

A scenic landscape featuring a grassy field in the foreground, two large pine trees on either side, and a person walking in the distance. The sun is low in the sky, creating a warm, golden glow and lens flare effects. The background shows rolling hills and a clear sky.

Usage of Dramix® Steel Fiber in Precast and Impact on Sustainability

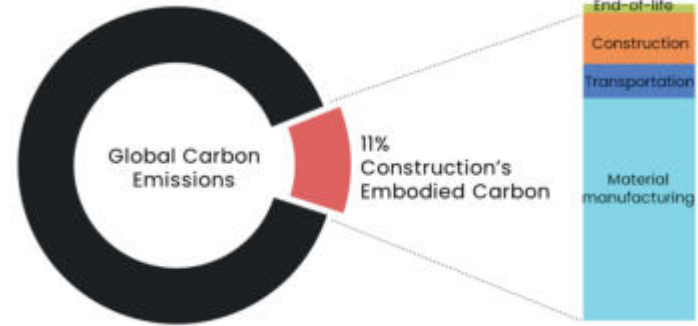
Kadir Aktas - NV Bekaert SA

09/2023

Sustainability is transforming the construction industry



Construction embodied carbon share



Regulations
&
Standards



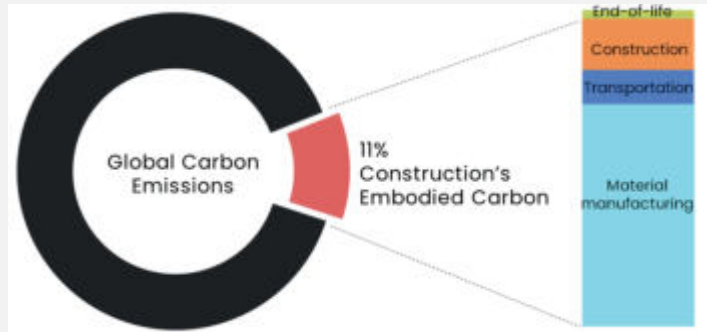
Building
Certifications



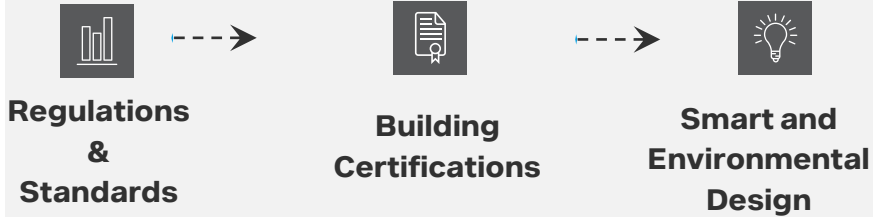
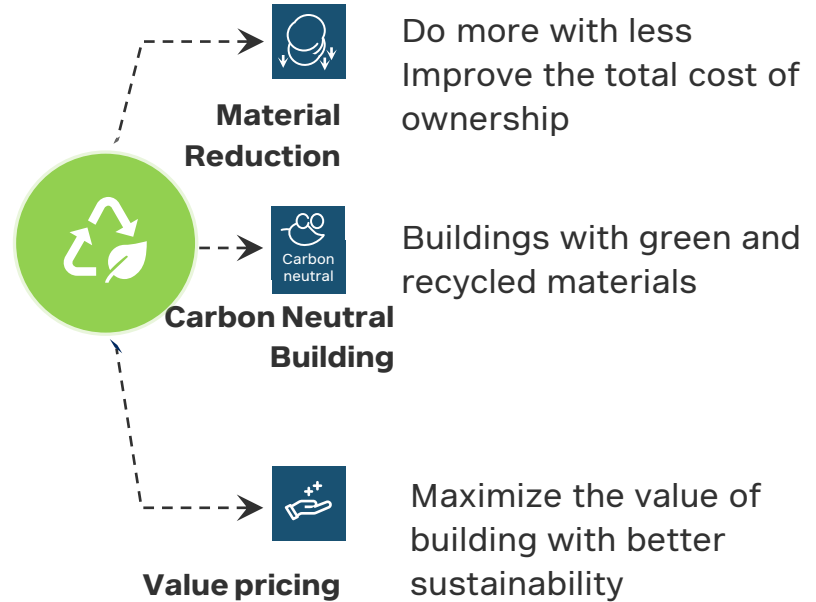
Smart and
Environmental
Design

Sustainability is transforming the construction industry

Construction embodied carbon share



Translates into customer needs

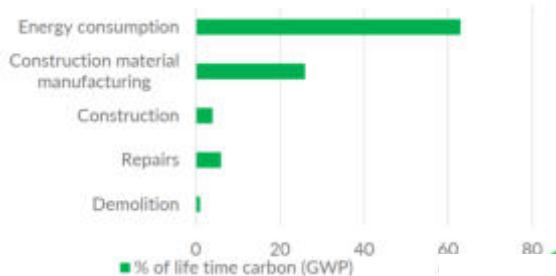


Material carbon emission is becoming more and more important

LCA of average apartment building



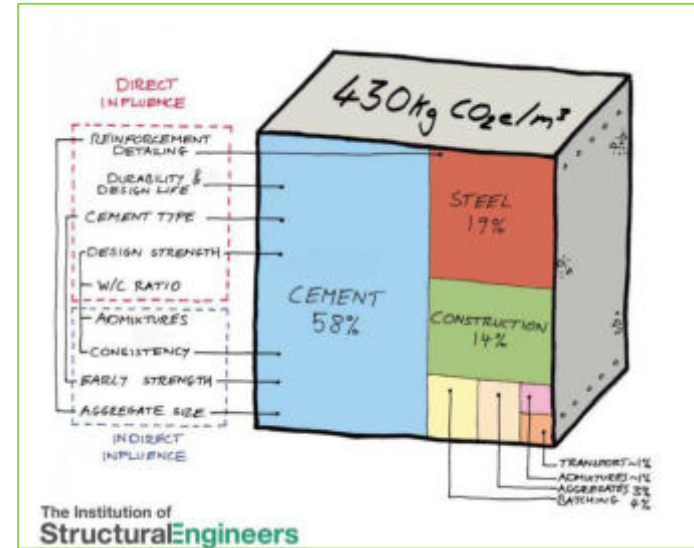
- 6 floors + cellar
- Floor area 2 500 m²
- 50 years life time



- Emission is the highest at during construction and other phases spread out over lifetime
- Energy emission expected to reduce by 50% with insulation and green energy sourcing

➤ **Material will represent a bigger portion of the total emission over buildings lifetime**

Key constituents of carbon emission





Steel fiber – Game changing concrete reinforcement

- The role of the reinforcement is to increase load bearing capacity and limit crack opening**
- Steel fibers for concrete appear in different colors, shapes and sizes**
- Engineered to replace rebar and mesh in concrete**
- Provides superior resistance to cracking and crack propagation**

Innovative reinforcement for a sustainable future



Less concrete + steel fiber = less CO₂

- Reduction of reinforcement material

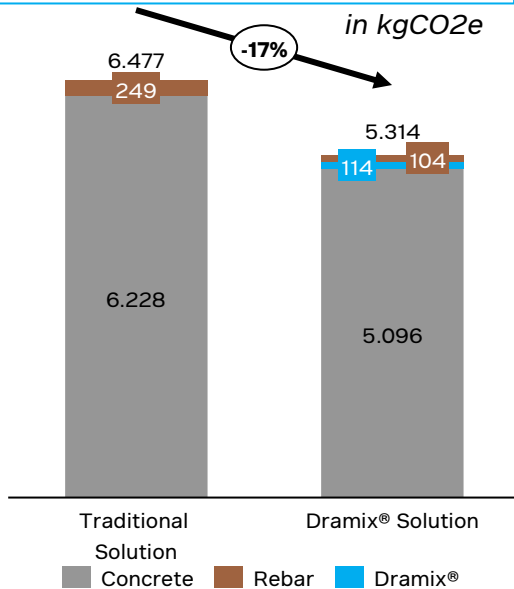
- Optimized design and reduced concrete thickness

- Advanced reinforcement solutions further decrease of tonCO₂e

Steel fiber carbon footprint on different precast applications

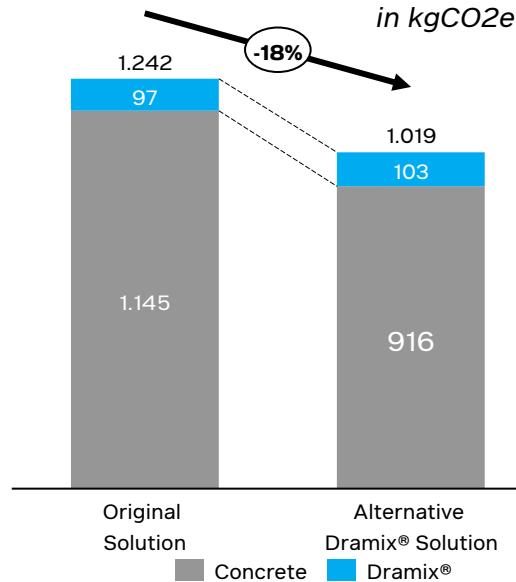
Utility Vaults – Electric Cabins

Reduction of CO2 emission by ~17% achieved in a less amount of reinforcement solution with reduced wall thickness



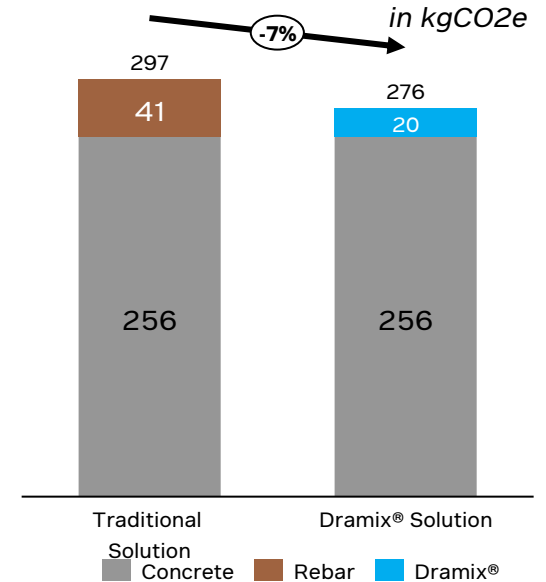
Precast Sandwich Wall

Reduction of thickness by 4 cm while increasing dosage from 20 to 25kg/m3 resulted in 18% less CO2 emission



Precast Pipes

Amount of total reinforcement reduced by 20% resulting in savings in material and CO2 footprint



Dramix® supports you along your sustainability journey



