Verfügbare Daten:

— jährliche beschaffte Menge an Stahlspulen: 138 600 Tonnen;

— jährliche verkaufte Menge an Profilen: 126 000 Tonnen;

— Transport per LKW;

  — betriebsartspezifische Daten nach Anhang G, Abschnitt G.2: Nutzlast eines LKW = 85 % von 27 Tonnen = 22,95 Tonnen je LKW;

  — Tabelle G.1: Standardentfernung für Modul A2: 100 km Transportentfernung, nur Hinfahrt;

  — Tabelle G.2: Standardentfernung für Modul A4: 500 km vom Werkstor zur Baustelle im regionalen Markt;

  — Kraftstoffverbrauch: konservativer Wert von 35 l Diesel / 100 km;

  — 1 l Diesel = 2 640 g CO_2 oder 2,64 kg CO_2 Gleichung [23];

— EPD des Stahllieferanten, der ein gesamtes Treibhauspotenzial für 1 Tonne Stahl von: A1-A3 = 2 600 kg, C3 = 2 kg und D = −1 700 kg angibt..

Berechnungen:

A2, Transport vom Stahlhersteller zum Rollformen:

— 138 600 Tonnen / 22,95 Tonnen je LKW = 6 039 LKW;

— 6 039 LKW × 100 km = 603 900 km / Jahr;

— Kraftstoffverbrauch = 6 039 × 35 = 211 373 l Diesel;

— Menge an produziertem CO_2 = 211 373 × 2,64 kg CO_2-Äq. = 558 024 kg CO_2-Äq;

— spezifischer Kraftstoffverbrauch / Tonne transportierter Stahl = 558 024 kg CO_2-Äq. / 138 600 Tonnen Stahl = 4,03 kg CO_2-Äq./ Tonne transportierter Spulen.

A4, Transport vom Rollform-Unternehmen zur Baustelle:

— 126 000 Tonnen / 22,95 Tonnen je LKW = 5 490 LKW;

— 5 490 LKW × 500 km = 2 744 440 km / Jahr;

— Kraftstoffverbrauch = 27 444 × 35 = 960 544 l Diesel;

— Menge an produziertem CO_2 = 960 544 × 2,64 kg CO_2-Äq. = 2 535 836 kg CO_2-Äq;

— Spezifischer Kraftstoffverbrauch / Tonne transportierter Stahl = 2 535 836 kg CO_2-Äq. / 126 000 Tonnen Stahl = 20,12 kg CO_2-Äq./ Tonne transportierter Spulen.

Schlussfolgerung:

— Im Vergleich zu der während der Herstellung der Stahlspule produzierten Masse an CO_2 entspricht der relative Beitrag des Transports zu und von dem nachgelagerten Unternehmen (4,03 kg + 20,12 kg) / 2 600 kg = 0,93 %.

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L.2.3 Schrotterzeugung (Modul A3)

Die Schrotterzeugung ist für ein einzelnes Projekt oder einen Auftrag schwierig abzuschätzen, kann aber geschätzt werden, indem die jährliche Menge an verkauftem Schrott durch die Menge an während desselben Zeitraums beschafften Stahl oder Aluminium geteilt wird. Der erzeugte Schrott, der deklariert werden sollte, gibt die Effizienz des Prozesses an, d. h. die erforderliche Masse zur Herstellung von 1 kg des Produkts. Das Verfahren wird in Beispiel 3 beschrieben.

BEISPIEL 3 Kaltrollform-Herstellungsprozess montagefertiger Tragwerksprofile.

Verfügbare Daten:

— jährliche Masse an verkauftem Schrott: 14 000 Tonnen;

— jährliche Masse an beschafftem Stahl: 138 600 Tonnen.

Berechnungen:

— Schrottrate = 14 000 / 138 600 = 10 %.

Schlussfolgerung:

— Die Schrottrate entspricht 10 %. Um 1 kg des fertigen Produkts herzustellen, werden 1,1 kg Stahl benötigt und die Umweltbelastung in der EPD des Herstellers sollte mit 1,1 multipliziert werden.

— Die Schrottmenge in einer EPD sollte in einem geschlossenen Kreislauf recycelt sein oder in Modul D deklariert werden. Um die Deklaration zu vereinfachen, sollte die dem Recycling zugeführte Schrottmenge als potenzieller Vorteil deklariert werden.

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– Entwurf –

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 17662

May 2021

ICS 91.010.99; 91.080.13; 91.080.17

English Version

Execution of steel structures and aluminium structures - Environmental Product Declarations - Product category rules complementary to EN 15804 for Steel, Iron and Aluminium structural products for use in construction works.

Ausführung von Stahltragwerken und Aluminiumtragwerken - Umweltproduktdeklarationen - EN 15804 ergänzende Produktkategorieregeln für tragende Produkte aus Stahl, Aluminium und Metall für den Einsatz in Bauwerken

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 135.

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European foreword

This document (prEN 17662:2021) has been prepared by Technical Committee CEN/TC 135 “Execution of steel structures and aluminium structures”, the secretariat of which is held by SN.

This document is currently submitted to the CEN Enquiry.

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Introduction

As in EN 15804:2012+A2:2019, in addition:

This European Standard provides rules for Environmental Product Declarations (EPD) for steel and aluminium structural elements which are used in buildings and civil engineering works. It complements the core product category rules for all construction products and services as established in EN 15804:2012+A2:2019.

This document:

- gives precision to the material specific system boundaries, including mandatory modules C and D
- specifies the use of modules A1 and A3
- gives precision to when and where to include impact from coatings
- gives precision to when and how to report additional indicators
- gives precision to allocation procedures for multi-output processes along the steel and aluminium manufacturing process chain
- gives precision to allocation procedures for re-use and recycling
- provides in Annexes G, H, and I, default data and scenarios for transport, reuse and re-cycling, and erection/deconstruction
- gives guidance in Annex L for downstream companies on how to use an Environmental Product Declaration, EPD, from a supplier

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1 Scope

This document provides product category rules (c-PCR), that are complementary to EN 15804:2012+A2:2019, for Type III environmental declarations for steel components and aluminium components fabricated from steel or aluminium constituent products to be used for structural purposes in buildings and civil engineering works, where their characteristic affects the mechanical resistance and stability of these construction works or parts thereof. The structures can be built-in structures or open structures. This document also provides guidance for other metal construction products where a specific PCR as EN standard does not exist.

This document is intended to be used in conjunction with EN 15804:2012+A2:2019.

This document can be used also for non-structural metal products or metal parts thereof where a specific PCR as EN standard does not exist.

This document is intended to be used for cradle-to-gate with options or cradle to grave assessment, provided the intention is properly stated in the system boundary description.

The assessment of social and economic performances at product level is not covered by this standard.

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.

EN 15804:2012+A2:2019, *Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products*

EN 1090-1:2009+A1:2011, *Execution of steel structures and aluminium structures - Part 1: Requirements for conformity assessment of structural components*

EN ISO 14044:2006, *Environmental management - Life cycle assessment - Requirements and guidelines (ISO 14044:2006)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 15804:2012+A2:2019 and the following apply.

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

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

3.1
recycled metals
metals produced from secondary materials which substitutes primary materials

Note 1 to entry: E.g. recycled metal ingot or slab.

Note 2 to entry: Recycled metals are typically produced from metal scrap which are secondary materials for recycling. The fraction of recycled metal within a product can vary from low proportion to high depending on the sourcing of its production, e.g. fraction of virgin metal vs fraction of metal scrap.

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