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... bridging the communities ...

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Information Sheet

Design Criteria for New and Altered High Risk Food Premises

1. Introduction

- 1.1 The principal legislation dealing with the design and construction of food premises is Regulation (EC) 852/2004, Article 4, Annexe II.

The regulations contain specific requirements for the layout, design and construction of premises where open food is handled or sold. Also detailed requirements are laid down for floor, wall and ceiling surfaces together with numbers of facilities such as sinks and wash hand basins and the installation of equipment.

- 1.1.1 New materials and construction techniques have been developed which help to ensure that food premises are easily cleaned and do not encourage infestation by rodents and insects or the growth of disease producing bacteria.

1.2. Standards

- 1.2.1 Three principal criteria have been referred to throughout this document:

"Legal Requirement"

This quotes the actual provision of the legislation and the Chapters contained in the Regulations.

"Guide to Compliance"

These standards are contained in the Industry Guidance document, are legally enforceable and are therefore the minimum standard to be achieved in any food premises.

"Advice on Good Practice"

These standards are also contained in the Industry Guide and indicate the materials, practices and construction techniques currently available and known to provide good standards of catering practice.

1.3 **Application of these Criteria**

1.3.1 These standards are applicable to all premises where high-risk open food is stored, prepared or sold.

1.3.2 High Risk Open Foods: are either ready to eat foods, or those which have already gone through most, if not all, of their preparation and cooking stages. There would be a 'high risk' of food poisoning if they were contaminated by bacteria or allowed to deteriorate because there are no further steps to control the hazard from foods prior to them being consumed.

Examples include:

- cooked meats and fish, pies and pates;
- soft cheeses, cream, milk and dairy based foods, cooked rice, pasta and vegetables, prepared salads, and
- any food containing the above as ingredients.

1.4 **Standards of Workmanship**

These criteria are intended to apply to new premises or premises where refitting or major alteration is carried out. The suitability of the premises after this work will depend on the ability of the builder to work to a professional standard.

1.5 **Size, Design, Construction and Layout**

These criteria make no mention of any standard for the size of food rooms or the space to be devoted to any particular operation. It has not been possible to give definitive criteria for these aspects and therefore **proprietors of any new food premises or premises where work is to be carried out must submit a scaled sketch plan showing the exact layout of all fixtures and fittings detailing areas in which various processes are to be carried out and giving details of surface finishes.** This will enable the Environmental Health Officer dealing with the premises to make recommendations on the suitability of the proposed layout and space.

1.6 **Legal Requirement**

"In general terms the layout, design, construction and size of food premises shall:

- (a) permit adequate cleaning and/or disinfection;
- (b) be such as to protect against the accumulation of dirt, contact with toxic materials, the shedding of particles into food and the formation of condensation or undesirable mould on surfaces;

- (c) permit good food hygiene practices, including protection against cross contamination between and during operations by foodstuffs, equipment, materials, water, air supply or personnel and external sources of contamination such as pests; and
- (d) provide, where necessary, suitable temperature conditions for the hygienic processing and storage of products."

1.7 **Guide to Compliance**

The main criterion is cleanability and layout and design should allow access for effective cleaning. Alternatively equipment must be mobile to enable adequate cleaning and disinfection. The amount and type of cleaning needed will be different for each area of the premises and the uses to which areas are put. The layout, design, construction and size of premises must avoid the accumulation of dirt in places inaccessible to cleaning. High level surfaces should avoid finishes that may lead to shedding of particles such as flaking paintwork, plaster or fibres. Similarly any growth of mould within the fabric of a building is undesirable, as is the presence of condensation.

Adequate space must be provided to allow high risk foods to be stored, handled and prepared separately from foods that may contaminate them: eg raw foods. This is particularly necessary where both have to be stored, handled and prepared at the same time and/or in the same area.

1.8 **Advice on Good Practice**

It is good practice to avoid sharp corners at floor and wall junctions, the use of coving being recommended.

Good layout, operating systems and production flow should ensure that preparation and handling of high risk foods are segregated.

In addition to proofing possible pest entry points, it is recommended to have secondary defences against pests which could include the use of baits (which should be positioned by a competent pest controller) and electric fly killers which should not be located directly above work surfaces.

The design should be such that refuse does not have to be taken through food rooms to the collection area.

1.9 **Design:**

All food premises should be designed with a logical work flow pattern along the following lines:

- (a) raw materials in;
- (b) storage;

- (c) preparation;
- (d) cooking, and
- (e) service or despatch.

Good design will reduce the risk of cross contamination and will provide the basis for an efficient work pattern.

2. Requirements for Food Rooms

2.1 Floors

2.1.1 Legal Requirements

"Floor surfaces must be durable, anti-slip, impervious to moisture, non-toxic and capable of being effectively cleaned, and where necessary, disinfected. Changes in floor levels should be avoided if possible. The junction of walls and floors must be coved for ease of cleaning. The coving should be of solid material. The coving diameter should be sufficient to enable easy cleaning".

2.1.2 Guide to Compliance

Floors must be kept in a good state of repair that allows them to be kept clean. Frequent disinfection of floors in catering premises would not be essential if the floors were kept clean. Exceptions would apply to 'cook-chill' units where bacterial contamination would seriously jeopardise the safety of the product.

Assuming that they are properly installed the following surfaces would comply:

- quarry, ceramic or vinyl tiles, preferably anti-slip;
- vinyl sheet safety flooring with welded seams (Altro, etc);
- terrazzo, and
- cast in situ resin flooring.

2.1.3 Advice on Good Practice

It is good practice to disinfect all floors periodically but the frequency of disinfection will depend upon the type of food preparation carried out in that area or room.

2.1.4. Notes:

- (a) Terrazzo tiles are not recommended in wet areas because they are slippery.

- (b) Domestic grade ceramic tiles should not be used.
- (c) All floor drainage, including channels, gullies and gratings, should be constructed of commercial quality stainless steel suitable for use in a food room. Gullies in food rooms must be trapped.
- (d) Where floor drainage is provided the floor should be laid to a slight fall towards the drain.
- (e) With modern 'wet-vac' machines floor drainage will not always be necessary.

2.2. Walls

2.2.1 Legal Requirements

"Walls should be of solid construction with smooth, impervious, non absorbent, non-toxic and have durable finishes. They should be light in colour and capable of being repeatedly cleaned, and where necessary, disinfected without deterioration".

"Wall surfaces immediately behind food preparation surfaces or equipment must be capable of being disinfected to reduce the risk of food contamination".

2.2.2 Guide to Compliance

Assuming proper installation the following surfaces would comply:

- Ceramic tiles with epoxy resin grouting;
- Aluminium sheeting;
- Stainless steel sheeting;
- PVC, GRP or polypropylene cladding, and
- Smooth painted plaster (except immediately above and behind areas subject to regular soiling or where there is a risk of physical impact or damage).

2.2.3 Advice on Good Practice

To assist cleaning all junctions between walls and floors and vertical wall angles should be coved.

Wall surfaces should be to a minimum height of at least 1.8 metres above floor level.

Surfaces above this height should also be cleanable but might not need to be so durable against impact or physical damage.

2.2.4 Notes:

- (a) All sheet materials must be directly applied to solid wall surfaces and not leave any gaps which could allow infestation by pests.
- (b) Where materials may be damaged, for example at projections or external corners, protection strips will be required.
- (c) If painted plaster is used protection against damage should be given above work surfaces by tiling or sheeting.

2.3. Ceilings

2.3.1 Legal Requirements

"Ceilings must be smooth, impervious and capable of being effectively cleaned and finished to prevent accumulation of dirt, reduce condensation, the growth of moulds and the shedding of particles".

2.3.2 Guide to Compliance

The following surfaces would comply with the legal requirements:

- painted plaster;
- suspended ceilings with removable tiles (the tiles must be fire retardant), and
- proprietary ceiling systems providing that they meet the general criteria.

2.3.3 Advice on Good Practice

Polystyrene or fibre tiles or panels would not be suitable in high humidity locations and the choice of ceiling design and materials may be important in reducing condensation.

2.3.4 Notes:

- (a) The assumption that absorbent ceilings should be used in order to absorb moisture and prevent condensation is misguided. If condensation is likely to occur then adequate mechanical ventilation must be used to remove moist air from the premises.
- (b) The void above suspended ceilings must be accessible, cleanable and be kept free from pest infestations.

2.4 **Doors**

2.4.1 Legal Requirements

"Doors and frames should be of simple design, smooth, impervious, close fitting, easy to clean, and where necessary, disinfect. External doors must be insect and vermin proof. Sight panels are required where doors open both ways".

Any doors used by staff who handle open food during work activity may be a source of contamination, especially if staff touch the doors with their hands. These doors, as well as any door furniture, eg handles, must be capable of disinfection.

2.4.2 Guide to Compliance

The following doors and finishes would comply:

- painted wooden doors;
- varnished wooden doors, and
- P.V.C or rubber doors (for access by fork lift trucks).

Note: unsealed wood does **not** comply.

2.4.3 Advice on Good Practice

Washable, durable, flush doors or composite doors of solid construction without angles or mouldings would comply. Swing doors with kick or push plates are preferable to doors with handles.

If doors to food rooms are to be left open for ventilation purposes, then fine-mesh fly screens (mesh-size 10) should be fitted to prevent access by pests.

2.4.4 Notes:

- (a) Any Fire Authority requirements must be met.
- (b) Protection (usually metal strips) will be required against physical damage by feet, trolleys and vehicles.

2.5. **Windows**

2.5.1 Legal Requirements

"Windows and other openings must be constructed to prevent the accumulation of dirt".

"Those windows which can be opened to the outside environment must where necessary be fitted with insect proof screens which can be removed for cleaning".

"Where open windows would result in contamination of foodstuffs they must remain closed and fixed during production".

2.5.2 Guide to Compliance

Windows must permit effective cleaning and prevent accumulations of dirt. This does not necessarily require sloping cills.

Windows must be screened if:

- (a) they open directly into food preparation areas;
- (b) they are opened for ventilation during preparation, and
- (c) screening is necessary to prevent risk of contamination or infestation - eg if opening onto refuse areas.

Where build up of dirt on screens presents a risk of food contamination the screens must be easily removable for cleaning.

2.5.3 Advice on Good Practice

Sloping cills help prevent accumulations of dirt.

It is good practice to screen all openable windows in food preparation areas.

Recommended Materials

- Aluminium.
- UPVC.
- Painted wood.

3. Services and Equipment

3.1 Ventilation

3.1.1 Legal Requirements

"There must be suitable and sufficient means of natural or mechanical ventilation".

"Mechanical air flow from a contaminated area to a clean area must be avoided".

"Ventilation systems must be so constructed as to enable filters and other parts requiring cleaning or replacement to be readily accessible".

3.1.2 Guides to Compliance

Natural or mechanical ventilation must be provided to ensure that heat and/or humidity do not build up to levels that could compromise the safety of the food.

Air mechanically drawn into "clean" preparation rooms, producing ready to eat food must not be drawn from dirty areas such as waste storage areas or rooms used for "dirty" processes such as pot washing.

Filters and other parts of the system must be accessible either directly or through access panels.

3.1.3 Advice on Good Practice

As a target food room temperatures should be below 25°C.

Natural ventilation in rooms where food is cooked will only be suitable in small premises and where there is low heat input into the room from cooking appliances such as ovens, hobs, grills etc.

3.1.4 General Requirements

If you intend to carry out anything more than minimal cooking you should consult a ventilation engineer to design a system which will:-

- (a) maintain kitchen air temperatures between 16°C and 22°C;
- (b) control relative humidity, and
- (c) achieve a ventilation rate of not less than 20 air changes per hour.

Mechanical air flow from a contaminated area to a clean area must be avoided.

The ventilation system should provide comfortable work conditions. At present the Offices, Shops and Railway Premises Act 1963 requires a minimum fresh air supply of 20 litres per metre square floor area per second for 'existing premises'.

From 1.1.96 all premises will have to comply with Regulation 6 of the Workplace (Health, Safety and Welfare) Regulations 1992. Reference to The Approved Code of Practice for the Regulations published by HMSO is recommended.

3.1.5 **Natural Ventilation** is only acceptable where there is minimal cooking and heat generation.

Windows should be sited to allow through flow ventilation and preferably on a north-facing wall to reduce internal temperatures due to the heating effect of the sun.

Windows should allow incoming air to be as fresh as possible and preferably should not open directly onto busy roads, refuse areas or other unsuitable environments.

3.1.6 **Mechanical Ventilation** designed by a ventilation engineer will be required if you carry out moderate or large scale cooking.

The suitability of the make up air must be considered. All equipment which produces heat or water vapour should be ventilated by hoods connected to the extract ventilation system.

3.1.7 Notes:

(a) Mechanical ventilation systems should be designed and fitted so as to avoid nuisance from noise and odours affecting occupiers of neighbouring premises.

(b) Your ventilation engineer should forward to this Authority, written confirmation that the proposed system can operate without causing such nuisance.

3.2 **Lighting**

The natural and artificial lighting must give good illumination to all parts of the premises.

3.2.1 Legal Requirements

"Lighting must be of a sufficient level to permit safe food handling, effective cleaning and monitoring of cleaning standards."

3.2.2 Guide to Compliance

Light fittings should be designed to facilitate easy changing of tubes or bulbs and cleaning.

3.2.3 Advice on Good Practice

Daylight supplemented with artificial light.

Recommended levels of illumination range from 150 lux in storage rooms to 500 lux in food preparation areas.

Glass lights should be protected with diffusers or shrouds to contain breakages in areas where open food is handled.

3.3 **Washing Facilities for Food and Equipment**

3.3.1 Food - Legal Requirement

"Where appropriate, adequate provision must be made for the necessary washing of food".

"Every sink or other facility for the washing of food must have an adequate supply of hot and/or cold potable water as required, and be kept clean".

3.3.2 Guide to Compliance

Separate sinks must be provided for food preparation if the volume of preparation demands it.

In smaller kitchens one sink may suffice for both food and equipment washing, provided that both operations can be carried out without prejudicing food safety. It may be possible to 'time separate clean and dirty operations' such as washing salad vegetables and washing-up crockery and cutlery with thorough cleaning of the sink in between these operations.

A supply of hot water is not essential if a sink is to be exclusively used for food washing only.

A single mixer tap is acceptable, or water supplied from a heating unit at a regulated temperature.

3.3.3 Advice on Good Practice

Signs above sinks designating the purpose that they are to be used for is good practice.

3.4 **Equipment - Legal Requirement**

"Where necessary adequate facilities must be provided for the cleaning and disinfecting of work tools and equipment".

"These facilities must be constructed of materials resistant to corrosion and must be easy to clean and have an adequate supply of hot and cold water".

3.4.1 Guide to Compliance

From time to time it will be necessary to clean all items of equipment depending upon how they are used and the foods they are used for. Containers that only hold dry goods or powders will need cleaning only infrequently.

Equipment that comes into contact with 'high risk' foods will require cleaning and disinfection more often.

Facilities must also be provided to clean and disinfect all tools and equipment, crockery, cutlery, glasses and serving dishes with which food comes into direct contact.

Suitable equipment will include:

- sinks with detergents and disinfectants for manual equipment cleaning which are large enough to totally immerse the largest piece of equipment;
- sterilising sinks;
- dishwashing machines, and
- hoses or other equipment for cleaning and disinfection of fixed equipment or structural surfaces.

Drying of equipment must be carried out without recontamination, for example from soiled cloths. Space for air drying of all equipment is a suitable alternative.

All equipment must be of durable construction and resistant to corrosion, especially those items that will come into contact with powerful cleaning chemicals.

Hot water via a single mixer tap is acceptable as is water supplied through a suitable heating unit at a regulated temperature.

3.4.2 Advice on Good Practice

Signs above sinks indicating the purpose they are to be used for is good practice.

Facilities for draining and air drying close to the area where washing up is undertaken.

Drying cloths will ideally be for single use only.

Where crockery, glassware and cutlery are washed by hand, a food approved detergent and disinfectant should be used.

Mechanical washing equipment should be used in larger operations with back up facilities available in case of breakdowns. An adjacent slop sink, or pre wash facility with a waste disposal unit is recommended for heavily soiled items.

Twin sinks with draining boards are preferred for washing and rinsing to be carried out separately.

Cleaning chemicals brought into food rooms should be handled, and placed, carefully to prevent any food contamination.

3.4.3 Notes:

- (a) The recommended temperature for washing-up is a minimum of 55°C and for rinsing is a minimum of 77°C.

- (b) All waste pipes must be suitably trapped and discharge to a 'foul water' gully connected to the drainage system.
- (c) Sink surrounds and fittings must be designed to allow for cleaning and to prevent moisture getting between the appliance and the wall surface.
- (d) Domestic grade and inset sinks are not recommended in commercial operations.

3.5 Wash Hand Basins

3.5.1 Legal Requirements

"An adequate number of wash basins must be available suitable located and designated for cleaning hands".

"Wash basins for cleaning hands must be provided with hot and cold running water, or appropriately mixed running water, materials for cleaning hands and for hygienic drying".

3.5.2 Guide to Compliance

The number of wash basins will depend upon the size of the business and the size and layout of the premises.

Wash basins must be located close to toilet facilities and at strategic places throughout the premises so that any worker has convenient access to them.

In **all** premises there must be at least **one** separate basin that is only used for the cleaning of hands.

A single mixer tap is acceptable or water supplied by an instant heating unit and a supply of soap or detergent must be provided for cleaning hands as well as facilities for hand drying which may include:

- disposable paper towels (with a collection bin adjacent);
- roller cabinet paper towels;
- washable fabric 'roller towels' in cabinets, or
- warm air hand dryers.

3.5.3 Advice on Good Practice

Water at about 45°C through a single tap which is not hand operated is recommended.

Bactericidal detergent from a dispenser or antiseptic wipes (applied to cleaned hands) provide acceptable alternatives to bactericidal soaps.

Any towel of which the same part can be used more than once is not recommended.

Hot air dryers can be provided but they tend not to be used effectively nor efficiently.

Signs designating 'HAND WASH BASINS' are recommended.

Where nail brushes are provided they must be kept clean.

3.6 **Toilets**

3.6.1 Legal Requirements

"An adequate number of flush lavatories must be available and connected to an effective drainage system".

"Lavatories must not lead directly into rooms in which food is handled".

"All sanitary conveniences within food premises must be provided with adequate natural or mechanical ventilation".

3.6.2 Guide to Compliance

Toilets must be provided on the basis contained in the Workplace (Health, Safety and Welfare) Regulations 1992. The minimum requirement is one WC for 15 employees of each sex.

Toilets must be connected through an effective trap to a 'foul' drainage system.

Toilets (either WCs or urinals) must not open directly into a food room.

Toilets must have either natural or mechanical ventilation to prevent (as far as is possible) aerosols and offending odours from reaching food rooms.

3.6.3 Advice on Good Practice

There should be an intervening ventilated space between toilet facilities and food rooms and food should not be stored in those spaces, nor in toilet compartments.

Separate toilet facilities for staff and customers is recommended.

Mechanical ventilation systems should discharge away from food rooms.

3.7 **Drainage**

3.7.1 Legal Requirements

"Drainage facilities must be adequate for the purpose intended: they must be designed and constructed to avoid the risk of contamination of foodstuffs".

3.7.2 Guide to Compliance

Drains must have sufficient fall to allow for solid and liquid wastes to flow away.

All appliances connected to the drainage system must be provided with effective traps.

Inspection points must be available, but they must be adequately sealed.

3.7.3 Advice on Good Practice

The direction of flow should be away from 'clean' areas to 'dirty' areas. Toilets should feed into the system after the kitchen drains and there should be adequate traps to all appliances.

If open floor drains are provided, grids should be easily removable for cleaning purposes.

3.8 **Changing Facilities**

3.8.1 Legal Requirement

"Adequate changing facilities for personnel must be provided where necessary".

3.8.2 Guide to Compliance

Provision must be made to allow food handlers to change and to store their street clothes and personal effects away from open foods.

Depending upon the size of the operation and numbers of staff a changing area away from foods and with lockable secure cupboards may be adequate.

3.8.3 Advice on Good Practice

Where staff wear protective clothing separate changing facilities and secure storage for personal effects should be provided.

3.9 **Equipment Installation**

3.9.1 Legal Requirement

"All articles, fittings and equipment with which food comes into contact shall be installed in such a manner as to allow adequate cleaning of the surrounding area".

3.9.2 Guide to Compliance

The criterion is cleanability and installation should allow access for effective cleaning.

Alternatively equipment must be mobile to enable adequate cleaning and disinfection.

The amount and type of cleaning will relate to the area of the premises and the use to which it is put.

3.9.3 Advice on Good Practice

Heavy equipment should **not** be fixed in place in such a way that restricts access for cleaning and service connections should not restrict mobility. Flexible connections to electricity, gas, water supply and drainage are possible and should be provided.