

Recommendations

for the selection
and risk
management of
portable
accommodation
units

RC33



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Recommendations like this present publication were, in times past, advisory documents which were published by the Fire Offices' Committee (FOC) of the British insurance industry, their purpose being to offer guidance which would help reduce the incidence of fires in industry and commerce. Subsequently the role of the FOC was taken on by the Loss Prevention Council, which formally established its series of Loss Prevention Recommendations and prepared and published such documents on behalf of the Association of British Insurers (ABI). At January 2003 there were 33 different sets of LPC Recommendations available. New and revised Recommendations are being reproduced in formats that are consistent with audience requirements.

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SCOPE

These recommendations, RC33, concentrate on the key aspects of property protection related to the use of portable accommodation units.

Guidance is provided on the selection, positioning and management of such units to reduce the risk of fire and fire spread to main buildings.

Portable accommodation units covered by RC33 typically include buildings used as classrooms, offices, mess rooms, drying rooms, sanitation facilities and storage.

This does not cover use of portable accommodation units used on construction sites. This is covered by the FPA's Joint Code of Practice, *Fire Prevention on Construction Sites*.

For information relating to life safety and fire safety regulations the local fire authority should be consulted.

FOREWORD

The use of portable units for accommodation is widespread. These units offer a cost-effective means of providing additional space quickly. Although not designed for long-term use it is not unusual for such units to become permanent fixtures.

In many cases portable accommodation units are positioned adjacent to main buildings, presenting an increased fire exposure. Fire losses confirm that such units present a significant fire exposure if inadequate measures are taken in their design specification, positioning and management. The recommendations in this document are subject to the performance of a risk assessment at any particular location, but would typically cover units located closer than 10m from existing buildings. This recommendation also covers portable units used inside existing buildings.

Stacked units may increase the fire exposure and would need to be considered during the risk assessment.

DEFINITIONS

For the purposes of this document, the following definitions apply:

Portable accommodation units

Factory produced portable units used to provide temporary accommodation.

High risk applications

This would typically relate to high financial exposures, or hazardous process, or where high fire loads exist or there is a significant arson threat.

Normal risk applications

Risks not considered to be high risk

Non combustible

Material that meets the requirements of BS 476: Part 4: 1970.

Limited combustibility

- (a) Any non-combustible material;
- (b) any material of density 300kg/m³ or more which, when tested to BS476: Part 11, does not flame and for which the rise in temperature on the furnace thermocouple is not more than 20 deg C;
- (c) any material with a non-combustible core at least 8mm thick having combustible facings (on one or both sides) not more than 0.5mm thick. (where a flame spread rating is specified, these materials should also meet the appropriate test requirements);
- (d) any material of density less than 300kg/m³, which when tested to BS476: Part 11, does not flame for more than 10sec and for which the rise in temperature on the centre (specimen) thermocouple is not more than 35 deg C and on the furnace thermocouple is not more than 25 deg C.

RECOMMENDATIONS

1. General

Any new or replacement portable accommodation unit shall comply with the recommendations in this document.

Portable accommodation units used for temporary accommodation shall meet any requirements imposed by the local authority and in addition meet the requirements in section 2 of this recommendation. In addition, intruder and fire detection systems (where fitted) within any adjacent main building should be extended to include these areas. Consideration shall also be given to the benefit of fitting a sprinkler system in the portable accommodation unit, since a fire in an unsprinklered accommodation unit might spread to an adjacent building. In such an event, a sprinkler system in the adjacent building may be overwhelmed. As a minimum, adequate firefighting equipment shall be provided and maintained in each unit.

2. Fire Safety Management

Portable accommodation units should be regularly inspected by users for damage or unauthorised alterations. Necessary repairs and maintenance should be carried out strictly in accordance with the manufacturer's instructions.

Special care should be taken by the user to check the integrity of the construction following any dismantling, relocation and re-erection process.

Ideally, the use of gas cylinders should be discouraged in portable accommodation units. If this is unavoidable, regular inspection of pipework and fittings to gas cylinders shall be undertaken on a weekly basis to prevent gas leakage. Care should be taken to ensure that gas taps are switched off after use.

It is important to ensure that perimeter skirting is checked on a regular basis to detect damaged panels that could undermine the effectiveness of the protection.

No tall grass or other vegetation or any combustible materials shall be located between any portable accommodation units and existing buildings.

Windows should be grilled over and secured each day, outside of working hours. Doors should also be adequately secured with five-lever mortise locks. For higher risk applications, such security devices shall be substantial to minimise the risk. This shall take into account the overall level of site security, during and outside business hours, taking into account features such as perimeter fencing, CCTV surveillance and the use of security personnel. Clearly a high standard of site security will reduce the possibility of an arson attack and will be a factor included in the overall risk assessment.

The amount of combustible material within units shall be kept to a minimum.

3. Design Specification

3.1 Fire rating

It is strongly recommended that each portable accommodation unit is suitably marked to identify which performance rating it achieves, as stipulated in clause 4.

3.1.1 Portable accommodation units in high-risk applications

Half-hour resistance, inside to out, as specified in 3.2.3
Surfaces shall meet the requirement in 3.2.2. In addition, insulants shall be non-combustible or of limited combustibility if the internal skin is of metal. If the inner skin is plasterboard not less than 12.5mm thick, this requirement need not be applied.

The above requirements may also be deemed to have been met if the portable accommodation unit has been tested and approved to the requirements in 3.2.4.

3.1.2 Portable accommodation unit in normal risk applications

Surfaces shall meet the requirement in 3.2.2. In addition, insulants shall be non-combustible or of limited combustibility if the internal skin is of metal. If the inner skin is plasterboard of not less than 12.5mm thick, this requirement need not be applied.

3.2 Specification

3.2.1 General requirements

All electrical installations, preferably surface mounted, should be to BS 7671/current IEE regulations. Heaters for use in portable accommodation units must be fixed, preferably above floor level, and maintained in a sound condition.

The layout and position of escape routes from portable accommodation units should comply with the appropriate legislation.

All unit types should be fitted with skirting at ground and first floor voids which prevents the introduction of combustible or ignited materials beneath the floor(s) of the unit.

Ideally, solid skirting should be used around the base of the portable accommodation unit. Where ventilation proves to be a problem and subject to an assessment of the risk of malicious fires fine-gridded or close wire skirting can be used.

3.2.2 Surface flame spread

Class 0 surface spread of flame performance in BS 476: Part 7: 1997 should be a property of all internal walls. External surface of roof should meet EXT F.AA in BS 476: Part 3: 1958.

Element	Internal	External
Roof/ceiling	Class 0	AA
Walls	Class 0	Class 0
Floor	-	-

3.2.3 Fire resistance

The walls and roof should achieve 30 minutes' fire resistance from inside to out (integrity and insulation) as defined in BS 476: Parts 20 and 22: 1987.

Windows to achieve 30 minutes' fire resistance (integrity) to BS 476: Parts 20 and 22: 1987.

All doors should be fitted with self-closing devices and should be classified FD30S.

Any fixed ventilation system or openings for services should be fire stopped to provide 30 minutes' fire resistance in terms of integrity.

Where portable accommodation units are vertically stacked, the roof/floor* assembly and members supporting them should achieve at least 30 minutes' fire resistance (integrity, insulation and load-bearing capacity) as defined in BS 476: Parts 20 and 22: 1987 and comply with the relevant Building Regulations' requirements where necessary.

Fire Resistance	Internal	External
Roof*	_ hour	AA
Ground floor	-	-

3.2.4 Full-scale real fire test

As an alternative to the requirements given above, a portable accommodation units building may be tested and approved by LPCB to the requirements of LPS 1195-3.

This test is to demonstrate the fire resistance qualities of the complete unit, applying the appropriate criteria for integrity and insulation from BS 476: Part 20: 1987. The portable accommodation unit shall be subjected internally to the fire from burning timber cribs representing a cellulosic fire load of 25kg/m², the test being conducted with the windows and one door open to the specified amount. The criteria for acceptance will be generally as for the corresponding standard fire resistance tests but will in addition include joints between adjacent walls and between walls and roof.

4. Marking

Currently, it is not common practice for fire-rated units to be clearly marked. However, the recommendation of this document is that a manufacturer should fix, in a prominent position on the outside of a portable accommodation unit, an appropriate notice that the portable accommodation unit complies with these recommendations. It must be clearly understood that the portable accommodation unit so identified by the manufacturer relates to that building in the condition in which it left the manufacturer's premises. Alterations to the unit must not be made without prior reference to the manufacturer.

To assist management and identification of the performance level which the building can meet, the portable accommodation unit shall be identified as follows:

Fire resistant

Building meeting in full requirements in 3.1.1.

Non-combustible

Building meeting requirements in 3.1.2.

Combustible

Portable accommodation units not able to meet requirements in 3.1. (If a portable accommodation unit is not so marked, it may be assumed that it is a combustible building.)

REFERENCES

Joint Code of Practice, *Fire Prevention on Construction Sites*, 5th edition, Fire Protection Association, 2000. Paragraph 12, Temporary buildings and temporary accommodation.'

LPS 1195: Issue 3, *Specification for testing of temporary buildings for use on construction sites*, Loss Prevention Certification Board, 1994.

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Part 22: Methods for determination of the fire resistance of nonload-bearing elements of construction, British Standards Institution, 1987.

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National Prefabricated Building Association: website, www.npba.co.uk.

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