CSC-Certified Concrete: Advancing Responsibly Sourced Materials for Sustainable Buildings

Concrete Sustainability Council- Concrete Innovations July 16th 2025

July 2025

Why is the CSC important?

Concrete is the most widely used construction material and is the second most used material after water, because of its versatility and durability.

Materials' consumption in a typical building:

- **Concrete: 70-80% by mass**

The responsible sourcing of its constituents as well as the sustainable manufacturing are pivotal matters to the construction sector.

Concrete has a major role to play to enable the development of sustainable and resilient buildings and communities around the world.

The Concrete Sustainability Council is ...

... the first & only established certification system for concrete
... founded in November 2016

... 'FSC for concrete'

... advocating for responsibly sourced concrete ... as the construction material of choice

...Third paty verified

Regional System Operators & Sector Associations

- GCCA
- Concrete Europe
- FIHP (LatAm)
- Fedbeton (Belgium)
- BTB (Germany)
- Fedeerbeton (Italy)
- Betonhuis (The Netherlands)
- THBB (Turkey)
- GVTB (Austria)
- Grey Matters (MENA)

Industry

- Dyckerhoff
- CRH
- Heidelberg Materials
- Holcim
- Titan

Certifiers

- Applus (ES, LatAm)
- NSF (USA)
- ICMQ, ASACERT (IT)
- KGS (TR)
- Kiwa (DE,NL, BE, LX)
- SGS (CH)
- SKG-IKOB (NL)
- KCL (Korea)
- BPS (Austria)
- VDZ, BAU-ZERT, G-CERT, SIC-ZERT, Füz Süd, PÜZ BAU, TÜV Rheinland (DE)

Sponsors

- Güteschutz Beton
- KTI
- Green Fair Consulting
- Climate Earth

The CSC is pushing the concrete sector towards further improving its sustainability practices.



GCCA Picture competition 2024, left to right: Edwin Loyola, WTC NY,- Renato Fontanari Thomson, Biscayne Boulevard- Wentao Guo, American Museum of Natural history

What is CSC's mission?

CSC enables the concrete industry and its main suppliers – i.e. cement and aggregate industry – to communicate and demonstrate the responsible sourcing credentials of its products

Promote Sustainability

The CSC aims to advance sustainability in the concrete industry by promoting economically, environmentally, socially, and responsibly managed practices.

Credibility and Influence

It provides a certification system to showcase the sustainability performance of concrete and its value chain transparently. CSC is independent and the certification process review is performed by independent certification bodies. CSC promotes knowledge sharing, outreach and awareness rising

Support Global Goals

The CSC aligns its mission with the U.N. SDGs, contributing to global efforts for a sustainable future. Responsibly sourced concrete supports sustainable development by ensuring ethical practices, reducing environmental impacts, and contributing to resilient, long-lasting structures.

Drive Industry Change:

By fostering collaboration among stakeholders, the CSC helps the concrete sector improve sustainability standards worldwide. CSC is supported by competent and strong partners around de world, namely industry associations, certification bodies, concrete, cement and aggregates producers.

What makes CSC concrete more sustainable?

Supporting SDG 15: Extraction activities managed under an Environmental Management System/Biodiversity management / action plan for cement and aggregates operations

Supporting SDG 14: Appropriate measures to process returned concrete

Supporting SDG 13: Policy/commitment to measure and reduce CO_2 emissions (cement)
Public commitment to CO_2 reduction and GHG monitoring & reporting

Supporting SDG 12: Use of responsibly sourced cement and aggregates

Supporting SDG 11: Protection against contamination

Supporting SDG 10: Operations comply with the Universal Declaration of Human Rights and acknowledge indigenous peoples' rights

Supporting SDG 16: Framework for ethical and legal compliance

Supporting SDG 3: OH&S policy available to every employee and the public
Access to medical treatment and clean drinking water

Supporting SDG 6: Water scarcity assessment for the plant area
Water consumption monitored and reported

Supporting SDG7: Awareness creation for energy saving among workers
Transport management system

Supporting SDG 8:Safety procedures in place
OH&S risk analysis and a monitoring of all incidents in place

Supporting SDG 9: Material from traceable sources

Exchange with our key-stakeholders …

… their valuable feedback is our opportunity to make it better

Switzerland, Gland 2016

Online 2020

Civil society
IUCN/ WBCSD /Bellona/ World resources forum/ Fauna and Flora/ BSHR

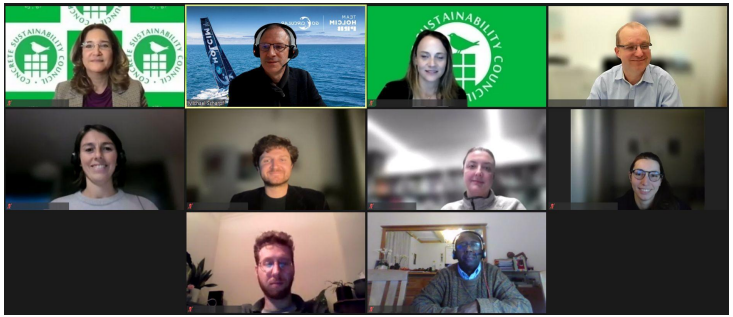
Industry association
BTB/FEDBETON/ERMCO/GCCA/THBB

Enterprises
Buzzi Unicem/ Heidelberg Materials/ Holcim

Green Building Councils
DGNB/ GBCI Europe/

Academia
ETH Zürich/ MIT/ OST-ostschweizer Fachhochschüle/

The Netherlands, Amsterdam 2018



Online November 2023

…and growing recognition in Green Building Labels

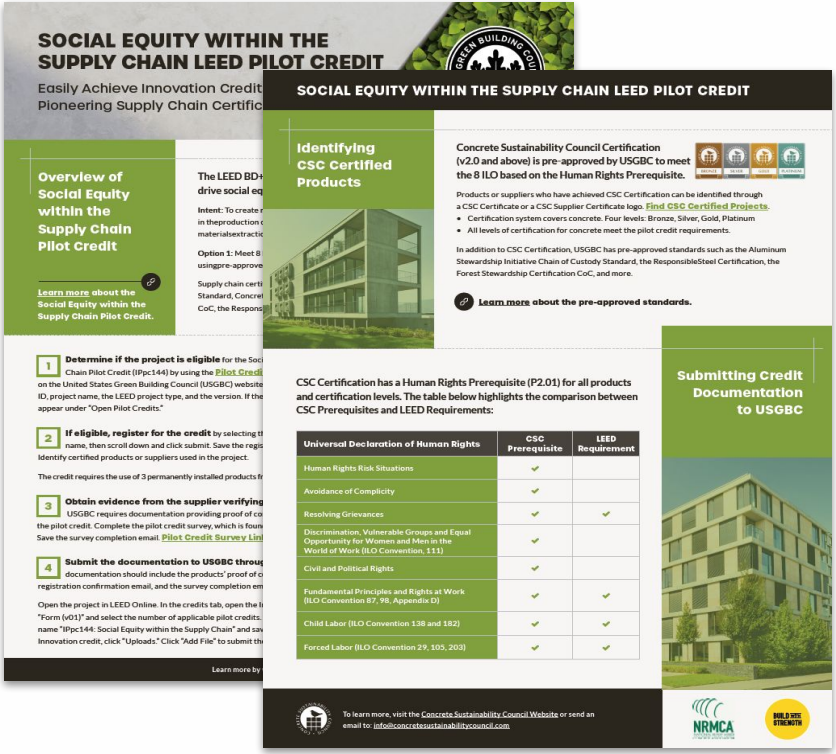
CSC's recognition by green building labels enhances the value of certified concrete in sustainable construction. It ensures alignment with global standards, promoting transparency and credibility in the concrete industry sustainability efforts

LEED, United States Recognition in "Social equity within the supply chain" pilot credit	**BREEAM | UK, Europe** Recognition in the "Responsible sourcing of construction products" credit	**Envision | North America, World** Recognition in the "Support Sustainable Procurement Practices" credit	**DGNB,Germany and many countries** Recognition in the "Responsible sourcing" credit	**ÖGNI | Austria, Europe** Recognition in the "Responsible sourcing" credit	**B.E.S.T | Turkey** Recognition in the "Ecological and Sustainable Design"	**CASA Guatemala, LATAM** Recognition in the "Materials" category
First time ever for non-wood material labels to be recognized	Platinum at "score level 7" (same level as FSC 100% wood)	Recognized by the Institute for Sustainable Infrastructure (ISI) for contributing to requirements on credit RA1.1	Silver, Gold at QL 1.2 and Platinum at level 1.3 (same as FSC-Mix wood) R-module recognition at QL 2.2	Silver, Gold and Platinum at QL 1.2 (same as FSC-Mix wood) R-module recognition at QL 2.2	Recognized for contributing to requirements on residential certification	Bronze, Silver, Gold and Platinum

LEED recognition

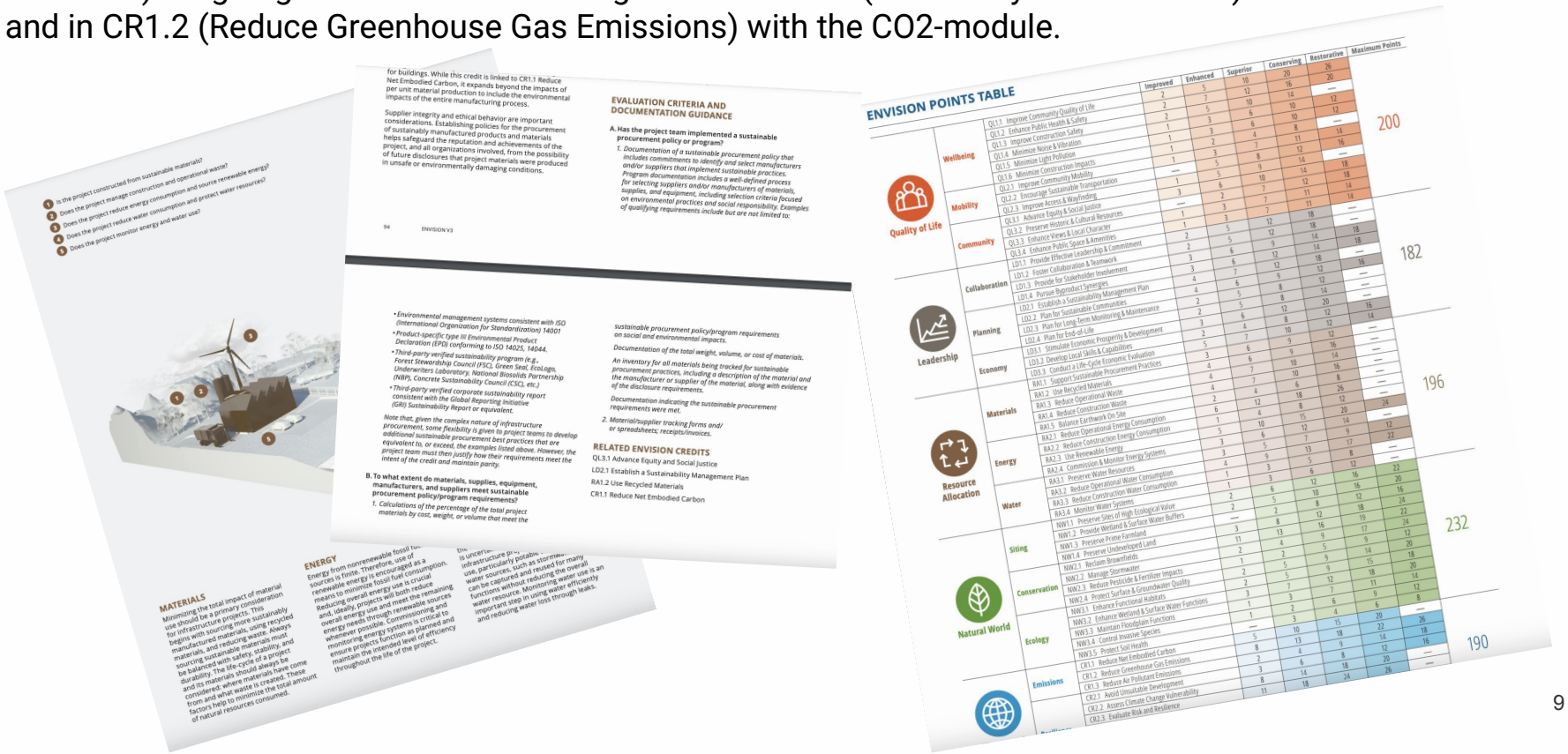
Ongoing conversations for recognition in “Responsible sourcing of raw materials credit”

- Pilot Credit “Social Equity in the Supply Chain”
- First time ever for non-wood material labels to be recognized by LEED
- Fact sheet geared to coach LEED APs on how to score points with CSC certified concrete in LEED
- LEED v5
  Next level of recognition in a Project Priority credit



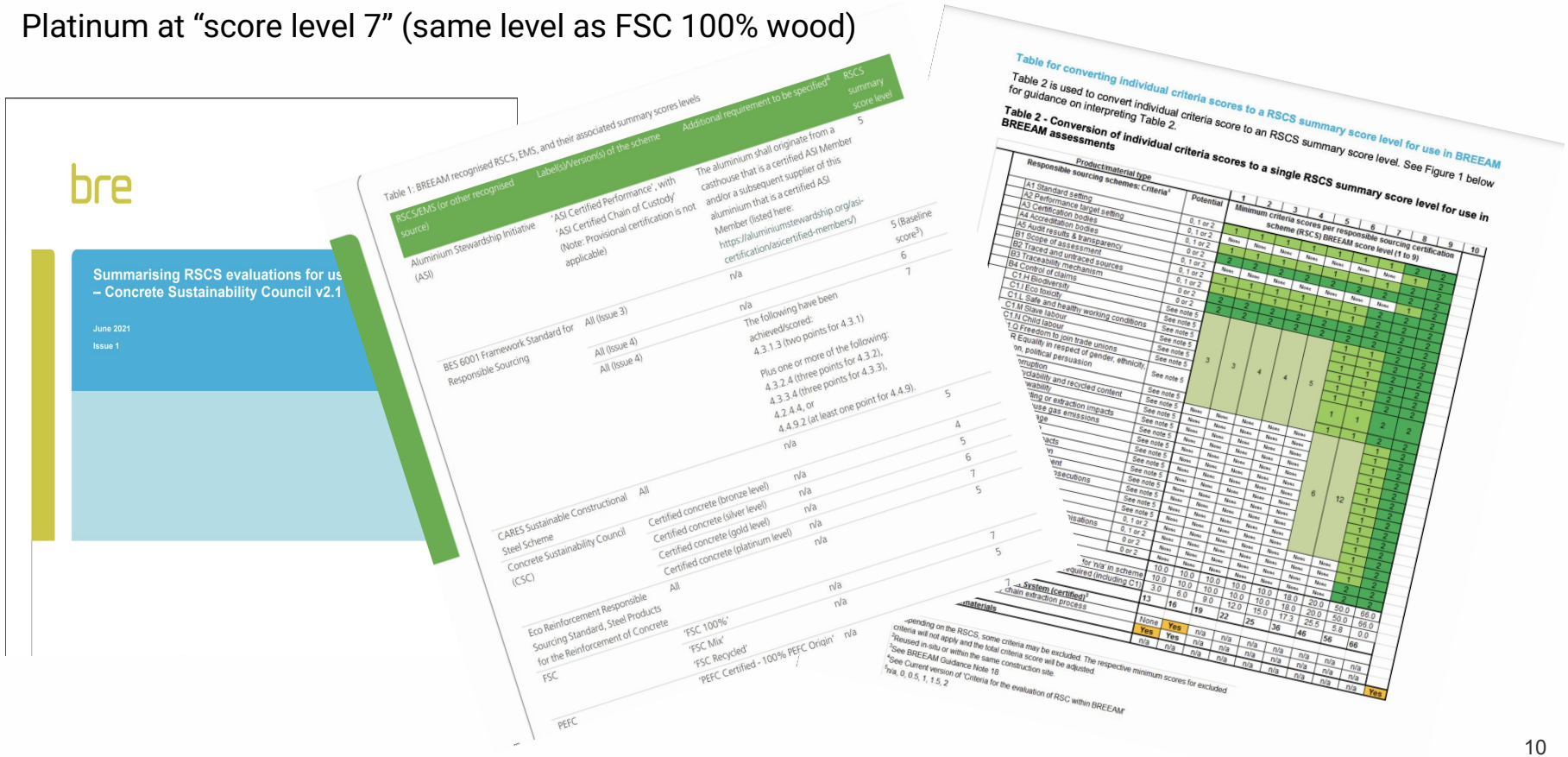
ENVISION recognition

Recognized for contributing to requirements on credit RA1.1 (Support Sustainable Procurement Practices). Ongoing conversation for recognition on RA1.2 (Used Recycled Materials) with the R-module and in CR1.2 (Reduce Greenhouse Gas Emissions) with the CO2-module.



BREEAM recognition

Platinum at “score level 7” (same level as FSC 100% wood)



CSC credibly defines and differentiates sustainable concrete…

25
Countries
in 4 continents

30
Members

770+
Producers

2300+
Assessments

Committed to responsibly sourced concrete … ‘FSC for concrete’

1430+
Active certificates
as of June 2025

Founded in November 2016

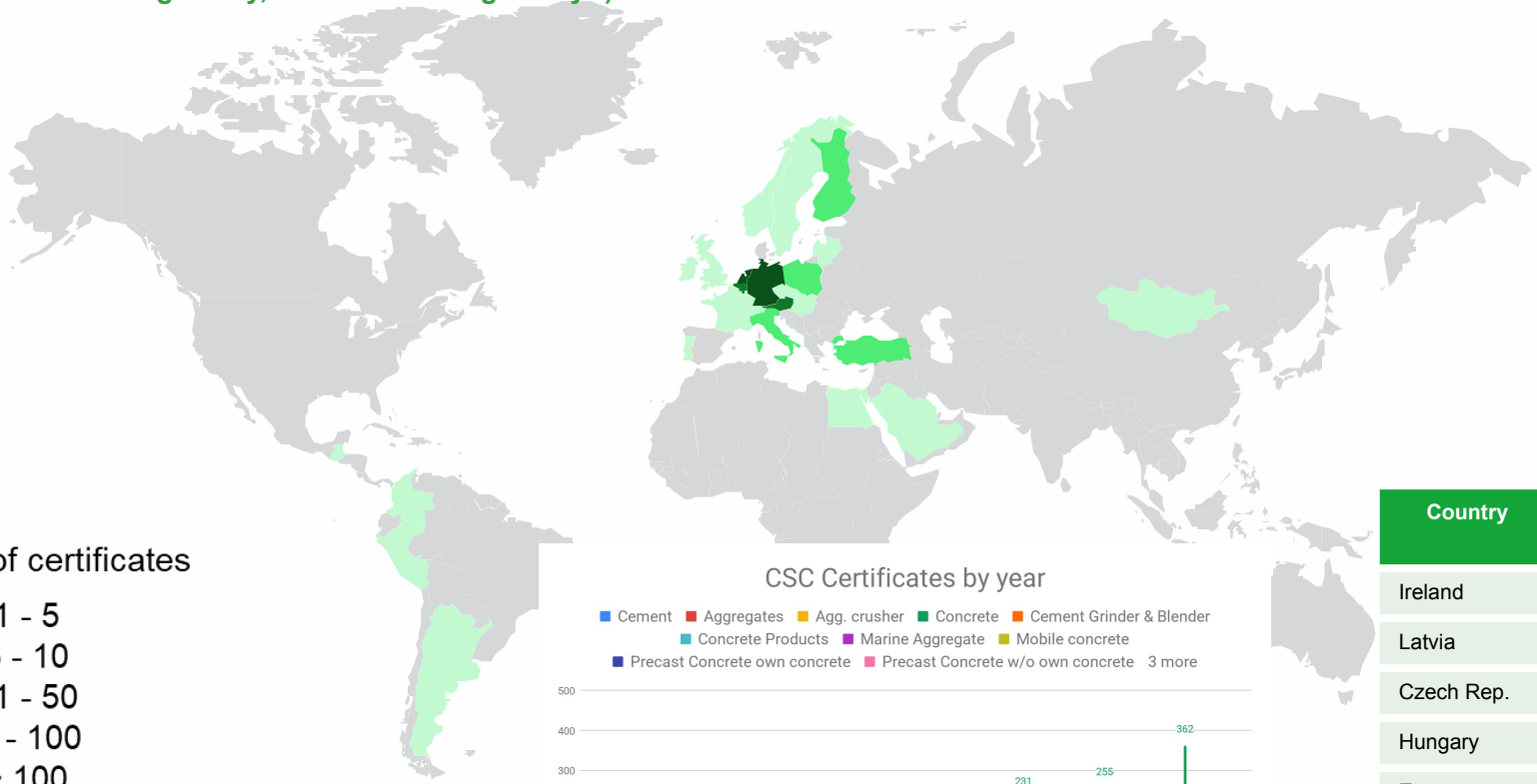
9
Years of continuous growth

4
Levels with
2 modules

11

Global Roll-out

1440 certificates globally, in 25 countries globally *)



Number of certificates

1 - 5
6 - 10
11 - 50
51 - 100
> 100

Country	Date of Certificate
Ireland	July 24
Latvia	July 24
Czech Rep.	Sep. 24
Hungary	Sept. 24
Egypt	Nov. 24
Saudi Arabia	Dec. 24
Mongolia	April 25

*) July 2025, valid certificates

Recognized by different organizations worldwide…

Belgium

Guide des Achats durables

Buildwise

Saudi Arabia

NEOM

The Netherlands

Rabobank

Germany (indirectly with DGNB recognition)

Global

One planet handle with care

Global Alliance for Buildings and Construction

…and coming together with others globally, to increase our influence, effectiveness and impact, and collectively protect the nature on which we all depend…

What does the certification system reward?

PREREQUISITES
P1 Ethical and Legal Compliance
P2 Human Rights
P3 Indigenous People Rights
P4 Environmental and Social Impact
P5 Traced Materials
P6 Vessels Evidence List

MANAGEMENT
M1 Sustainable Purchasing
M2 Environmental Management
M3 Quality Management
M4 Health & Safety Management
M5 Benchmark

ENVIRONMENTAL
E1 Life Cycle Impact
E2 Land Use
E3 Energy & Climate
E4 Air Quality
E5 Water
E6 Biodiversity
E7 Secondary Materials
E8 Transport
E9 Secondary Fuels

SOCIAL
S1 Local Community
S2 Health Product Information
S3 Occupational Health & Safety
S4 Labor Practices

ECONOMICS
B1 Local Economy
B2 Ethical Business
B3 Innovation
B4 Feedback Procedure

CHAIN OF CUSTODY
C1 Cement
C2 Aggregates
C3 Clinker
C4 Raw Aggregates Suppliers
C5 Ready Mix Concrete
C6 Steel Reinforcement
C7 Slag Supply to CSC Slag Grinder
C8 Cement supply to CSC Cement Blender

CO2-Module

Plant Requirements

L1 CSC certification Silver+

L2 75% coverage of the cement supply chain

L3 Monitoring of GHG emissions
CSC certification criterion E3.02 fulfilled

L4 Quality Management: QMS

Product Requirements

L5 Concrete Mix with CO2 reduction vs. baseline >= 30%

The certification system rewards 32 categories besides the basic requirements

R-Module

Plant Requirements

R1 CSC certification Silver+

R2 Traced R-material supply

R3 R-material Consumption

R4 Quality management
QMS, Use of certified R-material

Product Requirements

R5 Concrete mix with minimum R-material content >= 10%

Supported by competent partners acting as RSOs

The Concrete Sustainability Council (CSC) Global is based in Geneva, Switzerland.

Meanwhile, CSC is represented by Regional System Operators (RSOs) around the world.

CSC typically collaborates with industry associations or key partners working across the entire concrete sector in specific countries or regions.

Latin America

MENA

Austria

Belgium

Germany

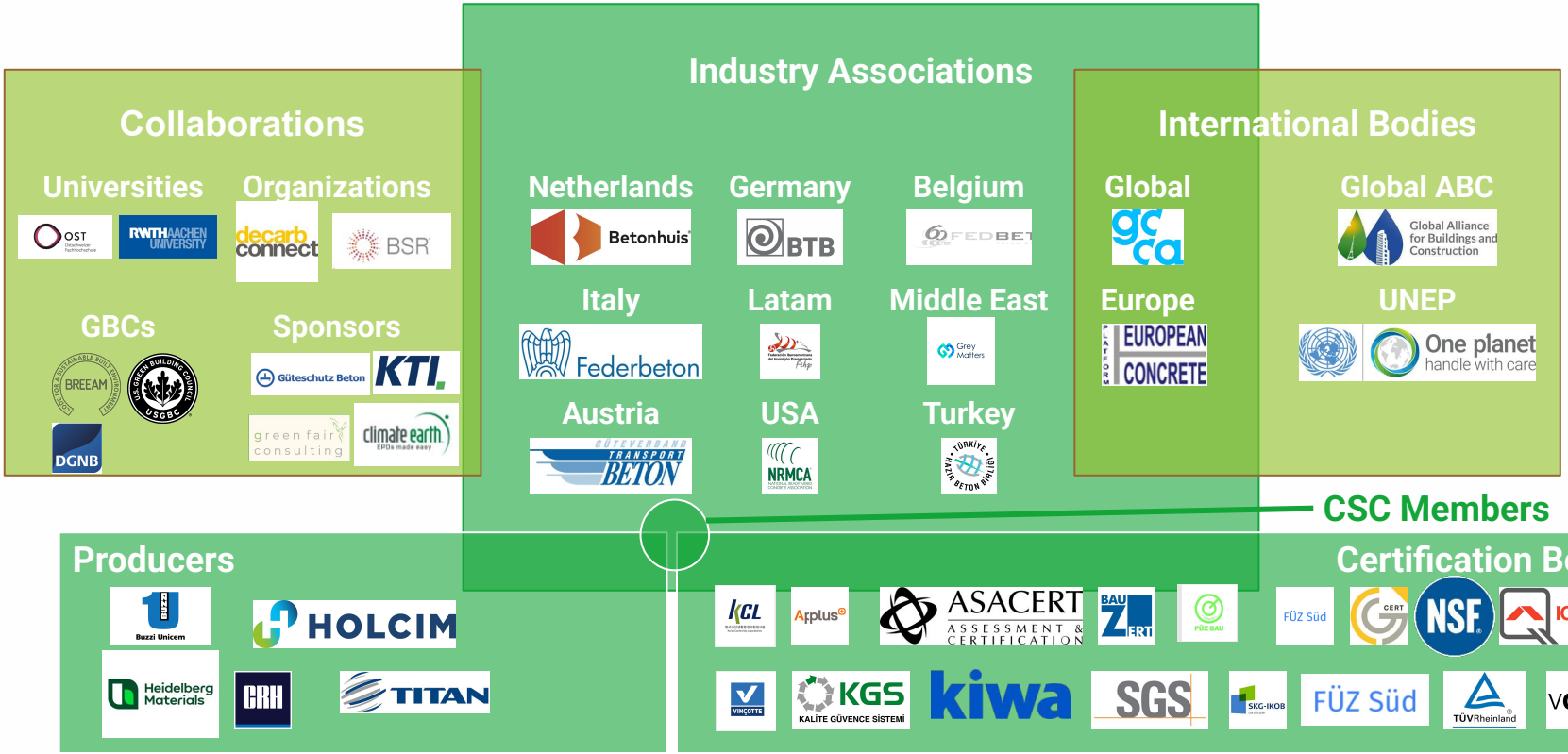
Italy

USA

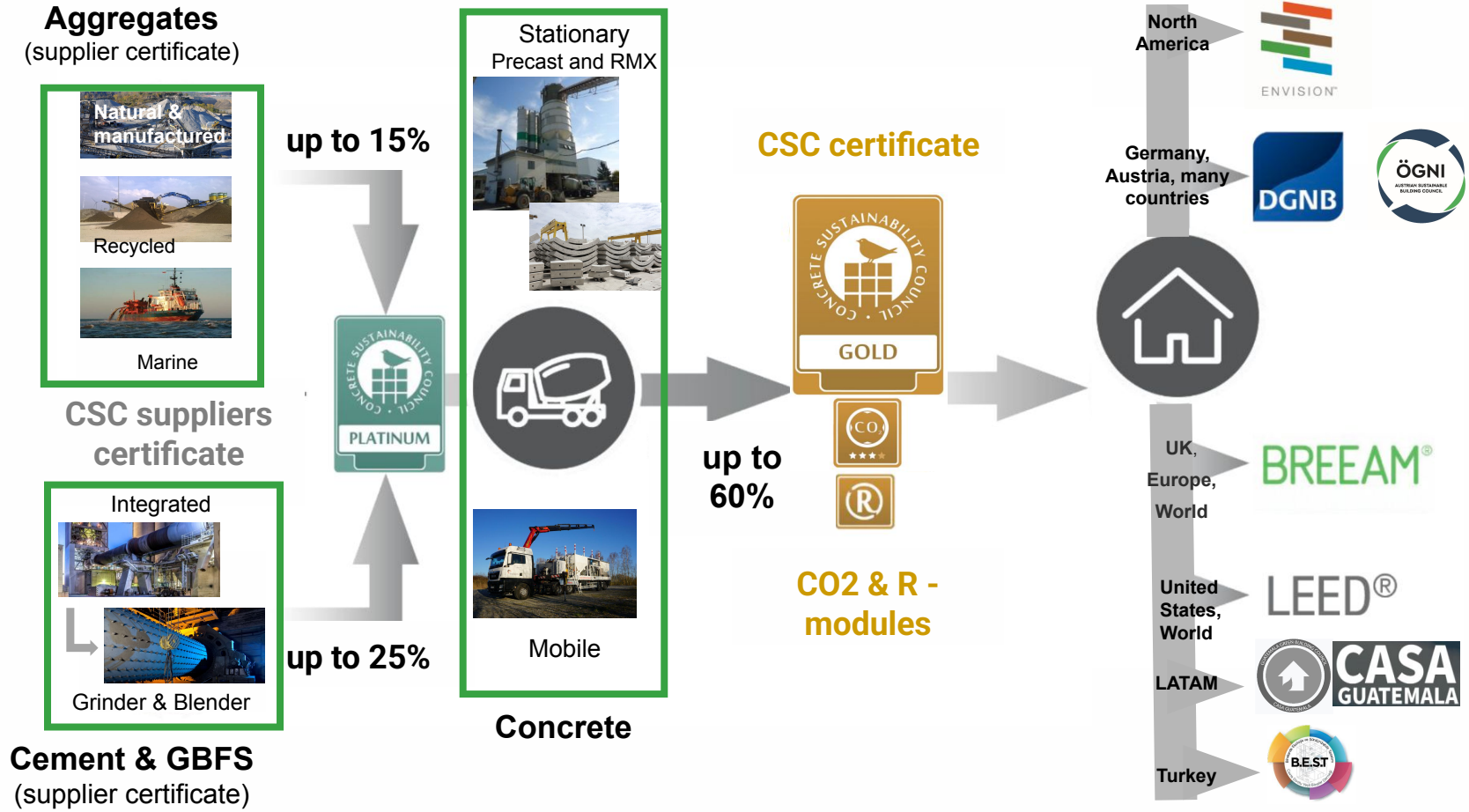
Netherlands

Turkey

CSC network extends to almost every country in the world



What plants can be CSC-certified?

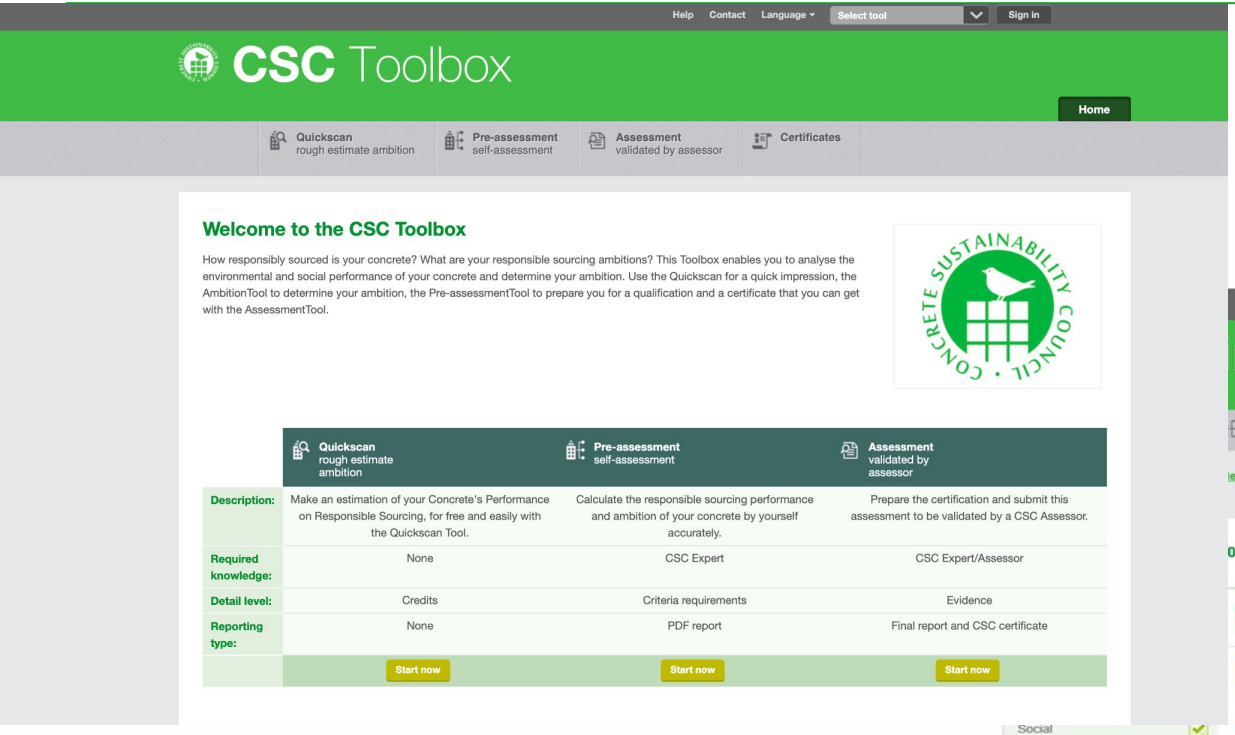


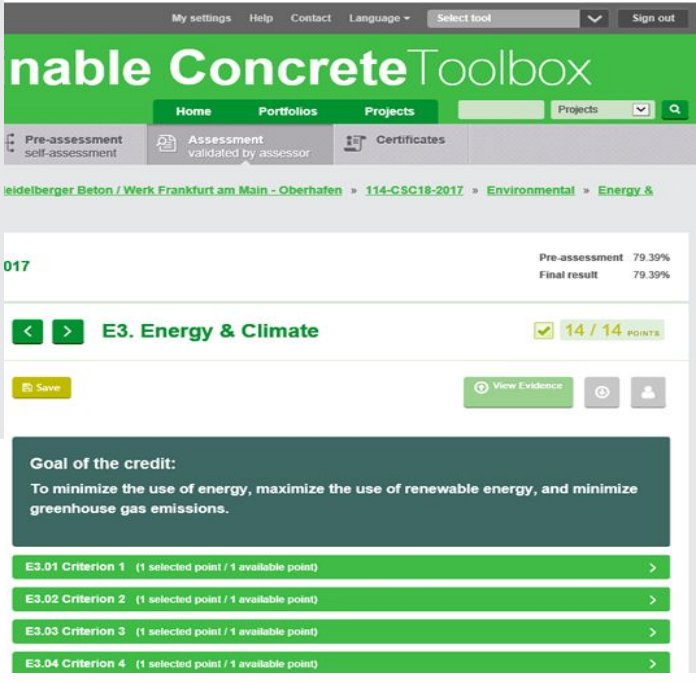
Example of CSC Certified Plants

Ready-Mix concrete Plant in Innsbruck, Austria Fröschl Beton,
CSC SILVER CERTIFICATE

**AKÇANSA Cement Büyükçekmece Plant, Turkey,
CSC GOLD CERTIFICATE**

Providing evidence via the CSC toolbox





Assessment Report – selected sample sections

Detailed assessment of the performance of the project

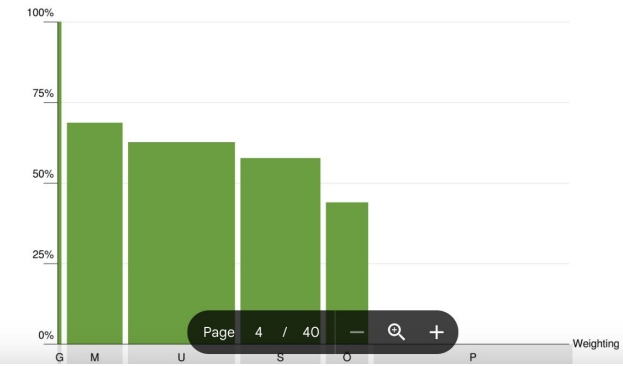
On the following pages requirements for this CSC scheme will be summarised, and the corresponding evidence will be shown.

On the basis of the supplied evidence the concerning CSC credits are granted or remembered. Every assessed part includes a validation of the CSC Assessor. This validation is a summary of the rating by the Assessor of the performances of the building compared to the requirements of CSC.

Summary Assessment score

Sections		Section score		Weighting		Result
G	Grundvoraussetzung	100.00%	x	0.10%	=	0.10%
M	Management	68.75%	x	11.92%	=	8.19%
U	Umwelt	62.71%	x	21.97%	=	13.78%
S	Soziales	57.78%	x	16.75%	=	9.68%
Ö	Ökonomie	44.00%	x	9.31%	=	4.10%
P	Produktkette	0.00%	x	39.96%	=	0.00%
Assessment qualification						**35.84%**

Section scores



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S3.3 Requirement	Required	Responsibility of Expert
S3.3.1	No	-

S3.4 Requirement	Required	Responsibility of Expert
S3.4.1	No	Das Kriterium wird erfüllt durch [...]. Vgl. Nachweise und/oder folgenden Link:

S3.5 Requirement	Required	Responsibility of Expert
S3.5.1	No	Das Kriterium wird erfüllt durch [...]. Vgl. Nachweise und/oder folgenden Link:

S3.6 Requirement	Required	Responsibility of Expert
S3.6.1	Yes	Das Kriterium wird erfüllt durch [...]. Vgl. Nachweise und/oder folgenden Link:
S3.6.2	Yes	Das Kriterium wird erfüllt durch [...]. Vgl. Nachweise und/oder folgenden Link:

S3.7 Requirement	Required	Responsibility of Expert
S3.7.1	No	Das Kriterium wird erfüllt durch [...]. Vgl. Nachweise und/oder folgenden Link:

S3.8 Requirement	Required	Responsibility of Expert
S3.8.1	No	Das Kriterium wird erfüllt durch [...]. Vgl. Nachweise und/oder folgenden Link:

S3.9 Requirement	Required	Responsibility of Expert
S3.9.1	Yes	Das Kriterium wird erfüllt durch [...]. Vgl. Nachweise und/oder folgenden Link:

S3.10 Requirement	Required	Responsibility of Expert
S3.10.1	No	-

S3.11 Requirement	Required	Responsibility of Expert
S3.11.1	No	Das Kriterium wird erfüllt durch [...]. Vgl. Nachweise und/oder folgenden Link:

S3.12 Requirement	Required	Responsibility of Expert
S3.12.1	No	-

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Annex – selected sample sections

E1.02 Implementation of Life Cycle Analysis (LCA)

Applicable to region (s)	Criteria	Applicable sections		Evidence
Global		Concrete	x	LCA tools shall comply with ISO 14025/ISO 14040, the following tools are accepted: • GABI • SimaPro • GCCA EPD Tool • One Click LCA • ReTHiNK For concrete, the use of an above tool for concrete must be presented, and respectively the same for cement. Only for aggregates, a use of the above tools for concrete or cement can be accepted as evidence instead of an LCA calculation for aggregates.
		Cement	x	
		Aggregates	x	
The Netherlands		Concrete	x	LCA tools shall comply with ISO 14025/ISO 14040: • Rekentool Groen Beton
		Cement	x	
		Aggregates	x	
Belgium		Concrete	x	LCA tools shall comply with ISO 14025/ISO 14040: • LCA QUADRANT Tool • Rekentool Groen Beton
		Cement	x	
		Aggregates	x	
Germany		Concrete	x	LCA tools shall comply with ISO 14025/ISO 14040: • SLG-Umweltrechner (Engl.: Environmental calculator) for concrete paving stones, e.g., according to DIN EN 1338, and for concrete slabs, e.g., according to DIN EN 1339, both for surface coverings.
		Cement		
		Aggregates		

E1.03 Release of Environmental Product Declarations

Applicable to region	Criteria	Applicable sections	Evidence

S2.01 Public availability of information about product risks and safety

Applicable to region (s)	Criteria	Applicable sections		Evidence
Global	S2	Concrete	x	• European Union`s REACH (registration, evaluation, authorization and restriction of chemicals) regulation or similar. • Health Product Declarations • ....
		Cement	x	
		Aggregates		
Italy	S2	Concrete	x	For Italy additional for concrete: • Evidence of the product/s registration in the dangerous preparation database by Istituto Superiore di Sanità (ISS) (https://preparatipericolosi.iss.it/default.aspx) • The producer shall provide a declaration by the management that safety sheets are in compliance with Association guidelines.
		Cement	x	
		Aggregates		

S4.02 Personal record for all employees

Applicable to region (s)	Criteria	Applicable sections		Evidence
Italy	S3	Concrete	x	For Italy additional: • A sample of training programs/certificates for employees.
		Cement	x	
		Aggregates	x	

S4.09

Applicable to region (s)	Criteria	Applicable sections	Evidence

Certificates are valid for 3 years

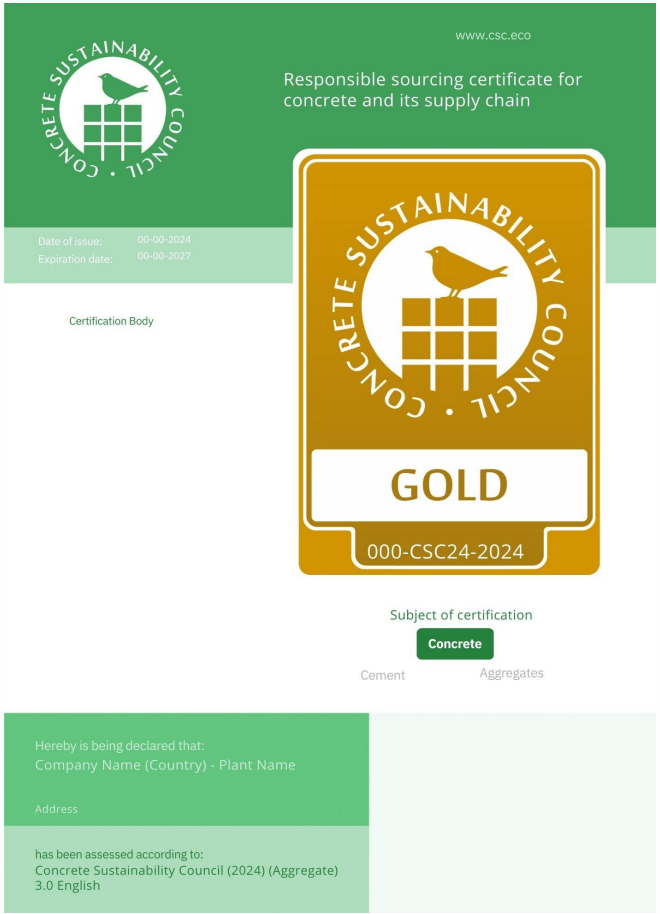
A new certification (recertification) will be necessary when certificate expires.

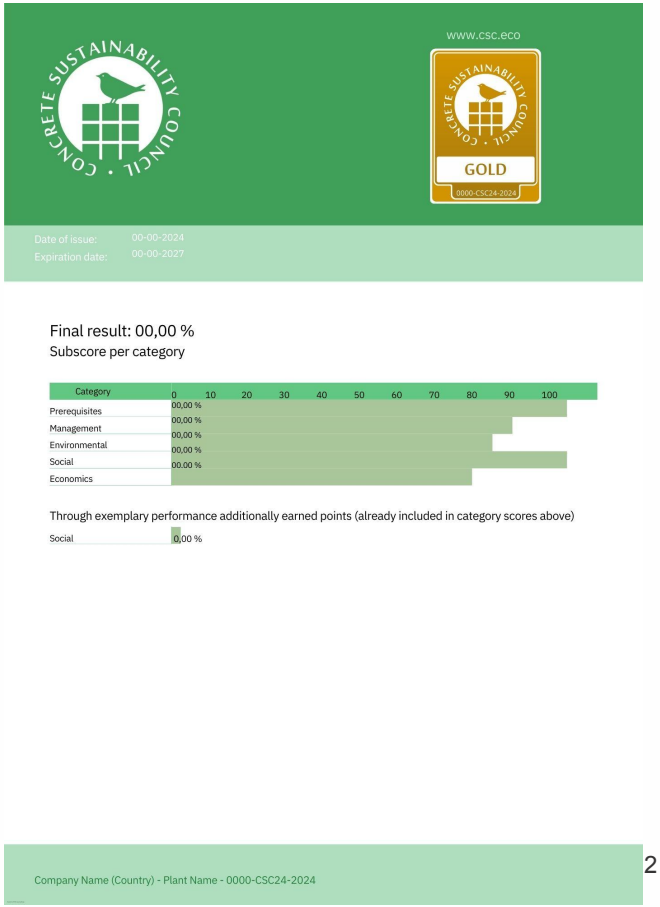
Certification level is determined by the overall fulfillment rate (= score)

- Compliance with additional mandatory criteria for higher certification levels
- Certified plants must fulfil all prerequisites

35% 50% 65% 80%

Minimum Score

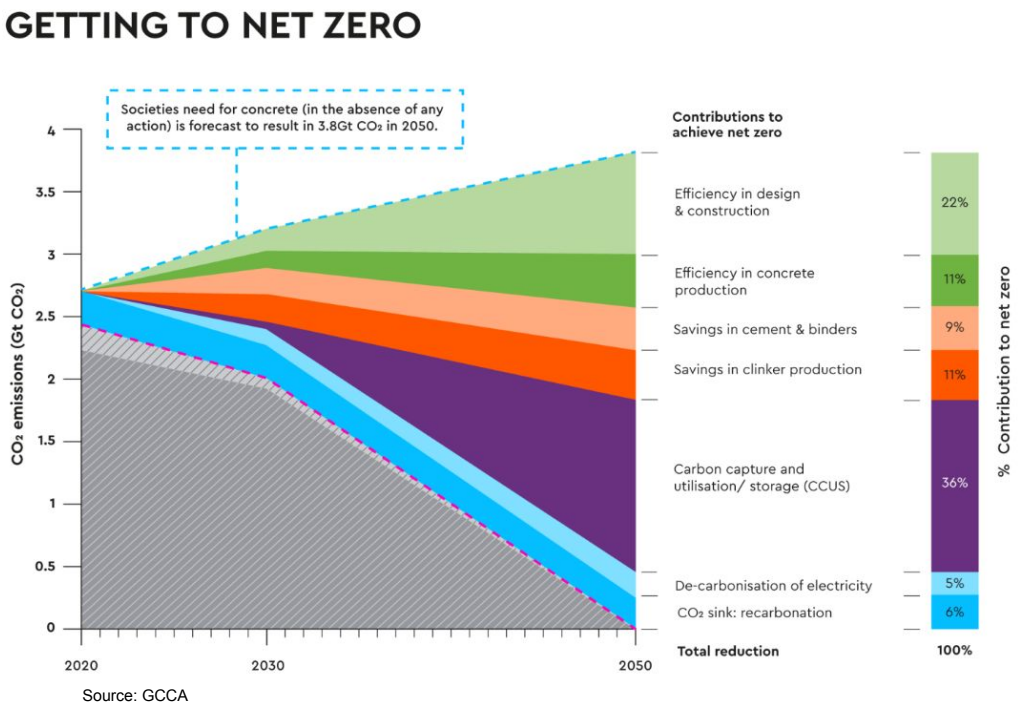





BAU-Quiz: Nachhaltiges Bauen und die DGNB
PLATINUM


ROHRDORFER
FERTIGTEILE
SILVER

The efficiency in design and construction plays a big role in getting to net zero



Source: GCCA

The purpose of unlocking design levers is to ensure **that reduction of CO2 emissions becomes a design parameter** in addition to the current parameters of quality, cost, speed and specific project client requirements.

Designers of buildings, with support of construction companies, can achieve CO2 emission reductions through their choice of concrete floor slab geometry and system, choice of concrete column spacing and optimization of concrete strength/element size/reinforcement percentage. This can be achieved whilst still obtaining all the performance benefits of concrete construction. Infrastructure projects offer analogous opportunities.

By choosing certified CSC concrete with CO2 add-on module, construction companies are contributing to this goal.

CSC Climate Indicators Overview: Aligning with Global Best Practices

The following slides present how CSC certification supports **climate change mitigation** across the concrete value chain.

We provide a structured overview of the **CSC Climate Indicators** — highlighting how companies can demonstrate transparent and credible action on greenhouse gas emissions.

Specifically, we'll cover three core focus areas:

1. **Climate Policy Commitment** – Establishing a public and transparent foundation for climate action
2. **Monitoring & Reporting** – Tracking and disclosing GHG emissions with reliability
3. **Target Setting & Achievement** – Defining and delivering on measurable emission reduction goals

These indicators reflect global best practices and are **aligned with the expectations of green building programs like LEED**, helping to support low-carbon, responsibly sourced construction materials.

Climate Policy as the Foundation (E3.01)

E3.01 – Climate Policy
The company demonstrates a **public commitment** to climate action by:

- **Measuring and reporting** its greenhouse gas (GHG) emissions
- Setting a **publicly available GHG emission reduction target**

This policy serves as the **foundation** for monitoring, reporting, and target achievement efforts.

Accepted forms of evidence:

1. A **publicly available policy or commitment** (e.g. on the company website) to:
    - Measure, report, and reduce GHG emissions
    - For aggregates: alternatively, a commitment to measure, report, and reduce **energy consumption**
2. OR: **Membership in a sector organization** (e.g. GCCA) that requires such a commitment as a condition of membership
3. A **publicly available GHG reduction target** — accessible to anyone online, with no login or special permissions

Monitoring & Reporting of GHG Emissions

Monitoring

- **E3.02 – Monitoring of GHG emissions**
  Regular measurement and calculation of GHG emissions across **cement, concrete, and aggregates**.

- **E3.10 – CO_2 emissions**
  Reporting of **specific CO_2 emissions per ton of cementitious product**, compared against performance thresholds. Data must be **externally verified (ISAE 3000)**.

Reporting

- **E3.03 – Public reporting**
  Emission data must be published **annually**, with reports not older than **1.5 years** at time of certification.

- **E3.04 – External verification**
  GHG data must be independently verified according to **ISAE 3000**.

- **E3.05 – GNR database**
  Reporting through the **GCCA GNR database** or national cement association.

- **E3.06 – CDP reporting**
  Annual disclosure to CDP of **Scope 1, Scope 2, and relevant Scope 3 emissions**, including **public evidence of reduction actions**.

Target Setting & Achievement

E3.07 – Science-based reduction targets

The company sets **SBTi-verified CO_2 reduction targets** with a time horizon extending to at least **2030**.

E3.08 – Achievement of reduction targets

Demonstrated **progress in line with the published CO_2 reduction path**, as part of ongoing climate action.

GCCA picture competition,2024, Greg Trainor
Russain Gulch CA Mendocino

CSC's CO2 - Module

The CO2 Module

- aims to create transparency with regard to the greenhouse gas emissions associated with concrete production and to classify CO2-optimized concrete into CO2 classes.
- aims at creating transparency and credibility
- can be used as a marketing tool for concrete to demonstrate verifiable reduction of embodied carbon
- It is not an EPD

CO2-Module

Plant Requirements

L1 CSC certification Silver+

L2 75% coverage of the cement supply chain

L3 Monitoring of GHG emissions
CSC certification criterion E3.02 fulfilled

L4 Quality Management: QMS

Product Requirements

L5 Concrete Mix with CO2 reduction vs. baseline >= 30%

1 Star: **- 30 %**

2 Stars: **- 40 %**

3 Stars: **- 50 %**

4 Stars: **- 60 %**

As of July 2025, 330 CO2 module certificates have been successfully achieved in The Netherlands, Germany, Austria, Luxembourg and Belgium

CO2 module - Recognized calculation methods

- Valid EPDs verified by a third party
- CO2 calculation including background data via an LCA calculation tool accepted by CSC
- Proprietary and/or unverified EPD tools are not permitted
- Recognized calculation tools:
  - GCCA tool
  - GaBi software
  - SimaPro
  - R<THiNK
    - ORIS (for aggregates only)
    - Climate Earth
- Other / Local tools subject to external review and CSC approval

Defining low carbon concrete facilitates the process to be incorporated in tenders…

Germany						
CO2-\Strength-Classes	C20/25	C25/30	C30/37	C35/45	C45/55	C50/60
Maximum Greenhouse Gas Emissions per reduction level [net kg CO2eq. / m^3]*)						
Reference values	**213**	**237**	**261**	**286**	**312**	**325**
Level 1 (↓ ≥ 30%)	149	16				
Level 2 (↓ ≥ 40%)	128	14				
Level 3 (↓ ≥ 50%)	107	11				
Level 4 (↓ ≥ 60%)	85	9				

Sample tender documents asking for low carbon materials

- Steel …
- Concrete
  "Concrete must be supplied from RMX concrete plants with a CSC Certificate Silver or higher.
  The following CO2-classes must be achieved:
  - Slabs, 3000 PSI, CSC Level 2
  - Columns, 4000 PSI, CSC Level 3
  - Walls, 3000 PSI, CSC Level 2
- Aluminium Facade cladding …

CO2 module - Industry Benchmarks

- RSO determines the reference values
- Reference values according to compressive strength classes
- Starting basis: EPDs of compressive strength classes 20 MPa / 2’900 PSI
- EPDs: life cycle assessment based on average cement
- CSC CO2 module: replacing the average cement with an OPC
- Choice of a OPC justified by
  - Ensuring international comparability
  - Existing data quality via the OPC (CEM I) at international level
  - Use of the same CO2 classes at international level
  - Concrete compositions are publicly available in the background report

CSC's R - Module

The R Module

- Prerequisite: plant must have at least Silver CSC certification
- Rewards plants for generation and use of recycled materials
- Acknowledges implementation of quality management system (QMS)
- Products must use at least 10% recycled material content

R-Module

Plant Requirements

R1 CSC certification Silver+

R2 Traced R-material supply

R3 R-material Consumption

R4 Quality management
QMS, Use of certified R-material

Product Requirements

R5 Concrete mix with minimum R-material content >= 10%

1 Star: **10 %**

2 Stars: **20 %**

3 Stars: **40 %**

4 Stars: **80 %**

- As of July 2025, 190 certificates has been issued in Austria, Germany, the Netherlands and Belgium.

Why CSC certification is of unique value?

Trusted Third-Party Verification

Provides independent validation of sustainability achievements—building confidence among clients, regulators, and certifiers.

Drives Circular Economy & Continuous Improvement

Supports a journey of ongoing progress, enabling producers to stay ahead of regulations and ESG reporting.

Global, Holistic & Rigorous

The only global material stewardship system for concrete—combining environmental, social, and governance criteria under one pragmatic, transparent, and credible framework.

Strong Focus on Low-Carbon Construction

Provides measurable benchmarks for decarbonization, directly supporting LEED v5 goals.

Inclusive & Accessible

Open to producers of all sizes—with a focused scope and lower costs, CSC makes responsible sourcing attainable industry-wide.

Procurement-Ready & Recognized

Simplifies validation in tenders and green building projects—enhancing transparency, trust, and LEED alignment

Thank you all for your attention and engagement today

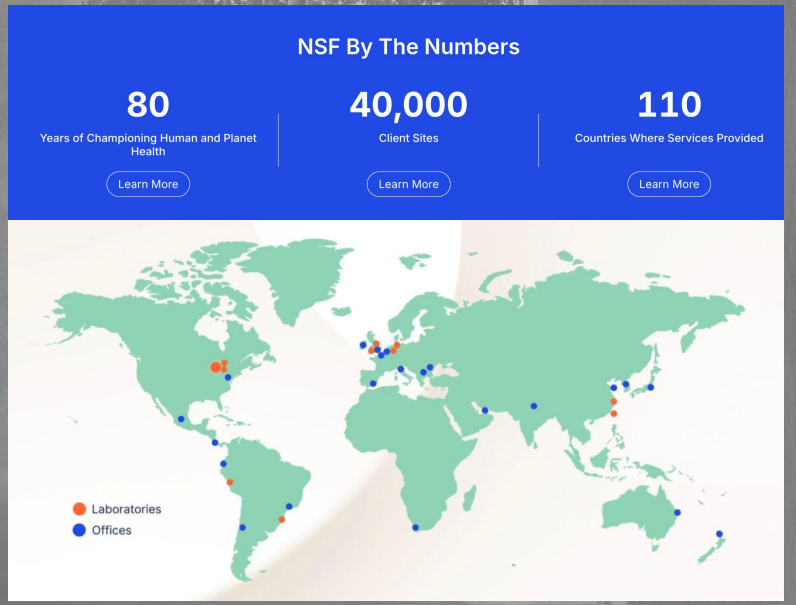
WWW.CSC.ECO


Q & A

NSF Certification, LLC

https://www.nsf.org/

Main contact for CSC certification:
Justin Brown
JBrown@nsf.org
T +1 734-646-8379



NSF conduct certifications for multiple building product types, including Natural Stone Products.

NSF provides services in 110 countries across all major industries.