

Essential Requirements for Packaging

Article 9.1 of EU Directive 94/62

Summary and Guide

What are the Essential Requirements?

1. Requirements specific to the manufacturing and composition of packaging:

- The weight and volume of packaging must be the “minimum adequate amount” to maintain the necessary level of safety, hygiene and acceptance for the packed product and the consumer.
- Noxious or hazardous substances in packaging must be minimised with regard to their presence in emissions, ash or leachate when packaging waste is incinerated or landfilled
- Packaging must be reusable or recoverable including through recycling and its impact on the environment must be minimised when packaging waste is disposed of.

2. Requirements specific to the reusable nature of packaging

- The physical properties of the packaging must enable a number of trips or rotations in normally predictable conditions
- It must be possible to process the used packaging without compromising the health and safety requirements for the workforce
- It must be possible to fulfil the requirements specific to recoverable packaging when the packaging becomes waste

3. Requirements specific to the recoverable nature of packaging

- Recycling: packaging must enable the recycling of a certain percentage by weight of the materials used into the manufacture of marketable products.
- Energy recovery: packaging shall have sufficient calorific value to allow optimisation of energy recovery
- Composting: packaging shall be of such a biodegradable nature that it should not hinder the separate collection and composting process into which it is introduced.
- Biodegradable: packaging should be capable of undergoing physical, chemical, thermal or biological decomposition, to such an extent that the final compost ultimately decomposes into carbon dioxide, biomass and water.

Heavy metal limits

The Directive also sets a concentration level for heavy metals which packaging must not exceed (cadmium, mercury, lead and hexavalent chromium). The limit is 100 parts per million which had to be met by 30 June 2001. The heavy metal limits do not apply to packaging which consists entirely of lead crystal glass.

Enforcement

Local Authorities are responsible for enforcing the Essential Requirements, and they may ask for a report of packaging composition and all relevant technical supporting documentation. Local authorities are empowered to bring a prosecution of a company whose packaging breaches the Essential Requirements. Packaged products could be removed from the marketplace and/or fines imposed.

CEN Guidelines

CEN, the European Committee for Standardization, has produced standards that provide one means of demonstrating compliance with the Essential Requirements.

To comply with the Essential Requirements, a producer must:

- minimise packaging weight and volume (subject to safety, hygiene and consumer acceptance);
- ensure packaging can be recovered, or produce packaging that is reusable;
- ensure packaging has a minimal impact on the environment after disposal;
- ensure packaging is manufactured to contain minimum levels of hazardous substances;
- ensure the amount of cadmium, mercury, lead and hexavalent chromium, or any combination of these heavy metals, does not exceed 100ppm (parts per million) by weight. These limits apply to packaging and any packaging components;
- keep evidence for at least four years from the date that the packaging was placed on the market that it complies with the Essential Requirements.

Understanding the CEN Standards

1. CEN “umbrella standard” (EN 13427:2000)

This standard guides users through the texts, indicating which standards are applicable to which type of pack:

- ◆ All packs must be assessed against the standard of prevention, and
- ◆ With reference to the report on minimisation of heavy metals
- ◆ Where reuse is claimed, packs must be assessed against the standard on reuse; and
- ◆ Packs must be assessed against at least one and, if appropriate, all the standards on recycling, energy recovery and organic recovery.

2. CEN Standard on prevention (EN 13428:2000)

This standard specifies a procedure for assessing packaging to ensure that the weight/volume of its material content is the minimum to maintain functionality, safety and hygiene and consumer acceptance.

The basis for compliance is to identify the “critical area” which governs the achievable limit for source reduction i.e. if the packaging was further reduced it would fail to meet one or more of the listed criteria

- i. Product protection
- ii. Packaging manufacturing process
- iii. Packing/filling process
- iv. Logistics (including transport, warehousing and handling)
- v. Product presentation and marketing
- vi. User/consumer acceptance
- vii. Information
- viii. Safety
- ix. Legislation

x. Any other relevant issues

If no critical area is identified, there may be scope for further reduction. A statement of conformity detailing the assessment procedures and determination of the critical area with all supporting documentation should be available to enforcement authorities. Producers must be able to demonstrate that the minimum adequate amount of heavy metals or dangerous substances has been used in the packaging. The methodology for this is fully outlined in a CEN report on Requirements for measuring dangerous substances in packaging (CR 13695-2:2001). The following evaluations must be undertaken:

- i. Have such substances been intentionally added? or the rom
- ii. Are any of the substances likely to be released into the environment from ash, emissions or leachate resulting from incineration or landfilling of the packaging or any packaging component after use?
- iii. If any of these substances are likely to be released into the environment, the supplier must ensure minimisation and document the results of the procedure.

The Commission wants the revised version of the standard to show how noxious substances can be minimized, and suppliers will have to justify the use of noxious substances in packaging.

3. CEN Standard on reusable packaging (EN 13429:2000)

This standard contains the check list for assessing the “reusability” of a pack. If the pack fails any of the three tests, it is deemed unfit for reuse.

- i. Packer/filler must intend to reuse the pack for its original purpose.
- ii. Must be possible to clean, wash and/or repair the pack after emptying and to refill or reload it
- iii. A system of reuse must be available, such as a closed loop system (reusable packaging is circulated by a company or a group of companies); or an open looped system (packaging is circulated among unspecified companies, eg CHEP) or hybrid system (reusable packaging remains with the end-user and is replenished by a one-way pack, e.g. (refill detergent pouches).

The Commission wants the revised version of the standard to cover the requirement that packaging is capable of undertaking a minimum number of trips or rotations.

4. CEN Standard on material recycling (EN 13430:2000)

This standard contains a formalised procedure by which design, production and use of packaging can be checked against the requirements of various material recycling systems. For material recyclability of packaging/packaged products on the market to be claimed, the supplier must:

- i. Ensure that the packaging design takes account of the recyclability of the materials from which it is produced
- ii. Control selection of raw materials used in production packing/filling operations and where practicable collection/sorting operations to ensure that they do not adversely affect recycling processes
- iii. Ensure that the design of packaging makes use of materials or combinations of materials that are compatible with known and relevant recycling technologies (innovative packaging can be classified as recyclable provided the supplier is satisfied that recycling infrastructure really is being developed)

- iv. Establish a system to ensure that new developments in relevant recycling technologies are monitored and recorded and that such records are made available to the design function
- v. Take account of the potential change in releases to the environment that will result from introducing the used packaging to the recycling process

The Commission wants the revised standard to include the requirement that packaging must enable the recycling of a certain percentage of materials. The standard is to differentiate between the percentages to be recycled depending on the material. The requirements will take account of substances or materials likely to create problems in the recycling process, including the generation of hazardous wastes

5. CEN Standard on energy recovery (EN 13431:2000)

Packaging claimed to be suitable for energy recovery must be combustible and capable of providing calorific gain (i.e. when the net heat of combustion exceeds the amount required to raise the temperature of the post-combustion substances from ambient temperature to the specified final temperature without heat leaving the system).

Also considered to be recoverable in the form of energy are:

- ◆ Packaging composed of over 50% by weight of organic materials (eg wood, board),
- ◆ Packaging composed of less than 50% of organic materials may be considered recoverable in the form of energy if supported by evidence of calorific gain.
- ◆ Thin gauge aluminium foil (up to 50 µm thick)

The standard is to be revised to include a minimum inferior calorific value. The revised requirements will take account of substances or materials likely to create problems in the energy recovery process, including the generation of hazardous wastes

6. CEN Standard on organic recovery (EN 13432:2000)

This standard defines the requirements for packaging to be considered as recoverable through composting and biodegradation. Each packaging material/component must fulfil the following criteria:

- i. Being biodegradable as demonstrated in laboratory tests, and to criteria and pass levels laid down
- ii. Disintegrating in a biological waste treatment process to the criteria and pass levels laid down, without any observable negative effect on the process
- iii. No negative effect on the quality of the resulting compost when submitted to a biological waste treatment process

Packaging intended for the bio waste stream must be recognisable by the end-user as compostable or biodegradable.

The results of each assessment or test undertaken must be recorded on an assessment checklist and their combined outcome used to determine whether a packaging material is suitable for organic recovery

This standard has been adopted in full by the EU Commission.

Copies of the standards can be obtained from the National Standards Authority of Ireland, tel: (01) 520 7150, email: nsai@nsai.ie.

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