Sea Fish Industry Authority

Seafish Technology

Guidelines for the Landing and Sale of Fishery Products

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Contents:

Appendices

1 Purpose and Scope of these Guidelines

These guidelines provide advice on how to maintain high standards of fish quality and food safety and on maximising value through efficient landing and sale operations.

The guidelines cover buildings and other structures, equipment, operating practices and the management and control of operations from landing of fish, to its despatch from the market or place of landing. They apply to the landing of fresh fish, both demersal and pelagic. They do not cover shellfish, that will be the subject of separate guidelines.

The document is intended as a reference for the trade and official bodies. Recommendations are based on good practice and are advisory not mandatory. Relevant legal requirements and some interpretation of those requirements are included but the document does not have legal status and the recommendations do not absolve the trade from compliance with the law. Sections of Legislation are reproduced (by kind permission of HMSO Publications Division) and are shown in *italic print.* Only legislation that is extant at the time of publication is included and users of the document should be aware that legislation is subject to constant review and change. Reference is however made to Food Safety Legislation, currently under review, in section 3.2.

The guidelines take due account of the Recommended International Code of Practice, General Principles of Food Hygiene, of Codex Alimentarius and proposed Code of Practice for Fish and Fishery Products.

The document was prepared by Seafish in collaboration with a panel of representatives from the relevant sectors of the trade and official bodies (as listed in Appendix I). It is one of a series of Guidelines that provide recommendations for good practice in various sectors of the fish industry (Appendix II).

 An electronic copy of the document may be found on the Seafish web site www.seafish.co.uk

2 Background

2.1 Food Safety

Although fish is generally a low-risk product, high standards of food safety are important to ensure public confidence in fish as a safe and wholesome food. Food safety risks are mostly associated with contamination, infestation or bacterial spoilage of product, the exception being some poisonous fish species and fish containing biotoxins.

In an environment where responsibilities for standards are vested in a number of organisations on the same site, the lack of unity of authority can give rise to problems of control. It is essential in such an environment that standards affecting food safety are clearly defined and effectively enforced, not only to meet statutory obligations but to project the right image of fish to the wider food industry and to the public.

Nowhere in the fish supply chain is the industry so visible as during landing and sale but perversely nowhere are standards probably found so wanting. The corporate food sector that now dominates the retail and catering sectors and the processors that supply them, are frustrated that many markets seem incapable of enforcing even the most fundamental of hygiene requirements to meet their needs of showing ‘due diligence’.

2.2 Trading

Many marketing systems and structures in use for first sale are still based on traditional practices and need to change to meet the requirements of today's market. Buyers are critical of the lack of communication that exists between producers and the market whereby trading requirements, in terms of product specification, traceability, price and supply can be negotiated. To meet their requirements many large processors are bypassing the port auction, at least in part, by making direct purchases, contracting vessels, importing or turning to farmed fish.

Many producers and sales agents however are cautious of change and are cynical of the motives of the multiples, claiming that they are merely attempting to use their commercial muscle to rationalise the supply chain and drive prices down, drawing parallels with the farming sector.

There is a need for sales and marketing systems that meet the requirements of the corporate sector and also guarantee efficient and fair price determination.

The lack of accurate product definition at sale (particularly weight) and of sales transparency often obscures any price premium for meeting market requirements (including quality) and is a constraint to improvements in practices of producers and of marketing methods. Without reform, there is a danger that the corporate sector, which has no allegiance to UK producers, will increasingly resource from abroad or farmed supplies where its standards and trading requirements can be met, leaving UK producers supplying a declining market.

2.3 Maintaining Fish Quality

Beyond the basic requirements for standards that ensure food safety, high standards of care are necessary when handling fish products of a perishable and delicate nature in order to achieve a level of product quality that will provide for customer satisfaction, minimise waste and maximise value.

After death, fish deteriorates due to a combination of enzymatic and bacterial action and gradually loses its appeal as a food. Oily fish may also become rancid through oxidation of the oil. Soon after death fish stiffen in rigor mortis, caused by enzymes. This passes and the fish softens and if tasted then, the flavours will be sweet and typical of the species. Further enzymatic action results in the loss of these desirable flavours. Meanwhile bacteria naturally present on the skin and in the guts of the fish, and from other sources of contamination, multiply and invade the fish flesh. The bacterial growth results in undesirable sour and eventually bitter flavours, the flesh softens further and yellow slime develops on the surface. Once bacterial growth has become established sour flavours dominate and the acceptability of the fish to the consumer is rapidly lost.

The rate of bacterial action and loss of quality is proportional to temperature and the simplest and most effective means of slowing deterioration is to chill and maintain fish close to zero degrees centigrade throughout the landing, handling and sale operations. Recommendations on temperature control are provided in section 6.3.

3. Summary of Legal Requirements - Contents

3 Summary of Legal Requirements

3.1 The Nature and Purpose of Legislation

Legislation governing and specific to, the activities of landing and sale of fish may be broadly classified as that relating to regulation of; Food Safety, Fish Marketing, Fisheries Control, Trading, Health and Safety and Environmental Protection. Within the context of this document the most significant legislation is that relating to food safety, fish marketing and trading.

Most legislation relating to the landing and sale of fishery products is essentially common to England, Wales, Scotland and Northern Ireland and is based on EU legislation. Where differences exist, reference is made to the equivalent national legislation where appropriate in the document.

3.2 Food Safety Legislation

The Food Safety Act 1990 is the central Act of Food Safety. It established the essential principles of food safety, it gives powers to the Food Authorities to enforce food safety and it provides a means of enacting subsidiary Regulations on more detailed aspects of food safety.

The Food Safety (Fishery Products and Live Shellfish)(Hygiene) Regulations 1998 as amended apply specifically to the seafood industry and cover all aspects of seafood handling from capture up to retail sale. They include basic requirements for the operation of fishing vessels, for landing of fish and the operation of the markets, for packaging and documenting products and for storage and transport. The basic requirements include the chilling of 'fresh fishery products' to the 'temperature of melting ice' and establish basic standards for the minimum quality of fishery products. More detailed requirements are laid down for premises, equipment and their operation, including monitoring and control procedures. Relevant detail of the requirements is provided in the body of these guidelines.

The Food Safety (General Food Hygiene) Regulations 1995 establish basic hygiene requirements for most foods in all sectors of the food industry, except 'primary production'. They do not generally apply where 'vertical' Regulations, such as the Fishery Products and Live Shellfish Regulations already apply, except by nature of omission. For example the particular requirements of these General Regulations concerning training do apply to businesses already covered by the 'vertical' Regulations although there is no such requirement under the 'vertical' regulations.

It should be noted that the existing EU Food Hygiene Directives upon which our current legislation is based are being reviewed and consolidated into four new EU Regulations, due to be in place by 2004. At the time of writing Hazard Analysis Critical Control Point (HACCP) procedures are proposed in these new Regulations. This would apply to all food businesses except those involved in primary production.

A further EU Regulation laying down the general principles and requirements of food law and establishing the European Food Safety Authority (EFSA) requires traceability from January 2005. This requires food businesses to be able to identify both their immediate suppliers and customers and to keep records.

The Food and Environment Protection Act 1985 gives Ministers powers to make emergency orders to deal with risks to human health from the consumption of food. These powers are used, for example to close fisheries where algal blooms or serious pollution incidents have occurred and to prohibit trade in fish from those areas whilst the order is in force.

Monitoring and enforcing food safety standards in the UK is primarily the responsibility of Local Government Authorities, via their Environmental or Port Health Departments.

3.3 Fish Marketing Legislation

The principle act of Fish Marketing legislation is The Sea Fish (Marketing Standards) Regulations 1986, SI No 1272 as amended, that enacts European Regulations that require common marketing standards.

They require classification for certain species by quality, size or weight, packaging and presentation (including requirements for fishery products imported from third countries). They define allowable tolerances of grading and of weights of standard boxes offered for sale. The minimum sizes established by these regulations apply without prejudice to minimum sizes, under Regulations laying down certain technical measures for the conservation of fishery resources or local by-laws. The Regulations make provision for trade organisations to undertake freshness and size grading and place obligation on Member States to ensure compliance with grading and check weighing of standard boxes.

Council Regulation No 104/2000 on the Common Organisation of the Markets in Fishery and Aquaculture Products includes a requirement for consumers to be provided with information on the commercial name and origin of certain fishery products. Commission Regulation No 2065/2001 lays down detailed rules for the application of this requirement and requires the commercial designation, production method and catch area, together with the name of the species, to be available at each marketing stage. Regulation 104/2000 also requires Member States to draw up and publish a list of commercial designations accepted in their territory. The Food Labelling (England) Regulations 2002 make provision to give effect to Council Regulation No 104/2000 as applied by Commission Regulation 2065/2001. These include a list of fish species and their permitted commercial designations. The regulations will also apply in Wales, Scotland and Northern Ireland. At the time of writing these are subject to consultation.

Responsibility for monitoring and enforcement of fish marketing regulations lies with the Fisheries Inspectorates.

3.4 Fisheries Control Legislation

European and National Legislation (including local by-laws) that are intended to protect stocks through fisheries management measures, may place controls upon fishing methods and gear, species uptake, fishing grounds, minimum sizes, prior notification of landings, ports of landing, times of landing and require documentation relating to catch records, landing, sale and transport of fishery products.

Monitoring and enforcement of legislation relating to fisheries management in respect to conservation of stocks is undertaken by the Department for Environment, Food and Rural Affairs (DEFRA) and Sea Fishery Committees in England and Wales, the Scottish Fisheries Protection Agency in Scotland and the Department of Agriculture and Rural Development in Northern Ireland.

Legislation is currently being considered that would require the registration of sellers and buyers of first-sale fish and prescribe times of auction sales.

3.5 Trading Legislation

The Weights and Measures Act 1985 as amended, prescribes acceptable units of measurement used in trading and requires certification of performance of weighing equipment by an authorised inspector. Under The Units of Measurement Regulation 1995 all trading transactions are to be conducted in metric measure (kilograms). It is an offence to sell any goods by weight or other measurement, or by number which on delivery to the buyer is of lesser quantity than claimed. Food Labelling Legislation establishes the legally acceptable names of fish species.

Monitoring and enforcement of legislation relating to trading is primarily the responsibility of the Local Government Trading Standards Departments. To ensure uniformity of interpretation and enforcement procedures in England and Wales, the Local Authority Co-ordinating Body on Regulatory Standards (LACORS) provides guidance to Local Authorities. The equivalent body in Scotland is the Convention of Scottish Local Authorities (COSLA).

3.6 Health and Safety Legislation

Legislation concerning personal health, safety and welfare requires the provision of staff facilities such as toilets, washing and changing rooms as necessary and places obligations on business operators to ensure a safe working environment and safe operating practices.

The Workplace (Health, Safety and Welfare) Regulations 1992, the Docks Regulations 1998 and the Loading and Unloading of Fishing Vessel Regulations 1988 prescribe requirements for staff facilities, safe access to and from fishing vessels, quay-side ladders, life-saving equipment, standards of lighting, protective clothing and the safe operation of mechanical handling and lifting equipment.

Health and Safety legislation is enforced by the inspectors of the Health and Safety Executive (HSE).

3.7 Environmental Protection Legislation

Legislation regarding the disposal of trade waste, places restrictions on the disposal of both solid and liquid wastes. Port Authorities must submit and obtain approval for their plans for the disposal of ships-generated waste and provide facilities for its disposal.

Disposal of fish and fish waste to sea is regulated by the Food and Environment Protection Act 1985 that controls deposits through a system of licences. Although fish and fish waste taken from sea by a fishing vessel in the course of normal fishing operations and returned to the sea from the vessel is exempt from licence control, such waste is licensable if taken back to sea for disposal or deposited into the sea after it has been landed.

Enforcement of legislation regarding disposal of trade waste on land is generally dealt with by local government authorities. The Marine Safety and Coastguard Agency is responsible for compliance with the preparation of waste plans and the provision of port waste reception facilities. Matters concerning the discharge of effluents to controlled waters are dealt with by the Environment Agency in England and Wales, the Scottish Environmental Protection Agency in Scotland and the DoE in Northern Ireland.

Matters relating to the discharge of effluent to public sewers are dealt with by the Water Companies in England and Wales, the Public Water Authorities in Scotland and the DoE in Northern Ireland. Control of disposal of specified forms of animal waste (including fish) is the responsibility of the Local Authority.

4.0 Management - Contents

4 Management

4.1 Legal Responsibilities of Management

Under Food Safety legislation, proprietors of all food businesses must ensure that the handling, preparation, storage, transportation and the sale of fishery products is carried out in a hygienic way. They are responsible for ensuring adequate standards of practices, structures, equipment, hygiene, cleaning and pest control. They are also responsible for ensuring that the staff who handle fish are medically fit to do so and are suitably supervised, instructed and/or trained in food hygiene. All businesses that involve the handling or sale of fish, or the cleaning of plant and equipment that may come into contact with fish are classified as food businesses. Port or Market Authorities are legally required to register or license, as appropriate, an auction or wholesale market with the Local Authority. Primary responsibility for food safety on a fish market lies with the Port or Market Authority as obligated by the Food Safety (Fishery Products and Live Shellfish)(Hygiene) Amendment No 2 Regulations 1999.

It is worth noting that a proposed EU Food Regulation currently includes proposals for the introduction of HACCP procedures for all food businesses (see section 3.2). A further Regulation laying down the principles and requirements of food law requires traceability (see section 3.2). However, fish marketing legislation (see section 3.3) does require information on the origin of certain fishery products to be available at each marketing stage.

Note that with regard to the use of contracted external service providers, for example pest control or fish transport, responsibilities may be shared but accountability rests with the food business. Note also that under Food Safety Legislation, where an offence has been committed by a body corporate, if it is proven to have been committed with the consent or connivance, or is attributable to neglect on the part of management, then the individual as well as the body corporate shall be deemed liable.

Fish Marketing Legislation, intended to promote the rational marketing of fishery products places obligations on European Member States that in the UK is largely devolved to Producer Organisations. The Producer Organisations have responsibility for the preparation of annual fishing plans, management of the price withdrawal scheme, where adopted (and quota management under Control Regulations) and the classification of products with regard to freshness, size/weight, packaging and presentation as prescribed.

They must keep records and accounts for inspection by the national fisheries Inspectorate/Agency who are responsible for monitoring the performance of individual PO's.

The responsibility for quota management of vessels not fishing against quota allocations managed by a Producer Organisation rests with the appropriate Government department. Quotas are managed and enforced through fishing vessel licences. Vessels not in membership of a Producer Organisation are not part of the price withdrawal scheme but are subject to marketing regulations regarding classification of products for freshness, size/weight, packaging and presentation as prescribed.

Under fisheries control regulations, skippers are responsible for compliance with the requirements for the completion and submission of logbooks and landing declarations. Responsibility for the accuracy of logbooks and landing declarations rests with the skipper although the landing declaration may be completed and submitted by his agent or representative. Sales notes for the first sales of fish must be completed and submitted to the competent authority by either those involved with selling fish (e.g. a fish selling agent) or by the buyer of the fish. The control regulation also places responsibility on transporters of fish to carry and provide documentation both prior to and after first sale. Under national legislation, masters or their representatives of UK vessels of 20 metres or more, landing whitefish or shellfish into UK ports must give at least 4 hours prior notice of landing unless the landing takes place in a designated port during designated landing times where a copy of the logsheet must be posted in the post box provided before discharge commences. UK vessels landing abroad or foreign vessels landing into the UK must comply with EU requirements on advance notification of landing. Fisheries conservation and marketing regulations place an obligation on skippers, sales agents, buyers and others with regard to possession or sale of undersize fish.

Health and Safety Legislation places a duty on the employer to ensure as far as reasonably practicable the health, safety and welfare of all his/her employees. This includes provision of a safe system of work and of information, instruction, training and supervision. It also places duties on persons in control of premises in relation to non-employees for safe access to and from premises and for the safety of plant and structures. Note that where employees work at or in workplaces in the control of others, their employer is still bound by his/her duties under Health and Safety to ensure the safety of his/ her staff.

Under legislation designed to protect the environment, Port Authorities are required to produce an acceptable Waste Management Plan and to provide adequate port waste reception facilities for the reception of prescribed wastes from ships using the port. In preparing waste plans Port Authorities are required to consult with those affected by the legislation. Plans must be reviewed and re-submitted at two-yearly intervals. Port Authorities may also be liable for permitting discharges, for which there is no consent, to controlled waters within harbour limits.

4.2 Structures and Powers

Ports management should be structured and empowered such that it can operate in a dynamic and commercial manner, having the ability to control and co-ordinate operations and enforce standards through its terms and conditions of business.

In an environment where the responsibility for structures, equipment, services and the conduct of staff is vested in numerous and diverse organisations, the lack of unified authority can give rise to problems of strategic management and control, particularly over standards.

In such an environment it is essential that management functions, responsibilities, authority levels and interface arrangements between port users are clearly defined, understood and agreed. This requires a management structure that can function at a strategic level in addition to the management of individual businesses operating in a port. The form that this may take will depend on the nature and scale of operations and existing commercial interests and ownership of facilities. To be effective however, ports management must have power or influence over the provision of the essential services in the port, either by providing them themselves or by licensing the service providers.

One way of achieving a management structure that can operate strategically is for the trade to take ownership of the infrastructure and operate it as a business, providing sectoral representation at Board level through financial commitment.

The various sectors then become stakeholders in the enterprise and are party to policy decisions and are accountable for its performance. The extent of its commercial involvement in the supply of goods and services etc. would be a matter for local agreement.

Where this model is not possible, for example in a trust port, or in ports run by a local authority, Port Committees or Forums may provide representation of sectoral interests, to improve communications and to agree standards, responsibilities and measures of enforcement. The composition of such bodies should include; ports management, merchants, skippers/owners, producer organisations, sales agents, ancillary trades and service providers and the Local Authority. To work effectively the group needs to meet on a regular basis. However, unless they are empowered to some degree, there is a danger that they become 'talking shops' and are ineffectual.

In order to make trust ports more open and accountable the Government published in January 2000 'Modernising Trust Ports – A Guide to Good Governance'. All trust ports are expected to meet these standards.

Membership of trade associations at both local and national level is to be encouraged, both to improve communications within trade sectors and beyond, and to promote self-discipline through peer-pressure.

4.3 Strategic and Business Planning

To safeguard the long-term prosperity of a port and the local businesses in the supply, demand and service sectors that depend upon it, it is necessary to understand the dynamics at work within the industry and have a strategic plan for the future of the port.
The Port Authority and the individual trading/service companies should each have detailed business plans for their own operations that are concordant with the objectives of the strategic plan for the port.

Ports management and trading/service companies need to have a clear understanding of the impact of regulatory, market and technological forces on their businesses, and on that of their existing and potential customer base.

Key considerations of strategic and business plans should be that of supplies, management, financial planning, physical infrastructures, ancillary services, competition, training, quality management and marketing (both of product and port services).

4.4 Standards and Control Procedures

To ensure compliance with legal requirements of food safety and to consistently achieve the standards of product quality required by the market it is recommended that, as part of the ports strategic plan, a quality management plan is agreed between all parties involved in the landing and sale of fishery products.

Where standards or controls are prescribed in law it is recommended that compliance is made a condition of trading or working on the market.

The quality management plan establishes standards, procedures and controls, including documented records of the results on monitoring performance. The methods used and the extent of formal documentation should be appropriate to the scale and nature of the operations. It is worth noting that a proposed EU Food Hygiene Regulation currently includes proposals for the introduction of HACCP procedures for all food businesses (see section 3.2).

The quality management plan should indicate responsibilities , authority and the interrelationships of all personnel who manage, perform and verify work affecting the performance of such plans. The design should identify critical control points in the operation where the plant or product will be inspected, the specification or standard to be met, the monitoring frequency and sampling plan used at the control point, the monitoring system used to record the results of these inspections and any corrective action when required. A record for each critical control point that demonstrates that the monitoring procedures and corrective actions are being followed should be provided. The records should be maintained as verification and evidence of the ports quality assurance programme.

On fish markets or facilities in communal use it is essential that the management of all organisations show commitment to the plan, not just to its aims but by agreeing to be bound by the plan and to provide the necessary resources to achieve it.

The quality plan needs to identify who is responsible for what and to define powers available and the policy for enforcement in the event of non-compliance. Voluntary codes of practice that lack agreed and enforceable penalties can be ineffective. The plan should cover;

(a) food safety risk assessment based on hazard analysis
(b) standards of personal hygiene
(c) unacceptable market practices (walking on boxes, tipping boxes etc.)
(d) cleaning of buildings, yards, quays, fish boxes, plant, equipment and transport
(e) measures to be taken to control pests on the market and dock estate
(f) temperature control and monitoring of fishery products
(g) checks on quality standards of products
(h) policy with regard to access to the market
(i) maintenance of buildings, yards, plant and equipment and procedures for reporting faults
(j) handling, storage and disposal of trade wastes (including formal approval by the MCA or others as required.

(k) storage of fishing gear, nets, spare parts etc., and their removal from unapproved areas

(l) specification of handling equipment and transport, on and off the market

(m) policy with regard to skill levels and training

(n) means of achieving traceability

4.5 Training

It is required that all those involved in the landing and handling of fishery products be trained in personal hygiene and food safety.

It is recommended that all those involved in selling, buying, grading and inspection are additionally trained in quality control and quality assessment. The training should provide them with an understanding of the fish spoilage process, risks from contamination and the means of minimising both.

It is recommended that those responsible for the standard of upkeep of premises and equipment be trained in food safety and cleaning to a level appropriate to their position. The training should enable those responsible to recognise signs of infestation etc. and to take the necessary actions to prevent contamination by infestation or other means. It should also provide a clear understanding of the importance of high standards of cleanliness and the means of achieving them by using documented cleaning schedules. Records of training should be maintained for current staff.

The Food Safety (General Food Hygiene) Regulations 1995 establish a requirement for all food handlers to be supervised and instructed and/or trained in food hygiene matters to a level appropriate to their job. There is also a statutory requirement for the training of forklift-truck operatives.

At all levels of organisation, personnel should have the ability, training, expertise and where necessary professional qualification to efficiently undertake their duties and discharge their responsibilities. Food handlers should clearly understand their duties and responsibilities which should be defined in a written job description that specifies the skills and knowledge required. Where casual staff are employed or bonus schemes used, training may need to be reinforced by a higher level of instruction and supervision. The level and content of training, instruction or supervision should be determined having regard to the nature of the operations and the role of the food handler. Training requirements should particularly reflect the levels of product risk and the working environment. Managers and supervisory staff should have a clear understanding of both technical requirements of product quality and safety and their legal responsibilities.

5.0 Facilities and Equipment - Contents

5 Facilities and Equipment

5.1 General Requirements

5.1.1 Site, Layout and Provision of Facilities

5.1.1.1 Legal Requirements

The Food Safety (General Food Hygiene) Regulations 1995 SI No 1763
Schedule I Rules of Hygiene Chapter I

2. 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.

Other than restrictions on landing imposed on vessels by fisheries control regulations, there are no legal constraints with regard to the choice of site for the landing of fishery products, other than that the site meet legal requirements with regard to the provision and standard of infrastructures and conditions of hygiene as prescribed under Food Safety and other forms of legislation (as summarised in Section 3).

The Food Safety (Fishery Products and Live Shellfish)(Hygiene) Regulations 1998 prescribe the requirement and standard of hygienic construction of buildings, equipment, services (water, lighting, drainage), temperature control of product, handling and disposal of wastes and competent authority accommodation. (Details of the legal requirements are given in the relevant sections). The requirement to maintain fishery products at the temperature of melting ice may require chilled storage and/or a supply of ice. The requirement for cleaning of plant and equipment necessitates the provision of suitable cleaning equipment.

The Workplace (Health, Safety and Welfare) Regulations 1992 establish the requirements for sanitary, washing and changing facilities at workplaces.

However, at remote or temporary workplaces (which could be interpreted as small-scale beach landing places) the relevant requirements apply *'so far as is reasonably practicable'* and at remote workplaces, the requirements for accommodation for clothing and facilities for changing do not apply. The Loading and Unloading of Fishing Vessel Regulations 1988 define requirements for safe quayside working operations.

The Seafish (Marketing Standards) Regulations, Fisheries Control Regulations and Weights and Measures Legislation requires sorting and weighing of fish that necessitates the provision of equipment. The Merchant Shipping (Port Waste Reception Facilities) Regulations 1997 and Food Safety Legislation requires facilities for the storage and disposal of ships-generated trade wastes.

5.1.1.2 General Recommendations for Site, Layout and Provision of Facilities

The site and provision, scale and layout of infrastructures servicing the fleet and on-shore sector should provide for efficient operation by minimising any delay in the landing, handling and despatch of fishery products and in taking ice, water, fuel, provisions or removal of gear etc. The facilities provided must ensure at all times the minimum risk of contamination of product and quality loss.

Sites for fish landing and handling operations should be free from objectionable odours, smoke, dust and other contaminants, infestation by pests and not be subject to contamination by flooding.

It is recommended that fish landing and handling areas are designed and dedicated for that purpose only and that public access is restricted or managed. Fish handling areas should be designed for flow-through of product which minimises risk of cross-contamination and loss of quality. It is recommended that vessel fuelling, maintenance, waste storage or other potentially contaminating activities are conducted well away from fish handling and storage areas. Provision for storage of bait should be such that it cannot contaminate fishery products or equipment that might come into contact with fishery products.

Whatever the scale of the operation, facilities must be provided to meet the essential requirements of cleaning, hygiene and staff welfare.

The factors that make fishing harbours differ from most other harbours concern the very perishable nature of the product handled and the need for prompt onward distribution. These demands call for rapid unloading and handling operations conducted under hygienic and temperature controlled conditions.

The site should be considered with regard to its proximity to fishing grounds and processing infrastructure/markets, availability of labour and services (power, water and sewerage, and good road services for onward distribution.

It is essential that the site be adequately protected from bad weather to ensure that calm water prevails at landing and service quays and that the entrance to the harbour is accessible and may be navigated by vessels in safety.

Facilities need to cope with irregular and unpredictable flows of traffic and volumes of product as accurate predetermined knowledge of arrival and departure times is not always possible for a fleet which is subject to weather conditions and variable catch rates on the grounds. A consequence of unpredictable landings is the need to 'over-design' infrastructures to cope with peak volumes and patterns of landings. Rational layout of facilities in a port that take due account of the operational requirements of all sectors will minimise avoidable delay, congestion, inefficiency and quality loss.

5.1.2 General Principles of Design and Construction

5.1.2.1 Summary of Legal Requirements

The Materials and Articles in Contact with Food Regulations 1987 - SI No 1523 - Part III

4.(1) This regulation shall apply to materials and articles which are in their finished state and are intended to come into contact with food or which are in contact with food and are intended for that purpose.(2) Materials and articles to which this regulation applies shall be manufactured in accordance with good manufacturing practice, that is to say in such a way that under normal or foreseeable conditions of use they do not transfer their constituents to foods with which they are, or likely to be, in contact, in quantities which could-

(a) - endanger human health or

(b) - bring about a deterioration in the organoleptic characteristics of such food or unacceptable change in its nature, substance or quality.

The Food Safety (Fishery Products and Live Shellfish)(Hygiene) Regulations 1998 SI No 994 Schedule 3 - Chapter II

1) *Unloading and landing equipment must be constructed of material that is easy to clean and disinfect (and must be kept in a state of repair and cleanliness*
2) *Equipment (and handling practices) that cause unnecessary damage to the edible parts of fishery products are not authorised.*
3) *Parts of auction or wholesale markets where fishery products are displayed for sale must-*
   (a) *be covered and have walls which are easy to clean;*
   (b) *have waterproof flooring which is easy to wash and disinfect....*
   (c) *have special watertight receptacles made of corrosion-resistant materials for fishery products which are unfit for human consumption;*

Schedule 4 - Part I

1. *The sections of vessels or the containers reserved for the storage of fishery products must not contain objects or products liable to transmit harmful properties or abnormal characteristics to the foodstuffs. These sections or containers must be so designed as to allow them to be cleaned easily....*

5.1.2.2 General Recommendations of Design and Construction

Design and Construction of plant and equipment to facilitate cleaning contributes greatly to the ease and cost of maintaining high standards of cleanliness.

Choice of plant and equipment and materials of construction, should take due account of the costs of maintenance, breakdowns and service life.

It is generally advisable to use purpose-designed equipment manufactured by specialist companies serving the food industry who are experienced in hygienic design and use of suitable materials.

All surfaces that come into direct contact with fish should be smooth, and made of non-absorbent, corrosive-resistant and non-toxic materials and be inert to fish, detergents and disinfectants under normal operating conditions. Stainless-steel and food-grade plastics are recommended for surfaces that come into contact with fishery products. Galvanised steel is not recommended for these surfaces, as its finish may be rough and with wear or damage the steel will corrode. Wood is not suitable as a food grade material; it is absorbent and cracks and splinters.

Working area floor surfaces should be hard wearing, impervious and non-slip. Asphalt is not suitable for fish-handling areas or loading-bays as it is attacked by fish oils. Sets of concrete brick are not recommended for loading bays or quay aprons as they cannot be efficiently cleaned.
Choice of materials or finish of plant and equipment, particularly electrical fittings and controls and refrigeration equipment (condensers and evaporators) should be suitable for wet and salt-laden atmospheric conditions.

Wherever possible glass should be avoided in fish handling areas.

Market buildings, ice stores, chill stores and other fish handling rooms should be designed to prevent the entrance and harbouring of pests and wind-born contaminants such as dust and smoke etc.

Electrical equipment and installation should conform to IEE Wiring Regulations and contractors to BS7671. Safety devices and guards must be fitted as necessary. All electrical equipment used in wet areas must be hose-proof. Electrical equipment conforming to IP66 classification is recommended. Machinery must be fitted with electrical isolators that are conveniently fitted. Residual current circuit-breakers are recommended and for some applications are a legal requirement.
Power supplies to electrical equipment should not involve cables being run across working surfaces. In the case of machinery, moving parts should be suitably enclosed to prevent grease, oil etc. contaminating product. Only 'food grade' lubricants should be used in greasing of moving parts.

Design and construction of plant and equipment to facilitate cleaning contributes greatly to the ease and cost of maintaining high standards of cleanliness.

Choice of plant and equipment, and materials of construction, should take due account of the costs of maintenance, breakdowns and service life. It is generally advisable to use purpose-designed equipment manufactured by specialist companies serving the food industry who are experienced in hygienic design and use of suitable materials.

Great care must be taken to ensure the safety of electrical supplies in a wet environment. Domestic electrical equipment is not suitable.

5.1.3 Provision for Cleaning of Structures, Plant and Equipment

5.1.3.1 Legal Requirements for Cleaning Equipment

Other than the requirements relating to quality of water supply used, Food Safety and Hygiene Legislation does not prescribe equipment or methods of cleaning and disinfection. The requirement for means of cleaning however is implicit in the standard of cleaning required.

Food Safety (Fishery Products and Live Shellfish)(Hygiene) Regulations 1998 SI No. 994

Schedule 3 Chapter II

3 (I) have facilities to provide adequate water supplies satisfying conditions laid down in paragraph 7 of section I of Chapter III

Chapter III Section I

7. facilities to provide adequate supplies of potable water, or alternatively of clean seawater treated by an appropriate system under pressure and in sufficient quantity. However, by way of exception, a supply of non-potable water is permissible for the production of steam, fire-fighting and the cooling of refrigeration equipment, provided that the pipes installed for the purpose preclude the use of such water for other purposes and present no risk of contamination of the products. Non-potable water pipes must be clearly distinguishable from those used for potable water or clean seawater.

11. adequate facilities for cleaning and disinfecting means of transport. However, such facilities are not compulsory if there is a requirement for the means of transport to be cleaned and disinfected at facilities officially authorised by the Food Authority.

5.1.3.2 Recommendations for Cleaning Equipment

There must be adequate supplies of pressurised clean water and means of washing down landing quays and areas where fish is handled and for the washing of premises, vessels, equipment and vehicles as necessary. Supply must be from the public mains or be suitably treated to be of similar quality. Connections to public mains supply must conform to water company regulations. The use of seawater is not recommended because it may be contaminated and is corrosive. Stand-pipe connections and/or water hoses should be located such that they enable the cleaning of all fish handling and equipment storage areas.

For small-scale operations, hose washing and manual scrubbing may be adequate for cleaning of the fabric of buildings, plant, equipment, boxes and transport. Adequate stocks of cleaning materials such as brushes, clothes, mops and buckets etc. and suitable detergents and disinfectants must be provided. Equipment and utensils used for cleaning should be resistant to the temperatures, detergents and disinfectants used.

Plastic sponges, brushes and buckets are recommended in preference to natural products such as cotton mops and bristle brushes. It is recommended that hoses are fitted with trigger-operated adjustable spray nozzles to assist in washing down and to minimise water consumption. Portable high-pressure washers that can incorporate detergent injection and water heating are recommended for universal cleaning purposes.

Where the scale of the operation justifies it, mechanical box-washing machines, located separately from fish handling areas are recommended. Through-flow systems commonly feature three stages - a pre-rinse, a hot pressured detergent wash and a post rinse. Throughputs may be varied to suit the degree of soiling of the boxes. Soak tubs may be used to extend the contact period for very badly soiled boxes. Adequate provision should be made for vapour extraction of the area. Pedestrian or rider-operated rotary mechanical scrubbers are recommended for cleaning of large areas.

Provision should be made for the safe access to high level cleaning operations of gutters, skylights, overhead lighting, ceilings etc. by means of scaffolding or platform lifts or by hiring in services.

All cleaning and disinfecting agents used must be approved food-grade materials. They must not be perfumed for risk of tainting product and should not pose a threat by means of residual toxin. The following table lists types of detergent available and their applications. Types are listed according to their chemical constituents rather than their many and various trade names.

Types of Detergent and their Applications

Detergent Type	Typical Ingredients	Typical Applications	Limitations of Use
Acid	Acid, corrosion inhibitor, wetting agent	Removing heavy deposits of scale or dirt	Extremely corrosive, must only be used when wearing protective clothing including goggles and gloves
Neutral	Synthetic surface-active agent	Removing oil and grease	May foam in high pressure equipment
Mildly Alkaline	Synthetic surface-active agent polyphosphate, silicate proteins	Removing fats and dissolving proteins	Prolonged contact with skin should be avoided
Strongly Alkaline	Silicate, carbonate, polyphosphate, wetting agent	Softening water	Contact with skin should be avoided
Caustic	Sodium or Potassium Hydroxide, Sodium Orthosilicate	Removing stubborn fats, dried proteins and tar	Extremely corrosive, must only be used when wearing protective clothing including goggles and gloves
Abrasive	Abrasive powder, wetting agent. alkali	Scouring hardened residues	Should not be used on soft surfaces such as plastics

Disinfectants and sanitisers should be chosen with great care as many have strong odours that can taint product, particularly phenolic fluids and pine oils. The following table lists disinfectants suitable for fish handling areas. Again types are listed according to their chemical constituents, rather than trade names. It is recommended that suppliers are consulted to identify suitable disinfectants for specific purposes.

Types of Disinfectants and their Application

Type	Typical Ingredients	Typical Applications	Limitations as to Use
1. Chlorine			
i Hypochlorite	Sodium Hypochlorite in solution to give 10% chlorine (common household bleach)	Diluted to 150 ppm for general use on floors, walls equipment, stronger solutions up to 1000 ppm may be used for very dirty surfaces	Chlorine is extremely corrosive and must be handled with care in concentrated solutions It is advisable to rinse metal surfaces 10 minutes after exposure
ii CTSP Crystals	Chlorinated Trisodium Phosphate	As above, but less corrosive in solution	As above, but more stable during storage
iii Hypochlorite	Sodium or Calcium Hypochlorite	Removal of stains on floors walls etc.	As for liquid hypochlorite but is safer to handle
2 Q.A.C's	Quaternary Ammonium compound	Any surface requiring a non-toxic non-corrosive disinfectant with a detergent action	Readily inactivated by many substances including dirt, soap, plastic and detergents
3 Amphoteric	Amphoteric sufactants	Any clean surface requiring a non-toxic, non-corrosive, odourless disinfectant with a detergent action	Relatively expensive and readily inactivated by many substances including dirt, plastic, soap, nylon and detergents

Hazardous substances must be correctly and clearly labelled with the appropriate Health and Safety symbol and stored under lock and key, separate from food handling areas.

Mains water is generally recommended for purposes of wash-down. Clean seawater may be suitable for washing down quay surfaces but it is not recommended as its cleanliness cannot be guaranteed (it is often subject to oil contamination and foul discharges) and its use can lead to corrosion of equipment. Chlorination of local supplies of fresh water (from a bore hole or similar source) may be acceptable but requires significant capital investment and operating and monitoring costs. Any supplies of non-potable water for other purposes must be clearly identified and have notices at outlets prohibiting their general use. Water companies should be consulted when planning installations to ensure compliance with regulations designed to prevent back-contamination through the use of storage tanks, check valves and water breaks etc.

Cold water is adequate for rinsing off fish slime and residues which have not dried and hardened. Hot water at sterilisation temperatures of 82 degrees centigrade or above is not recommended for washing as it is potentially dangerous, expensive and tends to burn fish protein onto surfaces. A hot-water temperature of 50 to 60 degrees centigrade is adequate for washing purposes when used with a suitable detergent.

For small-scale operations at simple landing places, where vessels land direct to vehicles, which are based at other places and where no equipment is used, there may be no need to provide washing equipment. However, a means of maintaining good hygiene standards remains necessary. Where landings are made direct to an approved establishment, the facilities of the establishment may be used. Where vehicle washing is required, a suitably surfaced and drained area should be provided. Washing of vehicles in markets or fish handling areas is not permitted.

5.1.4 Staff Facilities

5.1.4.1 Legal Requirements for Staff Facilities

Food Safety (Fishery Products and Live Shellfish)(Hygiene) Regulations 1998 SI No 994

Schedule 3 Chapter II

3. Parts of auction or wholesale markets where fishery products are displayed for sale must -

(c) be equipped with sanitary facilities with an appropriate number of washbasins and flush lavatories. Wash basins shall be supplied with materials for cleaning the hands and single use hand towels;

Workplace (Health, Safety and Welfare) Regulations 1992 Regulation 20, Sanitary Conveniences

(1) Suitable and sufficient sanitary conveniences shall be provided at readily accessible places

(2) Without prejudice to the generality of paragraph (1), sanitary conveniences shall not be suitable unless-

(a) the rooms containing them are adequately ventilated and lit;

(b) they and the rooms containing them are kept in a clean and orderly condition; and

(c) separate rooms containing conveniences are provided for men and women, except where and so far as each convenience is a separate room the door of which is capable of being secured from the inside

Regulation 21, Washing Facilities

(1) Suitable and sufficient washing facilities, including showers if required by the nature of the work, shall be provided at readily accessible places

(2) Without prejudice to the generality of paragraph (1), washing facilities shall not be suitable unless-

(a) they are provided in the immediate vicinity of every sanitary convenience, whether or not they are provided elsewhere as well

(b) they are provided in the vicinity of any changing rooms required by these regulations, whether they are provided elsewhere as well;

(c) they include a supply of clean and cold, or warm, water (which shall be running water so far as is practicable);

(d) they include soap or other suitable means of cleaning;

(e) they include towels or other suitable means of drying

(f) the rooms containing them are sufficiently ventilated and lit;

(g) they and the rooms containing them are kept in a clean and orderly condition; and

(h) separate facilities are provided for men and women, except where and so far as they are provided in a room the door of which is capable of being secured from the inside and the facilities in such room are intended to be used by only one person at a time

(3) Paragraph (2)(h) ..shall not apply to facilities which are provided for washing the hands, forearms and face only.

Regulation 23, Accommodation for clothing

(1) Suitable and sufficient accommodation shall be provided-

(a) - for any person at work's own clothing which is not worn during working hours; and

(b) - for special clothing which is worn by any person at work but which is not taken home

(2) Without prejudice to the generality of paragraph (1) the accommodation mentioned in that paragraph shall not be suitable unless-

(a) - where facilities to change clothing are required by regulation 24, it provides suitable security for the clothes mentioned in paragraph (1)(a);

(b) - where necessary to avoid risks to health or damage to the clothing, it includes separate accommodation for the clothing

(c) - so far as is reasonably practicable, it allows or includes facilities for clothing; and

(d) - it is in a suitable location

Regulation 24, Facilities for changing clothes

(1) Suitable and sufficient facilities shall be provided for any person at work in the workplace to change clothing in all cases where-

(a) - the person has to wear special clothing for the purpose of work; and

(b) - the person can not, for reasons of health or propriety; be expected to change in another room.

(c) - Without prejudice to the generality of paragraph (1), the facilities mentioned in that paragraph shall not be suitable unless they include separate facilities for, or separate use of facilities by men and women where necessary for reasons of propriety.

Regulation 25, Facilities for rest and to eat meals

(1) Suitable and sufficient rest facilities shall be provided at readily accessible places.

(2) Rest facilities provided by virtue of paragraph (1) shall-

(a) - where necessary for reasons of health or safety include, in the case of a new workplace, extension or conversion, rest facilities provided in one or more rest rooms, or, in other cases, in rest rooms or rest area;

(b) - include suitable facilities to eat meals where food eaten in the workplace would otherwise be likely to become contaminated,

(3) Rest rooms and rest areas shall include suitable arrangements to protect non-smokers from discomfort caused by tobacco smoke.

(4) Suitable facilities shall be provided for any person at work who is a pregnant woman or nursing mother to rest.

(5) Suitable and sufficient facilities shall be provided for persons at work to eat meals where meals are regularly eaten in the workplace.

The Food Safety (General Food Hygiene) Regulations 1995 Schedule 1 Rules of Hygiene Chapter I General Requirements for food premises

3. *An adequate number of washbasins must be available, suitably located and designed for cleaning hands. 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.*
4. *Washbasins for cleaning hands must be provided with hot and cold (or appropriately mixed) running water, materials for cleaning hands and for hygienic drying. Where necessary, the provisions for washing food must be separate from the hand-washing facility.*
6. *All sanitary conveniences within food premises shall be provided with adequate natural or mechanical ventilation.*
9. *Adequate changing facilities for personnel must be provided where necessary.*

5.1.4.2 Recommendations for Staff Facilities

It is recommended that showers are provided for persons who have to work in vessel fishrooms discharging bulk, or shelf-stowed fish, or are involved in sorting and grading operations.

Adequate, suitable and conveniently located staff facilities of toilets, washrooms, changing rooms and facilities for rest and eating of meals must be made in accordance with Workplace (Health Safety and Welfare) Regulations and Food Safety Legislation. These areas should be well lit, ventilated and not open directly on to fish handling or storage areas.

Toilets and wash-hand basins must be readily accessible at all times to all persons involved in the landing, handling, sale and transport of fish or in the handling of fish boxes, equipment and ice etc. Additional wash-hand basins are recommended for work areas associated with direct handling of fish. Use of public facilities is not usually acceptable. Sanitary ware and fittings should be robust and of hygienic design. Hand washing facilities with warm or hot and cold water, a suitable hand-cleaning preparation and suitable hygienic means of drying hands, should be provided adjacent to toilets and in such a position that staff must pass them when returning to fish handling areas.

Where paper towels are used, a sufficient number of dispensers and receptacles should be provided near to each facility. Taps of a non-hand operable type should be used. Foot, knee or proximity operation are recommended. Notices should be posted directing staff to wash their hands after using the toilet.

Facilities must be provided, where appropriate, for staff to change and store their outdoor clothing, footwear and work clothes in a designated area separate from work areas. Changing rooms should be well ventilated and equipped with benches and lockers. On arrival for work, staff should be able to access changing rooms without passing through fish handling areas.

The provision of suitably located washroom and changing facilities encourages high standards of personal hygiene and minimises risks of cross-contamination. The provision of canteens, or dedicated areas, for eating, drinking and smoking encourages compliance with Food Safety Regulations that do not permit such practices in fish handling areas.

5.1.5 Waste Storage and Disposal

5.1.5.1 Legal Requirements of Waste Disposal

The Merchant Shipping Act (Port Waste Reception Facilities) Regulations 1997
SI No3018

Requirement to provide adequate port waste reception facilities

4 - (1) *Every harbour authority in respect of a harbour and terminal operator in respect of a terminal to which these Regulations apply shall provide adequate facilities for the reception of prescribed wastes from ships using the harbour or terminal*

(2) *In assessing the adequacy of the waste reception facilities in its harbour or terminal the relevant harbour authority or terminal operator shall have regard to-*

(a) the Secretary of State's guidance as laid down in Merchant Shipping Notice 1462

The Water Resources Act 1992

Part III Control of Pollution of Water Resources

Chapter II - Pollution Offences

85 (3) *A person contravenes this section if he causes or knowingly permits any trade effluent or sewage effluent to be discharged*

(a) into any controlled waters;

Equivalent legislation in Scotland is 'The Water Act 1989' and 'The Control of Pollution Act 1974'. In Northern Ireland it is the 'Water Act (Northern Ireland) 1977' and the 'Sewerage Services (Northern Ireland) Order 1973.

Water Industry Act 1991

Part IV Chapter II - Communication of drains and private sewers with public sewers

106 (1) *Subject to the provisions of this section -*
the owner or occupier of any premises in the area of a sewerage undertaker; or

the owner of any private sewer draining premises in the area of any such undertaker, shall be entitled to have drains or sewer communicate with the public sewers of that undertaker and thereby to discharge foul water and surface water from those premises or that private sewer

Subject to the provisions of Chapter III of this Part, nothing in subsection (1) above shall entitle any person

(a) to discharge directly or indirectly into any public sewer

(i) any liquid from a factory, other than domestic sewage or water, or any liquid from a manufacturing process; or

(ii) any liquid or other matter the discharge of which into public sewers prohibited by or under any enactment; or

(b) where separate public sewers are provided for foul water and for surface water, to discharge directly or indirectly -

(i) foul water into a sewer provided for surface water; or

(ii) except with the approval of the undertaker, surface water into a sewer for foul water; or

(c) to have his drains or sewer made to communicate directly with a storm-water overflow sewer.

Food Safety (General Food Hygiene) Regulations 1995 Chapter V Food Waste

2. Food Waste and other refuse must be deposited in closeable containers unless the proprietor of the food business can satisfy the food authority that other types of container are appropriate. These containers must be of an appropriate construction, kept in sound condition, and where necessary be easy to clean and disinfect.

3 Adequate provision must be made for the removal and storage of food waste and other refuse. Refuse stores must be designed and managed in such a way as to enable them to be kept clean, and protect against access by pests, and against contamination of food, drinking water, equipment or premises.

The Food Safety (Fishery Products and Live Shellfish)(Hygiene) Regulations 1998 SI No 994 Schedule 3 Chapter II

3. Parts of auction or wholesale markets where fishery products are displayed for sale must-

(j) have special watertight receptacles made of corrosion-resistant materials for fishery products which are unfit for human consumption

***Environmental Protection Act 1990, Part II - Receptacles for commercial or industrial waste**.*

47-(1) A waste collection authority may, at the request of any person, supply him with receptacles for commercial or industrial waste which he has requested the authority to arrange to collect and shall make a reasonable charge for any receptacle supplied unless in the case of a receptacle for commercial waste the authority considers it appropriate not to charge.

(2) If it appears to a waste collection authority that there is likely to be situated, on any premises in its area, commercial waste or industrial waste of a kind which, if the waste is not stored in receptacles of a particular kind, is likely to cause a nuisance or to be detrimental to the amenities of the locality, the authority may, by notice served on him, require the occupier of the premises to provide at the premises receptacles for the storage of such waste of a kind and number specified.

(3) The kind and number to be used shall be such only as are reasonable.

(4) In making requirements as respects receptacles under subsection (2) above, the authority may, by the notice under that subsection, make provision with respect to -

(a) the size, construction and maintenance of the receptacles;

(b) the placing of the receptacles for the purpose of facilitating the emptying of them, and access to the receptacles for that purpose

5.1.5.2 Recommendations for Waste Storage and Disposal

5.1.5.2.1 Solid Waste

Provision must be made for the storage and disposal of solid wastes generated at fish markets and landing quays, including ships landed wastes. Separate provision should be made for waste fishery products from other solid wastes (garbage, packaging materials, nets and gear etc.).

Lidded leak-proof containers that can be easily cleaned should be provided for storage of waste fishery products. They should be clearly marked as waste unfit for human consumption and be used solely for that purpose. Where such waste is not collected at least daily it is recommended that the containers be stored in an environment that provides protection from the elements, vermin and insects. If the waste is to be processed for animal foodstuffs or for pharmaceutical purposes it is recommended that the containers be stored under chilled conditions. To avoid any cross-contamination of product, stores for waste fishery products should be separate from fish handling and storage areas. They should be of adequate capacity, hygienically constructed, well lit, provided with water for cleaning purposes and be well drained. Where there is no market for waste fishery products, advice should be sought from the Local Authority on suitable means of disposal.

Where the scale of operations warrants it, large lidded industrial skips are recommended for disposal of ships-landed solid wastes, located convenient to lay-by and service berths with easy access for collection. Where the public has site access and their use of such facilities causes nuisance, it may be necessary to restrict and monitor access to skips. For smaller quantities of solid wastes, wheeled lidded bins of hygienic construction are recommended. If wheeled bins are located exterior to a building, particularly near quays, they should be fitted with brakes and be well secured.

Where large quantities of paper and packaging materials are generated, a compactor is recommended to reduce the costs of disposal.

Adequate provision for storage and disposal of solid wastes permits a tidy and safe working environment that facilitates efficient cleaning and reduces the risk of infestation and cross-contamination of fishery products.

5.1.5.3 Liquid Wastes

It is recommended that waste-waters including those generated from; cleaning operations, ice melt-water, live shellfish (vivier) transport, unloading of pelagic tank boats and staff facilities be discharged to a public sewer or disposed of by other approved hygienic means. Consent is required to discharge to a public sewer from the appropriate Water Company who will levy a charge dependent on the volume and strength of the effluent.

Provision must also be made for the storage and disposal of spent lubricating oils landed by vessels. Storage should be well away from fish landing, handling and storage areas to avoid possible contamination or tainting of product. In the event of spills or leaks of any containers, provision must be made to contain the total volume of oil by 'bunding' or other means.

In certain circumstances a license may be granted by the Environment Agency, or equivalent body, to discharge to local waters. In practice, consent may be given for small-scale discharges to local waters, depending upon the nature of the waters but for large-scale discharges it is less likely.

See also recommendations for drains made in section 5.6.2.2.

5.2 Fish Boxes and Containers

5.2.1 Legal Requirements of Fish Boxes and Containers

The Food Safety (Fishery Products and Live Shellfish)(Hygiene) Regulations 1998 SI No 994 Schedule 4 Part I

1) The sections of vessels or the containers reserved for the storage of fishery products must not contain objects or products liable to transmit harmful properties or abnormal characteristics to the foodstuffs. These sections or containers must be so designed as to allow them to be cleaned easily and to ensure that melt water cannot remain in contact with the fishery products.

See also section 5.1.2.2.

5.2.2 Recommendations for Fish Boxes and Containers

Boxes and containers intended for use with fishery products must be constructed of materials that are durable, non-absorbent, corrosion resistant and easy to clean. High density polyethylene is recommended. Wooden boxes and wicker baskets are not suitable.

Containers for the storage of fish must have drainage holes except where the fish is stored in RSW or CSW. They should be designed for efficient handling, both manually and mechanically. Fish boxes and containers designed to interlock and stack together are recommended for efficient handling, storage and transport

Stack-boxes that are designed to nest together when empty have the advantage of requiring less storage space**.** Colour coding of the ends of stack-nest boxes aids the correct orientation of boxes when stacking and prevents crushing of fish and the destabilisation of stacks of boxes.

The design and materials of containers must be compatible with any washing machinery used. Lips and reinforcing webs that could trap water must have drainage holes. Plastic containers must be capable of withstanding the pressure and temperature of the hot water and detergents used.

Fish boxes and other containers including baskets and tubs used for discharge should have strong points for sling attachment. Fish boxes and other containers to be handled manually should have suitable hand holds. It is recommended that fish box and container design enable direct handling by mechanical equipment and be so sized to allow for efficient utilisation of space during transport and distribution.

5.3 Quays, Jetties and Other Landing Sites

5.3.1 Summary of Legal Requirements

The Food Safety (Fishery Products and Live Shellfish)(Hygiene) Regulations 1998
SI No 994 Schedule 3 - Chapter II

2. During unloading and landing, contamination of fishery products must be avoided. It must in particular be ensured that-

- *unloading and landing operations proceed rapidly;*
- *fishery products are placed without unnecessary delay in a protected environment at the temperature required on the basis of the nature of the product and, where necessary, in ice in transport, storage or market facilities, or in an establishment;*

Other than the specific requirements designed to ensure safe working conditions under the Loading and Unloading of Fishing Vessel Regulations 1988, detailed requirements of quays, jetties and landing sites are not prescribed in law other than that they enable speedy and hygienic operations that prevent contamination of product.

Section 5 of the above Regulations deals with the Health and Safety at work aspects of handling fish both on board and on the quayside, where this is carried out commercially. They cover activity on the quay up to and including loading onto vehicles which are intended to remove the fish from the quay, but not beyond this point. The Regulations do not apply to the unloading of fish from fishing vessels at beach-landing sites, or at river and canal banks other than a quay. Detailed guidance on these Regulations is given in the Health and Safety Executive publication 'A guide to the Loading and Unloading of Fishing Vessels Regulations 1988'.

5.3.2 Recommendations for Quays, Jetties and Other Landing Sites

5.3.2.1 Segregation and Layout of Landing Sites

It is recommended that fish landing areas are designated and dedicated to fish landing, having site and layout in accordance with the recommendations made in section 5.1.1.2 to ensure minimum risk of contamination.

Where possible it is recommended that there be a physical barrier that excludes the public and dogs etc. from the landing site. For landings to fish markets this can often be simply effected by placing gates or fencing on the quayside at each end of the market. It also improves security. Where this is not possible it is recommended that a bylaw be sought to restrict public access and/or the exercising of dogs and other animals on the site. Where open access cannot be denied, for example on beaches, particular attention must be made to handling and cleanliness in order that contamination of product be avoided.

To simplify handling operations and to minimise exposure of fish it is recommended that the landing quay and fish market or storage facility are in close proximity to each other.

5.3.2.2 *Recommendations on the Design and Construction of Landing Quays and Jetties*

Quays, Jetties and their aprons etc. must be of hygienic design and construction in accordance with general recommendations provided in section 5.1.2.2. They should have sufficient length/capacity for the speedy discharge of all vessels. Ideally they should have depth of water that allows access at all states of tide.

Concrete surfaces are generally recommended for quayside aprons etc. Granolithic concrete is recommended for areas subject to heavy use. Power- floated finishes are not recommended as they are slippery when wet and potentially dangerous. Wood decking is not recommended as it cannot be kept clean and may also be slippery when wet. Asphalt and bituminous macadam may be suited for lightly loaded roadways but are not recommended for fish handling areas as they are not hard and are subject to attack by oils, including fish oils.

Where practical, solid quay and jetty structures are preferred to open structures. Open structures may harbour debris, encourage vermin and can cause problems of vessels fouling on the structure on a rising tide. Bollards, fendering and other features should be simple and unadorned to avoid the lodging of debris and to facilitate cleaning. Systems of vertical fendering without horizontal surfaces that may collect debris, particularly fish dropped during unloading, are recommended. Rubber car tyres etc. are not recommended for use as fenders as they harbour waste and are unhygienic.

Landing quays etc. should be equipped with pressurised clean water for purposes of cleaning in accordance with recommendations provided in section 5.1.3.2. Surface drainage slopes of 1 in 70 or 80 to a hygienic drainage system are recommended. Slopes of 1in 50 are noticeably steep and hazardous, and slopes of 1 in 100 require a high standard of finish to avoid puddles. Landing quays should not drain over the quay into the dock or over fishing vessels.

Good lighting is essential on quays and sites where fish is handled, both for reasons of safety at work and for the maintenance of hygiene standards. It is recommended that lights are distributed to create an even level of lighting without excessive glare or deep shadow. Lighting should be so directed that it cannot be confused with navigation lights by fishing vessels. Particular attention should be paid to the lighting of any warning signs, quay intersections and dock safety ladders. Light fittings should be weather-proof and fitted with shatterproof plastic diffusers.

5.4 Vessel Discharging and Onshore Fish Handling Equipment

5.4.1 Summary of Legal Requirements

The Food Safety (Fishery Products and Live Shellfish)(Hygiene) Regulations 1998
Schedule 3, Chapter II - Requirements During and After Landing

1. *Unloading and landing equipment must be constructed of material which is easy to clean and disinfect and must be kept in a good state of repair and cleanliness.*
2. *During unloading and landing, contamination of fishery products must be avoided. It must in particular be ensured that-*
   - *unloading and landing operations proceed rapidly;*
   - *fishery products are placed without unnecessary delay in a protected environment at the temperature required on the basis of the product and, where necessary, in ice in transport, storage or market facilities, or in an establishment.*
   - *equipment and handling practices that cause unnecessary damage to the edible parts of fishery products are not authorised.*
3. *Parts of auction or wholesale markets where fishery products are displayed for sale must -*
   (e) when they are used for display or storage of fishery products, not to be used for other purposes; vehicles emitting exhaust fumes which may impair the quality of the fishery products must not be admitted to markets

5.4.2 Recommendations for Vessel Discharge and Onshore Handling Equipment

5.4.2.1 General Recommendations

With regard to hygiene, safety and care of handling of product the design and construction of vessel discharge and onshore handling equipment should be in accordance with the recommendations made in section 5.1.2.2.

5.4.2.2 Recommendations for Box and Tub Discharge Equipment

Electrical/hydraulic derricks and hoists are recommended for the lifting of boxes from the fishroom and transferring them ashore. In many instances the vessels own gear is adequate and shore-based equipment unnecessary. The unloading of larger tubs may require more substantial cranage and the use of spreaders. Hoists should have good line-speed control to prevent the 'jumping' of boxes and the spillage of fish. It is particularly important that the lifting slings are compatible with the boxes or tubs used. For safety of operation and to avoid damage, lifting slings must locate positively at strong points on boxes and tubs. For the handling of a number of boxes in a single lift, the sling should constrain the stack of boxes but not exert excessive pressure on the sides of boxes.

The number of boxes that can safely be handled in a single lift depends on the specification of the landing equipment and box. Landing equipment should clearly state the safe working load.

It may not be necessary to provide unloading equipment, particularly for small-scale landings where manual handling operations may be adequate. At quaysides with a large tidal range however, it may be necessary to provide equipment to avoid restriction on landing times.

5.4.2.3 Recommendations for Equipment for the Discharge of Bulked and Shelved Fish

For the discharge of bulked and shelved fish it is recommended that fish is transferred in the fishroom from the pounds to plastic baskets or containers that may be lifted and swung ashore using the vessels own gear or shore-based crane. Sharp tined implements are not recommended for digging out of pounds. Shovels used for cleaning up ice and small fish should be constructed of stainless steel, aluminium or other food-grade material.

The use of bucket elevators, pumps and air unloaders for lifting fish from the fishroom are not generally recommended due to the level of damage that they cause to fish. However the use of conveyors to transfer fish to the shore from the decks of large vessels may speed up the unloading process (see 5.4.2.5).

5.4.2.4 Recommendations for Equipment for the Discharge of Pelagic Tank Boats

It is recommended that purpose-designed vacuum or induced- flow pump systems, or brails are used for the unloading of pelagics from RSW or CSW tanks. A maximum brail capacity of 0.75 tonne is recommended for unloading, to avoid crushing of fish.

High throughput submersible or other water pump systems, in which the fish pass through the moving parts of the pump, are not recommended for unloading due to the damage they cause to the fish.

The system must provide for the hygienic disposal of waste-waters or return them to the vessel for discharge out at sea.

The type of vacuum pump recommended is that which evacuates a chamber to suck in fish and water through a pipe, then closes valves and pressurises the chamber to transfer the fish and water via another pipe. The fish is cushioned by the water, the valves are designed to minimise fish damage and the fish do not actually pass through the moving parts of the pump itself. The suction lift of the pump is limited and it is best located on the vessel, or on a barge or low down within the quay structure, although the delivery side of the pump can transfer fish over considerable distances. Many RSW vessels now carry such pumps for discharge. The design of the pump and associated pipework must facilitate flushing out and cleaning.

An alternative to this type of vacuum pump is a purpose-designed induced-flow water pump system. In this system a powerful pump injects water around the sides of a tube which sucks in fish and water. Again the fish do not pass through the moving parts of the pump and in well designed systems little fish damage is caused.

5.4.2.5 Recommendations for Onshore Fish Handling Equipment

Systems of handling must be capable of rapidly transferring fish from the exposed quayside or landing site to a protected environment. The system must have the capacity to keep up with the rate of discharge in order that fish does not accumulate on the quayside etc. Where the scale of operation warrants it, mechanised handling is recommended. Equipment must be of hygienic design and construction, conform to safety requirements and not cause unnecessary damage to edible parts of fishery products, in accordance with the recommendations made in section 5.1.2.2.

Conveyor systems used for transfer of bulk discharges need careful design to avoid trapping and damaging fish, particularly at transfer points. They should be fitted with emergency stops. Any equipment mounted on wheels should have brakes fitted to at least two wheels.

Boxes or flat-bottomed containers should be landed directly onto pallets, trucks or barrows etc. in order to prevent contamination when stacking boxes.

Electric fork trucks are recommended where they operate into markets, establishments or chill stores. For small-scale operations simple hand-pallet trucks, barrows or bogies are suitable. Dragging of boxes is not recommended.

When pumping pelagics from tank boats it is recommended that the fish is pumped directly into an establishment where possible. When brailing or pumping ashore to a reception/dewatering hopper on the quayside the equipment should be purpose designed to minimise damage to the fish.

Handling equipment fitted with small wheels should be avoided as lumps of ice etc. make them difficult to operate. Fork lifts must be capable of operating in wet conditions on gradients designed to remove water. Smooth tyres and tyres that leave deposits on floor surfaces are not suitable. Trucks powered by internal combustion engines are suitable for use in the open air and have advantages of power and endurance but most emit toxic fumes, particularly diesels, and cannot be used in enclosed situations where they may contaminate or taint fish. Only gas-powered trucks that are fitted with high-performance catalytic converters that emit few fumes are acceptable for use in food rooms although they still produce significant amounts of heat and water vapour. All trucks must be well maintained to prevent oil leaks.

Placing boxes or containers on the ground creates risk of contamination, particularly if they are subsequently stacked when the bottom of one box can contaminate the top of another. Dragging of boxes on the quay and market causes wear to the bottom of boxes and may be unhygienic. The use of plastic pallets is recommended although well maintained wooden pallets may be acceptable. Special care must be taken in non ideal situations, for example on beaches or quaysides with public access, where there is less control over the hygiene of ground surfaces.

5.5 Fish Grading and Weighing Equipment

5.5.1 Summary of Legal Requirements

5.5.1.1 Size Grading

Council Regulation (EC) No 2406/96 Laying down common marketing standards for certain fishery products *- C Size categories, Article 7.*

1. Products as specified in Article 3 shall be sized by weight or by number per kilogram. Shrimp and crabs however, shall be graded in size categories by width of shell.

2. The minimum sizes established by this Regulation, in accordance with the scale set out in Annex II, shall apply without prejudice to the lengths required under: (listed technical measures)

For the purposes of control by the competent authorities, the species covered by marketing standards shall respect the minimum sizes laid down and which are set out in Annex II.

Article 8

2. Each lot must contain products of the same size. A small lot need not, however, be of uniform size; if it is not of uniform size, the lot shall be placed in the lowest size category represented therein.

Article 9.

Pelagic species may be graded in the different categories and size on the basis of a system of sampling. This system must ensure that the freshness and size of the products contained in the lot are as uniform as possible.

5.5.1.2 Freshness Grading

Council Regulation (EC) No 2406/96
Laying down common marketing standards for certain fishery products

B. Freshness Categories: Article 4

1. The freshness category of each lot shall be determined on the basis of the freshness of the product and a number of additional requirements.

Freshness shall be defined by reference to the special ratings for the different types of products set out in Annex I.

The Food Safety (Fishery Products and Live Shellfish)(Hygiene) Regulations 1998
Chapter V Section 2

1-(1) Without prejudice to the derogation's provided for by Council Regulation (EEC) No 103/76(a) laying down common marketing standards for certain fresh or chilled fish, as amended (b), each batch of fishery products must be submitted for inspection by the food authority at the time of landing or before first sale to check whether they are fit for human consumption. This inspection comprises an organoleptic check carried out by sampling.

(5) If the organoleptic examination revels any doubt as to the freshness of the fishery products, use may be made of chemical or microbiological analysis.

5.5.1.3 Weighing

Council Regulation (EC) No 2406/96 Laying down common marketing standards for certain fishery products

Article 8

3. The size category and presentation must be clearly and indelibly marked, in characters which are at least 5cm high, on labels affixed to the lot.

The net weight in kilograms shall be clearly marked on each lot. Where boxes are put up for sale in standard boxes, the net weight need not be shown if the contents of the box are shown, when weighed before being put up for sale, to correspond to the presumed contents expressed in kilograms.

Commission Regulation (EEC) No 3703/85

Article 10

1. In order to ascertain the weight of the quantities put for sale and landed the recipient units, or the transport vehicle into which these quantities are loaded, shall be weighed.

If such weighing cannot be carried out, the weight of the landed quantities shall be calculated by the addition of the contents of the standardised boxes in which the quantities must be landed. However a supplementary weighing by sample shall be carried out for the standardised boxes.

2. If the quantities are presented for public auction for a particular sale; weighing shall be carried out according to the provisions of article 5.

Article 5

To ensure that the contents of standardised boxes are the same as their presumed contents, as provided for in 8 (4) of Regulation (EEC) No 103/76, at least one box in every hundred must be weighed, without prejudice to more restrictive national provisions or commercial rules applied in Member States. The net weight may vary, as provided for in Article 8 (5) of Regulation (EEC) No 103/76 by 5% above or below the weight stated or presumed, subject to more restrictive national provisions on matters of commercial law

Weights and Measures Act 1985 Part II

11 - (1) The provisions of this section shall apply to the use for trade of weighing or measuring equipment of such classes or descriptions as may be prescribed.

(2) No person shall use any article for trade as equipment to which this section applies, or have any article in his possession for such use, unless that article, or equipment to which this section applies in which that article is incorporated or to the operation of which the use of that article is incidental-

(a) has been passed by an inspector as fit for such use, and

(b) - except as otherwise expressly provided by or under this Act, bears a stamp indicating that it has been passed which remains undefaced otherwise than by reasons of fair wear and tear.

Note that the Weighing Equipment (non-automatic Weighing Machines) Regulations 1988 SI No 876 provide detail of the materials and principles of construction and marking of non-automatic weighing machines, their use for trade, testing and prescribed limits of error.

5.5.2 Recommendations for Grading and Weighing Equipment

5.5.2.1 Recommendations Size Grading Equipment

Means of size grading of fish to EC Marketing Standards must be provided if size grading is not undertaken at sea. Equipment should be designed and constructed in accordance with general recommendations given in Section 5.1.2.2.

Size grading may be achieved manually, mechanically or electronically depending on the volumes and species involved. For small-scale operations simple grading tables are adequate. For larger operations mechanical or electronic equipment is recommended.

Grading tables offer a simple, low-cost, reliable means of grading small volumes of supply. Grading staff can control the rate of tipping of boxes onto the table to suit their grading speed. Stainless-steel table surfaces are recommended with a shallow rim around the perimeter to contain the fish except where spent ice is swept off. Legs that can be folded up when not in use assist in handling and storage.

In-line or rotary conveyors that feed manual grading stations should be specifically designed for the purpose and of variable speed to suit the capacity of grading staff and the species/size of fish.

To assist in the accuracy of manual grading it is recommended that the grade lengths of the major species (together with the minimum landing lengths) be marked at the grader stations on the equipment for reference. The design of systems should not require the throwing or dropping of fish.

For larger-scale operations, automatic equipment is recommended that provides faster and more accurate grading.
Mechanical systems working on counter-balanced springs and stops, or diverging bars/belts etc. require regular maintenance and involve longer down-time in changing the size grades to suit different species. Electronic systems must be robust and designed specifically for fish and for operation in a wet environment. Electronic systems can be pre-programmed to facilitate quick change of grades to suit species and may include a totaliser set to fill market boxes to any given weight. They may also be integrated with ticket-printing machines and electronic sales systems.

There are no specific requirements defined in legislation other than general requirements of the Weights and Measures Act, and Food and Safety Acts (See Section 5.1.2). Note that EC size grades are defined by weight bands but may be undertaken by reference to the equivalent length or width of the fish (See Appendix III).

5.5.2.2 Recommendations for Weighing Equipment

Unless fish is weighed and boxed at sea, weighing equipment is required for weighing of fish prior to sale and for check-weighing of 'standard boxes'. All equipment should be calibrated in metric measure and must be type approved by Trading Standards Officers or their agents.

Robust hose-proof electronic platform scales made of corrosion resistant materials with instantaneous push-button 'taring' facilities are generally recommended for weighing of fish boxes. They should be movable to facilitate cleaning and should be the out-of-level resistant type.

It is recommended that all platform scales are fed by a section of roller conveyor to reduce impact damage when loading. A fabricated 'goal-post' structure positioned directly over the scale will prevent boxes being dropped onto the scale.

Where fish grading is undertaken onshore and the grading operation does not feature the automatic weighing of graded fish to the sale unit, then a weigh-scale can be integrated with the grading and re-icing operations by use of a roller conveyor.

Auctions that operate electronic sales may link the weigh-scales with the central computer to provide information for the preparation of the sales catalogue. These scales may additionally incorporate a printer to produce tickets that identify the lot number, fish species, size grade, area of capture and boat name etc.

5.6 Fish Auction Markets

5.6.1 Summary of Legal Requirements of Auction Markets

In addition to the general requirements as specified in Section 5.1 relating to layout, design and construction, provision for cleaning (including potable water supply), staff facilities and a wastewater storage/disposal system; specific requirements are made for markets under the Food Safety (Fishery Products and Live Shellfish)(Hygiene) Regulations 1998.

The Food Safety (Fishery Products and Live Shellfish)(Hygiene) Regulations 1998 SI No 994

Schedule 3 Chapter II

3. Parts of auction or wholesale markets where fishery products are displayed for sale must-

- *(a) be covered and have walls which are easy to clean;*
- *(b) have waterproof flooring which is easy to wash and disinfect and laid in such a way as to facilitate the drainage of water and have a hygienic waste water disposal system;*
- *(d) be well lit to facilitate the inspection of fishery products provided for in Chapter V;*
- *(g) have displayed in a prominent position signs prohibiting smoking, spitting, eating and drinking;*
- *(h) be closable and be kept closed when the competent authority considers it necessary;*
- *(k) in so far as they do not have their own premises on-the-spot or in the immediate vicinity on the basis of the quantities displayed for sale, have, for the purposes of the competent authority, an adequately equipped lockable room and the equipment necessary for carrying out inspections;*

4. After landing or, where appropriate, after first sale, fishery products must be transported without delay under the conditions laid down in Chapter VIII to their place of destination.

5. However if the conditions laid down in paragraph 4 are not fulfilled, the markets in which fishery products may be stored before being displayed for sale or sold and pending transport to their place of destination must have sufficiently large cold rooms which satisfy the conditions laid down in paragraph 3 of Section I of Chapter III. In such cases, fishery products must be stored at a temperature approaching that of melting ice.

Chapter III Section I General conditions relating to premises and equipment

3. in cold rooms where fishery products are stored-

-the provisions set out under paragraph 2(a),(b),(c),(d) and(f) (which relate to standard of flooring, walls, ceilings, doors and lighting)

-where necessary, a sufficiently powerful refrigeration plant to keep products at temperatures prescribed in these Regulations;

4. appropriate facilities for protection against pests such as insects, rodents, birds etc.;

5.6.2 Recommendations for Auction Markets

5.6.2.1 Design and Layout

Markets must be fully enclosed structures that provide a protected and hygienic environment capable of maintaining fishery products at the temperature of melting ice. It is recommended that the areas used for display or storage of fishery products should be insulated and mechanically chilled. Doors provided for access to and from the building should be the minimum compatible with efficient handling operations. Reception areas and despatch corridors/vehicle docking bays are recommended to minimise air exchanges, to maintain chill temperatures and to minimise entry by pests.

Washrooms, changing rooms and canteens etc., must not provide direct access onto the market or fish handling areas, and staff arriving for work should not have to access changing rooms via the market or fish handling areas. General recommendations with regard to layout, design and construction, provision for cleaning (including water supply), staff facilities and waste water storage/disposal is given in Section 5.1.

In order that the supply and demand sectors may be responsive to each other there is a need for efficient communication of reliable trading information between them, and a transparent sales system that delivers adequate rewards for meeting market requirements. The supply of forward information of supplies is vital to merchants and processors in order that they can plan purchases, production, promotion and negotiate sales. Electronic communication and sales systems are recommended including provision for meeting the requirements of traceability.

Auction markets should be designed as operating systems taking into account the scale, nature and timings of fish landings or deliveries, handling methods employed, the requirement for sorting, grading and icing operations, fish storage and display for sale, sale methods, despatch, washing of equipment and the provision of staff facilities

Consistent with the requirements of handling a perishable food product, the speed of handling and sale operations and the ability to maintain high standards of quality control and hygiene are fundamental. The system should minimise quality loss, waste and withdrawals through its marketing efficiency and quality control.

Markets of traditional design and construction with large continuous doors along their length and no means of temperature control, are not compatible with modern standards of hygiene and quality control. The structures are not cost-effective and provide little protection from pests, wind-born contamination or heat gain.

The quality and scheduling of supplies to the market is largely determined by producers in response to market forces. To encourage good marketing practice the trading system needs to clearly demonstrate the financial rewards for doing so. It needs to be open and transparent. To be transparent there is need for accurate product specifications (of weight and grading of size and freshness) and access to sales information on prices, otherwise it is not possible to establish any premium for meeting market requirements and hence any incentive for doing so.

5.6.2.2 Floors and Drains

Floors must be hard wearing, non-slip, impervious to water and easily cleaned. They should have an even surface without cracks, crevices or hollows that cause puddles and be sloped to drainage channels or gullies. Channels or gullies must be covered and drains trapped. It is recommended that floor/wall junctions are coved.

Non-slip polymer screeds and granolithic concrete surfaces are recommended for fish handling and storage areas with drainage slopes of between 1 in 70 and 1 in 80 to continuous interceptor drains. Coloured polymer surfaces may be used to designate areas that are to be kept free for access etc.

Drains must be capable of handling all melt and washdown water and be fitted with strong covers to withstand heavy traffic. 'U' section channels fitted with removable covers to facilitate cleaning are recommended.

They should be trapped to prevent the transfer of foul odours and back-up and should preclude the access of pests to the market. It is recommended that removable interceptor-baskets are fitted, that separate solids from liquid wastes to minimise discharge costs and to prevent blockages of the system. Designs that allow liquids to drain without flowing over trapped solids are recommended. Inspection chambers and convenient rodding points should be provided. Foul drainage ventilation must be exterior to the building and drains flow from 'clean' areas to 'dirty' areas.

With regard to floor finishes, a balance must be struck between smoothness/gradient for reasons of hygiene and grip for reasons of personal safety. Slopes in excess of 1 in 50 are noticeably steep and potentially hazardous. Slopes of less than 1 in 100 require a high standard of finish to avoid puddles. Concrete should not be power-floated but left slightly rough. Ordinary concrete is not recommended as it dusts unless it is coated with a good layer of polymer screed. Thin coatings and painted finishes are not suitable.

Drains fitted with meshes of fine holes in covers are not recommended as they block easily and are difficult to clean. Interceptor-basket designs that allow liquids to drain without flowing over or through trapped solids reduce liquid effluent strength and discharge costs.

Coving of the floor/wall junction facilitates cleaning and if extended upwards proud of the wall it protects the wall from impact damage and maintains an airspace between stacked boxes and the wall to permit the circulation of air in refrigerated areas.

5.6.2.3 Walls

Internal surfaces must be smooth, durable, impervious to water and easily cleaned. A light-coloured finish is recommended. Surfaces should be resistant to impact damage, and areas vulnerable to heavy traffic, for example doorways and pillars, should be reinforced or protected by crash rails or posts.

Where possible, pipework or conduit should be chased into the wall or boxed in; alternatively it should be bracketed sufficiently clear of the walls to enable thorough cleaning.

Recommended finishes include smoothly finished, steel-floated concrete rendering coated with a hard two-pack epoxy paint and resin laminates laid direct onto the wall structure, high grade wall cladding and prefabricated plastic-coated metal/foam sandwich insulated panels.

Windows should be avoided in walls to prevent solar heat gains and concerns for contamination of product with glass in the event of breakage. If necessary, internal window sills should be sloped to assist in maintaining high standards of cleanliness and to prevent their being used as shelves etc.

A hard cement render applied to a sound wall structure treated with an epoxy paint is cheap and easily repaired if necessary. Special water-based epoxy paints are recommended as they are relatively insensitive to application conditions and do not give off toxic fumes during the curing period. Laminated fibre-glass applied direct to a sound wall surface creates a tough joint-free surface that is easily repaired. Epoxy laminating resins have a higher performance than less expensive polyesters. Plastic cladding may be applied to wall surfaces to provide a hygienic surface but quality and suitability vary considerably. Mould resistant mastics should be used to join panels. Cladding is best suited to low-traffic areas where they are less prone to damage. Damage to panels, or poor installation, provides opportunity for infestation and fungal or bacterial growth in the void spaces between the wall and cladding material. Stainless steel cladding is more durable but it also has to be sealed and is expensive. Prefabricated sandwich construction insulated panels with a light-coloured plastic coating provide a good finish but also need to be protected from mechanical handling operations etc., by upstands and/or crash barriers. Soft plaster finishes are not suitable and ceramic tiles are not recommended as they are easily damaged.

5.6.2.4 Doors

The spacing, or number and size of doors that provide access to fish handling areas should be the minimum compatible with efficient handling operations.

Doors must be close fitting, durable and easy to clean. Insulated sectional up-and-over or sliding doors, of polyurethane infill (or similar) faced with plastic or plastic-coated steel are recommended for fish handling areas. Doors should be lockable but must conform to fire and safety regulations.

Docking-bays, secondary doors, buffer zones or strip curtains are recommended to reduce air exchanges to fish handling areas to maintain chilled temperatures and to minimise risk of access by pests or wind-born contaminants.

For fork truck or other mechanised operations, a maximum door width of 3 metres at 20 metres minimum centres is recommended with additional doors for personnel access. Automatic or pull-cord activated power doors ensure opening and closing times are kept to a minimum. Door frames, mechanisms and vulnerable surrounding structures should be protected from damage by substantial kerbs or posts etc.

Access points to fish handling areas are major hazard points and their design and construction should minimise risk of contamination and quality loss. Wooden doors and frames are not suitable for fish handling or wet working areas as they absorb water, swell and jam, are prone to damage and are difficult to maintain in a hygienic condition. Folding and roller, metal shutter doors are not recommended as they radiate solar heat in the summer, freeze up in winter and are difficult to clean.

5.6.2.5 Ceilings and Roof Linings

Ceilings and roof linings must be so constructed and finished that they may be easily maintained and kept in a clean condition. The surface should be in a light colour. They must not flake or otherwise cause contaminants to drop on fish or equipment beneath. Overhead pipework, ducting and beams etc., should be kept to a minimum.

Prefabricated sandwich-construction insulated panels with a plastic coating, resin laminates and epoxy paint on a hard cement render or concrete are recommended. It is recommended that all fish handling and storage areas are insulated.

Suspended ceilings may be used to conceal roof support structures and services that otherwise present cleaning problems and provide roosts for birds. Any roof voids must be provided with access for inspection, maintenance and pest control. Lightweight suspended ceilings with lose panels are inadequate for fish working or wet working areas.

5.6.2.6 Ventilation

Adequate ventilation should be provided to all non-refrigerated areas and roof voids.

All ventilators must be screened to prevent the entry of vermin and other pests.

Mechanical extraction from dirty/contaminated areas to clean areas must be avoided. Ventilation systems must be constructed so as to enable filters and other parts requiring cleaning or replacement to be readily accessible. All ventilation ductwork should be contained within the ceiling void or wall structure, or fitted so as to enable efficient cleaning and not provide opportunity for infestation /roosting etc.

Ventilation should conform to the standards of the Institution of Heating and Ventilation Engineers/Chartered Institute of Building Services Engineers.

Ventilation helps remove warm air and stale odours, and reduces condensation and mould that can damage the fabric of the building and equipment. Mechanical extraction or air conditioning may be necessary for some areas, for example office accommodation, staff facilities/drying rooms and box washing areas etc. Special provisions may be required for computer operated equipment of communications, sales, weighing and labelling equipment etc.

5.6.2.7 Lighting

Lighting levels should be appropriate to the tasks being carried out and should be even and without shadow. A high level of 500 lux with natural colour rendition is recommended where or when fish is being inspected but a lower level of 200 lux is adequate for sorting and cleaning. A level of 110 lux is adequate for laying out boxed fish and for ancillary areas.

Fluorescent lighting is recommended as it is more efficient and produces less heat and glare than tungsten filament bulbs. Natural lighting of fish handling and storage areas should be avoided in order to prevent 'greenhouse' solar heating.
All light fittings should be of simple, unadorned design, corrosion resistant and easily cleaned.

Shatterproof plastic diffusers must be fitted in fish handling and storage areas. Where possible light fittings should be flush with the ceiling or be fitted and sealed to the ceiling. Lighting should conform to the standards of the Chartered Institute of Building Services Engineers/Health and Safety Executive. For safety, fittings should conform to at least IP34 classification.

Good lighting is essential for safety at work, the maintenance of hygiene standards and for inspection of fish quality.

Where high lighting levels are necessary only during certain periods, for example for inspection of fish prior to sale, the ability to reduce levels by switching out a proportion of them at other times can reduce running costs.

5.6.3 Chilled Storage

Mechanically refrigerated storage must be provided for holding fishery products in circumstances where they are not sold shortly after landing, or where there is delay in despatch after sale.

Chill facilities should be adequately sized in relation to the volumes of supplies and have refrigeration capacity to maintain fishery products as close as possible to zero degrees centigrade within a range of zero to four degrees centigrade.

To minimise air exchange and heat gain to markets, double-doors or sub-division of market areas are recommended. Subdivision of large market areas enables the loading or despatch from one area while maintaining temperature in the others.

Refrigeration systems should not freeze fish in store or dry it out. Fan-assisted evaporator units provide for rapid temperature pull-down in comparison with natural convection systems, but care should be taken that air-speeds over fish are not so high that they lead to desiccation.

Natural convection systems are recommended where access to the stores is managed and restricted and air exchanges are controlled. Air speeds from fan-assisted units may be reduced by use of diffusers, ducting or by using a greater number of small units to achieve the air circulation and distribution required. Each chilled section should be independently controlled and fitted with a temperature indicator and/or recorder. Automatic temperature monitoring and alarm systems are recommended. Heat rejection from refrigeration systems should not be to fish handling or storage areas.

The design, construction and lighting etc. of stores should be in accordance with the general requirements of Section 5.1 and relevant sections of 5.6.2. For reasons of safety, all chill store doors must be operable from within the store.

Temperature is by far the most significant factor affecting the rate of deterioration of fish. Mechanically refrigerated stores ensure fish is protected from heat gain and loss of quality.

5.6.3.1 Vehicle Docking Bays

A raised vehicle docking bay is generally recommended for ease of transfer of fish to and from the market. The design should reflect the numbers, types and size of road vehicles and fish handling equipment used. It should facilitate the transfer of fish with minimum risk of contamination.

It is recommended that manoeuvring areas and vehicle berths should not infringe upon public roadways. Saw-tooth designs are recommended where space behind the market is restricted.

Flush loading bays incorporated in a transfer corridor that forms a barrier between fish storage/handling areas and the external environment are recommended. A minimum corridor width of 4.8 metres is recommended for mechanical handling. Loading bay widths should be a minimum of 3.67 metres for 2.6 metre vehicles. Platform heights should reflect the size and type of vehicle.

To serve a mixed fleet of vehicles 1.25 metres is recommended. Where a high percentage of refrigerated vehicles are used a height of 1.32 metres is recommended. For light duty handling operations dock plates are acceptable but for forklift truck operations dock levellers or platform lifts are recommended. Recommended size of doors on flush bays is 2.7 metres wide by 3.0 metres high. Reduction of the width does not take into account the common practice of side-by-side pallet loading in 2.5 metre wide vehicles. If the vehicle is as little as 50 mm off centre, a smaller door will prevent easy transfer of the load.

Open loading bays must have an overhead canopy that at least covers the platform and if possible 2 metres beyond. Provision by means of steps or ladders must be made at reasonable intervals for drivers etc. to the loading platform.

Adequate protection to the structure of the building should be provided by means of wheel guides, bollards and dock fenders etc. Suitable electrical connections are recommended for use by refrigerated vehicles in order that they do not have to run their engines to maintain chill temperatures.

Vehicle loading bays should be well lit and drained and provided with water supply for wash-down purposes. Granolithic concrete is recommended. Asphalt and bituminous macadam are not recommended as they are not hard and are attacked by oils. Concrete sets and blocks are not recommended as they present cleaning difficulties.

Dispatch areas of fish markets are potential hazard points with regard to contamination of product. Well designed vehicle docking bays and transfer corridors help with maintaining temperature control, minimise risk of contamination and provide a safer and more comfortable environment for staff to work in.

5.6.3.2 Food Authority Accommodation

A suitably equipped lockable room should be provided for use by the Food Authority, if such a facility is not already available locally and it is required by the Food Authority.

It is recommended that the room be equipped with a wash-hand basin, power supply and provision for telephone connection. The room should be able to take a desk and filing cabinet, clothes locker and a small chill/freezer for holding samples of fish.

5.6.3.3 Storage of Equipment and Boxes

Hygienic storage must be provided for items of equipment that come into contact with fish, to protect them from contamination after they have been cleaned following use. The area must itself be easy to clean and be well drained.

Separate lockable storage for cleaning chemicals and equipment must be provided as required under the Control of Substances Hazardous to Health Regulations 1994.

Hygienic storage facilities are necessary for items of equipment such as grading tables, handling equipment, weighing machines, fish boxes, ice tubs etc. after cleaning and prior to re-use. These facilities must provide protection from potential sources of contamination and infestation.

Use of the market to store equipment may be acceptable provided that its use does not compromise security or hygiene. Use of the market for garaging road transport is not permitted.

5.7 Fish Handling, Storage and Despatch Centres (that are not part of a market)

5.7.1 Summary of Legal Requirements

In circumstances where fishery products are landed to sites that are not part of a market, the site and infrastructures must conform to the relevant requirements of; The Food Safety (Fishery Products and Live Shellfish)(Hygiene) Regulations 1998, The Workplace (Health, Safety and Welfare) Regulations 1992 and The Food Safety (General Food Hygiene) Regulations 1995, broadly as defined in Sections 5.1.1, 5.1.2, 5.1.4, 5.1.5, 5.6.1.

5.7.2 Recommendations for Fish Handling, Storage and Despatch Centres (that are not part of a market)

Facilities for the reception, handling and holding of fishery products prior to onward distribution must at all times provide adequate protection of product from contamination and maintain them at a temperature approaching that of melting ice.

The facilities required will depend upon the nature, scale and duration of the operations involved but must include;

- **a hygienic enclosed working area for reception, handling, storage and despatch of fish;**
- **facility for washing and storage of equipment;**
- **facility for storage and disposal of waste;**
- **provision of staff facilities (toilets and changing rooms).**

The working area should provide sufficient space for hygienic operations and be equipped with wash-hand basins. A supply of potable water is required.

Mechanically refrigerated storage is recommended for holding of fishery products unless timescales are short and/or product temperatures can be guaranteed by other means. Unless reliable supplies of ice are available locally it is recommended that an ice machine and means of storage is provided to maintain product temperatures after landing and during onward distribution.

Guidance on site requirements and recommendations for design, construction and layout are as described in section 5.1 and relevant sections of 5.6.2 for auction markets.

Note that none of the foregoing precludes the speedy direct transfer of landings by vessels to waiting suitable road transport.

5.8 Ice Production, Storage and Handling

5.8.1 Legal Requirements of Ice Production, Storage and Handling

The Food Safety (Fishery Products and Live Shellfish)(Hygiene) Regulations 1998 - SI No 994
Schedule 3, Chapter II

2. *During unloading and landing, contamination of fishery products must be avoided.*
It must in particular be ensured that-
fishery products are placed without unnecessary delay in a protected environment at the temperature required on the basis of the nature of the product and, where necessary, in ice in transport, storage or market facilities, or in an establishment;

Schedule 3, Chapter VIII Storage and Transport

1. *Fishery products must, during storage and transport, be kept at the temperatures laid down in these Regulations, and in particular-*
   - *fresh or thawed fishery products and cooked and chilled crustacean and molluscan shellfish products must be kept at the temperature approaching that of melting ice;*

Schedule 4, Hygiene Conditions for Fishing Vessels, Part I

6. *Ice used for the chilling of products must be made from potable water or clean seawater. Before use, it must be stored under conditions which prevent its contamination*

Food Safety (General Food Hygiene) Regulations 1995

Schedule 1, Chapter VII

2. *Where appropriate, ice must be made from potable water. This ice must be used whenever necessary to ensure foodstuffs are not contaminated. It must be made, handled and stored under conditions which protect it from all contamination.*

Note also that plants with recirculated water cooling systems need to register with the Local Authority under 'The Notification of Cooling Towers and Evaporative Condensers Regulations 1992'. Under Health & Safety legislation regulations, regular testing of evaporative condenser water is required to identify build-up of harmful legionnaires bacteria.

5.8.2 Recommendations for Ice Production, Storage and Handling

To maintain fish quality, both at sea and onshore, the specification of the production, storage and delivery system should enable the levels and patterns of demand to be serviced at all times.

It is recommended that in most circumstances this is best achieved by the provision of an ice plant at the place of landing. Where there is a significant supply to vessels, the plant is best located on a dedicated berth that enables direct delivery to the vessels.

The berth should be remote from bunkering or engineering operations etc. that pose a possible threat of contamination and have depth of water to accommodate vessels at any state of tide.

The delivery system should be able to accommodate the various hatch positions and shelterdeck arrangements etc. of vessels. Ice must be manufactured from potable water and must be manufactured, stored, handled and transported under hygienic conditions as if it were food.

In order that it is maintained in good condition it is recommended that the ice store be insulated and refrigerated. Surfaces in contact with ice must be food-grade quality.

Production, storage and delivery systems should be designed and constructed in accordance with the general recommendations given in Section 5.1.2 particularly with regard to cleaning and proofing against pests.

Other than for small-scale installations, where manual methods may be employed, mechanical handling and delivery is recommended. Most stores operate on the 'first in last out' principle and require periodic emptying to remove stale and packed ice that builds up at the bottom of the store. Where the scale justifies it, double-bin systems are recommended that enable one bin to be cleared while the other maintains production and supply. Card-operated automatic delivery systems that are programmed to deliver a set weight of ice to a vessel or merchants vehicle, reduce labour costs and maintain supply out of hours.

Ice is the most convenient and effective means of slowing the rate of deterioration of fish and should be generally available for supply to vessels and merchants, for use on the market and for onward distribution. Short term fluctuations between production and demand, that commonly occur during the week, may be overcome by sensible sizing of the ice store. Ice supplies can be built up on days of the week when demand is low. This enables peak demands on busy days to be met with a lower production capacity than otherwise would be possible. It is common for ice stores to have capacity for three or four days ice production. A counter argument in favour of a higher production capacity is the ability to achieve production during periods of off-peak power supply. Tariffs for off-peak consumption can be substantially lower than at other times and offer significant savings on production costs. Specification is a balance of production and capital costs.

5.9 Fish Transport

5.9.1 Legal Requirements of Fish Transport

The Food Safety (Fishery Products and Live Shellfish)(Hygiene) Regulations 1998 S.I. No. 994
Schedule 3, Chapter VII

1. Fishery products must, during storage and transport, be kept at the temperatures laid down in these Regulations, and in particular -

(a) fresh or thawed fishery products and cooked and chilled crustacean shellfish products must be kept at a temperature approaching that of melting ice;

4. Vehicles used for the transport of fishery products must be constructed and equipped in such a way that the temperatures laid down in these Regulations can be maintained throughout the period of transport. If ice is used to chill the fishery products, adequate drainage must be provided in order to ensure that water from melted ice does not stay in contact with the products. The inside surfaces of the means of transport must be finished in such a way that they do not adversely affect the fishery products. They must be smooth and easy to clean and disinfect.

The Food Safety (General Food Hygiene) Regulations 1995 SI No. 1763
Schedule 1 Rules of Hygiene, Chapter IV Transport

1. *Conveyances and/or containers used for transporting foodstuffs must be kept clean and maintained in good order and condition in order to protect foodstuffs from contamination and must, where necessary be designed and constructed to permit adequate cleaning and/or disinfection.*
3. *Where conveyances and/or containers are used for transporting anything in addition to foodstuffs or for transporting different foodstuffs at the same time, there must be effective separation of the products, where necessary to protect against the risk of contamination.*
6. *Where necessary, conveyances and/or containers used for transporting foodstuffs, must be capable of maintaining and where necessary, designed to allow those temperatures to be monitored.*

In addition, environmental protection legislation and local bylaws may prohibit the contamination of public roads and places by leakage of fish liquor and melt-water from the transport vehicles.

5.9.2 Recommendations for Fish Transport

To provide the necessary protection from pests and contamination, fishery products should be covered at all times during transportation. Fully enclosed vehicles with separate driving compartments are recommended.

To maintain chill temperatures it is recommended that for all but immediate local delivery, vehicles be at least insulated and that for extended journeys, vehicles also be mechanically refrigerated. Mechanically refrigerated vehicles should be fitted with a temperature indicator and/or recorder.

Vehicles must be well drained to prevent any accumulation of melt-water from contaminating the fish. To prevent contamination of the environment and cause of public nuisance, it is recommended that vehicles that produce significant quantities of melt-water be fitted with tanks to collect the water. The tank capacity should be adequate for all melt-water produced and have an overflow system to prevent the possibility of backing-up and contamination of fish in the load compartment.

To facilitate cleaning, vehicles must be of hygienic design and construction having internal surfaces that are smooth, durable, corrosion resistant, light-coloured and non-absorbent. See also Section 5.1.2. Aluminium, stainless-steel, fibre-glass and plastic materials are suitable.

Although it is possible to hold fish in suitable containers that will provide adequate protection and therefore not require the vehicle to provide cover, for standard fish boxes, covered vehicles are necessary. Flatbed vehicles and tarpaulin covers are not adequate.

The use of insulated and insulated/refrigerated vehicles minimises heat gains to the load compartment and greatly assists in keeping fish in ice at the required temperature in distribution.

Hand-washing facilities are not required on vehicles transporting fish between landing places, markets and establishments where facilities are readily available.

6.0 Practices - Contents

6 Practices

6.1 Physical Handling of Product

6.1.1 Legal Requirements of Physical Handling of Product

The Food Safety (Fishery Products and Live Shellfish)(Hygiene) Regulations 1998, SI No 998.

Schedule 3, Chapter II

During unloading and landing, It must in particular be ensured that....

- *equipment and handling practices that cause unnecessary damage to the edible parts of the fishery products are not authorised.*

Schedule 4, Part I

4. the use of spiked instruments shall be tolerated for the moving of large fish or fish which might injure the handler, provided the flesh of these products is not damaged.

6.1.2 Recommendations for the Physical Handling of Product

Fish handlers must be aware at all times that the fish they are handling is a food and must be treated accordingly. Fish must not be crushed, stood upon, dropped, thrown or otherwise roughly handled. Wherever possible fish should be handled in containers that afford protection and take the strain of handling, rather than handling the fish directly. No forks or sharp tined instruments should be used for digging out fish-room pounds.

The volume or weight of fish placed in a box or container should be such that it causes no crushing or damage to the fish. Fish should be carefully laid within the box, belly cavity down, orientated with the length of the box (other than for very small fish). They should not be tipped in. Any large lumps of ice should be broken up or crushed before use.

Large fish should not be bent or forced into boxes but weighed, labelled and laid out on plastic pallets (on ice).

Fish is a delicate foodstuff and physical handling of it should be kept to a minimum. The effects of careless handling and overfilling of boxes may not be apparent to those responsible at the time but will result in loss of quality and value. Poor handling and boxing practices not only cause obvious external damage but also internal damage such as broken backbones, bruising and bleeding. This can result in problems with machine filleting, loss of yield, increased costs of trimming and more rapid deterioration of product.

6.2 Protection of Product from Contamination

6.2.1 Legal Requirements for the Protection of Product from Contamination

The Food Safety (Fishery Products and Live Shellfish)(Hygiene) Regulations 1998 SI No 994 Schedule 3, Chapter II

1. *Unloading and landing equipment must be.....kept in a good state of repair and cleanliness.*
2. *During unloading and landing, contamination of fishery products must be avoided. It must in particular be ensured that-*
   - *unloading and landing operations proceed rapidly;*
   - *fishery products are placed without unnecessary delay in a protected environment.*
3. *Parts of auction or wholesale markets where fishery products are displayed for sale must-*
   - *(e) when they are used for display or storage of fishery products, not be used for other purposes; vehicles emitting exhaust fumes which may impair the quality of the fishery products must not be admitted to markets; undesirable animals must not be admitted;*
   - *(f) be cleaned regularly and at least after each sale, crates must, after each sale, be cleaned and rinsed inside and outside with potable water or clean seawater, where required, they must be disinfected;*
   - *(g) be kept closed when the competent authority considers it necessary;*
4. *After landing or, where appropriate, after first sale, fishery products must be transported without delay under the conditions laid down in Chapter VIII to their place of destination.*
6. *The general conditions of hygiene laid down in Section II of Chapter III - with the exception of paragraph 1(a) of Section IIB - shall apply mutatis mutatis to the markets in which fishery products are displayed for sale or stored*

Chapter III, Section II, A

1. *Floors, walls and partitions, ceilings and roof linings, lavatories, equipment intended to facilitate personal hygiene (such as hand basins) and equipment and instruments used for working on fishery products must be kept in a satisfactory state of cleanliness and repair, so that they do not constitute a source of contamination for the products.*
2. *Rodents, insects and other vermin must be systematically exterminated in the premises or on the equipment; rodenticides, disinfectants and any other potentially toxic substances must be stored in premises or cupboards which can be locked; their use must not present any risk of contamination of the products.*
3. *Working areas, instruments and working equipment must be used only for work on fishery products. However, following authorisation by the food authority they may be used at the same time or other times for work on other foodstuffs*
4. *Potable water or clean seawater must be used for all purposes. However, by way of an exception, non-potable water may be used for steam production, fire-fighting and cooling of refrigeration equipment, provided that the pipes installed for the purpose preclude the use of such water for other purposes and present no risk of contamination of the products.*
5. *Detergents, disinfectants and similar substances must be....used in such a way that they do not have adverse effects on the machinery, equipment and products.*

Chapter III, Section II, B (as amended)

1. *The highest possible standard of cleanliness is required of persons working on or handling fishery products. More specifically-*
   - *(b) persons working on or handling fishery products must wash their hands at least each time work is resumed; wounds to hands must be covered by a waterproof dressing;*
   - *(c) persons working on or handling fishery products must not smoke, spit, eat, or drink in any fishery products working or storage area.*
2. *(1) The employer shall take all requisite measures to prevent persons working on or handling fishery products from contaminating them.*
   - *(2) The employer shall prevent persons liable to contaminate fishery products from working on or handling them, until there is evidence that such persons can do so without risk.*
   - *(3) When recruited, any person working on or handling fishery products must prove, by medical certificate, that there is no impediment to such work or handling.*

6.2.2 Recommendations for Hygienic Handling and Use of Facilities

Handling operations in the landing, handling and sale of fishery products should proceed as quickly as possible under hygienic conditions to minimise the risk of contamination of product and temperature gain, particularly at exposed areas such as landing quays and open loading bays. At no time should fishery products be left unprotected in the open. Prior to any work-break, any fish left on the quay, conveyor belts or grading tables etc. should be cleared. Fishery products should not be tipped from boxes onto the market floor for inspection.

Landings should only be made to a designated quay or site that is maintained in a hygienic condition. Operations such as shot-blasting, paint spraying and handling of dusty cargoes etc. that might cause contamination or tainting of product should not be permitted on or near fish handling areas and fish should not be landed to such areas. Where landings are made for collection by road transport and no hygienic storage facility is available, it is recommended that the fish is retained on board in the fish-room until transport is available to receive it.

Where mechanised equipment is used for unloading, handling, grading, weighing etc. of fishery products it is important that it is used to the manufacturers instructions, particularly with regard to its rated capacity or speed of operation.

6.2.3 Recommendations on Cleaning and Disinfection

6.2.3.1 Cleaning Schedules

To consistently achieve the standards required to minimise risk of cross-contamination it is necessary to adopt systematic and documented procedures for cleaning and disinfection. Cleaning schedules should be used that cover building structures, quays, loading bays, plant and equipment. In fish handling areas where plant and equipment, such as weigh scales and grading tables etc. are owned by various parties who are individually responsible for its cleaning it is recommended that responsibility for checking and enforcing standards ideally lie with a single body.

Cleaning schedules should clearly specify;

- **(a) what is to be cleaned;**
- **(b) who is to clean it;**
- **(c) when it is to be cleaned;**
- **(d) how it is to be cleaned;**
- **(e) chemicals, materials and equipment to be used;**
- **(f) precautions to be taken;**
- **(g) who is responsible for checking and recording**

In the design of a cleaning schedule, due consideration should be given to the size and construction of the building or equipment and the material from which it is made. The methods, chemicals used and the frequency of cleaning required will depend upon the degree of soiling and the risks it poses. Cleaning should proceed from ‘clean’ areas to ‘dirty’ areas but not be conducted while product is being handled or stored in the area being cleaned. Cleaning schedules should not preclude a policy of ‘clean as you go’ as may be necessary in busy areas or in the event of contamination of the area or item of equipment. Detailed cleaning schedules can only be specified for specific circumstances, but for purposes of illustration an example is provided in Appendix IV.

The basic steps for effective cleaning and disinfection are;

(a) the removal of gross debris to ensure the maximum effectiveness of the detergent/sanitiser used;

(b) cleaning with hot or cold water and detergent;

(c) sterilising to kill bacteria

(d) rinsing to remove traces of detergent and steriliser.

Cleaning and sterilising agents must only be used at the strength recommended and in accordance with the manufacturers instructions. Chemicals should not be mixed and only fresh solutions should be used.

6.2.3.2 Cleaning of Building Structures, Quays, Loading Bays and Yards

The floor surfaces of the market or fish handling/storage areas should be brushed down after sale, or use, to remove any fish debris, sales tickets etc., and then hosed down with cold water. At least once a week it should be treated with a cleaning agent and power hosed. A rinse of dilute hypochlorite solution is recommended to reduce bacterial contamination and prevent fishy odours.

Doors and lower surfaces of walls should likewise be cleaned daily with special attention paid to areas around handles, light switches, pipework and fittings etc. Cleaning is easier if fish slime, inks and residues are still wet and not left to dry. If the slime has hardened a solution of detergent in hot water should be used with a hand brush to remove stubborn residues. The higher surfaces of walls, ceilings and overhead light fittings should be cleaned once a month with a mildly alkaline detergent.
All drains should be thoroughly swilled with cold water after sale or handling operations. Grids should be removed and cleaned of debris by brushing or pressure spraying. Waste traps should be checked at least once a week, emptied and cleaned. A strong solution of hypochlorite as per manufacturers recommendations should be poured down the drains once a week after wash-down to kill any bacteria which could cause foul odours.

Toilets, urinals and wash-hand basins must be cleaned at least once a day and regularly inspected to make sure they are kept clean. A disinfectant solution should be used on water closets, basins and associated equipment including chains, levers, door handles, taps and light switches.

Surface-water guttering and down-pipes should be inspected monthly and cleaned as necessary to remove any debris or fish waste carried up by birds that may attract flies that could lead to production of maggots.

Waste-storage areas must be kept clean and tidy by hosing down once a day. A rinse with dilute Hypochlorite solution is recommended to reduce bacterial contamination and to prevent fishy odours that attract flies and vermin.

6.2.3.3 Cleaning of Plant and Equipment

Mechanical handling equipment, grading and weighing equipment, fish boxes, ice tubs and shovels, plastic pallets and other items of equipment that come into contact with fishery products must be thoroughly cleaned immediately after use.

It is recommended that equipment be rinsed with clean water as soon as possible after use, before residues have time to dry and harden, followed by a detergent hot wash, then disinfection and a further rinsing with clean water. Badly soiled equipment or boxes/containers may require leaving to soak in a disinfectant solution or the use of a foam cleaner to extend the contact time.

Complex items of equipment such as mechanised sorting, grading and weighing lines are best cleaned with a high pressure hose to reach inaccessible areas. If dismantling of machines is necessary for thorough cleaning they must be isolated from the power supply prior to dismantling and cleaning.

After cleaning, plant and equipment must not thereafter be exposed to contamination prior to re-use.

6.2.3.4 Health and Safety Aspects of Cleaning

Manufacturer's recommendations for the storage, dilution and method of application of cleaning agents and precautions necessary must be strictly followed.

Protective clothing, including goggles, gloves, boots, waterproof aprons and headware must be worn as required and specified in the cleaning schedule.

Electrical equipment must be isolated from the power supply before cleaning.

The use of ladders, scaffolding, platform lifts and other equipment to clean ceilings, light fittings, gutters etc., must conform with the requirements of Health and Safety Legislation.

It is recommended that cleaning operations are carried out after the sale when product has been removed and buyers and transport staff etc., are clear of the area. During cleaning operations warning notices should be prominently displayed at the entrances whilst cleaning is taking place.

6.2.4 Recommendations on Personal Hygiene

6.2.4.1 Protective Clothing

All personnel entering fish handling and storage areas should wear clean, washable protective over-clothing, including coat and hat. Staff involved in 'wet' operations should wear waterproof aprons, leggings or waterproof trousers/tops and rubber boots. It is recommended that a stock of disposable paper hats be held for use by visitors. Hard hats are recommended for quayside operations or other operations as required by Health and Safety legislation. Robust, non-slip, waterproof footwear is recommended and must be kept clean. Safety footwear is recommended. Disposable or rubber gloves may be worn provided they are kept clean.

Protective clothing is worn to protect product from contamination and should only be worn at work. It should be removed after work and stored in a suitable facility away from fish handling areas or sent for laundering. Waterproof clothing should be cleaned regularly throughout the day and other protective clothing should be changed and laundered whenever soiled, at least once a week. All clothing must be maintained in good condition.

6.2.4.2 Personal Habits

All staff must keep themselves and their clothing clean and refrain from unhygienic personal habits.

Smoking, eating and drinking is only permitted in designated areas and not in fish handling or storage areas.

Staff must not spit, pick their noses or scratch other body parts. They must not cough, sneeze or comb their hair over product and should not lick their fingers to separate sales tickets put on fish.

Personnel working in fish handling and storage areas are the most common sources of contamination of product. They may transfer pathogenic bacteria to product and may be responsible for the tainting of product. It is essential that high standards of personal hygiene are observed to avoid contamination or deterioration of product.

6.2.4.3 Hand Washing

All staff must thoroughly wash their hands whenever they become dirty and specifically after;

a) visiting the toilet
b) prior to starting work and after work breaks
c) after handling waste
d) after any cleaning activity
e) after touching any body parts

Hands should be washed in hot water with unscented soap and hygienically dried. They should only be cleaned in wash-hand basins and not in any food or equipment washing sink etc. or under fire hoses. Hands must not be dried on clothing.

It is recommended that nails are kept short and that a nailbrush be used to keep them clean. Non-odourless liquid or gel-type soaps containing a mild disinfectant are recommended.

Hands are a common source of contamination and must be kept clean.

6.2.4.4 Jewellery, Watches and Cosmetics

Personnel working in or entering fish handling areas must not wear any jewellery other than plain gold wedding rings or sleeper earings. Staff with other exposed body piercings should cover them with coloured tape. Wrist watches, necklaces and broaches etc. are not permissible.

Nail varnish must not be worn as it presents a potential foreign body risk to product and perfumes should not be worn due to the possibility of tainting of product.

Wrist watches and jewellery can harbour dirt and bacteria which may cause cross-contamination of product or become loose and be lost into fishery products.

6.2.4.5 Health Checks and First Aid

Staff must report any illness to their supervisor, particularly bowel disorders, vomiting, digestive upsets, discharges from the eyes or ears and skin infections. Staff found to be suffering from notifiable diseases must not handle product and the local medical health officer must be informed immediately. Medical clearance may be required before return to work is permitted for certain infections. No person having untreated cuts, burns, sores or spots shall be allowed to handle product. Such injuries must be treated and covered with a waterproof dressing.

First aid materials must be hygienically stored so that they do not become contaminated or damp. In addition to the statutory requirements of first aid boxes finger stalls and rubber gloves are recommended to give increased protection. Dressings should be blue in colour and incorporate a metal strip for ease of automatic detection should they become lost. Stocks in the first aid box must be replenished and maintained to comply with statutory regulations.

Serious risk to public health can result from carriers of infectious diseases handling product. Annual medical checks for staff are recommended and at other times as necessary. Guidance for Food Businesses is given in 'Food Handlers Fitness to Work' publication by the DoH.

6.2.5 Pest Control

Systematic pest control procedures must be adopted that restrict access by pests to fish handling and storage areas, identify outbreaks if they do occur and deal effectively and promptly with them.

A written plan of pest control should specify the frequency of inspection, monitoring methods, location of pest control bait boxes, substances used, a system for recording the results of inspection or any reported sightings, or evidence of infestation and the actions to be taken in the event of infestation. The inspection should include an examination of the fabric of the building and the physical barriers that prevent access by pests particularly by doors, windows, drains and ventilation systems.

It is recommended that ports management contract the services of a specialist pest control company to ensure adequate protection. All personnel working in or entering fish handling or storage areas must be made aware of the importance of good housekeeping, the need to keep doors shut and to report any signs of infestation.

Pests carry harmful bacteria on their bodies and in their faeces/urine and pose a serious threat to food safety by contamination of product. They also spread diseases such as dysentery and Weils disease (which can be fatal) and cause damage to structures and equipment. Birds, rodents, insects and pets must be excluded from product areas.

6.3 Temperature Control and Monitoring

6.3.1 Legal Requirements for Temperature Control and Monitoring

The Food Safety (Fishery Products and Live Shellfish)(Hygiene) Regulations 1998 SI No 994

Schedule 3 Chapter II

2. *During unloading and landing... It must in particular be ensured that fishery products are placed without unnecessary delay in a protected environment at the temperature required on the basis of the nature of the product and, where necessary, in ice in transport, storage or market facilities, or in an establishment.*

4. *After landing or, where appropriate, after first sale, fishery products must be transported without delay under the conditions laid down in Chapter VIII to their place of destination.*

5. *However, if the conditions laid down in paragraph 4 are not fulfilled, the markets in which fishery products may be stored before sale or after being sold and pending transport to their place of destination must have sufficiently large cold rooms which satisfy the conditions laid down in paragraph 3 of Section I of Chapter III. In such cases, fishery products must be stored at the temperature of melting ice.*

Chapter VIII

1. *Fishery products must, during storage and transport, be kept at the temperatures laid down in these Regulations, and in particular-*

   (a) fresh or thawed fishery products..... must be kept at a temperature approaching that of melting ice;

6.3.2 Recommendations for Temperature Control and Monitoring

On landing, fish should be immediately transferred to a protected environment where its temperature can be maintained close above zero degrees centigrade. Where the period of holding is only a few hours, re-icing may be sufficient but where the period is longer, chilled holding facilities are recommended.

Samples of supplies landed by a vessel, or over-landed to the market, should be checked by the PO, the landing Company or Agent to ensure adequate temperature control, particularly if there is any reason for concern over temperature.

If there is a problem the fishery products should be re-iced and reported to the skipper and Sales Agent. Periodic checks should also be made and the results recorded, of the temperatures of mechanically refrigerated stores and transport.

The temperature of mechanically refrigerated areas should be pulled down to operating temperature prior to loading with product. Doors of the market, chills and transport should be kept closed when not in active use to minimise heat gain by air exchange and product temperature rise.

Temperature is the most important factor affecting the rate of deterioration of fishery products. To minimise quality loss, fresh fishery products should be maintained as close to zero degrees centigrade as possible through the landing, handling and sale operations. The best way of achieving this is by icing, supported where necessary by mechanical refrigeration.

6.4 Monitoring of Product Quality and Safety

6.4.1 Legal Requirements to Monitor Product Quality and Safety

Food Safety Act 1990

Part II, 8 Selling food not complying with food safety requirements

(1) Any person who -

(a) sells for human consumption, or offers, exposes or advertises for sale for such consumption, or has in his possession for the purpose of such sale or of preparation for such sale; or

(b) deposits with, or consigns to, any other person for the purpose of such sale or of preparation for such sale, any food which fails to comply with food safety requirements shall be guilty of an offence.

The Food Safety (Fishery Products and Live Shellfish)(Hygiene) Regulations 1998 SI No 994

Schedule 3, Chapter V Section 2

1. (1) Without prejudice to the derogations provided for by Council Regulation (EEC) No 103/76(a) laying down common marketing standards for certain fish or chilled fish, as amended (b), each batch of fishery products must be submitted for inspection by the food authority at the landing or before first sale to check whether they are fit for human consumption. This inspection comprises an organoleptic check carried out by sampling.

5. If the organoleptic examination reveals any doubt as to the freshness of the fishery products, use may be made of chemical checks or microbiological analysis.

6.4.2 Recommendations for Product Quality and Safety Checks

To ensure that fishery products traded on the market are fit for human consumption supplies to the market should be checked for freshness, contamination, condition, physical damage, temperature and infestation. Any product not meeting minimum standards of food safety should be sprayed with a coloured dye, withdrawn from sale and disposed of in an approved manner.

In addition to statutory monitoring of fishery products undertaken by Environmental or Port Health Officers, all handlers of fishery products should continuously monitor product to ensure its safety. Particular attention should be paid to boats working longer trips and over-landed/imported supplies. Where there is any doubt about a products fitness then it should be reported to the food authority.

6.5 Maintenance of Plant and Equipment

6.5.1 Legal Requirements for Maintenance of Plant and Equipment

The Food Safety (Fishery Products and Live Shellfish)(Hygiene) Regulations 1998 SI No 994

Schedule 3, Chapter I

1. Unloading and landing equipment must be kept in a good state of repair and condition.

Chapter III, Section II, A

1. Floors, walls and partitions, ceilings and roof linings, equipment and instruments used for working on fishery products must be kept in a satisfactory state of repair, so that they do not constitute a source of contamination of products.

In addition to statutory requirements under Food Safety and Hygiene Legislation there are also requirements under Health and Safety Legislation (particularly with electrical and mechanical handling and lifting equipment) and with Weights and Measures Legislation.

6.5.2 Recommendations for Maintenance of Structures and Equipment

In order to ensure the quality and safety of fishery products a programme of inspection, planned maintenance and a system for reporting and rectifying defects is recommended for structures and equipment.

A documented schedule of inspections should establish responsibilities, specify what is to be inspected and when and the actions to be taken as necessary. Particular attention should be given to the fabric of the building and possible access by pests, lighting, mechanical equipment and plant and equipment that comes into direct contact with fishery products. In some circumstances it is possible to combine checks on structures and equipment with those of cleaning standards, inspection of safety equipment and for signs of infestation.

In addition to the scheduled inspections there should be a programme of planned maintenance for mechanical and electrical equipment in accordance with the manufacturers recommendations. A stock of consumables and essential spares should be maintained.

Scheduled inspections and planned maintenance programmes should not preclude the reporting by staff of any malfunction etc. and appropriate action being taken. The keeping of a defects log-book on the market for inspection by maintenance staff and review by management is recommended.

Maintenance staff must conform with the required standards of personal hygiene and cleanliness and conduct their duties such that they do not pose any risk of contamination of fishery products.

6.6 Meeting Market Requirements

6.6.1 Supply to the Market

6.6.1.1 Legal Requirements relating to Supply

Council Regulation (EC) No 104/2000
Chapter 3

Production and Marketing Planning
Article 9

At the beginning of the fishing year, each producer organisation shall draw up an operational programme for the fishing year for the species listed in Annexes I, IV and V and send it to the competent authorities of the Member State, comprising:

- *the marketing strategy to be followed by the organisation to match the quantity and quality of supply to market requirements;*
- *a catch plan for species in Annexes I and IV, in particular for species covered by catch quotas, in so far as such species represent a significant share of the landings of its members;*
- *a production plan for species in Annex V;*
- *special anticipatory measures to adjust the supply of species which habitually present marketing difficulties during the fishing year.*

Note also legal requirements relating to;

- minimum sizes under Fisheries Conservation and Fish Marketing legislation;
- the submission of log-books and landing declarations as required under Fisheries Control legislation;
- where and when vessels may land and the notice required as a condition of a vessel's licence under Fisheries Conservation legislation.
- the conditions of hygiene of vessels landing to the market, and the supply for sale of poisonous fish and fish containing biotoxins, under Food Safety (Fishery Products and Live Shellfish)(Hygiene) Regulations.

6.6.1.2 Recommendations relating to Supply

As far as is practically possible and viable, fishing activity should be targeted to meet market requirements of species, size, quality, condition and oil content etc.

Landings of vessels should be scheduled as far as possible to meet supply requirements, both in the short-term (during the week) and over the fishing season to provide continuity of supply and price stability. Producer Organisations and Agents should liase with merchants/processors in the preparation of annual fishing plans, sale times, supplies over public holidays etc. Sales Agencies should be in constant contact with vessels at sea to advise them of when and where to land and to provide the onshore sector with forward information of landings in as much detail as is possible.

In circumstances where fisheries management controls constrain the volume of landings, producers should be encouraged to maximise returns by considering the requirements of the market in the economics of their fishing operation. Those best positioned to influence

the practices of producers are the Producer Organisations and Sales Agents/Auction Companies, who through dialogue with the onshore sector can take a strategic view of market conditions. Merchants/Processors have a greater awareness of the broader market (both domestic and export) and of seasonal imports and cold store stocks etc.

The supply of detailed forward information of supplies enables merchants and processors to plan purchases, production, promotion and to negotiate sales. It is in the long-term interest of both the onshore sector and producers.

Scheduling and notification of landings is also beneficial to suppliers of ancillary services and facilitates the more efficient use of infrastructures and labour.

6.6.2 Product Specifications

6.6.2.1 Legal requirements of Product Specification

Council Regulation (EC) No 2406/96 laying down common marketing standards for certain fishery products

B Freshness Categories - Article 4

1. The freshness category of each lot shall be determined on the basis of the freshness of the product and a number of additional requirements. Freshness shall be defined by reference to the special ratings for the different types of products set out in Annex I.

(Annex I is reproduced in Appendix V)

C Size Categories

Article 7

1. Products as specified in Article 3 shall be sized by weight or by number per kilogram. Shrimps and crabs however, shall be graded in size categories by width of shell.

Article 8

2. Each lot must contain products of the same size. A small lot need not, however, be of uniform size; if it is not of uniform size, the lot shall be placed in the lowest size category represented therein.

3. The size category and presentation must be clearly and indelibly marked in characters which are at least 5 cm high, on labels affixed to the lot.

The net weight in kilograms shall be clearly and legibly marked on each lot. Where lots are put up for sale in standard boxes, the net weight need not be shown if the contents of the box are shown, when weighed before being put up for sale, to correspond to the presumed contents expressed in kilograms.

Article 9

Pelagic species may be graded in different categories of freshness and size on the basis of a sampling. This system must ensure that the freshness and size of the products contained in the lot are as uniform as possible

Note that although EC Regulations define marketing grades by weight, or number of fish per kilogram, the use of fish length equivalents is accepted by UK Fisheries Departments as defined in 'Community Grading Rules - A guidance note for the fishing industry' March 1990.

The Weights and Measures Act 1985

Part IV 28 - (1) Subject to sections 33 to 37 below any person who, in selling or purporting to sell any goods by weight or other measurement or by numbers, delivers or causes to be delivered to the buyers

(a) a lesser quantity than that purported to be sold, or

(b) a lesser quantity than corresponds with the price charged,

shall be guilty of an offence.

The Units of Measurement Regulations 1995 SI No 1804

Conversion of Imperial units of measurement

3 (1) Subject to the following provisions of these Regulations, where -

-

(c) the provision has legal effect on or after the commencement date, the provision shall, unless the content otherwise requires, be construed on or after that date as authorising or requiring the measurement to be made, or indication of quantity to be expressed, in the corresponding metric unit.

Later application of regulation 3 in relation to certain uses of imperial units.

4 In relation to any of the following uses of relevant imperial units which are permitted by Article 1(d) . of the Units of Measurement Directive, that is to say -

(c) the use of the pound or ounce (avoirdupois) for goods sold loose from bulk...

Regulation 3 above shall be treated as coming into force on 1st January 2000 and that date shall be treated as the commencement date for the purposes of these Regulations.

Trades Description Act 1968

Chapter 29

1 (1) Any person who, in the course of trade or business -

-

(a) applies a false trade description to any goods; or

(b) supplies or offers to supply any goods to which a false description is applied;

shall, subject to the provisions of the Act be guilty of an offence.

Food Labelling Regulations 1996

6. Name prescribed by law

(1) If there is a name prescribed by law for a food, that is to say if a particular name is required to be used for the food, that name shall be used as the name of the food.

(2) The name used for food specified in Schedule 1 shall be the name required by that Schedule.

(3) A name that is required to be used for a food by paragraph (1) or (2) of this regulation may be qualified by other words which make it more precise.

(Schedule 1 is reproduced in Appendix VI)

Council Regulation No 104/2000 on the common organisation of the markets in fishing and aquaculture products.

Chapter 2, Consumer Information, Article 4,

1 .....products referred to in article 1(a), (b) and (c) may not be offered for sale to the final consumer, . irrespective of the marketing method, unless appropriate marking or labelling indicates:

(a) the commercial designation of the species;

(b) the production method (caught at sea or in inland waters or farmed);

(c) the catch area.

Commission Regulation (EC) No 2065/2001 laying down detailed rules for the application of Council Regulation No 104/2000 as regards informing consumers about fishery and aquaculture products.

Article 8

The information required concerning the commercial designation, the production method and the catch area shall be available at each stage of the marketing of the species concerned. This information together with the scientific name of the species concerned shall be provided by means of the labelling or packaging of the product, or by means of a commercial document accompanying the goods, including the invoice.

6.6.2.2 Recommendations relating to Product Specification

To facilitate sales transparency and traceability and to provide guidance for buyers it is recommended that pre-sale product specifications be as accurate and detailed as is possible and include species, form, size grade, unit weight, quality/date of capture, vessel name/number and area of capture.

It is recommended that all demersal species are sold by weight having been accurately weighed at sea or onshore prior to sale. Sale of 'nominal' (unweighed) boxes is not recommended and should be phased out. Where fish is weighed and labelled at sea, due allowance should be made for drip loss prior to sale to ensure 'market weight'.

Where market requirements demand more precise grading than the EC grades provide, it is recommended that the grades be further sub-divided where possible. If the EC grade band limits do not conform to those required by the market then the PO should seek guidance from SEERAD, DEFRA or DARD.

Accurate product descriptions and grading to market requirements adds value to the product and is in the interests of both producers and merchants/processors. Size grading is of particular importance to processors in meeting contracted orders to given specifications and for the efficient use of processing machinery. If processors have to re-grade in the factory and sell on product outside their customer requirements it will be reflected in the price they are willing to pay. It is also essential for merchants/processors who buy on electronic sale systems.

The requirement for information on the commercial designation, the production method, the catch area and the scientific name of the species to be available at each stage of marketing is included under the Fish Labelling Regulations 2002 (ref. In Section 3.3) which provides a list of fish species and their permitted commercial designations. Guidance notes on enforcement are also currently subject to consultation.

6.6.3 Sales Transparency

6.6.3.1 Legal Requirements for Sales Transparency

Council Regulation (EEC) No 2847/93 (as amended) Article 9

1. *Auction centres or other bodies authorised by Member States, which are responsible for the first marketing of fishery products landed in a Member State shall submit, upon first sale, a sales note, the accuracy of which shall be the responsibility of the said bodies, to the competent authorities of the Member State in whose territory the first marketing takes place. This responsibility shall be limited to the information requested in paragraph 3*
2. *The sales notes referred to in paragraph 1 shall contain as a minimum the following information:*
   - *for all species, where appropriate, the individual size or weight, grade, presentation and freshness,*
   - *the price and quality at first sale for each species, and, where appropriate, on an individual size or weight, grade, presentation and freshness basis.*
   - *where appropriate, the destination of products withdrawn from the market (by products, human consumption, carry-over),*
   - *the name of both the seller and the buyer.*
   - *The place and date of the sale*
3. *These sales notes shall be completed and transmitted in accordance with the law of the Member State of landing in such a manner and under such conditions of sale to include the following data:*
   - *the external identification and the name of the fishing vessel which landed the products in question,*
   - *the name of the vessels owner or the master*
   - *the port and date of landing.*
4. *The sales notes mentioned in paragraph 1 shall be transmitted within 48 hours of sale to the competent authority or other bodies authorised by the Member State, either by computer or paper.*

6.6.3.2 Recommendations for Sales Transparency

Whatever sale method, or mix of methods, is used by the Auction Company or Sales Agent, the sale process should be open and transparent in order to encourage fair competition and the adequate reward for meeting market requirements. Post-sale information should be published and made readily available to producers and buyers that provides a record of the range and average of prices per kilo achieved for each size/quality grade of fish species.

Publication of detailed prices achieved on the market allows producers to make comparisons and to evaluate the potential financial benefits that might accrue by changes to the logistics of their fishing operation (trip length, grounds worked, gear used, day of landing etc.). The published information need not identify individual vessels.

Appendices

Appendix I

List of Participating Bodies

John Paterson	British Ports Association and Peterhead Harbour Trustees
Martyn Boyers	European Association of Fish Ports and Auctions and Grimsby Fish Market
Ian Eaton	Eyemouth Port Association
David Pessell	Plymouth Trawler Agents Ltd
George Mackay	Denholms Fish Selling Ltd
Robert Milne	Scottish Fish Merchants Federation
Robert Stevenson	UKAFPO
Steve Norton	Grimsby Fish Merchants Association Ltd
Rhona Grant	Scottish Fish Merchants Federation
Judith Farrell	UKAFPO
Chris Melville	Chartered Institute of Environmental Health and N E Lincolnshire Council
Trevor Hutchings	DEFRA
Alistair Stewart	SFPA
Susan Ewart	SEERAD
Wendy Taylor	SEERAD
Peter Wilson	Seafish
Mike Myers	Seafish

CONSULTEES

David Lock	LACORS
Doug Beveridge	NFFO
Ian Duncan	SFF
Ron Gilland	North East of Scotland FPO Ltd
Ron Murray	Fish Salesmens Association (Scotland) Ltd
Frances Hughes	Torbay Local Authority
M Bacon	Penwith district Council
Gary Kitching	Hull City Council
Ian Robertson	Aberdeenshire Council
John Pegg	Fowey Port Health Authority
Ian Milligan	Seafish

Appendix II
Seafish Guides for the Fish Industry

(1) Guidance for Fish Processors on Water and Effluent Minimisation - April 1999

(2) Guidance on Procedures to Minimise Risks to Food Safety in Bivalve Mollusc Production - March 1999

(3) Guidelines for the Facilities and Equipment Required for Handling Bivalve Molluscs from Harvesting through to distribution in Retail Outlets - April 1997

(4) Basic Guidance on Good Hygiene Practice for the Inshore Shrimp Industry - March 1994

(5) Guidelines for the Handling of Chilled Fish by Primary Processors - May 1989

(6) Guidelines for the Handling of Chilled Fish by Retailers - January 1987

(7) Guidelines for the Handling of Chilled Fish in a Controlled Atmosphere - March 1985

Community Size Standards and Practical Guide

EC Standard (KG/FISH			Practical Guide
		HADDOCK	
	kg/fish		**cms**
Size 1	1 and over		
Size 2	from 0.57 up to but excluding 1		49.5 and over
Size 3	from 0.3 up to but excluding 0.57		from 41.5 to less than 49.5
Size 4	from 0.17 up to but excluding 0.3		from 33.5 to less than 41.5
			from 27 to less than 33.5
		WHITING	
	kg/fish		**cms**
Size 1	0.5 and over		40.5 and over
Size 2	from 0.35 up to but excluding 0.5		from 36 to less than 40.5
Size 3	from 0.25 up to but excluding 0.35		from 32 to less than 36
Size 4	from 0.11 up to but excluding 0.25		from 23 to less than 32
		LING	
	kg/fish		**cms**
Size 1	5 and over		100 and over
Size 2	from 2.5 up to but excluding 5		from 79 to less than 100
Size 3	from 0.5 up to but excluding 2.5		from 46 to less than 79
		MACKEREL	
	kg/fish	**number of fish per 25 kg**	**cms**
Size 1	0.5 and over	50 or less	37.5 and over
Size 2	from 0.2 up to but excluding 0.5	51 to 125	from 29 to less than 37.5
Size 3	(a) from 0.1 up to but excluding 0.2	(a) from 126 to 250	from 24 to less than 29
	(b) from 0.08 up to but excluding 0.2 for Mediterranean mackerel	(b) from 126 to 325 in the case of Mediterranean mackerel	---
		SPANISH MACKEREL	
	kg/fish		**number of fish per 25 kg**
Size 1	0.5 and over		50 or less
Size 2	from 0.25 up to but excluding 0.5		51 to 100
Size 3	from 0.14 up to but excluding 0.25		101 to 175
Size 4	from 0.05 up to but excluding 0.14		176 to 500
		ANCHOVIES	
	kg/fish		**number of fish per kg**
Size 1	0.033 and over		30 or less
Size 2	from 0.020 up to but excluding 0.033		from 31 to 50
Size 3	from 0.012 up to but excluding 0.020		from 51 to 83
Size 4	from 0.008 up to but excluding 0.012		from 84 to 125
		PLAICE	
	kg/fish		**cms**
Size 1	0.6 and over		38.5 and over
Size 2	from 0.4 up to but excluding 0.6		from 34 to less than 38.5
Size 3	from 0.3 up to but excluding 0.4		from 31 to less than 34
Size 4	from 0.15 up to but excluding 0.3		from 25 to less than 31
		HERRING	
	kg/fish	**number of fish per kg**	**number of fish per kg**
Size 1	0.125 and over	8 or less	80 or less
Size 2	from 0.085 up to but excluding 0.125	from 9 to 11	from 81 to 117
Size 3	(a) from 0.050 up to but excluding 0.085	(a) from 12 to 20	(a) from 118 to 200
	(b) from 0.033 up to but excluding 0.085 for Baltic herring	(b) from 12 to 30	(b) from 118 to 300

SARDINES

	kg/fish	number of fish per kg	number of fish per 10 kg
Size 1	0.100 and over	10 or less	100 or less
Size 2	from 0.055 up to but excluding 0.100	from 11 to 18	from 101 to 182
Size 3	from 0.031 up t but excluding 0.055	from 19 to 32	from 183 to 322
Size 4	(a) from 0.015 up to but excluding 0.031	(a) from 33 to 67	(a) from 323 to 667
	(b) from 0.011 up to but excluding 0.031 for Mediterranean sardines	(b) from 33 to 91	

DOGFISH

	Scyliorhinus spp	*Squalus acanthias*	*Squalus acanthias*
	kg/fish	kg/fish	cms
Size 1	2 and over	2.2 and over	82 and over
Size 2	from 1 up to but excluding 2	from 1 up to but excluding 2.2	from 64 to less than 82
Size 3	from 0.5 up to but excluding 1	from 0.7 up to but excluding 1	from 57 to less than 64

REDFISH

	kg/fish	cms
Size 1	2 and over	53 and over
Size 2	from 0.6 up to but excluding 2	from 34 to less than 53
Size 3	from 0.35 up to but excluding 0.6	from 29 to less than 34

COD

	kg/fish	cms
Size 1	7 and over	96 and over
Size 2	from 4 up to but excluding 7	from 79.5 to less than 96
Size 3	from 2 up to but excluding 4	from 62.5 to less than 79.5
Size 4	from 1 up to but excluding 2	from 49 to less than 62.5
Size 5	from 0.3 up to but excluding 1	from 30 to less than 49

SAITHE

	kg/fish	cms
Size 1	5 and over	87 and over
Size 2	from 3 up to but excluding 5	from 72 to less than 87
Size 3	from 1.5 up to but excluding 3	from 56 to less than 72
Size 4	from 0.3 up to but excluding 1.5	from 30 to less than 56

HAKE

	kg/fish	cms
Size 1	2.5 and over	74.5 and over
Size 2	from 1.2 up to but excluding 2.5	from 59 to less than 74.5
Size 3	from 0.6 up to but excluding 1.2	from 47 to less than 59
Size 4	from 0.28 up to but excluding 0.6	from 37 to less than 47
Size 5	(a) from 0.2 up to but excluding 0.28 in the case of Mediterranean hake	from 30 to less than 38
		-

MEGRIM

	kg/fish	cms
Size 1	0.45 and over	38 and over
Size 2	from 0.25 up to but excluding 0.45	from 32 to less than 38
Size 3	from 0.20 up to but excluding 0.25	from 30 to less than 32
Size 4	(a) from 0.11 up to but excluding 0.20	from 25 to less than 30
	(b) from 0.050 up to but excluding 0.20 in the case of Mediterranean megrim	-

RAY'S BREAM

	kg/fish	
Size 1	0.80 and over	-
Size 2	from 0.20 up to but excluding 0.80	-

MONKFISH

	whole, gutted kg/fish	whole, gutted cms
Size 1	10 and over	93.5 and over
Size 2	from 6 up to but excluding 10	from 79 to less than 93.5
Size 3	from 3 up to but excluding 6	from 62.5 to less than 79
Size 4	from 1 up to but excluding 3	from 43.5 to less than 62.5
Size 5	from 0.5 up to but excluding 1	from 34.5 to less than 43.5
	without heads kg/fish	**without heads cms**
Size 1	3.75 and over	72 and over
Size 2	from 2 up t but excluding 3.75	from 55 to less than 72
Size 3	from 3 up to but excluding 6	from 43 to less than 55
Size 4	from 0.5 up to but excluding 1	from 33 to less than 43
Size 5	from 0.2 up to but excluding 0.5	from 24 to less than 33

DAB

	kg/fish	cms
Size 1	0.25 and over	29.5 and over
Size 2	from 0.13 up to but excluding 0.25	from 23 to less than 29.5

LEMON SOLE

	kg/fish	cms
Size 1	0.6 and over	37 and over
Size 2	from 0.35 up to but excluding 0.6	from 31 to less than 37
Size 3	from 0.18 up to but excluding 0.35	from 25 to less than 31

ALBACORE

	kg/fish	cms
Size 1	4.0 and over	-
Size 2	from 1.5 up to but excluding 4.0	-

BLUEFIN TUNA

	kg/fish	cms
Size 1	70 and over	-
Size 2	from 50 up to but excluding 70	-
Size 3	from 25 up t but excluding 50	-
Size 4	from 10 up to but excluding 25	-
Size 5	from 6.4 up t but excluding 10	-

BIGEYE TUNA

	kg/fish	cms
Size 1	10 and over	-
Size 2	from 3.2 up to but excluding 10	-

BOGUE

	kg/fish	cms
Size 1	5 or less	-
Size 2	from 6 up to 31	-
Size 3	from 32 up to 70	-

PICAREL

	kg/fish	cms
Size 1	20 or less	-
Size 2	from 21 up to 40	-
Size 3	from 41 up to 90	-

BLUE WHITING

	kg/fish	cms/fish
Size 1	7 or less	over 28 cms
Size 2	from 8 up to 14	from 22.5 up to but excluding 28
Size 3	from 15 up to 25	from 18.5 up to but excluding 22.5
Size 4	from 26 up to 50	from 14.5 up to but excluding 18.5

POLLACK

	kg/fish	cms
Size 1	5 and over	84.5 and over
Size 2	from 2.5 up to but excluding 5	from 66.5 to less than 84.5
Size 3	from 1.5 up to but excluding 2.5	from 56.0 to less than 66.5
Size 4	from 0.265 up to but excluding 1.5	from 30.0 to less than 56.0

POUT

	kg/fish	cms
Size 1	0.35 and over	Over 30
Size 2	from 0.25 up to but excluding 0.35	from 27 to less than 30
Size 3	from 0.125 up to but excluding 0.25	from 21 to less than 27
Size 4	from 0.06 up to but excluding 0.125	from 17 to less than 21

CONGER EEL

	kg/fish	cms
Size 1	7 and over	over 136
Size 2	from 5 up to but excluding 7	from 124 to less than 136
Size 3	from 0.5 up to but excluding 5	from 65 to less than 124

GURNARD (RED)
(Aspitrigla Cuculus
Trigla lyra
Aspitrigla Obscura
Trigloporus Lastoviza)

	kg/fish	cms
Size 1	1 and over	from 46
Size 2	from 0.4 up to but excluding 1	from 34 to less than 46
Size 3	from 0.2 up to but excluding 0.4	from 28 to less than 34
Size 4	from 0.06 up t but excluding 0.2	from 19 to less than 28

GURNARD (OTHER)
(Trigla Lucerna
Eutrigla gurnardus)

	kg/fish	cms
Size 1	0.25 and over	Over 31
Size 2	from 0.2 up to but excluding 0.25	from 28 to less than 31

HORSE MACKEREL

	kg/fish	cms
Size 1	0.6 and over	over 42
Size 2	from 0.4 up to but excluding 0.6	from 36.5 to less than 42
Size 3	from 0.2 up to but excluding 0.4	from 29 to less than 36.5
Size 4	from 0.12 up to but excluding 0.2	from 24 to less than 29
Size 5	from 0.02 up to but excluding 0.12	from 13 to less than 24

MULLET

	kg/fish	cms
Size 1	1 and over	Over 46.5
Size 2	from 0.5 up to but excluding 1	from 37 to less than 46.5
Size 3	from 0.2 up to but excluding 0.5	from 27 to less than 37
Size 4	from 0.1 up to but excluding 0.2	from 21.5 to less than 27

SKATE/RAY

	kg/fish	cms
Size 1	5 and over	Over 92
Size 2	from 3 up to but excluding 5	from 78.5 to less than 92
Size 3	from 1 up to but excluding 3	from 56 to less than 78.5
Size 4	from 0.3 up to but excluding 1	from 38.5 to less than 56

SKATE WINGS
(to be graded by weight per wing)

	kg/wing
Size 1	3 and over
Size 2	from 0.5 up to but excluding 3

SHRIMPS
(Crangon Crangon)

	Width of Shell
Size 1	6.8 mm and over
Size 2	6.5 mm and over

Edible Crabs

	Width of Shell (as measured at its widest dimension)
Size 1	16cms and over
Size 2	From 13cms up to but excluding 16cms
Size 2a	From 11.5cms up to but excluding 16cms
Size 2b	From 12.5cms up to but excluding 16cms

Norway Lobster

	Number of fish per kg	
	Whole	**Tails**
Size 1	20 and less	60 and less
Size 2	from 21 up to 40	From 61 up to 120
Size 3	from 41 up to 60	From 121 up to 180
Size 4	more than 60	More than 180

Sole (Solea spp)

	Kg/fish
Size 1	0.5 and over
Size 2	0.35 to 0.5
Size 3	0.25 to 0.35
Size 4	0.2 to 0.25
Size 5	0.12 to 0.2

Notes:

1. In the case of crabs, the size category 2a only applies to the coastal areas of Lincolnshire, Norfolk, Suffolk and Cumbria whilst size category 2b applies to the coastal areas around the northern coasts of Great Britain from Caemes Head in Wales at Latitude 52 °07'N to the eastern border of East Sussex (excluding Lincolnshire, Norfolk and Cumbrian sea fisheries district). There is no minimum landing size for edible crabs in Northern Ireland.
2. In the case of Norway Lobster the minimum biological sizes applicable to each region must be observed.
3. In cases where minimum landing sizes have been set by conservation Regulations which are higher than the above minimum marketing sizes, the former must be observed.

Appendix IV (i)

Cleaning Schedule Example

Structure or Plant	**Fish Grading/Weighing Line**
Responsibility:	Cleaning Gang 'A'
Equipment to be used:	a) venturi and lance b) high pressure washer c) sprayer
Precautions:	Rubber gloves, apron and goggles to be worn
Product concentration:	a) alkaline foam detergent at 5% pre-diluted b) terminal sanitiser at 1%
When:	Daily after use of machine
Method:	a) isolate electrical supply b) remove gross debris c) apply foam detergent to all surfaces d) allow 10 minute contact time e) wash off f) sanitise in-feed hopper, weigh-head, belt, flippers and chute surfaces using sprayer g) allow to dry

Appendix IV (ii)

Cleaning Monitoring Schedule

Week Commencing:

Fish Market	Responsibility	Frequency	Monday		Tuesday		Etc.
			Completed	Checked	Completed	Checked	
Walls		D					
Floors		D					
Ceiling		M					
Drains		D					
Doors		D					
Light fittings		W					
Evaporators		W					
Grading Line		D					
Check weighing machine		D					
Ice skips		D					
Loading bay		D					
Quay apron		D					
Toilets		D					
Changing room		D					
FLT storage/charging area		D					
Gutters and downpipes		M					

D = Daily; W = Weekly; M = Monthly

Appendix V - EC Freshness Grading by Reference to Equivalent Length

Freshness Criteria (for Pelagics and Demersals)

	Freshness category (2)			
	Extra	A	B	Not Admitted
		APPEARANCE		
I. SKIN	Bright iridescent pigmentation; no discolouration	Pigmentation bright but not lustrous	Pigmentation in the process of becoming dis-coloured and dull;	Dull pigmentation [1]
	Aqueous, transparent mucus	Slightly cloudy mucus	Milky mucus	Opaque mucus
EYE	Convex (bulging)	Convex and slightly sunken;	Flat;	Concave in the centre [1]
	Transparent cornea:	Slightly opalescent cornea:	Opalescent cornea:	Milky cornea:
	Black, bright pupil	Black, dull pupil	Opaque pupil	Grey pupil
GILLS	Bright colour:	Less coloured:	Becoming discoloured	Yellowish [1]
	No mucus	Slight traces of clear mucus	Opaque mucus	Milky mucus
II. FLESH (cut from abdomen)	Bluish, translucent, smooth shining	Velvety, waxy, dull:	Slight opaque	Opaque [1]
	No change in original colour	Colour slightly changed		
COLOUR ALONG THE VERTEBRAL COLUMN	Uncoloured	Slightly Pink	Pink	Red [1]
ORGANS	Kidneys and residues of other organs should be bright red, as should the blood inside the aorta	Kidneys and residues of other organs should be dull red; blood becoming discoloured	Kidneys, residues of other organs and blood should be pale red	Kidneys [1] residues of other organs and blood should be brownish in colour
		CONDITION		
I. FLESH	Firm and elastic:	Less elastic	Slightly soft (flaccid), Less elastic;	Soft (flaccid) [1]
	Smooth surface		Waxy (velvety) and dull surface	Scales easily detached from skin, surface rather wrinkled
II. VERTEBRAL COLUMN	Breaks instead of coming away	Sticks	Sticks slightly	Does not stick [1]
PERITONEUM	Sticks completely to flesh	Sticks	Sticks slightly	Does not stick [1]
		APPEARANCE		
GILLS, SKIN ABDOMINAL CAVITY	Seaweed	No smell of seaweed or any bad smell	Slightly sour	Sour [1]

[1] Or in a more advanced state of decay

[2] In the case of monkfish from which the heads have been removed, classification shall be carried out on the basis of the headings application thereto.

Freshness Criteria for Norway Lobster (*Nephrops Norvegicus*)

Freshness Category		Appearance	Smell
E	- shell	Pale pink or pink to orange - red	Characteristic
	- whole	Shiny black eyes and pink gills	mild
	- tails	Exposed flesh is translucent and blue in colour tending towards white	shell fishy smell
A	- shell	Pale pink or pink to orange-red. No black spots	Loss of characteristic
	- whole	Eyes dull and grey/black, gills greyish	shell fishy smell
	- tails	The exposed flesh is no longer translucent but is not discoloured	No ammonia
B	- shell	The characteristic colour is the same but with slight discolouration. Some black pots and greyish colour, particularly on the shell and between the segments of the tail	Slightly sour
	- whole	Gills dark grey or some greenish colour on the dorsal surface of the shell	
	- tails	Flesh opaque and dull in appearance	

Live Norway Lobster shall be classified in a special freshness category denoted 'E'.

Freshness Criteria for Crabs

Crabs are not subject to specific freshness standards. However, only whole crabs, and not berried females or soft shelled crabs, may be marketed for human consumption.

Freshness Criteria for Shrimps (*Crangon Crangon*)

Freshness Category	A	B
MINIMUM REQUIREMENTS	The shell must have a moist and shiny surface; the shrimps must fall out separately when poured from one container to another; the flesh must be free from any foreign odour; the shrimps must be free from sand, mucus and other foreign bodies	As for freshness grade 'A'
APPEARANCE OF SHRIMP WITH SHELL	Bright brownish-red verging on grey; the pectoral part of the shell should be predominantly light in colour; very incurved	Slightly washed-out reddish-brown colour, the pectoral part of the shell should be predominantly dark; incurved
CONDITION OF FLESH DURING AND AFTER SHELLING	It should shell easily with only such losses of flesh as are technically unavoidable; it should be firm, but not tough	It should shell less easily with small losses of flesh; it can be less firm, slightly tough
FRAGMENTS	Occasional fragments of shrimp allowed	Small quantity of fragments allowed

Practical Guide to Community Freshness Grades Compiled by Torry Research Station to Help with Everyday Freshness Grading

To qualify for grading as grade E, A or B the fish of the following species should meet the descriptions under the relevant heading:

> Cod, Saithe, Haddock, Whiting, Plaice, Redfish, Hake, Mackerel, Spanish Mackerel, Atlantic Sardines (Pilchards), Ling, Dogfish, Megrim, Ray's Bream, Monfish*, Dab, Lemon Sole, Albacore, Bluefin Tuna, Bigeye Tuna, Pollack, Blue Whiting, Pout, Bogue, Picarel, Conger, Gurnard, Horse Mackerel, Mullet, Skate

	E	A	B
Skin	Bright, shining, iridescent (not redfish) or opalescent, no bleaning	Waxy, slight loss of bloom, very slight bleaching	Dull, some bleaching
Outer Slime	Transparent or water white	Milky	Yellowish-grey, some clotting
Eyes	Convex, black pupil, translucent cornea	Plane, slightly opaque pupil, slightly opalescent	Slight concave grey pupil, opaque cornea
Gills all except saithe	Bright red, mucus translucent	Pink, mucus slightly opaque	Grey and bleached mucus opaque
Saithe	Dark red, mucus translucent	Dark red, mucus slightly opaque	Brown, mucus opaque and thick
Peritoneum	Glossy, brilliant, difficult to tear from flesh	Slightly dull, difficult to tear from flesh	Gritty, fairly easy to tear flesh
Gill and internal odours all except plaice	Fresh, strong seaweedy shellfishy	No odour, neutral odour, trace musty, mousey, milky, capryllic, garlic or peppery	Definite musty mousey, milky, capryllic, garlic or peppery, bready, malty, beery, lactic, or slightly sour
Plaice	Fresh oil, metallic fresh cut grass earthy, peppery	Oily, seaweedy, aromatic trace musty, citric	Oily, definite musty, mousey, citric, bready, malty, beery, slightly rancid, painty

In the case of herring, the descriptions that should be met are as follows:

	E	A	B
Skin	Full bloom, bright shining, iridescent clean	Slight dullness and loss of bloom	Definite dullness and loss of bloom
Outer Slime	Transparent or water white	Milky slightly browning	Brownish
Gill Covers	Silvery	Silvery, slight browning, slight bright red blood stain	Predominantly silvery, some browning and blood staining
Eyes	Convex	Plane	Slightly concave
Firmness	Very stiff and firm	Fairly stiff and firm	Stiffness nearly absent, fairly soft
Gill Odours	Fresh seaweedy	Less fresh seaweedy, slightly oily	Slight stale seaweedy, definite oil, trace or slight rotten eggs, 'salt cured' or rancid oil

The descriptive terms are meant to be guides and not all the characteristics described will necessarily occur in every fish.

Where necessary particular note is taken of gill odours because this characteristic is particularly discriminatory.

* In the case of monkfish from which the heads have been removed, grading shall be carried out in respect of the headings applicable thereto.

Appendix VI - Fish Names prescribed by Law Food Labelling Regulations 1996, Schedule 1 Fish

1.(1) Subject to subparagraphs (2) and (3) of this paragraph, the name used for any species of fish specified in column 2 of the following Table shall be a name specified for that species in the corresponding entry in column 1 of the said table.

Column 1 **Fish Name:**	**Column 2** **Fish Species in Food Labelling Regulations:**
Sea Fish:	
Anchovy	All species of *Engraulis*
Bass	*Dicentrarchus labrax (L)*
Brill	*Scophthalmus rhombus (*L)
Brisling	*Sprattus sprattus(*L) when canned
Catfish Or Rockfish	All species of *Anarhichas*
Cod Or Codling	*Gadus morhua (L)* (including *Gadus morhua callarias* and *Gadus morhua morhua)*
Pacific Cod Or Cod	*Gadus macrocephalus*
Greenland Cod Or Cod	*Gadus ogac*
Cole Or Saithe Or Coalfish	*Pollachius virens (*L)
Conger	All *species of Conger*
Croaker Or Drum	All species of the family *Scianidae*
Dab	*Limanda Lmanda (*L)
Dogfish Or Flake Of Huss Or Rigg	All species of *Galeorhinus* All species of *Mustelus* All species of *Scyliorhinus* *Galeus melastomus* Rafin *Squalus acanthias (*L)
Dory Or John Dory Or St Peter's Fish	*Zeus faber (*L)
Eel	All species of *Anguilla*
Emperor	All species of *Lethrinus*
Flounder	*Platichth s flesus (*L)
Grey Mullet	All species of *Mugil* All species of *Liza* All species of *Chelon*
Grouper	All species of *Mycteroperca* All species of *Epinephelus*
Gurnard	All species of the family *Triglidae* *Peristedion cata hractum (*L)
Haddock	*Melanogrammus aeglefinus (L)*
Hake	All species of *Meduccius*
Halibut	*Hippoglossus hippoglossus (L)* *Hippoglossus steneolepis*
Black Halibut	*Reinhardtius hippoglossoides* Walbaum)
Herring	*Clupea harengus (L)*
Hilsa	*Hilsa elisha*
Hoki	*Macruronus novaezelandiae*
Jack	All species of *Caranx* All species of *Hemmicaranx* All species of *Seriola* All species of *Trachurus* All species of *Decapterus*
Lin:.	All species of *Molva*

Lumpfish Or Lumpsucker	*Cyclopterus lumpus*
Mackerel	All species of *Scomber*
Megrim	All species of Lep*idorhombus*
Monkfish Or Angler	*Lophius iscatorius (L)*
Orange Roughlly	*Hiplosteppus atlanticus*
Parrot-Fish	All species of the family *Scaridae*
Pilchard	*Sardina pilchardus* (Walbaum)
Pacific Pilchard	*Sardinops sagex caerulea* (Girard) *Sardinops sagax sagax* (Jenyns) *Sardinops sagax melanosticta* (Schlegel)
South Atlantic Pilchard	*Sardinops sagax ocellata* (Pappe)
Plaice	*Pleuronectes platessa* (L)
American Plaice	*Hipoglossoides platessoides* (Fabr.)
Pollack Or Pollock Or Lythe	*Pollachius pollachius* (L)
Pacific Pollack Or Pacific Pollock Or Alaska Pollack Or Alaska Pollock	Theragra chalcogramma (Pallas)
Pomfret	All species of *Brama* All species of *Stromateus* All species of *Pampus*
Redfish Or Ocean Perch Or Rose Fish	All species of *Sebastes* *Helicolenus maculatus* *Helicolenus dactylopterus* (De la Roche)
Red Mullet	All species of *Mullus*
Sardine	Small *Sardina pilchardus* (Walbaum)
Sardinella	All species of *Sardinella*
Sea Bream Or Porgy	All species of the family *Sparidae*
Sild	Small *Clupea harengus* (L) when canned Small *Sprattus sprattus* L when canned
Skate Or Ray Or Roker	All species of *Raja*
Smelt Or S arlin	All species of *Osmerus*
Sole Or Dover Sole	*Solea solea* (L)
Lemon Sole	*Microstomus kitt* (Walbaum)
Snapper	All species of the family *Lutjanidae*
Sprat	Sprattus sprattus (L), except when canned
Swordfish	*Xiphias gladius*
Tuna Or Tunny	All species of *Thunnus*
Skipjack (Tuna Or Tuna)	*Euthynnus* Katsuwonus pelamis
Albacore (Tuna Or Tuna)	*Thunnus alalunga*
Yellowfin (Tuna Or Tuna)	*Thunnus* (neothunnus) albacores
Bluefin (Tuna Or Tuna)	*Thunnus thynnus*
Bigeye Tuna (Or Tuna)	*Thunnus (p*arathunnus) *obesus*
Bonito	All species of Sarda All species of *Euthynnus,* with the exception of the species *Euthynnus* (Katsuwonus) pelamis All species of Auxis
Turbot	*Scophthalmus maximus* L
Whitebait	Small Clupea *harengus (L),* except when canned Small Sprattus sprattus (L), except when canned
Whiting	*Merlangius merlangus (*L)
Blue Whiting	*Micromesistius poutassou* (Risso)
Southern Blue Whiting	Micromesistius australis
Winter Flounder	Pseudopleuronectes americanus (Walbaum)
Witch	*Glyptocephalus cynoglossus (L)*

Appendix VII

Further Sources of Reference:

1. **Health & Safety Executive Information Sheets.**
   The HSE produce an extensive range of publications providing guidance on health and safety in the workplace, including: manual handling, diving, electrical safety, lifting appliances, fork lift trucks, etc. Information sheets are published for a series of interest groups including the Dock and Food industries.

2. **A Guide to the Loading and Unloading of Fishing Vessels Regulation 1988**
   This publication (Health & Safety No. 26) provides guidance on the requirements to provide safe quayside working conditions. It covers quay surfaces, fencing, lighting, fire fighting, access to and from vessels, fixed quayside ladders and the safety of plant and equipment.

3. **Workplace (Health, Safety and Welfare) Regulations 1992 - approved Code of Practice**
   This publication provides detailed guidance on the provision and specification of staff facilities and safety in the workplace.

4. **Recommended Code of Safety for Fishermen**
   This Health and Safety Executive publication provides guidance on safety of winches and hoists used on fishing vessels during landing.

5. **Recommended International code of Practice for Fresh Fish CAC/RCP - 1976**
   This code of practice applies to fresh fish, chilled but not frozen, intended for human consumption. It contains the technological guidelines and the most essential requirements of hygiene for the handling and processing of fresh fish at sea and on shore.

6. **Recommended International Code of Practice, General Principles of Food Hygiene CAC/VOL A-Ed 2**
   This code recommends general hygienic practices for use in the handling (including growing and harvesting, preparation, processing, storage, transport, distribution and sale) of food for human consumption in order to ensure a safe, sound and wholesome product.

7. **Technical Standard and Protocol for Companies Supplying Retailer Branded Food Products, British Retail Consortium, April 2002**
   The Technical Standard sets out requirements for the supply of retailer branded food products to UK retailers. It covers HACCP, Quality Management, Factory Standards, Product and Process Control and Personnel.

8. **Guidelines for the Design and Construction of Walls, Ceilings and Services for Food Production Areas, Technical Manual No. 44 December 1994, Campden and Chorley Wood FRA.**
   This publication provides advice on materials, design and construction of food production areas, including renovation of existing structures.

9. **Guidelines for the Design and Construction of Floors for Food Production Areas, Technical Manual No. 40 March 1993, Campden and Chorley Wood FRA**
   This publication provides advice on the design and construction of floors, including renovation of existing floor areas.

10. **Port Waste Management Planning - How To Do It, DETR January 1998**
    Provides detailed guidance on the preparation of port waste plans to meet operational needs and legislative requirements.

11. **Community Grading Rules - A Guidance Note for the Fishing Industry, March 1990, issued by the UK Fisheries Department.**
    Provides a summary of EC fish grading requirements.

12. **Guidance on the Completion and Submission of EU Logbooks.**
    Guidance on the Completion and Submission of Landing declarations.
    Guidance on the Completion and Submission of Sales Notes.
    Guidance on the Requirements of Council Regulation (EEC) No. 2847/93 for Transporters of Fish.
    The above notes provide guidance on compliance with fisheries control regulations.

13 **Guidelines for Good Hygienic Practice in the Manufacture of Chilled Foods.** Third Edition. Chilled Food Association, 1997.

14 **Food Handlers Fitness to Work.** Department of Health, 1995.

15 **Food and Drink Manufacture – Good Manufacturing Practice. A Guide to its Responsible Management.** Institute of Food Science and Technology, 1991.

16 **Lighting Guide – The Industrial Environment.** Chartered Institute of Building Services Engineers.

17 **Hygiene Design Guidelines,** First Edition 2002, Chilled Food Association.

18 **Modernising Trust Ports – A Guide to Good Governance.** January 2000. D. o. T.