

INTERNATIONAL ASSOCIATION FOR COLD STORAGE CONSTRUCTION (IACSC)

Labelling of Insulating Panels

As part of an industry initiative to enhance fire safety in large insulated temperature and environment controlled structures, the IACSC (European Division) published the Guide to the *'Design, Construction, Specification and Fire Management of Insulated Envelopes for Temperature Controlled Environments'*, within which a scheme was introduced to label all walls and ceilings within the building with critical information as to their construction. This Guide was drawn up in full consultation with the Home Office Fire Inspectorate and the DTLR (as they were then called) Building Regulations Department so that it reflected their interest in the provision of fire safety. The labelling system evolved in response to a request from the Fire Service for there to be greater information available in respect of the nature of the panels used in the construction of a building. The success of the Guide is reflected by the recognition given to the Guide in both the England & Wales Approved Document 'B', Appendix F and Technical Standard D *Structural Fire Precautions* in support of the Scottish Building (Standards) Regulations (7.4).

Compliance with the Guide, and/or its labelling principles is not mandatory, but compliance is deemed-to-satisfy the regulatory recommendations. The Fire Service, who are always consulted as part of the approval system, have on many occasions

expressed their support for the panel labelling system as an aid for fire fighters. A full and comprehensive knowledge of the panels can allow a brigade to pre-plan its fire fighting operations with much more confidence.

What does the IACSC Labelling Scheme consist of?

The main component of the IACSC Scheme are labels affixed to the walls adjacent to any door opening into a space bounded by sandwich panels, whether directly from outside the building, or from other parts of the building. The labels indicate the core materials present in the panels forming the space into which the fire fighters are about to enter. There would normally be one A5 label each side of the door to indicate the construction of the wall (facing the room) on either side of the entrance and another A5 label on the door itself to identify the construction of the ceiling. The label carries information relevant to the known fire performance of the panel to assist with the choice of fire fighting options being considered by the Incident Commander

A secondary and supportive component of the Labelling Scheme is an enhanced fire plan of the building(s), which clearly identifies the materials from which the sandwich panels are constructed and any other

relevant fire safety information. This A3 plan is mounted adjacent to the normal fire control panel/annunciator point and can be readily removed by an incident commander for him to use on the fire ground.

All existing and new buildings can, and should be labelled under the IACSC Labelling Scheme.

What information does the label provide?

The main information that is displayed on the label is a large code letter clearly identifying the material, which forms the panel core (see Figure 1). The code letters used are as follows:

- Pu - polyurethane
- PIR - polyisocyanurate
- PH - phenolic
- EPS - expanded polystyrene
- XPS - extruded polystyrene
- MRF - mineral rock fibre
- MGF - mineral glass fibre
- FG - foam glass
- COM - composite (calcium silicate)
- B - blockwork (faced with metal lining)

In addition to the core material the label carries additional information by means of side flashes. As part of the IACSC's Guide recommendations and labelling philosophy, it is recognised that fire stability is as important a characteristic as delamination of the room side facings under fire. Without fire stability, escape and possibly fire

fighting is jeopardised. In the case of combustible cored panels, delamination also exposes large areas of the core to the fire which will add significantly to the fire load. The Guide and associated Scheme Documents, sets criteria and includes details of a testing regime, to demonstrate compliance with the fire stability requirement.

Compliance with the Fire Stability criteria is identified by a green and white striped side flash to the left hand side of the main core code letter(s) (see Figure 2).

If the panel has fire resistance in addition to fire stability, i.e. complies with BS476: Part 22: 1987, or LPS1208, then the green and white striped side flash is replaced by a solid green flash (see Figure 3).

Insurance companies may recommend/require that all panels comply with the current version of LPS1181 and compliance with this can be indicated by a solid red flash on the right hand side of the label, possibly with a code which states the 1181 rating. Because LPS1181 compliance is frequently dependent upon methods of sealing joints and fixings, suitable warnings are incorporated in the flash to identify the need for such extras to be present if the certification is to be validated (see Figure 4).

The label also gives contact details of the administrators of the Scheme.

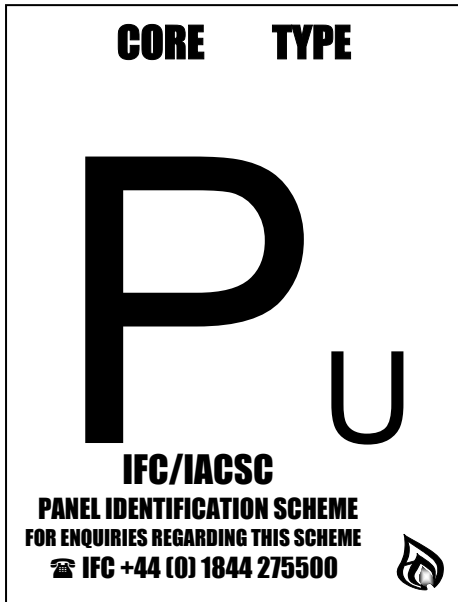


Figure 1 : Typical label

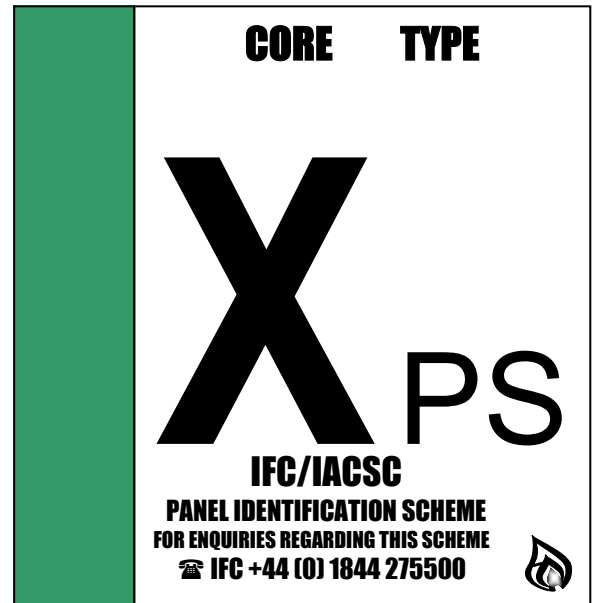


Figure 3 : FR and fire stable

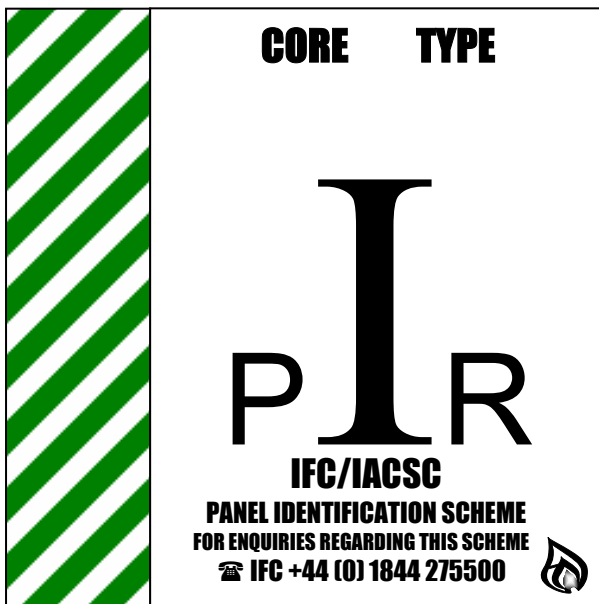


Figure 2: Fire stable construction

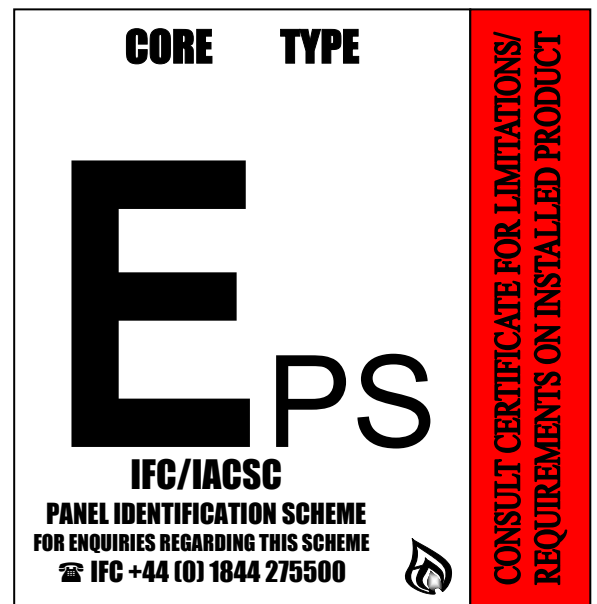


Figure 4 : LPS 1181 compliant

Who can apply the labels?

If the labels are to serve their intended purpose it is vital that 100% confidence can be placed upon the information given on the label. For this reason the application of labels is strictly controlled and the Scheme is operated under licence from the IACSC by their recognised fire consultants, International Fire Consultants Ltd (IFC), who have developed quality systems to ensure that the correct labels are applied. As a consequence, the application of labels will only be permitted following a survey undertaken by IFC staff, or IFC trained inspectors/labellers.

In new build applications it is possible for IACSC recognised contractor to apply the labels on behalf of IFC at the time of construction. This will be subject to the company's capabilities being overseen and audited by IFC, under a controlled sub-contract procedure. Under such arrangements the panel manufacturer/construction company may also have its own details incorporated in the label design.

In existing buildings the labels will be applied, by IFC or its representative, following panel identification surveys as appropriate. The construction of the panels may be established solely from physical examination or in some circumstances, where the panels are traceable from orders and/or delivery notes, the inspection may be restricted to a confirmatory audit.

How much does it cost to have a building labelled?

The cost of labelling an insulated envelope facility will depend upon the following factors:

- the number of discrete rooms/spaces
- the number of entry points
- the variety of panels used in the construction
- the travel involved in any inspection/audit and labelling operations.

Guide costs; all buildings/complexes quoted individually:

- cost of labels for each side of a door £4
- installation/fixing of labels £450 per large building
- enhanced fire plan £200
- inspection /audit of IACSC recognised labelled building(s) at cost (charged to constructor/contractor as part of agreed auditing regime).

In the case of new buildings the additional cost of having the facility labelled by the contractor, assuming that he is registered with the IACSC and IFC, may be minimal. Consult your contractor, or incorporate the requirement to label the completed construction into the tender package as proposed in the IACSC Model Specification. For existing buildings, or new buildings not built by IACSC or IFC recognised self-labelling

constructors contact IFC [or the IACSC] for a quotation, at the contact points given at the end of this Guidance Note. If you are responsible for a number of sites the cost per building will inevitably be less.

What are the advantages of labelling?

Whilst labelling was initially introduced to make your facility more fire fighter friendly, hopefully with the benefits of encouraging the Fire Service to invoke more aggressive fire fighting, labelling has subsequently been shown to have many advantages. Insurers are more willing to insure your property if the risk can be quantified, panel labelling allows them to make that quantified assessment. As a property owner/manager you are now legally responsible for fire safety auditing your premises under the Fire Precautions (Workplace) (Amendment) Regulations 1999. The labelling system helps your risk assessors, or yourself to identify the hazards posed by the panels and to fully quantify the risk that they represent. The presence of the labels automatically reminds management of the need to consider the panel construction when modifying or extending the property, especially if panels with the green or red side flashes have been used, thereby ensuring the performance of the building is not inadvertently changed. It also helps to provide an easy-to-audit building, which has a permanent record of the original construction materials.

Panel labelling should feature as a priority in your company's risk management procedures.

How do I obtain more information about the criteria of fire stability and other performance requirements for panels?

Detailed information on the many critical aspects of constructing temperature controlled or clean structures, including the fire safety aspects, is to be found in the IACSC's Guide '*Design, Construction, Specification and Fire Management of Insulated Envelopes for Temperature Controlled Environments*', available from the IACSC at the contact point given.

The criteria and various methods available for demonstrating fire stability are to be found in the '*The Fire Stability Certification Scheme For Insulated Panel System and Structures Document*' also available from the IACSC.

Contact Points for further information

For either of the documents referred to please contact:

Secretariat:

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For a quotation, or further information relating to the process of labelling your facility please contact:

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Fax: + 44 (0) 1844 274002
e-mail : ifc@intfire.com
http://www.iacsc.org/iacsc/european_division**

‘Panel Labelling - the least that you can do to improve fire safety’.

