RISK MANAGEMENT PROGRAMME FOR COMBUSTIBLE COMPOSITE PANELS

The potential for serious fires in combustible composite panels can be reduced by implementing a fire risk management programme to minimise inception hazards. A designated person should oversee the programme to ensure all aspects are properly managed and any required corrective action is implemented without delay.

The following information is provided for guidance purposes only. Panels which have LPS certification and other non-combustible types such as mineral wool fall outside this guidance.

1) TYPES OF COMBUSTIBLE PANEL

a) Expanded/Extruded Polystyrene (EPS/XPS)
These normally have a white core, or pale blue for extruded polystyrene, and were used extensively until 2000 for internal lining and insulation, particularly in the food industry and in cold rooms. Polystyrene can be ignited easily by low temperature flame or sparks, will spread fire rapidly inside the metal facings and be difficult to extinguish. As the panels burn they will produce flaming droplets of plastic and extensive black toxic smoke and rapid collapse of the panels is common

b) Polyurethane foam (PUR)
These typically have a yellow foam core and were used for whole building insulation and linings until 2003, and later for smaller stand-alone cold stores. Whilst PUR is a little more difficult to ignite than polystyrene, once ignited it will burn rapidly and with similar consequences

c) Polyisocyanurate (PIR)
These succeeded EPS and PUR and generally have a yellow core but are often difficult to distinguish from PUR panels. PIR panels are intended to have more resistance to ignition and generally won't make a significant contribution to the spread of a fire in its initial stages. Early panels were not manufactured to particular standards and so their performance in a fire is unknown, and the potential for early collapse under fire conditions is also a concern. Panels from 2003 onwards should conform to LPS 1181 or LPS 1208 standards, and be certified by the Loss Prevention Certification Board.

2) ASSESSMENT

Areas of combustible composite panel construction to be assessed to identify the type of panel and evaluate the potential for serious fire in the light of working practices, inception hazards and likely fire spread. The results of the assessment to be documented, together with action points, and reviewed annually.

a) High Risk Areas will include
   i) presence of panels constructed from expanded polystyrene (EPS) or polyurethane (PUR)
   ii) areas of buildings where there is the potential for fire inception such as deep fat frying or other cooking
   iii) other areas of the premises where an ancillary occupation could incept fire such as workshops or services areas

b) Medium Hazard Areas will include
   i) presence of panels such as Polyisocyanurate (PIR) which do not have any fire rating due to predating LPC Certification
   ii) combustible panels where fire is unlikely due to lack of significant inception hazards such as changing rooms or offices.

3) FIRE ENGINEERING SOLUTIONS

Where possible the fire risk to be reduced by

a) replacing panels with non-combustible (rock wool or mineral wool) panels or by those approved by the Loss Prevention Certification Board (LPCB) achieving LPS 1181:Part 1 EXT A30 for external envelopes and LPS 1181:Part 2 INT-2 for internal areas, as a minimum standard

b) providing internal protected zones around high hazard areas such as cooking, with non-combustible wall and ceiling panels providing at least 60 minutes fire resistance (to LPS 1181:Part 2 INT-1) or conforming to LPS 1208 FR60 rating for both integrity and insulation. Doors and other openings to be of similar rating and with automatic closure devices

c) fire separation of large undivided floor areas by wall divisions of minimum 120 minute fire resistance with doors and other openings of similar rating and with automatic closure devices

d) sub-division of large undivided roof void areas by walls or panels with minimum 120 minutes fire resistance to the underside of the roof deck with doors or other openings of similar rating. Certain operations and activities may warrant increased fire resistance of 240 minutes. Any fire separation is to include reference to Protected Zones within buildings in accordance with LPC Design Guide.

4) ELECTRICAL INSTALLATIONS

Electrical installations present a potential inception risk and so strict requirements are necessary embracing

a) electrical testing of the fixed installation in accordance with the current edition of Institute of Engineering and Technology (IET) Wiring Regulations: BS7671:2008 by a member of NICEIC/ECA or similar approved UKAS accredited body who is regulated for commercial installations
   i) wiring inspection of the premises with IET certification to be every 3-5 years in accordance with the recommendations of BS 7671:2008 or Electricity at Work Regulations 1989, or more frequently if advised by the electrician
   ii) electrical wiring/switch panels and controls directly attached to, or passing through, combustible panels to be inspected annually with IET certification or be subject to at least annual thermographic inspection to detect hidden hot spots and any corrective action taken as necessary

b) annual portable appliance testing by a competent person

c) electric cables or wiring not to pass through or be directly attached to combustible panels. Where this is unavoidable fire resistant cables to be used or cables enclosed within non-combustible insulating sleeves or conduit, and metal backing plates used behind any direct attachments to panels

d) high temperature electrical fittings e.g. halogen lamps and fluorescent tube lighting incorporating ballast units not to be fitted directly onto combustible panels

e) evaporators on refrigeration systems to be fitted with additional automatic thermostatic cut-offs pre-set at no more than 20 degrees centigrade above normal ambient temperature and subject to annual calibration checks or as stipulated by the manufacturer

f) thermographic inspections undertaken at least annually of all electrical systems, attachments and equipment can identify developing faults before they become a problem. Any faults identified to be corrected without delay

g) further guidance can be found in the Risk Management Data Sheet for Electrical Installations.

5) CONTROL OF CONTRACTORS

Only bona fide contractors to be employed and a designated person appointed to ensure they adopt the necessary safety procedures. Any contractors 'Hot Works' to be controlled by a strict permit to Work system. Contractors to hold Public Liability insurance with an adequate indemnity limit to reflect the potential exposure but of at least £2.5 million.

Further guidance can be found in the Risk Management Data Sheet for Control of Contractors.

6) HOT WORK

Welding or cutting/grinding equipment, blow lamps, blow torches or similar equipment not to be used for repairs to combustible composite panels or within five metres of them unless they are

i) protected by non-combustible fire blankets, drapes or screens and

ii) subject to a strict 'permit to work' system, unless undertaken by own staff in accordance with documented safe hot working procedures/policy.

Further guidance can be found in the Risk Management Data Sheet for Hot Work.

7) HOUSEKEEPING AND WASTE CONTROL

a) External storage of combustible goods or waste materials to be at least 7m (but where possible 10m) from the fabric of the building, preferably within fenced or enclosed areas

b) Internal storage of combustible or waste materials to be kept to a minimum and within designated areas at least 3m from combustible panels

c) The premises and immediate external areas to be inspected and, where appropriate, swept daily

d) Roof voids to be kept clear of combustible materials and regularly inspected

e) Modified Atmosphere Packaging (MAP) using 'oxygen injection' presents potential fire hazards and to be evaluated by a risk assessment and risks reduced as necessary, e.g. location of oxygen supply pipes and tanks and provision of automatic safety cut-off devices

f) Designated smoking areas to be at least 10m from the buildings and any external combustible storage such as pallets. Suitable disposal facilities for spent smoking materials to be provided and emptied frequently.

8) HEATING

a) Only fixed indirect heating to be used in areas containing combustible panels

b) Temporary portable heaters not to be used

c) Heaters or boiler units to be within an area of non-combustible construction or enclosed within a fire compartmented area providing at least 60 minutes fire resistance. Where this is not possible heaters or boiler units to be at least 3m from combustible panels or the panels boarded over with non-combustible material

d) Flues used to extract hot gases not to pass through, or be close to, combustible panels. Where this is not possible one of the following precautions can be taken
   i) dual skin insulated 'cool' flues to be used
   ii) the immediately surrounding panels to be replaced with non-combustible (rock wool or mineral wool) panels
   iii) the flue outlet or hot trunking passing through the panel to be fitted with a non-combustible insulating sleeve with a minimum 60 minutes fire resistance. Any gap between the sleeve and panel to be filled with mineral fibre or other suitable non-combustible material.

9) BATTERY POWERED VEHICLES

a) Charging to be undertaken in an area of non-combustible construction or outside the main buildings. Where this is not possible charging is not to be undertaken within 3m of combustible panels unless they are protected by non-combustible materials such as steel checker plate or mineral board surrounding the charging area

b) Chargers not to be mounted on to panels but on fixed metal stands located at least 250mm from the panels

c) Local fire detection to be provided immediately above chargers and suitable ventilation provided to remove potential gas build up through charging activities

d) Further guidance can be found in the Risk Management Data Sheet for Forklift Trucks.

10) COOKING APPLIANCES

If the premises are used for frying, baking or cooking

a) all appliances, equipment, grease traps and removable filters to be cleaned at least weekly

b) fixed flues and extraction ducts to be deep cleaned by a competent person at least once every six months

c) thermostatic temperature controls or cut-out devices to be serviced and calibrated by a competent person at least annually

d) flues used to extract hot cooking gases to conform to the requirements for heater flues (see paragraph 8d).

11) MAINTENANCE AND INSPECTION

All panels to be inspected at least weekly and damaged panels or facings replaced or repaired. Fixings or joints to be maintained in good condition and tightly secured. A written log of inspections and remedial action to be kept. Consider protecting panels prone to frequent damage by pallet or lift trucks by barriers or checker plate.

12) AUTOMATIC FIRE ALARMS

Fire detection systems to conform to BS5839: Fire Detection and Alarm Systems for Buildings: Part 1: Code of Practice for Design. The installation to be designed and installed in accordance with category P1/L1 as defined within BS5839 preferably with remote signalling to an approved alarm receiving centre.

13) AUTOMATIC FIRE SUPPRESSION AND/OR SPRINKLER PROTECTION

a) Consider installation of an LPCB approved automatic fire suppression system conforming to LPS 1204, either as a fully integrated flooding system to identified 'high risk' areas, such as cooking, electrical switch rooms or plant rooms, or as individual systems to target inception hazards such as items of machinery, plant or cooking or catering equipment

b) Consider automatic fire sprinkler protection to the premises specifically designed to give maximum coverage to walls, ceilings and roof/ceiling and other voids. Any new sprinkler system to be designed and installed in accordance with LPC rules BS EN 12845 Fixed Fire Fighting Systems - Automatic Sprinkler Installations.

14) PORTABLE FIRE EXTINGUISHERS

Adequate fire extinguishers to be located throughout the premises. Regular inspection and maintenance to be undertaken by an approved supplier and recorded.

15) FIRE RISK ASSESSMENT

Employers or occupiers of premises have a statutory duty to carry out an assessment of the fire risk to their employees and others. This duty is formulated in the Regulatory Reform (Fire Safety) Order 2005 and the responsible person must make a suitable and sufficient assessment of the risks to which relevant persons are exposed.

The assessment to include the risks of fire spread from the building construction, the processes within it and the amounts or types of hazardous substances present. Further information and guidance may be found at the web site for the Department for Communities and Local Government www.communities.gov.uk/fire/firesafety/firesafetylaw/

The fire risk assessment must be reviewed annually or following any change to the buildings or processes carried on within.