KRAMPE HAREX®

KNOW WHY.

KNOW WHY
YOU BUILD SUSTAINABLY WITH KRAMPEHAREX.

Low emission values and life cycle costs, high energy efficiency and a long service life – the requirements for sustainable construction are high. Building materials and construction products used in a building have a significant impact on the environment. In order to obtain a valid basis of information for the life cycle assessment of a product, an Environmental Product Declaration (EPD) is often required to disclose the CO2 balance of building products and thereby promote sustainable construction.

An EPD is a comprehensive, independently verified and registered product passport. It contains life cycle information, characteristics of the life cycle analysis and test results for a detailed assessment of building materials and construction products. They are based on the international standard ISO 14025. With regard to the construction industry, EPDs are based in particular on the EN 15804 standard for construction products, services and processes.

An EPD is ideal for communicating the environmental performance of building products and thus promoting sustainable construction. In the requirements for sustainable products, the focus today is primarily on the Global Warming Potential (GWP).

*"If you look at the entire life cycle of our steel fibres, our production is almost CO_2-neutral."**

*Cross-system consideration taking into account the high recyclability of KrampeHarex steel fibres

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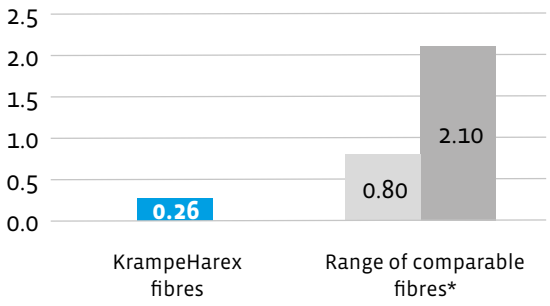
Know why you build sustainably with KrampeHarex. Our EPD.

The EPD of KrampeHarex for steel fibres with hooked ends covers approx. 90 % of the total production of KrampeHarex. The verified results are a benchmark in the market and a good message to the earth. They reflect KrampeHarex's consistent and effective sustainability strategy, with which we are working to continuously improve our own carbon footprint over the long term.

The diagram on the left shows the GWP of KrampeHarex steel fibres with hooked ends compared with other fibres from cradle-to-gate (A1: raw material supply, A2: transport to manufacturer, A3: manufacturing). The chart on the right contrasts the credits and loads outside the system boundaries (D: reuse, recovery or recycling potential related to A1 – A3).

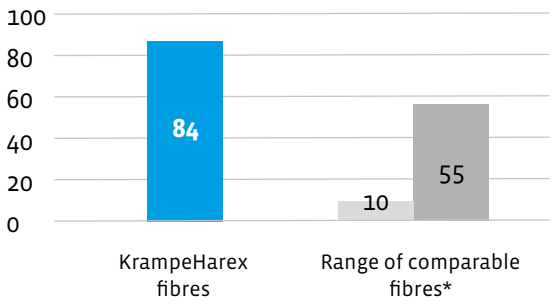
Production A1 – A3

GWP-total [kg CO_2-Eq.]



Recycling Potential D

GWP-total [%]



* Published EPDs of different platforms

While KrampeHarex fibres have a GWP of **0.26 kg Co_2-Eq.** for cradle-to-gate, the range of comparable fibres is between 0.80 and 2.10 kg Co_2-Eq. The KrampeHarex fibres have a recycling potential of **84 %**, while the comparable fibres achieve a range of 10 – 55 %.

These fibres from KrampeHarex are covered by the EPD:

Type of fibre & Shape of fibre	Length [mm]	Diameter [mm]	Material Specification	Nominal Tensile Strength [N/mm²]
DE	25 to 60	0.40 to 1.2	N = Normal tensile strength M = Medium tensile strength H = High tensile strength U = Ultra-high tensile strength	960 – 1.350 › 1.350 – 1.800 › 1.800 – 2.000 › 2.000

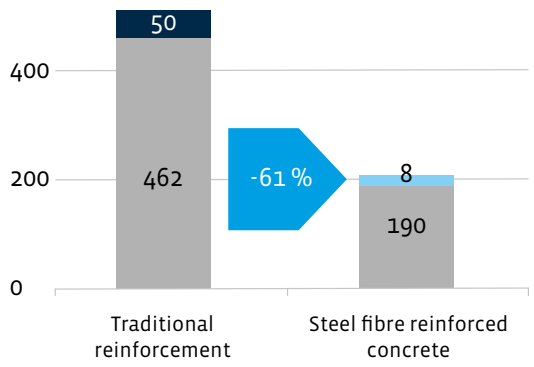
The contribution steel fibres make to sustainability – CO_2 savings due to optimal reinforcement.

The use of steel fibre reinforced concrete or steel fibre reinforced RC (combined reinforcement) significantly reduces the GWP compared to pure reinforced concrete.

REDUCTION OF GWP THROUGH THE USE OF STEEL FIBRES

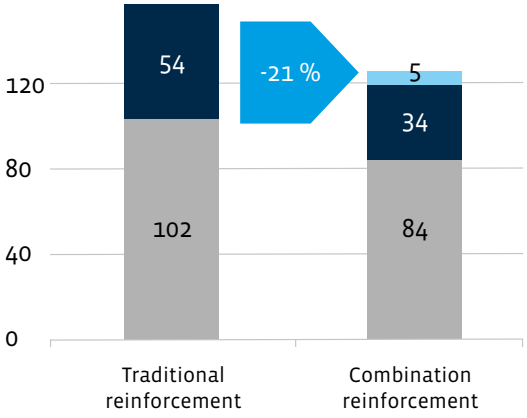
Example tunnel segments

[kg CO_2/m^3]



Example Industrial Floor

[kg CO_2/m^3]



Concrete Rebar Steel fibres

Data basis: EPD KH,0.257 kg CO_2/kg-Eq. / EPD C30/37: 238 kgCO_2/m^3 (environdec.com)
https://api.environdec.com/api/v1/EPDLibrary/Files/38b1b0b1-5f67-4599-524c-08dbdfa90a02/Data

In the case of the tunnel segments example, a large part of the Portland cement was substituted by granulated blastfurnace slag and metakaolin. In addition, steel fibres were used instead of rebars. Overall, this resulted in a reduction in GWP of **61 %**.

By using steel fibres for the punching shear reinforcement, it was possible to reduce the slab thickness of the industrial floor and therefore the minimum reinforcement required. As a result, a reduction in GWP of **21 %** was achieved.

KrampeHarex GmbH & Co. KG
Dr. Christian Neunzig
Phone +49 1525 4662464
E-Mail christian.neunzig@krampeharex.com

Link EPD

Creator

EN 15804 & ISO 14025

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