

Application Bulletin 11

FirePro.
UK & IRELAND
www.fireprouk.com

Application Bulletin: **Boiler Rooms** • Technology: **FirePro Condensed Aerosol**

Application
Boiler Rooms

The Risk
Gas or oil-fired boilers, burners, fuel trains, hot surfaces and electrical controls, where fuel leaks or burner faults can start fires that disable heating and hot water.

This Bulletin Covers
- Design considerations
- Environmental requirements
- End user responsibilities
- Post-discharge procedure
- Myths & comparative analysis

Mandatory Message to End Users
"Following discharge, burners, fans and control panels must be inspected and cleaned where necessary, and the boilers re-commissioned by a competent heating engineer before being returned to service."

Condensed Aerosol Fire Suppression in Boiler Rooms

Design Considerations, Environmental Requirements, End User Responsibilities, Myths & Comparative Analysis

1. Introduction

Boiler rooms house gas or oil-fired boilers, burners, fuel trains, pumps, control panels and associated cabling.

These spaces present a significant fire risk due to fuel supplies, burner faults, hot surfaces, electrical equipment and, in older plant rooms, stored combustible materials. A fire in a boiler room can quickly disable heating and hot water services across a building or site.

FirePro condensed aerosol (CA) technology provides an effective, LPCB-certified suppression solution for boiler rooms, particularly where water-based systems risk damage to hot plant and electrical equipment, and gaseous systems are impractical due to the permanent ventilation openings these rooms require.

This bulletin outlines the design considerations, environmental requirements, end user responsibilities, and common misconceptions relevant to FirePro systems in boiler room applications.

LPCB Product Certificate No. 1417a

FirePro UK is certified by BSI to ISO 9001 and is an active subscribing member of the following trade associations

bsi ISO 9001 Quality Management Systems CERTIFIED
AMPS MEMBER
FIA Fire Industry Association
NAHFO
ECA COMMERCIAL ASSOCIATE

Ground Floor, Egerton House, Baker Street, Weybridge, UK, KT13 8AL T: +44 (0)8000 314 333 E: sales@fireprouk.com W: www.fireprouk.com



Application Bulletin 11

FirePro. UK & IRELAND
www.fireprouk.com

Application Bulletin: **Boiler Rooms** • Technology: **FirePro Condensed Aerosol**

2. Purpose of FirePro in Boiler Rooms

FirePro is designed to:

- Rapidly suppress fire at an early stage
- Control fuel and electrical fires around burners and control panels
- Prevent fire spreading between items of plant
- Reduce downtime and protect building services

However, FirePro is **not designed to**:

- Prevent burner, fuel or combustion faults
- Replace boiler safety controls or gas and oil safety shut-off valves
- Provide cooling of hot boiler shells, flues or pipework

> **Therefore:**
> *FirePro must form part of an overall boiler room safety strategy, including fuel shut-off on fire detection and regular servicing by competent heating engineers.*

This requirement must be clearly communicated to the end user during system design, installation, and handover.

3. Important Note on Residue and Boiler Plant

FirePro is not a clean gas agent and does not claim zero-residue discharge.

A light, dry aerosol particulate may settle on surfaces after activation, including:

- Burner housings and fans
- Control panels and electrical enclosures
- Pumps, pipework and boiler casings

> **Mandatory message to end users:**
> *"Following discharge, burners, fans and control panels must be inspected and cleaned where necessary, and the boilers recommissioned by a competent heating engineer before being returned to service."*

This is a mandatory operational requirement.

4. Why Sprinklers and Water-Based Systems Are Unsuitable for Many Boiler Rooms

Water-based systems present significant risks in boiler plant rooms.

4.1 Thermal Shock to Hot Plant

- Cold water on hot boiler shells and flues can cause cracking or distortion

FirePro UK is certified by BSI to ISO 9001 and is an active subscribing member of the following trade associations

LPCB Product Certificate No. 1417a

Ground Floor, Egerton House, Baker Street, Weybridge, UK, KT13 8AL T: +44 (0)8000 314 333 E: sales@fireprouk.com W: www.fireprouk.com



Application Bulletin 11

FirePro.
UK & IRELAND
www.fireprouk.com

- Damage may be costly and slow to repair

4.2 Electrical Damage

- Water can short-circuit burner controls, pumps and control panels
- Increased risk to engineers working in the room

4.3 Oil Fire Spread

- In oil-fired plant, water can spread burning fuel across the floor
- Ineffective on pressurised fuel spray fires

4.4 Extended Loss of Heating

- Wet controls and burners need drying, testing or replacement
- Long outages affect occupants, processes and hot water supplies

4.5 Water Mist Limitations

- Still introduces moisture onto electrical equipment
- Can promote corrosion on burners and controls

5. Why FirePro Is Well Suited for Boiler Room Protection

FirePro offers significant advantages in boiler plant rooms.

5.1 No Water or Moisture

Eliminates risks of:

- Thermal shock to hot plant
- Electrical failure
- Corrosion due to moisture

5.2 Effective on Typical Boiler Room Fire Risks

- Suitable for:
  - Gas and oil fuel fires (Class B)
  - Electrical fires in controls and pumps
  - Cable and insulation fires

5.3 Rapid Flame Suppression

- Interrupts combustion chain reactions
- Effective on fast-developing fuel fires

5.4 No Cylinders or Pipework

- Compact, self-contained units
- Simple to retrofit into existing plant rooms

5.5 Minimal Pressure Rise

- No requirement for pressure relief venting

5.6 High Leakage Tolerance

- Performs effectively in rooms with permanent combustion air openings

5.7 Long 15-Year Life

- Reduced maintenance and lifecycle costs

LPCB Product Certificate No. 1417a

FirePro UK is certified by BSI to ISO 9001 and is an active subscribing member of the following trade associations

bsi ISO 9001 Quality Management Systems CERTIFIED
AMPS MEMBER
FIA Fire Industry Association
NAHFO
ECA COMMERCIAL ASSOCIATE

Ground Floor, Egerton House, Baker Street, Weybridge, UK, KT13 8AL **T:** +44 (0)8000 314 333 **E:** sales@fireprouk.com **W:** www.fireprouk.com



Application Bulletin 11

FirePro.
UK & IRELAND
www.fireprouk.com

6. Boiler Room Protection Requirements (Mandatory)

6.1 Fuel Shut-Off

- Gas or oil supply must be shut off automatically on fire detection
- Shut-off valves must be tested as part of routine maintenance

6.2 Burner and Fan Shutdown

- Burners and combustion air fans must stop on activation
- Prevents re-ignition and aerosol dilution

6.3 Plant Maintenance

- Regular servicing of:
  - Burners and fuel trains
  - Flues and seals
  - Control panels
- Fuel and oil leaks must be repaired immediately

6.4 Housekeeping

- Boiler rooms must not be used for storage
- Combustible materials must be kept clear of plant

6.5 Access Control

- Restricted access to authorised personnel only
- Doors should remain closed during normal operation

7. Environmental Conditions

Maintaining suitable conditions enhances system performance:

TEMPERATURE	HUMIDITY
Within the plant room design range; keep generators clear of hot surfaces	Controlled to avoid condensation on electrical components
AIRFLOW	**POST-DISCHARGE VENTILATION**
Mechanical ventilation and burner fans must stop during discharge	Ventilate within 10–15 minutes

FirePro UK is certified by BSI to ISO 9001 and is an active subscribing member of the following trade associations

LPCB Product Certificate No. 1417a

Ground Floor, Egerton House, Baker Street, Weybridge, UK, KT13 8AL **T:** +44 (0)8000 314 333 **E:** sales@fireprouk.com **W:** www.fireprouk.com



Application Bulletin 11

FirePro.
UK & IRELAND
www.fireprouk.com

8. Design Considerations for Boiler Rooms

8.1 Fire Load Assessment

- Include:
  - Fuel type and supply arrangements
  - Cable insulation and controls
  - Any stored materials

8.2 Enclosure Volume and Leakage

- Calculate full room volume
- Include permanent combustion air openings in the leakage assessment

8.3 Aerosol Generator Placement

- Ensure even distribution around boilers and burners
- Maintain safe distances from hot surfaces and flues

8.4 Detection and Control Integration

- Early detection is critical (heat, flame or smoke detection as appropriate)
- Integration with:
  - Fire alarm system
  - Fuel shut-off valves
  - Burner and ventilation shutdown

8.5 Gas and Oil Safety

- Design must align with the relevant gas and oil installation requirements
- Coordinate with the heating engineer and gas safety specialist

9. Post-Discharge Procedure

1. Confirm fuel supply and burners are isolated
2. Ventilate the room within 10–15 minutes
3. Inspect boilers, burners and electrical equipment
4. Clean:
   - Burner housings and fans
   - Control panels
   - Accessible surfaces
5. Heating engineer to test and recommission boilers
6. Confirm no risk of re-ignition
7. Recommission FirePro system

10. Common Myths & Factual Counterpoints

Myth 1: "Boiler rooms are too ventilated for aerosol suppression."

Fact: FirePro has a high tolerance to leakage. Permanent openings are allowed for in the design, and fans are shut down on activation.

LPCB Product Certificate No. 1417a

FirePro UK is certified by BSI to ISO 9001 and is an active subscribing member of the following trade associations

bsi ISO 9001 Quality Management Systems CERTIFIED
AMPS MEMBER
FIA Fire Industry Association
NAHFO
ECA COMMERCIAL ASSOCIATE

Ground Floor, Egerton House, Baker Street, Weybridge, UK, KT13 8AL **T:** +44 (0)8000 314 333 **E:** sales@fireprouk.com **W:** www.fireprouk.com



Application Bulletin 11

FirePro. UK & IRELAND
www.fireprouk.com

Application Bulletin: **Boiler Rooms** • Technology: **FirePro Condensed Aerosol**

Myth 2: "Sprinklers are the safest choice for boiler rooms."

Fact: Water can cause thermal shock to hot plant, damage electrical controls and spread oil fires.

Myth 3: "Gas systems are better for plant rooms."

Fact: Gas systems need sealed rooms, which conflicts with the permanent ventilation boiler rooms require. FirePro works effectively without this constraint.

11. Transparency Statement

FirePro UK maintains full transparency:

- FirePro is designed to suppress fire, not prevent burner or fuel faults
- FirePro is not a zero-residue agent; a light particulate is produced
- Post-discharge inspection and recommissioning are mandatory
- FirePro does not cool hot boiler shells or flues
- FirePro is not certificated for deep-seated fires
- FirePro introduces no water, avoiding thermal shock and electrical damage
- FirePro is often the most practical solution where gas or water systems are unsuitable

12. Summary

FirePro condensed aerosol provides an effective and practical fire suppression solution for boiler rooms, where water-based systems risk damage to hot plant and gaseous systems conflict with ventilation requirements.

Its ability to suppress fuel and electrical fires rapidly, without water and without sealed-room requirements, makes it well suited to protecting heating plant.

However, successful protection depends on:

- Automatic fuel and burner shutdown
- Correct design for ventilation openings
- Regular plant servicing
- Mandatory post-discharge inspection and recommissioning

Key operational requirement:
Fuel supplies and burners must shut down automatically on fire detection, and boilers must be recommissioned by a competent heating engineer after any FirePro activation.

If you would like to learn more about FirePro, or discuss a boiler room application, please visit us at **www.fireprouk.com** – see contact details below.

LPCB Product Certificate No. 1417a
FirePro UK is certified by BSI to ISO 9001 and is an active subscribing member of the following trade associations
bsi ISO 9001 Quality Management Systems CERTIFIED
AMPS MEMBER
FIA Fire Industry Association
NAHFO
ECA COMMERCIAL ASSOCIATE

Ground Floor, Egerton House, Baker Street, Weybridge, UK, KT13 8AL **T:** +44 (0)8000 314 333 **E:** sales@fireprouk.com **W:** www.fireprouk.com