

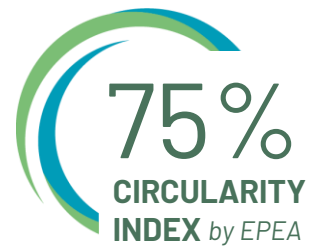
CIRCULARITY PASSPORT® PRODUCTS

HOLCIM

CPC-CONCRETE ELEMENTS

_ INNOVATION STORY

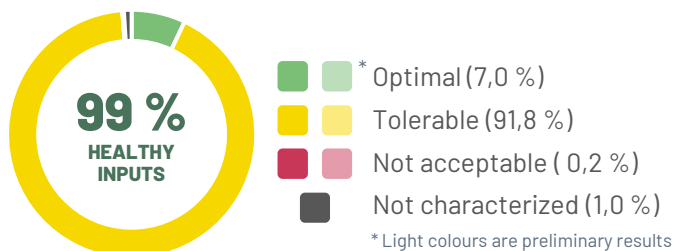
This product provides a light-weight and high-quality alternative for steel reinforced concrete elements. Its design allows for a long first use and product reuse. Upon the end of use the product can be cycled via designated concrete recycling streams. Innovation potential still lies in a separate recycling of carbon fibers.



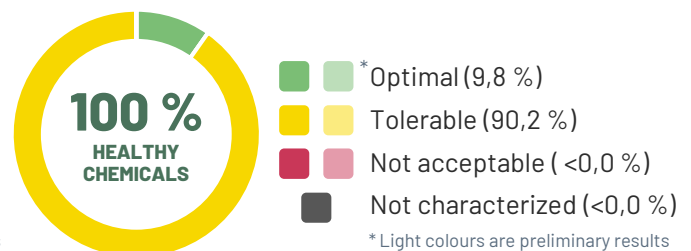
_ CRADLE TO CRADLE METRICS

All figures by weight

Material Health of Inputs



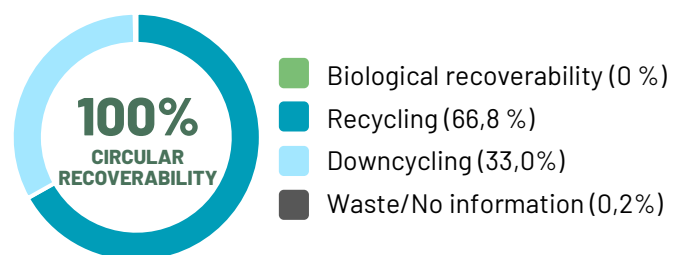
Material Health of Chemicals



Sourcing



Recoverability



_ RENEWABLE ENERGY: 100%

_ CARBON FOOTPRINT: 100% offset through CO₂ certificats.

_ PRODUCTION, USE AND AFTER-USE SCENARIO

Material Health: The following intended scenarios have been considered: final manufacturing, use according to user manual, recycling via designated disposal at a concrete recycling facility. The following unintended and unwanted after-use scenarios have been considered: landfilling, uncontrolled burning.

Sourcing: The analysis is based on verified supplier information. In this project 0% post-consumer recycle or responsible harvesting inputs were identified.

Recoverability: Materials intended for circular use were identified and recycling test reports were provided for the after-use scenario: concrete recycling via a designated service provider. The tests confirmed the suitability of est. 67% for type 1 concrete after recycling (s.a. "Recycling"). During the recycling process, some carbon fibers remain in the concrete material. Material health implications for this were assessed and deemed acceptable.

GLOSSARY

METHODS AND INSTRUMENTS

Circularity Index summarizes performance in Material Health (MH), Sourcing and Recoverability:

$$\text{Circularity Index} = (\text{MH Inputs} + \text{MH Chemicals} + \text{Sourcing} + \text{Recoverability}) / 4$$

MH Optimal: a / b rated according to C2C Certified® Standard V4.0

MH Tolerable: c rated according to C2C Certified® Standard V4.0

MH Not acceptable: x rated according to C2C Certified® Standard V4.0

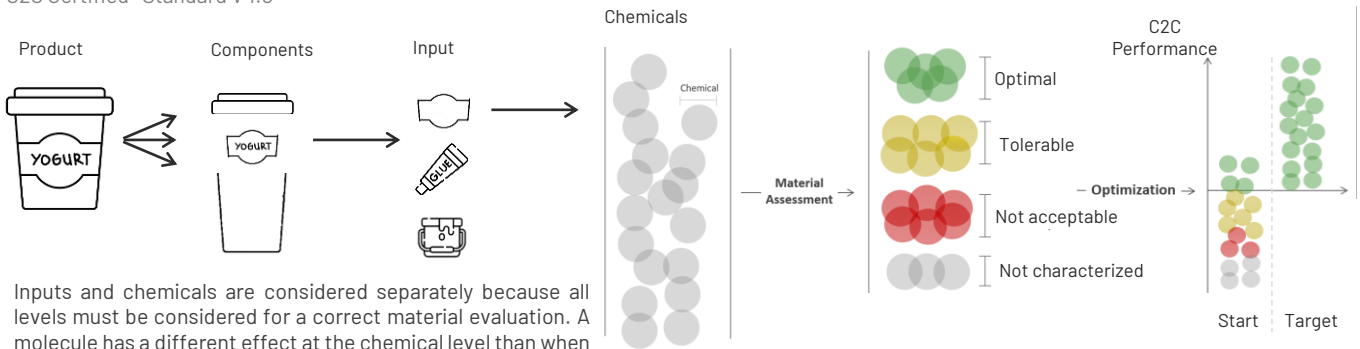
MH not characterized: insufficient data for rating

CRADLE TO CRADLE METRICS EXPLANATION

Material Health of Inputs and Chemicals

Explanation based on an example yogurt cup

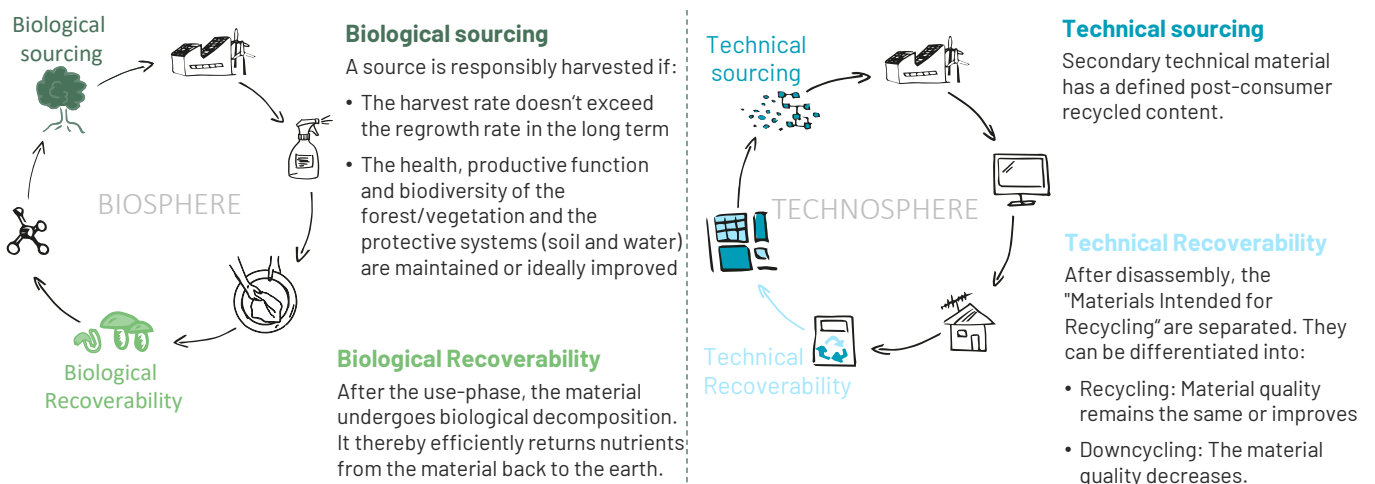
C2C Certified® Standard V4.0



Inputs and chemicals are considered separately because all levels must be considered for a correct material evaluation. A molecule has a different effect at the chemical level than when bound at the input level.

Sourcing and Recoverability

C2C Certified® Standard V4.0



RENEWABLE ENERGY

Share of renewable energy in final manufacturing facility (acc. to C2C Certified® Standard V4 definition).

CARBON FOOTPRINT

For calculation of the Carbon Footprint, Scope 1 and 2 emissions were considered (acc. to C2C Certified® Standard V4 definition). The following project was used for CO₂ compensation: 400 MW Solar Power Project at Bhadla, Rajasthan (Gold Standard).