Technical Bulletin 97/11

Ventilation, flues and installation of heating appliances

The contents of this Technical Bulletin are MANDATORY in support of the Ministry of Defence policy of reducing to the practical minimum the risk of fatality from inadequate ventilation and incorrect installation of flues and appliances using 1st, 2nd, 3rd family gases, fuel oil or solid fuel as the primary energy source.

MANDATORY

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DEFENCE ESTATE ORGANISATION (WORKS)
MINISTRY OF DEFENCE

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INTRODUCTION

1. This Technical Bulletin is directed at Property Managers to assist them in property management. It outlines the requirements for the inspection and maintenance of heating appliances including the method of installation, the flues and fresh air ventilation. Its purpose is to ensure safe and efficient operation, and is confined to appliances rated up to 150 kW maximum heat output using the following primary energy sources:

   1st family gas manufactured gas*.
   2nd family gas natural gases*.
   3rd family gas liquefied petroleum gases (LPG) including compressed propane and butane*.
   Solid fuel including coal, peat and wood burning appliances.
   Fuel oil class C2 and class D petroleum fuel oils to BS 2869.

* For detailed descriptions refer to BS 1179 Glossary of Terms Used in the Gas Industry.

2. The contents of this Bulletin are MANDATORY. No work involving expenditure on any Ministry of Defence account is to be entered into without authority from the Property Manager or the appropriate Ministry of Defence officer for that location or facility.

3. Installations are to be designed, installed, operated and maintained in accordance with the requirements of the relevant Statutory Regulations, British Standards and DWS Specification Number 005.

4. A risk assessment including a programme of surveys and reporting procedures is to be established by the Property Manager/EWC in accordance with an agreed format.

BACKGROUND

5. This Bulletin outlines the requirements of a survey/risk assessment of existing installations to establish that the heating appliances are installed, operated and maintained in accordance with the manufacturer’s recommendations, relevant current Standards and Regulations.

EWC RISK ASSESSMENT AND ACTIONS

a. Review the existing maintenance procedures and records and determine the frequency of
maintenance inspections for the heating appliance to ensure compliance with
manufacturer's recommendations.

b. Verify that the standard of maintenance is compatible with the relevant Statutory
Regulations, British Standards and DWS Specification No 005.

c. Verify that maintenance has been carried out by a CORGI registered Competent Person
who has the relevant skill, knowledge and experience.

d. Review the existing maintenance procedures and records to ascertain the frequency of
maintenance inspection of chimneys and flues by a Competent Person with particular
attention to when they were last checked for condition and demonstrated to be free
from obstructions or blockage.

e. Review the maintenance records to verify when the installation was last inspected for
adequate fresh air ventilation.

**WSM ACTIONS**

7. **Installations.**

a. Check that the operation and maintenance manuals and drawings are available and
correctly represent the installation.

b. Check that the boiler and/or heating appliances are sound and in good order, and that
there are no loose or incorrectly fitted casings.

c. Check that the correct safety devices are installed and where practicable check
operation.

d. Check that a means of pressure relief is provided in the system by open air vents or
safety valves as required by the relevant Standard.

e. Check that safety valves are fitted to all boilers connected to sealed heating systems.

f. Check that safety signs in permanent form and of the appropriate size are provided
where avoiding danger or hazard is necessary.

g. Check that the operating instructions are displayed.

h. Where carbon monoxide detectors are installed, check that they are correctly located,
fully operational, operate linked fuel shut-off devices if fitted and are installed in
accordance with BS 7850. Technical Bulletin 96/13 - Installation of Carbon Monoxide
Alarms advises on the risk assessment for carbon monoxide detectors.

8. **Adequacy of Chimneys and Flues.**

a. Chimney and flue arrangements for appliances are dependent upon the type of primary
fuel source and shall comply with the relevant Standard.

b. Chimneys and flues should be checked to ensure that they are the correct size and
height for the installed appliance and that the appropriate flue lining system is installed.

9. **Adequacy of Fresh Air Ventilation.**
a. Verify that adequate fresh air ventilation is provided for safe and efficient operation of the appliance as required by the manufacturer, the Building Regulations and the relevant Standards.

b. Ensure that vents and openings providing fresh air for ventilation and combustion are fully operational, free from obstructions and blockages, and are not fitted with any means of permanent closure.

c. Ensure that extract fans (e.g., kitchens and toilets) do not affect the supply of combustion air.

d. Verify that external surfaces of flues that are accessible to touch, are adequately protected to avoid injury by direct contact.

e. Where flue balance and explosion doors are fitted, ensure that they are fully operational and effective.

f. Ensure that there is adequate access to flues and chimneys for cleaning and maintenance purposes.

g. Where flues pass through or close to combustible materials, ensure that adequate protection is in place in accordance with the relevant Standard.

h. Ensure that the flue discharge position meets the requirements of the relevant Standard for the installation to allow safe and proper discharge of flue gases.

i. Ensure that the connection of the appliance to the chimney or flue is gas-tight, and that each appliance discharges into a chimney or flue that is not shared with any other appliance unless the chimney or flue has been specifically designed for use with multiple appliances in accordance with the relevant Standard. Where several appliances, other than appliances with atmospheric gas burners, discharge into a common flue, isolating dampers shall be fitted in each flue pipe between the appliance and the common flue.

j. Each isolating damper shall be electrically interlocked with the firing controls to open and close automatically when the appliance is cycling, and in conjunction with the purge sequence of the appliance (if provided).

k. In installations where chimneys or flues designed to serve multiple appliances have one or more appliances removed, ensure that redundant connections are sealed to prevent leakage of flue gases into the space.

**Additional requirements for solid fuel appliances**

Chimneys and flues should be cleaned and swept and demonstrated to be free of blockages and obstructions, as follows:

l. Solid fuel appliance burning bituminous coal - the chimney is to be swept at least twice a year. This should be carried out before the appliance is first used for the heating season and then again a further 12-15 weeks later.

m. Solid fuel appliances burning smokeless fuel - the chimney is to be swept once a year at the beginning of the heating season.

n. Chimney sweeping is to be carried out by a competent person accredited by the National Association of Chimney Sweeps.

o. Some solid fuel appliances require frequent cleaning of soot traps by the occupants or operators to prevent the blockages. Occupants and operators are to be instructed in the need for and the methods of soot removal.
10. **Adequacy of Means of Gas and Fuel Oil Isolation.**

   a. Ensure that all gas fired and oil fired appliances are fitted with a mechanical means of isolation adjacent to the appliance in accordance with the relevant Standard.

   b. Ensure that oil fired appliances are fitted with a fully operational fire valve in accordance with the relevant Standard.

**STANDARDS, REGULATIONS AND DEO(W) PUBLISHED DOCUMENTS**

11. **British Standards.**

    Where reference is made to the relevant Standards in this notice, the following British Standards apply:

    - **Gas fired appliances**
      - BS 5440 Parts 1 and 2
      - BS 5871 Parts 1 and 2
      - BS 5990
      - BS 6644
      - BS 6896

    - **Oiled fired appliances**
      - BS 5410 Parts 1 and 2

    - **Solid Fuel appliances**
      - BS 6461 Parts 1 and 2
      - (including wood and peat burning appliances)

    - **Glossary of Terms Used in the Gas Industry**
      - BS 5440 Parts 1 and 2

    All British Standards are deemed to include the latest amendments in force at the time of issue of this Bulletin.

12. **Regulations**

    All current relevant Regulations are to be complied with, including the following:

    - The Gas Safety (Installation and Use) Regulations 1994
    - The Health and Safety at Work, etc Act 1974
    - The Building Regulations 1991
    - The relevant MOD Fire Standards
    - Defence Works Functional Standard Technical Bulletin 95/31
13. **DEO(W) Published Documents**

The following documents, published by DEO(W), provide additional information relevant to this Bulletin:

- Technical Bulletin 38/93 Gas Safety Regulations: Open flued appliances - Prohibition notice
- Technical Bulletin 53/94 Acceptance procedures for completed project works
- Technical Bulletin 02/93 Married Quarters: Solid fuel burning appliances (and similar installations in barrack blocks and service messes)
- Technical Bulletin 95/31 Health and Safety - Gas Safety Regulations
- Technical Bulletin 96/13 Installation of Carbon Monoxide Alarms
- DWS Specification Property Management of the Defence Estate Number 005 Issue 003

**Bulletin Authorised By:**

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Director of Defence Estate Organisation  
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