SLOVENSKI STANDARD
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Protihrupne ovire za cestni promet - Trajnostnost: Deklariranje ključnih kazalnikov lastnosti (KPI)

Road traffic noise reducing devices - Sustainability: Key Performance Indicators (KPIs) Declaration

Lärmschutzvorrichtungen an Straßen - Nachhaltigkeitsbewertung: Deklaration der Leistungsindikatoren

Dispositifs de réduction du bruit du trafic routier - Évaluation de la contribution au développement durable : déclaration des indicateurs clés de performance (ICP)

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17.140.30	Emisija hrupa transportnih sredstev	Noise emitted by means of transport
93.080.30	Cestna oprema in pomožne naprave	Road equipment and installations

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

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European foreword

This document (prEN 17383:2021) has been prepared by the Technical Committee CEN/TC 226 “Road equipment”, the secretariat of which is held by AFNOR, it concerns the whole life sustainability of Road Traffic Noise Reducing Devices (NRDs).

This document is currently submitted to the CEN Enquiry.

Introduction

When placing a construction product on the European market the manufacturer is expected to present a Declaration of Performance (DoP) with reference to the Basic Work Requirements (BWRs) as listed in the CPR (Regulation EU 305/2011).

This document is intended as a supporting standard for the manufacturer to declare the performance of Road Traffic Noise Reducing Devices (RTNRD) with reference to BWR 7 *Sustainable use of Natural Resources* as mentioned in the CPR.

The performance declared with reference to BWR 7 will be part of the DoP including other product characteristics.

Considerations for materials (e.g. steel coils, panels of mineral wools, acryl transparent sheet, ..) if not related to the intended use (RTNRD) are not covered by this document.

This document presents the Key Performance Indicators (KPIs) the RTNRD manufacturers will provide to express the performance declared with reference to BWR7 and to allow better understanding on how their product can be considered "sustainable".

The declared KPIs will be referred to the manufacturing process included raw materials used and will consist of measurable quantities to assess product sustainability.

Additional information will be provided by the manufacturer about all processes that are needed to transport, install, maintain, repair, remove and recycle RTNRDs. This will allow a third party to assess product sustainability of the RTNRDs over their entire life cycle.

This document is also intended to help manufacturers to identify the materials and product stages with the most important impact on different sustainability aspects.

Besides manufacturers when other users of present standard are foreseen:

— designers when calculating the Life Cycle Analysis (LCA) of the product used;

— third parties implementing infrastructure rating systems to determine how the project of the construction work has incorporated sustainability;

— procuring entities can use the KPIs to promote in tender specifications more sustainable solutions and innovations;

— private developers to use RTNRDs on their own land similar to those used on public roads.

Declared KPIs and additional information will be provided according to the valid standards at the time of product placing on the market.

1 Scope

This document provides Product Category Rules (PCR) for the declaration of the Sustainability of RTNRDs according to EN 15804:2012+A2:2019.

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*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

— IEC Electropedia: available at shttps://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp

3.1
road traffic noise reducing device
RTNRD
device that is designed to reduce the propagation of traffic noise away from the road environment

Note 1 to entry: The RTNRD may comprise acoustic elements (3.2) only or both structural (3.3) and acoustic elements.

Note 2 to entry: Applications of RTNRD include noise barriers (3.4), claddings (3.5), covers (3.6) and added devices (3.7).

3.2
acoustic element
element whose primary function is to provide the acoustic characteristic of the device

3.3
structural element
element whose primary function is to support or hold in place acoustic elements

3.4
noise barrier
noise reducing device, which obstructs the direct transmission of airborne sound emanating from road traffic

3.5
cladding
noise reducing device, which is attached to a wall or other structure and reduces the amount of sound reflected

3.6
cover
noise reducing device, which either spans or overhangs the highway

3.7
added device
added component that influences the acoustic characteristic of the original noise-reducing device

Note 1 to entry: The added device is acting primarily on the diffracted energy.

3.8
working life
period of time during which the performance of the device will be sustained

[SOURCE: EN 14389]

3.9
design life
useful life of a RTNRD, as intended by the designer

3.10
durability
ability to maintain the required technical performance throughout the working life subject to specified maintenance under the influence of foreseeable actions

Note 1 to entry: See EN 14389.

3.11
roadside exposure
conditions experienced by the noise reducing device installed alongside a road

3.12
Sustainability Key Performance Indicator
KPI
quantitative evaluation of the relevant performance of a characteristic

3.13
RTNRD Life Cycle
succession of four key distinct stages; (1) Production; (2) Installation; (3) Usage, including maintenance, repair and replacement, and (4) Removal

Note 1 to entry: Definitions related to the Life Cycle Assessment procedure.

3.14
Environmental Product Declaration
EPD
environmental declaration providing quantified environmental data using predetermined parameters and, where relevant, additional environmental information

Note 1 to entry: The calculation of predetermined parameters is based on the ISO 14040 series of standards, which is made up of ISO 14040, and ISO 14044. The selection of the predetermined parameters is based on ISO 21930 (adapted from EN ISO 14025).

Note 2 to entry: An EPD covering only the product stage in LCA is said to be “cradle to gate” and is based on information modules A1 to A3 as per EN 15804. See Figure 1.

Note 3 to entry: An EPD is said to be “cradle to gate with options” when it covers the product stage and selected further life cycle stages. It is based on information modules A1 to A3 plus other selected optional modules, e.g. end-of-life information modules C1 to C4. Information module D may be included in this EPD as per EN 15804. See Figure 1.

Note 4 to entry: An EPD may cover the life cycle of a product according to the system boundary. In this case, the EPD covers the product stage, installation, use and maintenance, replacements, demolition, waste processing for re-use, recovery, recycling and disposal, and is said to be “cradle to grave”. It covers all information modules A1 to C4 as per EN 15804. In this EPD, the information module D may be included. See Figure 1.

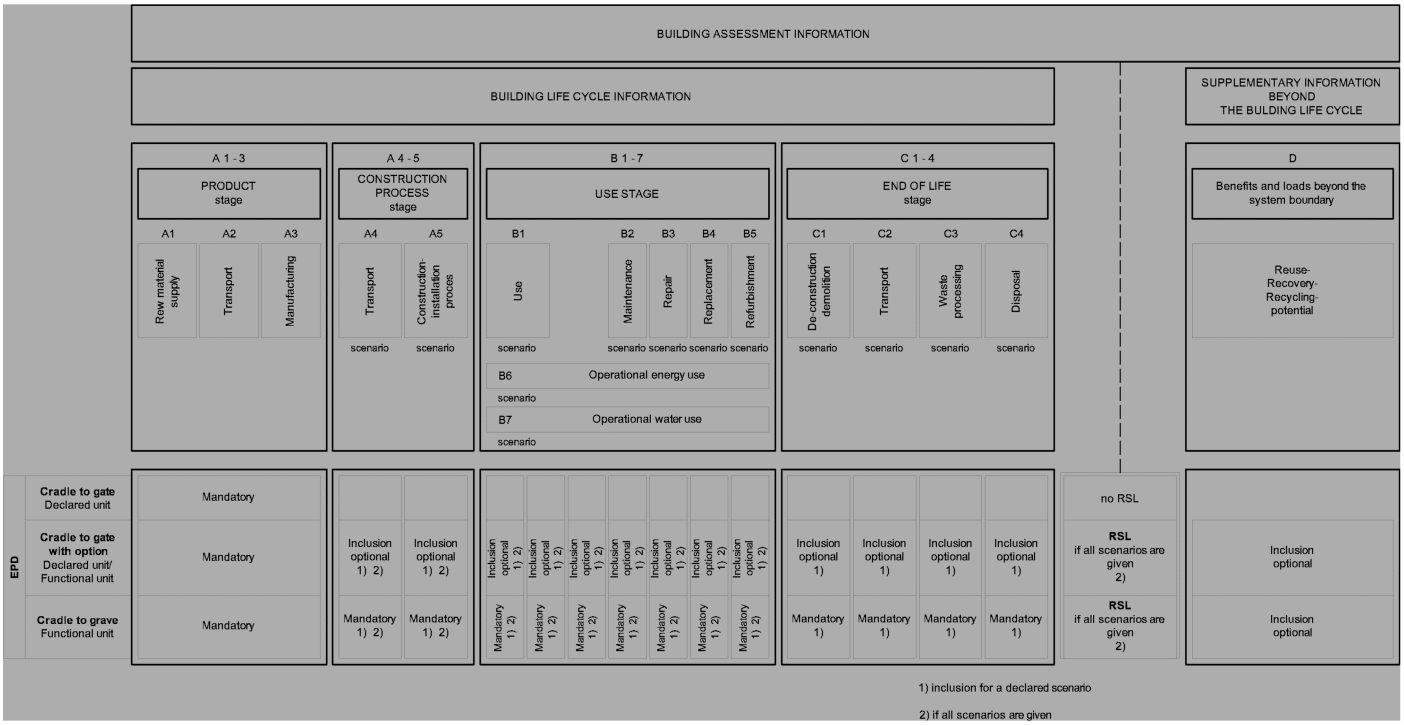

Figure 1 — Types of EPD with respect to life cycle stages covered and modules for sustainability assessment (from EN 15804:2012+A2:2019, Figure 1)

3.15
Product Category Rules
PCR
set of specific rules, requirements, and guidelines for developing Environmental Declarations for one or more product categories

[SOURCE: EN ISO 14025:2010]

3.16
Life Cycle Assessment
LCA
compilation and evaluation of the inputs, outputs and the potential environmental impacts of a NRD throughout its life cycle

[SOURCE: EN ISO 14044:2006]

3.17
Life Cycle Impact Assessment
LCIA
phase of life cycle assessment aimed at understanding and evaluating the magnitude and significance of the potential environmental impacts for a product system throughout the life cycle of the product

3.18
Life Cycle Inventory
LCI
phase of life cycle assessment involving the compilation and quantification of inputs and outputs for a product throughout its life cycle

3.19
system boundary
set of characteristics specifying which unit processes are part of the assessment

3.20
cut-off rule
criterion for the exclusion of input and outputs in the life cycle assessment

3.21
functional unit
quantified performance of a product system for use as a reference unit

3.22
declared unit
quantity of a construction product for use as a reference unit in an EPD for an environmental declaration based on one or more information modules

Note 1 to entry: Examples of declared unit are mass (kg), volume (m^3).

3.23
Greenhouse Gas
GHG
gaseous constituent of the atmosphere, both natural and anthropogenic, that absorbs and emits radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth's surface, the atmosphere and clouds

3.24
Global Warming Potential
GWP
potential of emissions of greenhouse gases to air

Note 1 to entry: GWP is expressed as kg of carbon dioxide (CO_2) equivalents.

Note 2 to entry: GWP is also called carbon footprint.

Note 3 to entry: GWP is usually expressed for time horizon 100 years (GWP100).

3.25
Stratospheric Ozone Depletion potential
ODP
potential of destruction of the stratospheric ozone layer by anthropogenic emissions of ozone depleting substances

Note 1 to entry: ODP is expressed in kg of CFC-11 equivalents.

Note 2 to entry: Because of stratospheric ozone depletion, a larger fraction of UV-B radiation reaches the earth surface. This can have harmful effects upon human health, animal health, terrestrial and aquatic ecosystems, biochemical cycles and on materials.

3.26
Photochemical Ozone Creation Potential
POCP
potential of formation of reactive substances (mainly ozone) at ground-level, which are injurious to human health and ecosystems and which also may damage crops

Note 1 to entry POCP is expressed in kg of ethylene (C_2H_4) equivalents.