

# **SATRA** **SPOTLIGHT**

## Upholstered contract furniture flammability

Furniture suppliers should comply with requirements for flammability and provide the correct labelling.



This article describes some of the main points concerning the essential flammability requirements for those involved in the supply of furniture to offices, hotels, hospitals and other contract market sectors.

Contract furniture includes all furniture supplied to all non-domestic buildings, including ones where the public has access.

Such buildings include schools and hospitals, and places of entertainment such as cinemas, nightclubs and concert halls. Prisons, military establishments and police stations may be other areas where flammability is a key issue.

In England and Wales, the responsibility for fire safety in non-domestic buildings lies with the operator of the building (note that the legal situation in Scotland and Northern Ireland is different). In England and Wales this responsibility is set out in the Regulatory Reform (Fire Safety) Order 2005 ('RRFSO').

The RRFSO covers 'general fire precautions' and other fire safety duties which are needed to protect 'relevant persons' (for example, employees or occupiers) in case of fire in and around most 'premises'. Risk assessments

are part of the duties. The risk assessment guide states: "The Order requires fire precautions to be put in place 'where necessary' and to the extent that it is reasonable and practicable in the circumstances of the case."

The legislation refers to the 'responsible person'. The responsible person is defined as follows:

- if the building is a place of work: the employer
- if the building is not a place of work, either the person who has control of the building, such as the occupier or the owner of the building. (Note that a domestic building, such as a private home, is exempt from the RRFSo).

The responsible person must arrange for risk assessments to be carried out. The risk assessment will cover fire doors, fire-escapes, fire-fighting equipment and signage, as well as furniture. In fact, furniture fire safety is likely to be only a minor part of the assessment.

When deciding on the requirements for furniture, the Responsible Person will use several factors in determining the potential fire hazard and the required furniture specification. These factors include:

- the use of the room
- whether or not smoking is permitted
- the number of seating units
- the level of occupancy – for example, the number of beds
- the size of the room and its location
- whether occupants sleep at the premises
- type of fire escape
- mobility of occupants
- use of automatic fire detection system
- use of automatic fire extinguishing system
- special hazards – such as, cooking, strobe lighting, locked internal doors
- staff training in evacuation procedures.

Having assessed the hazard area level involved, the furniture selected can be tested according to BS 7176.

## Upholstery products for use in offices, hotels and institutions

BS 7176:2007+A1:2011 is a specification which describes four different hazard levels for contract furniture and describes appropriate tests for evaluating furniture materials. The hazard categories are 'low hazard', 'medium hazard', 'high hazard' and 'very high hazard'.

Table 1 lists some typical furniture end-use areas and suggests appropriate hazard categories.

Table 1: Examples of performance requirements on application of hazard categories as specified in BS 7176:2007+A1:2011

Low hazard	Medium hazard	High hazard	Very high hazard
Offices Schools Colleges Universities Museums Exhibitions Day centres	Hotel bedrooms Public buildings Restaurants Services' messes Places of public entertainment Public halls Public houses and bars Casinos Hospitals Hostels	Sleeping accommodation in certain hospital wards and in certain hostels  Off-shore installations	Prison cells

## Labelling contract furniture

Because suppliers of furniture cannot control the use of the furniture after they have supplied it, and because the furniture might be moved from a lower to a higher hazard location, it is advisable to label it according to the hazard category to which it complies.

While there is no mandatory requirement to label the product, it makes good sense to do so. Failure to do this could put the furniture supplier at risk from legal action if the furniture were to be moved to a more severe hazard category and a fire were to occur. If there is no declaration on the product as to the suitability of the item for a particular end use or hazard category, the furniture supplier might be in a weak position to demonstrate that the product is fit for purpose.

Additionally the supplier's details may be added to the product label to help with service issues for spare parts or replacement products. If a supplier is making a claim for compliance with BS 7176, then the correct design of label must be used. See figure 1 for an example.

## Test requirement for the different hazard categories

These are fully described in BS 7176:2007+A1:2011, but are summarised here for convenience:

- **BS 7176 Low Hazard:** The test requirements include two applications of a smouldering cigarette (as per EN 1021-1) and three applications of a match flame ignition source (as per EN 1021-2), which are applied to the cover and filling composite
- **BS 7176 Medium Hazard:** The test requirements include those mentioned above in 'Low Hazard', plus a flame ignition source 5 test (figure 2), which is specified in BS 5852:2006 Section 11. Ignition source 5 is a small wooden crib 65mm tall, which is ignited with the help of a small amount of alcohol. This ignition source 5 test **must** be done on the combination of cover and filling(s) together
- **BS 7176 High Hazard:** The test requirements include those mentioned above in 'Low Hazard' plus a flame ignition source 7 test, which is specified in BS 5852:2006 Section 11. Ignition source 7 is a larger wooden crib, similar to ignition source 5, which is set alight with the help of a small amount of alcohol. This ignition source 7 test **must** be done on the combination of cover and filling(s) together

- **BS 7176 Very High Hazard:** The test requirements include those mentioned above in 'Low Hazard', plus any flame ignition source from BS 5852:2006 Section 11 or Section 12 at the discretion of the specifier. In practice, this might consist of several ignition source 7 cribs used together
- at all levels of BS 7176, all fillings must meet the ignition resistance requirements of the Furniture and Furnishings (Fire) (Safety) Regulations 1988.

## Hospitals in the UK

For hospitals in the UK, the National Health Service (NHS) has issued a booklet 'Fire Code – Fire Safety in the NHS Health Technical Memorandum 05-03: Operational Provisions: Part C: Textiles and Furnishings'. This recommends that upholstered furniture should meet BS 7176 Medium or High Hazard, according to location. In addition, the NHS specifies that wheelchairs should meet ISO 7176: Part 16 – 'Wheelchairs. Resistance to ignition of postural support devices'.

## Complete item test

The testing of a complete item is given as an option in the Very High Hazard category of BS 7176 and may be requested by a fire officer or a purchaser to determine if any design factors in the seating could affect the hazard classification. Complete items may be tested if sufficient raw materials are unavailable or difficult to obtain. Complete item testing cannot be used for classification except where a specifier requests a Very High Hazard classification.



Figure 1: Example of a label showing compliance with BS7176 Medium Hazard (the labels for other hazard levels are similar)

## How often should tests be carried out?

In BS 7176 there is a requirement that each cover and filling should be re-tested every 2,500 units (or 20,000 metres of fabric for predictive tests) produced or once per month, whichever is the more practical, or where there is a change to the specification or supplier. For lower production quantities there is no requirement for re-testing. A change of colour is not in itself a reason to necessitate re-testing.

An important feature of BS 7176 is that it includes a mandatory water soak and line drying procedure for all cover fabrics. It should be emphasised that BS 7176 includes a requirement for all fillings to be compliant with the UK domestic regulations (for example, a PU foam should pass the Schedule 1 Part I test of these regulations).



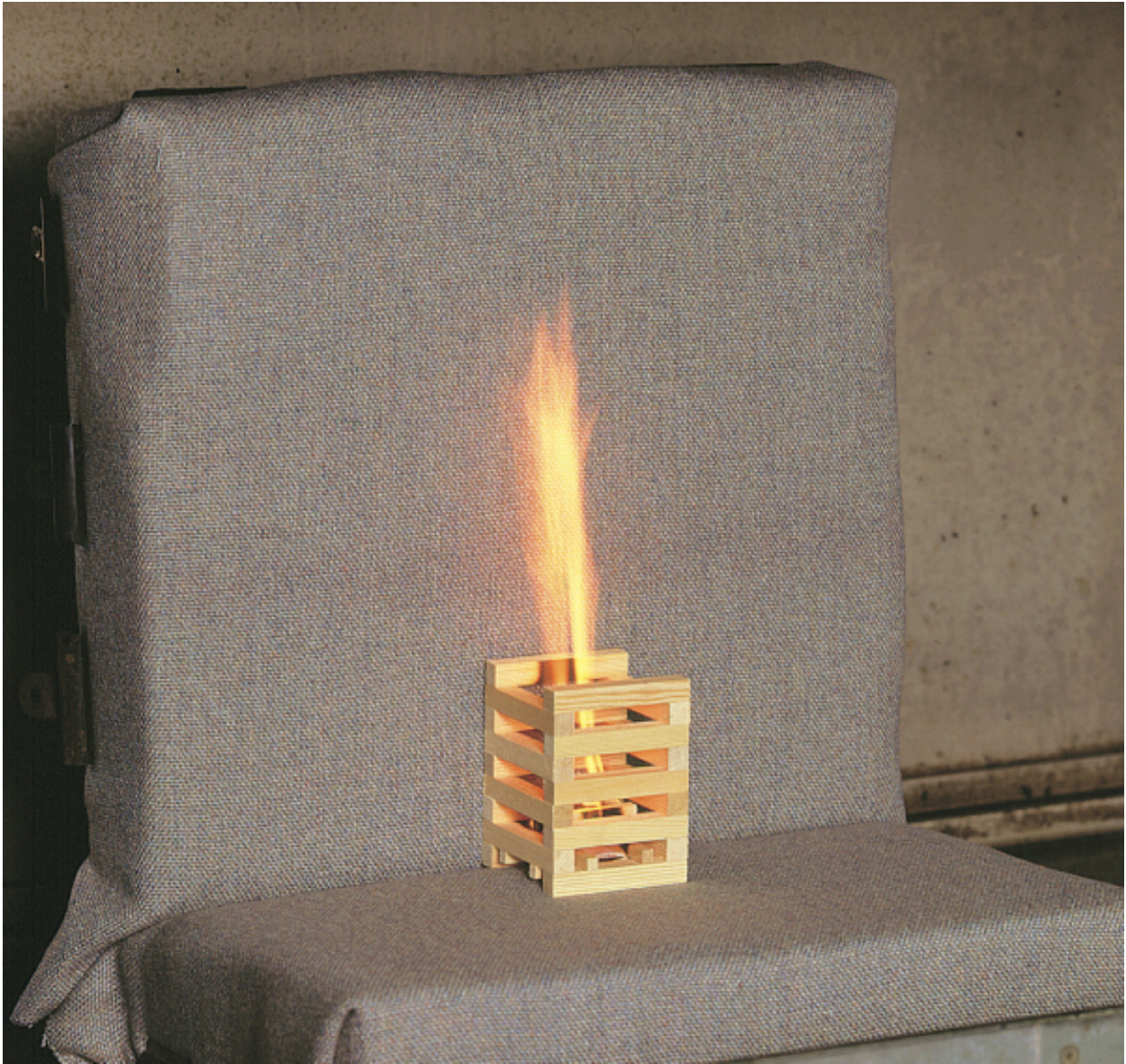


Figure 2: Wooden crib – ignition source 7

## How can we help?

**15 PER CENT DISCOUNT ON FIRST SATRA TEST** — [please click here.](#)

Please click here for information on SATRA's furniture testing services. To discuss the tests used to evaluate furniture for the contract market, email [furniture@satra.com](mailto:furniture@satra.com)