLICATION OF THE DEFENCE INFRASTRUCTURE FIRE STANDARD

- 3.1 This document applies to buildings where the MOD Building Regulations Compliance System¹ applies to the works, where works are carried out to active or passive fire safety measures in the building and/or where MOD assets are relocated to one of these building types that would materially alter the Fire Risk Assessment of the building;
- a. Single Living Accommodation – Limited to DIFS 2
 - b. Commercial Kitchens – Limited to DIFS 2
 - c. Electronic Data Processing Accommodation
 - d. Vehicle Workshops and Garages
 - e. Storage Accommodation, Vehicle Storage and Car Parks
 - f. Aircraft Hangars, excluding Glider Hangars and Temporary / RUBB Hangars
 - g. Laboratories
 - h. Underground and Unfenestrated Facilities
 - i. Fuel & Lubricant Installations – Limited to Fire Fighting Facilities in DIFS 1
 - j. Ammunition Stores – Limited to Fire Fighting Facilities in DIFS 1

¹ MOD Building Regulations Compliance System – DIO Policy Instruction 02/10 is mandated on the MOD estate, link attached; https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/278819/20140211_PI0210_DIObranding.pdf - Note: This will be revoked on publication of JSP 850.

Note 1: The requirements for Space Separation as detailed in DIFS 1 are not limited to the buildings / facilities highlighted in 3.1 and apply to all non-domestic buildings on the MOD estate.

Note 2: Electronic Data Processing Accommodation is defined as rooms or buildings that contain IT server equipment.

- 3.2 Where works are proposed to an existing building, the standard will apply to the area of work only. The intent is not to apply to the whole building retrospectively, for example if a new fire detection and alarm system was to be installed in an existing building, only the requirements applicable to fire detection and alarm systems would apply to the works.
- 3.3 Where works are carried out to an existing building that cannot meet the standards contained in Annex A, further consultation with the DIO SFMS will be required. This consultation is initiated by the submission of Annex B (Application For Determination of Defence Infrastructure Fire Standards)
- 3.4 In all cases, the minimum standards set by the applicable national guidance to the Building Regulations for the location of the works shall be followed, as mandated by DIO Policy Instruction 02/10 the MOD Building Regulations Compliance System. Any reference to supporting documents, British Standards, Codes of Practice etc are inferred to be the extant and latest versions.
- 3.5 The applicable mandated documents are as follows: -
 - a. England – Approved Document B, Volume 2 – Buildings other than dwellings (English version);
 - b. Wales – Approved Document B, Volume 2 – Building other than dwellings (Welsh version);
 - c. Scotland – Technical Handbook: Non-Domestic;
 - d. Northern Ireland – Technical Booklet E;
- 3.6 In all instances, where there is conflict between the requirements of this document, the relevant British Standards where referenced and the national minimum standard, the most onerous requirement shall be adopted.

ANNEX A – DEFENCE INFRASTRUCTURE FIRE STANDARDS

DEFENCE INFRASTRUCTURE FIRE STANDARD 1 MANDATORY STANDARD

1.0 APPLICATION

1.0.1 This standard applies to the following buildings where the MOD Building Regulations Compliance System has been applied. The Standard is also applicable where works are carried out to active or passive fire safety measures in the building and/or where MOD assets are relocated to one of these building types that would materially alter the Fire Strategy of the building;

- a. Electronic Data Processing Accommodation
- b. Vehicle Workshops and Garages
- c. Storage Accommodation, Vehicle Storage and Car Parks
- d. Aircraft Hangars, excluding Glider Hangars and Temporary / RUBB Hangars
- e. Laboratories
- f. Underground and Unfenestrated Facilities
- g. Fuel Depots and Lubricant Installations (Limited to Facilities for Fire Fighting)
- h. Ammunition Stores (Limited to Facilities for Fire Fighting)

1.0.2 Where works are proposed to an existing building the standard will apply to the area of work being undertaken only. The intent is not to apply to the whole building retrospectively, for example if a new fire detection and alarm system was to be installed in an existing building only the requirements applicable to fire detection and alarm system would apply to the works.

1.1 FIRE DETECTION AND ALARM SYSTEM

1.1.1 In addition to the minimum requirements of national standards where detection is provided the system shall also satisfy the criteria for a P system in accordance with BS5839-1.

1.1.2 The category of system installed will depend on the fire risk categorisation of the building as defined by JSP 440 Vol 2 Leaflet 3. The category of building will be provided by the project sponsor for the works and/or Head of Establishment² following assessment of the categories in JSP 440.

1.1.3 For Fire Risk Category 4 and 5 buildings a P1 system must be installed

1.1.4 For Fire Risk Category 2 and 3 buildings a P2 system must be installed.

1.1.5 For Fire Risk Category 1 buildings compliance with national standards is deemed acceptable.

1.2 EMERGENCY LIGHTING

1.2.1 Emergency lighting shall be provided in accordance the relevant national guidance and BS5266. (Note – This is required by National Standards and has been included in this DIFS for clarity on approach)

² Project Sponsor / Head of Establishment – They will be aware of the intended use of the building and the strategic importance of the building and contents to be able to categorise the building under the requirements of JSP 440. DIO staff must request this information during the design phase of the project.

1.3 LININGS

1.3.1 The surface internal linings of walls and ceilings of all areas except storage areas shall have a surface spread of flame classification of Class 0.

1.3.2 The surface linings of walls and ceilings of storage areas shall have a surface spread of flame classification not greater than Class 1.

1.4 VENTILATION SYSTEMS

1.4.1 All mechanical ventilation systems shall be installed in accordance with the minimum requirement of the relevant national guidance and/or BS 9999.

1.5 COMPARTMENTATION

1.5.1 The following requirements will apply to all buildings;

- a. All floors separating storeys shall be constructed as compartment floors having the minimum fire resistance required for elements of structure, or where paragraph d applies, the period of fire resistance specified, whichever is the greater:
- b. All stairways, lifts and service risers passing through compartment floors shall be constructed as protected shafts:
- c. Where sprinklers are installed in accordance with BS 12845 as part of a fire engineered solution consideration may be given to reducing the requirement for compartment floors and associated protected shafts. In such circumstances a determination must be sought from the DIO SFSM.
- d. Where separate areas of buildings contain duplicated equipment for reasons of property protection, national or strategic importance, these areas shall be separated from each other with a minimum of 60 minutes compartmentation.

1.5.2 Ancillary Accommodation, as defined in Approved Document B (England) or equivalent in the UK, shall be separated from the remainder of the building in accordance with ADB or BS 9999.

1.6 SEPARATION BETWEEN BUILDINGS

1.6.1 Space separation shall be provided between all proposed new buildings and existing buildings on the same site (i.e. creating notional boundaries). The distances to boundaries and notional boundaries shall be calculated using the appropriate document referenced in the national standard applicable to the work, irrespective of whether or not notional boundaries are required by national standards.

1.7 ROOF COVERINGS

1.7.1 The classification of the external surface of the roof coverings shall be AA, AB or AC when tested in accordance with BS 476.

1.8 FACILITIES FOR FIRE FIGHTING

1.8.1 Fire fighting water supplies;

Hydrants shall be provided in accordance with BS 9990 with the enhancement of the following flow rates-

- a 75 litres per second for 90 minutes for high risks such as industrial risk and storage.
- b 120 litres per second for 120 minutes for oil fuel depots and oil fuel jetties.
- c For ammunition and explosive risks the water supply requirements vary depending on the type and degree of risk. In such instances the water supply should comply with JSP 482.

1.8.2 Where hydrants cannot meet the requirements, the proposed water supply for fire fighting purposes must be approved by the DIO SFMS through the determination process.

1.9 ENGINEERING SERVICES

1.9.1 Engineering services or rooms/buildings containing such installations should be in accordance with BS 9999.

1.10 DANGEROUS SUBSTANCES AND EXPLOSIVE ATMOSPHERE REGULATIONS (DSEAR) 2002

1.10.1 Installations and equipment subject to processes and the storage of dangerous substances shall be in compliance with DSEAR 2002 and MOD JSP 375 Part 2 Volume 1 Chapter 9. This will be achieved by the completion of a DSEAR Risk Assessment during the design stage of the project.

1.11 FIRE ENGINEERED SOLUTIONS

1.11.1 Where the building is of strategic importance and staff are required to remain after the outbreak of fire, a fully fire engineered solution shall be developed. This will include the protection of buildings processing/storing Chemical, Biological, Radiological and Nuclear (CBRN). JSP 411 refers.

DEFENCE INFRASTRUCTURE FIRE STANDARD 2 STANDARDS FOR SPECIFIC BUILDING TYPES

2.0 GENERAL

2.0.1 The standards contained below are in addition to the requirements of National Standards and Defence Infrastructure Fire Standard 1.

2.1 SINGLE LIVING ACCOMMODATION

2.1.1 Where kitchens or kitchenettes are provided in sleeping accommodation buildings the following fire safety measures must be incorporated:

- a. Any hob must include a tamper proof timer switch that times out and turns the hob power off after six minutes. This is to ensure that cooking is not left unattended for long periods of time.
- b. An extract ventilation system must be provided to cover all cooking hobs, the extractor must start automatically when the hob is switched on and must continue to operate on activation of the fire alarm system. Ducting must not have any dampers. The system must be designed to allow all parts to be accessible for cleaning purposes.
- c. The kitchen must be provided with an FD30S fire door which is fitted with a self-closing device.
- d. A fire blanket must be provided within the kitchen area.

2.1.2 Smoke detectors must be provided in all bedrooms within Single Living Accommodation.

2.2 COMMERCIAL KITCHENS

2.2.1 Where there is no fire compartmentation between the provision of fixed deep fat frying facilities which has associated ventilation and dining facilities, a localised fire suppression system(s) must be provided.

2.2.2 Where deep fat frying facilities are provided in a kitchen and suppression is not required, suitable fire extinguisher(s) must be provided.

2.2.3 Ventilation ducts serving deep fat fryers shall;

- a. Contain no fire dampers;
- b. Arranged to continue running in the event of fire; and
- c. Discharge directly to open air.

2.3 ELECTRONIC DATA PROCESSING ACCOMMODATION

2.3.1 The requirements of BS6266 must be followed in relation to the provision of automatic fire detection, separation of ancillary accommodation and fire suppression for the extent of the Electronic Data Processing Accommodation within the building / facility.

2.4 STORAGE ACCOMMODATION, VEHICLE STORAGE AND CAR PARKS

2.4.1 Storage buildings with compartments larger than 2000m² or containing storage at a height of more than 6 metres will require a risk assessment to determine whether additional active fire protection, such as fire suppression, is required. Consideration should be given to:

- a. The financial value of items being stored in the building (Note - The end user must have delegated authority within the limits detailed at figure 1 of JSP 472 Part 1 Chapter 12 in respect of any loss of items stored in the building);
- b. The strategic / operational value of items being stored within the building;
- c. The level of automatic fire detection;
- d. The provision of automatic fire suppression;
- e. The provision of smoke ventilation

The approach must be approved by the DIO SFMS through the determination process detailed in Annex B.

2.4.2 This does not negate the need to consider additional fire safety measures for storage buildings under 2000m². A BS 9999 approach would provide a suitable solution.

2.4.3 Vehicle Storage water supplies should be in accordance with BS 9990 and not the details contained in Defence Infrastructure Fire Standard 1.

2.5 LABORATORIES

2.5.1 All laboratory buildings shall be provided with a category P1 fire detection and alarm system in addition to the requirements of the national standards.

2.5.2 Extensive laboratory areas and laboratories containing substances that have a high risk of fire that may not be considered as a place of special fire hazard under national regulations shall be separated from areas used for other purposes by construction having a minimum fire resistance of 120 minutes.

2.5.3 Laboratories shall be separated from each other by construction having a minimum fire resistance of 60 minutes.

2.5.4 Small offices sited within laboratories need not be fire separated but shall be constructed of materials of limited combustibility and shall have a minimum surface spread of flame classification not greater than Class 1.

2.5.5 Fume cupboards should be designed in accordance with the relevant parts of BS EN 14175 and BS 5726.

2.5.6 Any space containing a gas or electrical supply for an open heat source should be treated as a Place of Special Fire Hazard in accordance with BS 9999.

2.6 AIRCRAFT HANGARS – EXCLUDING RUBB³ HANGARS AND GLIDER HANGARS⁴

2.6.1 Aircraft hangars, with the exception of Hardened Aircraft Shelters, shall be provided with a suitable automatic fire suppression system. The system shall be appropriate to the risk presented by the use and contents of the building and shall be in accordance with the

³ RUBB – This is the generic recognised term used for temporary Aircraft Hangars

⁴ Where RUBB hangars are used as permanent structures a determination must be issued to DIO Senior Fire Safety Manager to confirm suitable fire safety measures are incorporated into the design.

relevant British Standard or code of practice. Should this not be appropriate a determination must be sought from the DIO SFSM.

- 2.6.2 The fire alarm and detection system must satisfy the criteria for a P1 system and incorporate a flame detection system in the main hangar.
- 2.6.3 Inspection pits or voids are prohibited in hangar floors as these may collect flammable vapours.
- 2.6.4 The following accommodation shall be separated from the hangar by construction of the minimum periods of fire resistance.

Accommodation	Enclosing walls, floors, independent ceilings and columns	Internal doors	Glazing
Battery Charging Rooms Workshops Crew Rooms Locker Rooms Offices Rest Rooms Technical Areas Store Rooms	Minutes 60	Minutes 60	Minutes 60

- 2.6.5 Hydrants shall be provided in accordance with BS 9990 with the enhancement of a flow rate of at least 100 litres per second for at least 90 minutes. A flow rate of 75 litres per second for at least 60 minutes is acceptable for hardened aircraft shelters.
- 2.6.6 Where hydrants are provided, they shall be sited between 6 and 15 metres from the hangar.
- 2.6.7 A clearly delineated gangway at least 1m wide must be provided around the internal perimeter of the building.

2.7 UNDERGROUND AND UNFENESTRATED FACILITIES

- 2.7.1 The fire alarm system shall satisfy the criteria for a P1 system.
- 2.7.2 A suitable automatic fire suppression system shall be provided. The system shall be appropriate to the risk presented by the use of the facilities and shall be in accordance with the relevant British Standard or code of practice. Should this not be appropriate a determination must be sought from the DIO SFSM.
- 2.7.3 A means of smoke clearance throughout the facilities in accordance with the relevant national guidance shall be provided. The system should be a powered system and shall be designed in accordance with BS 9999.
- 2.7.4 All dampers installed in the facilities in order to maintain lines of fire resistance shall be ES classified motorised smoke dampers and shall be suitably interfaced with the fire detection and alarm system.
- 2.7.5 Where separate areas of underground facilities contain duplicated equipment, these areas shall be separated from each other with a minimum of 60 minutes compartmentation.

- 2.7.6 Underground facilities with a 'close-down' facility shall be divided into two separate fire compartments by construction having a minimum fire resistance of 120 minutes. All necessary fire safety provisions shall be provided and replicated in each compartment in such a way that each compartment can effectively 'stand-alone' in terms of fire safety.
- 2.7.7 All cables should conform to JSP 604 Leaflet 4800.
- 2.7.8 All furniture and furnishings must comply with match test 7 in accordance with Schedule 5 of the Furniture and Furnishings (Fire) (Safety) Regulations 1988 (as amended).

ANNEX B - APPLICATION FOR DETERMINATION OF DEFENCE INFRASTRUCTURE FIRE STANDARDS

Before completing this Form, please read the Notes section



**Defence
Infrastructure
Organisation**

**DEFENCE INFRASTRUCTURE FIRE STANDARD
DETERMINATION APPLICATION**

To be submitted to the:	Copied to:
<p>Senior Fire Safety Manager Defence Infrastructure Organisation Kingston Road, Sutton Coldfield West Midlands, B75 7RL; or Ashley.lineham167@mod.gov.uk</p>	<p>MOD Project Manager Building Control Adviser</p>
PART A – INITIAL DETAILS	
<p>Applicant: Name: Address: Post Code: Tel No: Email address:</p>	<p>Address of Building(s) In relation to which application is made:</p> <p>DIO Asset Number: Post Code:</p>
<p>Name & Address of Owner of the building (if different from applicant)</p> <p>Name:</p> <p>Address:</p> <p>Post Code:</p>	
PART B - DETAIL OF APPLICATION	
<p>Number & Provision of the Defence Infrastructure Fire Standards from which a determination is being sought:</p>	<p>Grounds for application:</p>

PART C - EXISTING BUILDINGS ONLY	
State present use of building:	
State proposed use of building:	
PART D – FIRE AUTHORITY	
Has the requested determination received agreement from the relevant MOD Fire Officer?	YES/NO*
Name:	
Signature:	
PART E – CONSENTS	
BUILDING REGULATIONS COMPLIANCE	
Has a Building Control Adviser checked the works for compliance with the MOD Building Regulations Compliance System?	YES/NO*
LISTED BUILDING	
Is the building listed as being of special architectural or historic interest, or in a conservation area? (If in doubt, the planning authority can advise)	YES/NO* If so what category?
PART F – DECLARATION	
11. I/We* apply for a direction dispensing with or relaxing those provisions of the Defence Infrastructure Fire Standards set out above [in accordance with any necessary plans (including drawings, specifications and other particulars) submitted with the application] (See note 3)	
Signature of Applicant	Date:

NOTES

1. The application for determination should be made during the design phase of the project. Determinations cannot be provided when the work is complete.
2. Supporting information should include the fire strategy, where one has been completed, and any relevant drawings.