



# SLOVENSKI STANDARD

## oSIST prEN 17988-4:2023

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### Krožna zasnova ribolovnega orodja in opreme za akvakulturo - 4. del: Okoljske in krožne zahteve ter smernice

Circular design of fishing gear and aquaculture equipment - Part 4: Environmental and circularity requirements and guidelines

Kreislaufwirtschaft von Fischfanggeräten und Aquakulturausrüstungen - Teil 4: Umwelt- und Kreislaufanforderungen und Leitlinien

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#### **ICS:**

13.020.20	Okoljska ekonomija. Trajnostnost	Environmental economics. Sustainability
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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**DRAFT**  
**prEN 17988-4**

July 2023

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ICS

English Version

## Circular design of fishing gear and aquaculture equipment - Part 4: Environmental and circularity requirements and guidelines

Kreislaufwirtschaft von Fischfanggeräten und  
Aquakulturausrüstungen - Teil 4: Umwelt- und  
Kreislaufanforderungen an und Leitlinien für  
Fischfanggeräte und Aquakulturausrüstungen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 466.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

This draft European Standard was established by CEN in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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## European foreword

This document (prEN 17988-4:2023) has been prepared by Technical Committee CEN/TC “466”, the secretariat of which is held by NEN.

This document is currently submitted to the CEN Enquiry.

EN 17988 consists of the following parts, under the general title *Circular design of fishing gear and aquaculture equipment*:

- Part 1: General requirements and guidance
- Part 2: User manual and labelling
- Part 3: Technical requirements
- Part 4: Environmental and circularity requirements and guidelines
- Part 5. Circular business models
- Part 6. Digitalization of gear and components

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## **Introduction**

Directive (EU) 2019/904 of the European Parliament and of the Council on the reduction of the impact of certain plastic products on the environment lays down rules on different plastic products, including fishing gear containing plastics, and sets requirement to the Member States to establish Extended Producer Responsibility (EPR) schemes. It also contains rules on minimum national annual collection rates and report fishing gear placed on the market and waste fishing gear collected in ports.

In 2021 the Commission Implementing Decision M/574 on a standardization request to the European Committee for Standardization as regards circular design of fishing gear in support of Directive (EU) 2019/904 was approved, which forms the basis for this document and the series it belongs to.

The purpose of this series of documents is to provide the stakeholders to address the different aspects of circular design of fishing gear and aquaculture equipment.

In this part the environmental and circularity requirements and guidelines are addressed, which will enable the reader of this document to more efficiently use materials and resources and reduce the amount of plastics lost as waste.

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## 1 Scope

This document specifies the environmental and circularity requirements for the components of fishing gear and aquaculture equipment which contain plastics. It will establish sustainability principles that minimize the negative impact of the plastic components of fishing gear and aquaculture equipment on the environment, taking into account the impact on its performance (e.g. catchability or life span). The circular and environmental design of fishing gear and aquaculture equipment focuses on:

- selection/ sourcing of materials and components
- manufacture/assembly
- placement/ installation/ deployment of the gear/ equipment
- use and maintenance repair
- end-of-use stage

Transport, storage and distribution are taken into account at the different stages, where applicable.

Excluded: Design aspects related to fishing or aquaculture techniques or management.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

<std>IEC 62430, *Environmentally conscious design (ECD) — Principles, requirements and guidance*</std>

<std>EN 17988-2, *Circular design of fishing gear and aquaculture equipment - User manual and labelling*</std>

<std>EN 17988-3, *Circular design of fishing gear and aquaculture equipment - Technical requirements*</std>

## 3 Terms and definitions

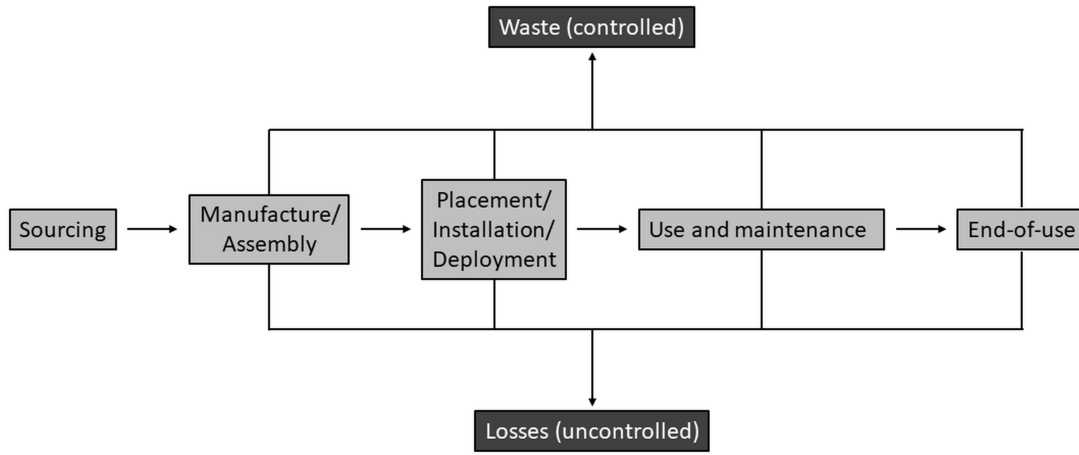
No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

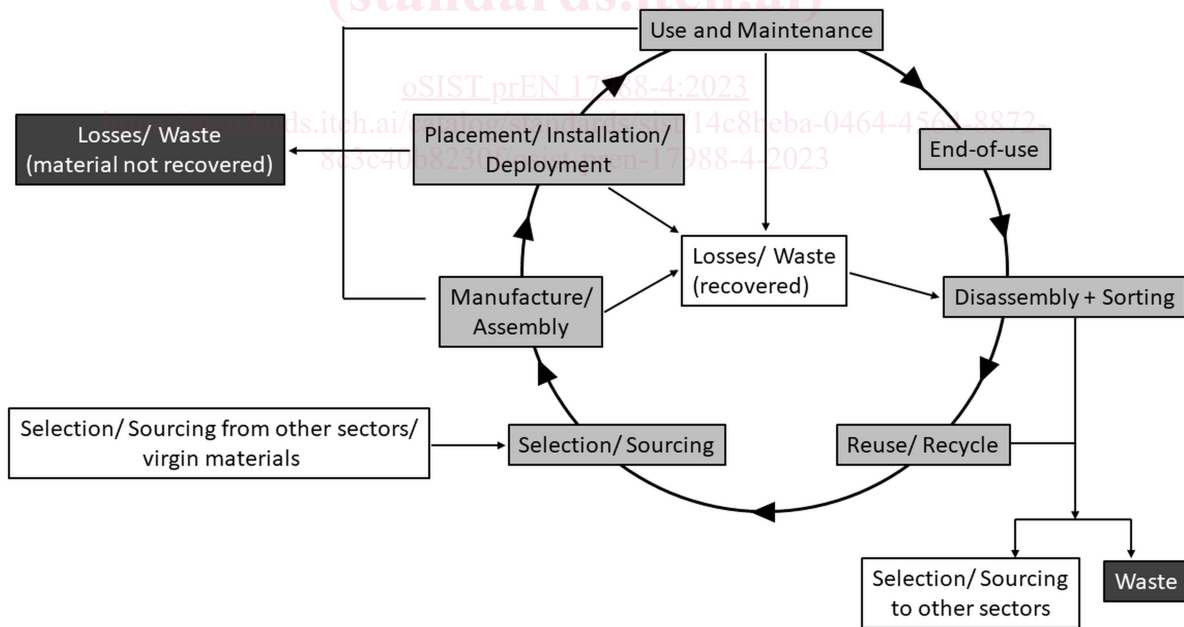
- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

## 4 Principles

### 4.1 General



**Figure 1 — Stages in product life, Linear flow/schematic (Elements in schematic are differently organized than in Figure B.1 of IEC 62430).**



**Figure 2 — Stages in product life, Circular paradigm**

This document will provide the reader with guidance, recommendations and requirements for changing from a linear product life economy (Figure 1) to a circular one (Figure 2) focusing on environmental and circular design but also respecting the technical requirements for fishing gear and aquaculture equipment, EN 17988-3 and general principles described in IEC 62430.



This document will focus on the principles for retaining fishing gear and aquaculture equipment or parts thereof in the circular economy for as many cycles as feasible, together with minimizing the negative impact of the plastic components on the environment. It will provide design criteria for achieving this goal while balancing it with the impact on its performance (e.g. catchability or life span); it can be expected that there are trade-offs between the different criteria which will need to be evaluated for their impact on the product.

- The characteristics of materials/ parts/ components shall be preserved as much as possible (durability, longevity)
- Materials/ parts shall be collected when damaged to be repaired and prepared for reuse, and at their end-of-use
- Transport, weight and packaging dimensions (including stack ability) of parts/ kits, etc. shall be taken into account
- EPR schemes shall be taken into account where available

It is important to consider the technical requirements for the specific type, size and use of the fishing gear and/or aquaculture equipment.

Issues like traceability and materials identification (e.g. via a product circularity data sheet) are important, but will not be covered in detail in this document. Here the reader is referred to EN 17988-2.

Concerning fishing gear, the issue of selectivity towards (aquatic) marine species and the size (which is linked to the age) for a given species is very important. For one, unwanted species add unnecessary and useless weight to the catch. For another, there are national and regional regulations concerning unwanted catch, as well as forbidding catching of protected species or younger fish. While this is an important environmental as well as commercial issue, it is not a focus in this document and is addressed by applicable legislation.

## **4.2 Modular design using standardized components**

In modular design one uses standardized components/ parts to assemble the product in a way that (1) the individual components/ parts can be exchanged and that (2) the product can be dismantled/ disassembled into the individual components again.

As a consequence, modular design and the use of standardized components/ parts allow for more efficient manufacture and assembly (5.2), repair, refurbishing and replacing of components (5.4) as well as dismantling/ disassembly and re-use of components (5.5).

Modular design also allows for use of the same standardized components/ parts in different products, allowing more efficient use of these components/ parts, a more efficient management of the stock, which ensures better availability of spare parts for gear/ equipment.

## **4.3 User (customer) requirements and needs**

User (customer) requirements and needs will depend on the specific intended use of the fishing gear and aquaculture equipment, the environment and/ or vessel it will be used in/ on and the personal preferences of the individual fisher or fishing company.

As a result, the current products in the fishing gear and aquaculture sector show a very high degree of diversification. This may seem to be in contradiction to the modular concept described in section

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4.2. but does not necessarily have to be the case. Correct modular design may allow for a high degree of diversification in final product design.

To ensure that the user (customer) requirements are taken into account during the design phase of the net, it needs to be ensured that the net producers receive the correct information from the users (customers) and also that the users (customers) receive up to date information on nets/ net materials and their performance. Usually, this information flow passes via the gear producers, and it must therefore be ensured that there is no information lost or altered when passed on.

**4.4 Environmental conditions during use**

Fishing gear and aquaculture equipment will be used in very diverse aquatic (including marine) environments, with specific combinations of parameters including not only the water temperature, pressure and salinity, but also the weather (atmospheric conditions) and the specific location (high sea, coastal area etc.). With exception of the specific location these conditions may be subject to variations in time, and it will be important to know the limits between which these variations occur. When designing the fishing gear or aquaculture equipment the location as well as the limits of the other parameters will need to be taken into account. Care shall be taken to neither under nor over design the gear/ equipment. Under designing will result in premature failure while over designing will result in excessive use of materials (5.1.2).

**5 Design criteria throughout the different steps in the life cycle****5.1 Selection/ sourcing of materials and components/ parts or products****5.1.1 General**

When sourcing materials (including additives used for processing and/ or functionalisation of the materials), components/ parts or products the following general considerations shall be taken into account:

- any materials, components/ parts or products need to be fit for purpose
- consider using existing products before making or buying new (or buying products made from virgin materials only)
- consider searching for opportunities in different markets, not limiting to the fishing gear and aquaculture market
- consider materials, components/ parts or products that are guaranteed to have an as long as possible use stage, either in their primary use sector (fishing / aquaculture) or in another value network

In addition, the following design criteria shall be used to source materials, components/ parts or products for circular and environmentally friendly fishing gear and aquaculture equipment:

- optimize weight, dimensions and stack ability of the product
- increase use of circular, recyclable, recycled, used, refurbished and/ or renewable materials and components to replace/reduce virgin materials
- when combinations or mixtures of materials are used, they shall be compatible in the recycling stream; this is also applicable to additives

- minimize the content and release of hazardous substances [1]; replace by less hazardous alternatives where possible
- minimize loss of materials, components/ parts or products into the environment
- consider the use of biodegradable materials only for parts/ components which have a high risk of getting lost into the environment (thus not being recovered)

NOTE 1 There are currently only few test methods and certification schemes for assessing biodegradability in an aquatic (marine) environment. Therefore, it is not yet clear which materials are suitable for biodegradable components for an aquatic (marine) environment. Since there is a lot of ongoing research the future availability of biodegradable materials cannot be excluded, and it is therefore important to add this option to this document.

It is important that the product performance shall be retained. Materials properties shall be balanced with circularity and environmental aspects (including weight and volume of the product). More details can be found in “Part 3 technical requirements”.

The sourcing of materials for coatings, finishes and other surface treatments shall be included in the selection and design considerations.

NOTE 2 Additional information is available in ISO 14009 *Environmental management systems — Guidelines for incorporating material circulation in design and development* [4] and ISO/ CD 59014 *Secondary materials — Principles, sustainability and traceability requirements* [5].

### 5.1.2 Optimize weight and volume of the product and its packaging

Evaluate the necessary values for strength, weight and durability.

- Over-designing may result in a higher weight and a higher volume/ general material use.
- Correct design may reduce the weight/ volume/ general material use for any component/ part or product.

A risk assessment/ analysis may be necessary to evaluate how much strength, weight and durability is needed to ensure the necessary/ required reliability of a component/ part or product. Maximizing the specific strength of the component/ part or product allows for minimizing its weight while ensuring that the required strength and durability are not compromised.

Criteria to be considered specifically towards product packaging (and compacting) are (non-exhaustive list):

- supply in bigger quantities reducing the packing units
- compact the product as much as possible to reduce the volume
- optimize packaging towards improved stack ability
- eliminate the excessive use of protective packaging by taking into consideration the level of protection the respective product requires
- consider implementing re-usable packaging, e.g. transport containers which can be re-used/ taken back