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Circular design of fishing gear and aquaculture equipment - Part 1: general requirements and guidance

Kreislaufwirtschaft von Fischfanggeräten und Aquakulturausrüstungen - Teil 1: Allgemeine Anforderungen und Leitlinien

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ICS

English Version

Circular design of fishing gear and aquaculture equipment - Part 1: general requirements and guidance

Norm für kreislauforientiertes Design von
Fischfanggeräten

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European foreword

This document (prEN 17988-1:2023) has been prepared by Technical Committee CEN/TC 466 “Circularity and recyclability of fishing gear and aquaculture equipment”, 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 (“Single Use Plastic directive”, SUP) lays down rules on different plastic products, including fishing gear and aquaculture equipment containing plastics, and sets requirement to the Member States to establish Extended Producer Responsibility schemes (EPR schemes).

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 and aquaculture equipment in support of Directive (EU) 2019/904 was approved in line with Article 8(9) of the Directive.

Based on the mandate M/574, a standard with six parts and a technical standard (TS) on terms and definitions have been developed by CEN/TC 466.

The purpose of this series of documents is to provide stakeholders with requirements and guidelines to address the different aspects of circular design of fishing gear and aquaculture equipment, encourage preparing for re-use and facilitate recyclability at end of use. The standard parts are developed not only to support the Single Use Plastics directives (SUP), but the Port Reception Facilities (PRF) Directive as well as the extended producer responsibility (EPR).

These requirements and guidelines for the circular design of fishing gear and aquaculture equipment containing plastics can be applied in the design, manufacturing, use and recycling of such fishing gear/equipment.

This document, part 1 of the standard, describes the general principles of circular design of fishing gear and aquaculture equipment (see Clause 4) . Additionally, it identifies the stakeholders of each part of the series of standards on the circular design of fishing gear and aquaculture equipment and how the stakeholders are related to each other (see Clause 7). This document also illustrates how all parts of this standards relates to each other (see subclauses 4.3 and 6.1).

The focus of these standard parts, and the mandate, is on circularity. Therefore, 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 and other components on the environment. It will provide general design criteria for achieving this goal while balancing it with the impact on its performance (e.g. catchability or life span). When implementing the requirements and guidance in these standard parts, balanced trade-offs to other environmental issues therefore need to be taken into account.

The intention with this multipart standard is also to facilitate for organizations to contribute to the UN Sustainability Development Goals (SDG):

- 9 Industry, innovation, and infrastructure.
- 12 Responsible consumption and production.
- 14 Life below water.

Specially SDG 14.1 is particularly relevant.

prEN 17988-1:2023 (E)**1 Scope**

This document specifies the stakeholders of each part of the series of standards on the circular design of fishing gear and aquaculture equipment and how the stakeholders are related to each other.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions are listed in this document.

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

4 General principles of circular design of fishing gear and aquaculture equipment**4.1 Circular economy**

Circular economy refers to an economic model of production and consumption in which final materials are repaired, reused, recovered and recycled back into the cycle as much as possible. Ultimately, waste is kept to a minimum.

4.2 Waste hierarchy

The EU Waste Framework Directive (Reference [1]), the cornerstone of European waste policies and legislation, is a strategy to achieve a circular economy by providing guidance on circular product design through prioritization of End-of-Use options. It defines terminology used in regard to waste and concepts and principles such as the extended producer responsibility (EPR), the waste hierarchy, and the polluter pays principle. Preferred waste management for the European Union is organized and described in the "waste hierarchy" where the goal is to move away from disposal at landfills and act towards prevention of waste from occurring.

Its primary purpose is to minimize adverse environmental effects from waste and to increase and optimize resource efficiency in waste management and policy.

It ensures that, from the start, products are designed to reduce overall waste. Additionally, the waste hierarchy prepares for a product's end-of-use so that materials can re-enter the cycle by means of reuse, recycling, and recovery.

Figure 1 illustrates the transition from Linear Economy (I) towards Circular Economy (III) via Recycle Economy (II).

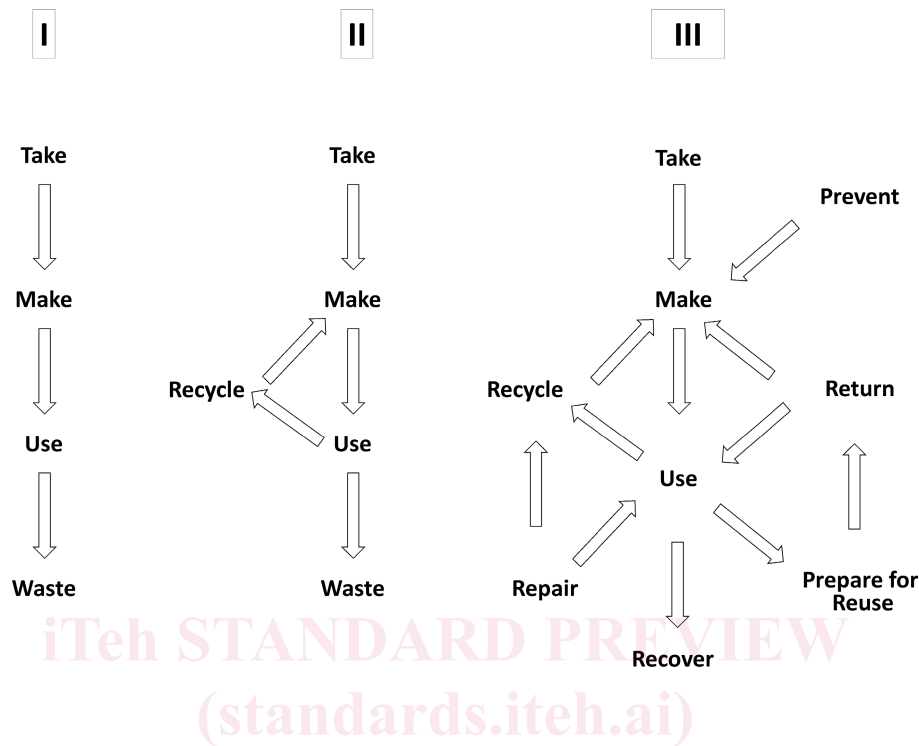


Figure 1 — Transition from Linear Economy towards Circular Economy via Recycle Economy

4.3 Life cycle perspective

From a life cycle perspective, both the waste hierarchy and circular economy consider the whole life cycle of a product, including the pre-use phase, use phase, and post-use phase. Both the waste hierarchy and circular economy have evolved over time to emphasize the design and use of a product before it turns into waste. Therefore, we can see that circular economy and waste hierarchy share a joint philosophy, aiming to manage waste by rethinking, redesigning, and repurposing in order to improve the resource efficiency of a product and to reduce the generation and adverse impact of waste. The minor difference is that the waste hierarchy still allows disposal, while the framework of a circular economy does not. The characteristics and performance of materials/parts shall be preserved as much as possible. 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 stackability) of parts/ kits, etc.... shall be taken into account.

4.4 Resource and material efficiency

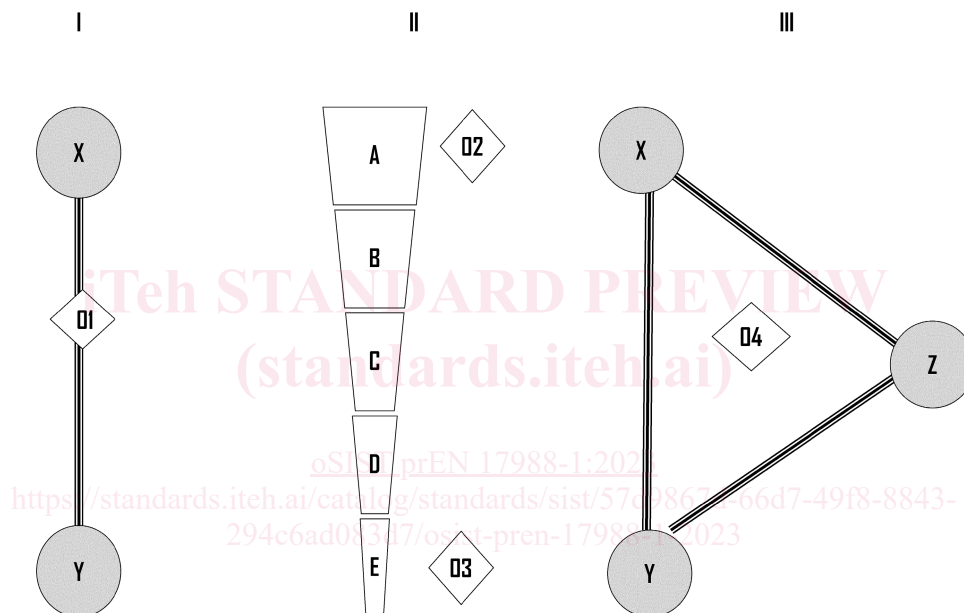
Various approaches, known as R-strategies, have been developed to achieve less resource and material consumption in product chains and make the economy more circular. All R-lists resemble each other and differ mainly in the number of circularity strategies they put forward. They typically present a range of strategies ordered from high circularity (low R-number) to low circularity (high R-number).

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Figure 5 in Annex A demonstrates how the five Waste Hierarchy components correspond with the 11Rs of Circular Economy.

4.5 Optimizing strategies in product design

Generally, product designs that optimize durability, ease of maintenance and repair, upgradability, re-manufacturability, separability, disassembly and reassembly are considered key elements for the transition towards circularity of products. Figure 2 demonstrates the design paradigm transition from Functional design towards Circular Design.



Key

I	Functional design at LINEAR ECONOMY	O ₃	Least favoured option at RECYCLE ECONOMY
II	Waste Hierarchy at RECYCLE ECONOMY	O ₄	Optimum at CIRCULAR ECONOMY
III	Circular design at CIRCULAR ECONOMY	A	Prevention of waste at RECYCLE ECONOMY
X	Best performance of Fishing Gear / Aquaculture Equipment	B	Preparing for reuse at RECYCLE ECONOMY
Y	Total Cost of Ownership	C	Recycling at RECYCLE ECONOMY
Z	Best End of Use Handling	D	Recovery at RECYCLE ECONOMY
O ₁	Optimum at LINEAR ECONOMY	E	Disposal at RECYCLE ECONOMY
O ₂	Most favoured option at RECYCLE ECONOMY		

Figure 2 — Transition from functional design to circular design

4.6 Consideration related to Extended Producer Responsibility (EPR) schemes

4.6.1 EPR Schemes

EPR is a self-financed and incentivized system with no cost to public budgets. It makes producers accountable for financing end-of-use cost (take-back and recycling) while providing incentives for producers to prevent waste at the source as well as incentive producers to design products that are recyclable/reusable.

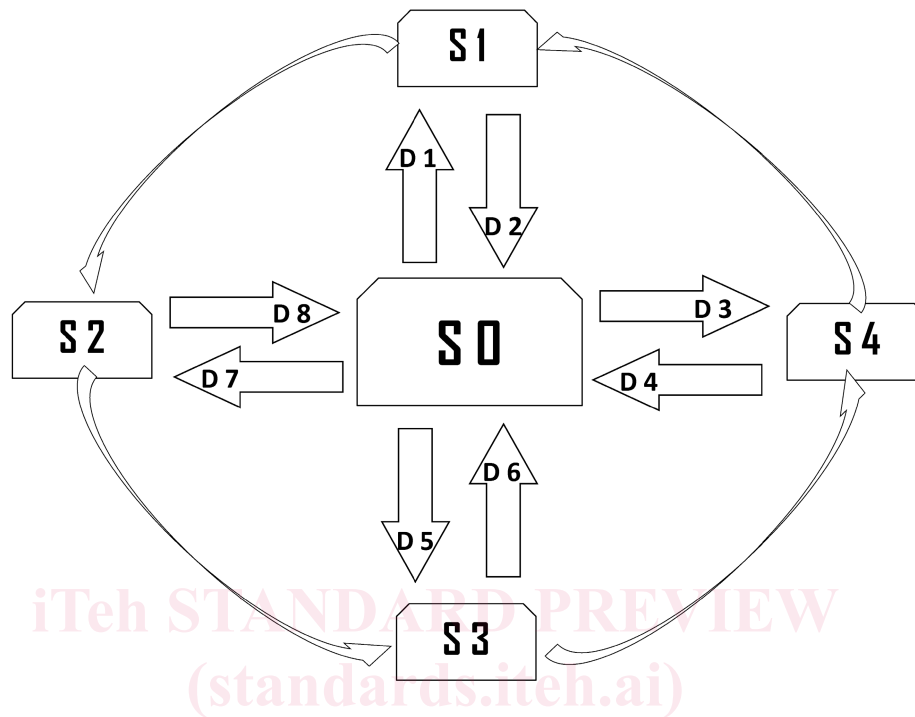
EPR schemes are required for products regulated in the Single Use Plastic Directive 2019/904 § 8 (Reference [2]) including Fishing gear and aquaculture equipment. The objectives of this Directive are to prevent and reduce the impact of certain plastic products on the environment, in particular the aquatic environment, and on human health, as well as to promote the transition to a circular economy with innovative and sustainable business models, products and materials. Specifically 27 % of the waste is coming from fishing gear at Europe 's beaches and seas. As plastic components of fishing gear have high recycling potential, Member States should, in line with the polluter pays principle, introduce EPR for fishing gear and components containing plastic to ensure separate collection of waste fishing gear and to finance environmentally sound waste management of waste fishing gear, in particular recycling.

Figure 3 gives an overview over what is covered by the EPR in the context of Fishing Gear / Aquaculture Equipment

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Key	
S0	Producer Responsibility Organization
S1	Fishing Gear / Aquaculture Equipment Producer & Repairer
S2	Fisher / Aquaculturist
S3	Fishing Gear / Aquaculture Equipment Collector & Sorter
S4	Plastic / Metal Recycler & Recoverer
D1	Service documentation for registrations, declarations, reporting, collection & treatment
D2	Contract for information exchange & financing
D3	Contract for Recycling / Recovery
D4	Certificates for Recycling / Recovery
D5	Contract for Collection & Sorting
D6	Certificates for Collection & Sorting
D7	Service for Producer Responsibility Organization on training and awareness raising
D8	Contract for Producer Responsibility Organization on training and awareness raising

Figure 3 — EPR for fishing gear and aquaculture equipment

4.6.2 EPR implementation opportunities and challenges linked specifically to waste gear

Opportunities:

- Return of waste fishing gears should be free of charge for the end user in order to reduce marine litter.