



Johan Björling

Forbo Flooring Systems



creating better environments

FORBO FLOORING

BASTA DAGEN 2024

Johan Björling – Hållbarhetschef och ansvarig för Teknisk service

2024-11-26


FLOORING SYSTEMS

Forbo Flooring Systems is publicly listed in Switzerland as part of the Forbo Group. It has 14 factories in Europe and sales offices over the entire world

878.0

MCHF SALES

14

PRODUCTION
SITES

27

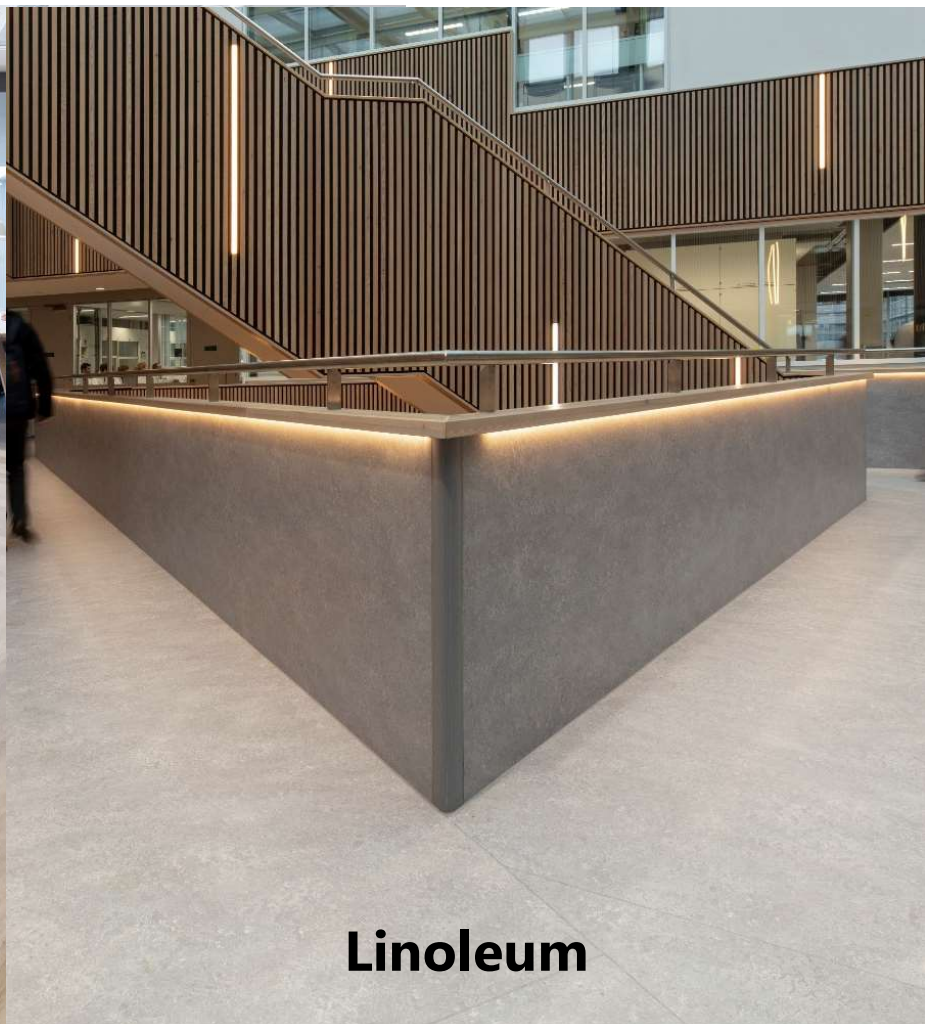
COUNTRIES

2,890

EMPLOYEES



Våra golvprodukter är indelade i tre huvudkategorier



How to become

**THE TRUSTED
PARTNER**

for

**CIRCULAR
FLOORING
SOLUTIONS**

made with

**RENEWABLE
RAW**



that

**CREATES
BETTER
ENVIRONMENTS**

for all our stakeholders

VAD INNEBÄR HÅLLBARHET?

Planetära gränser

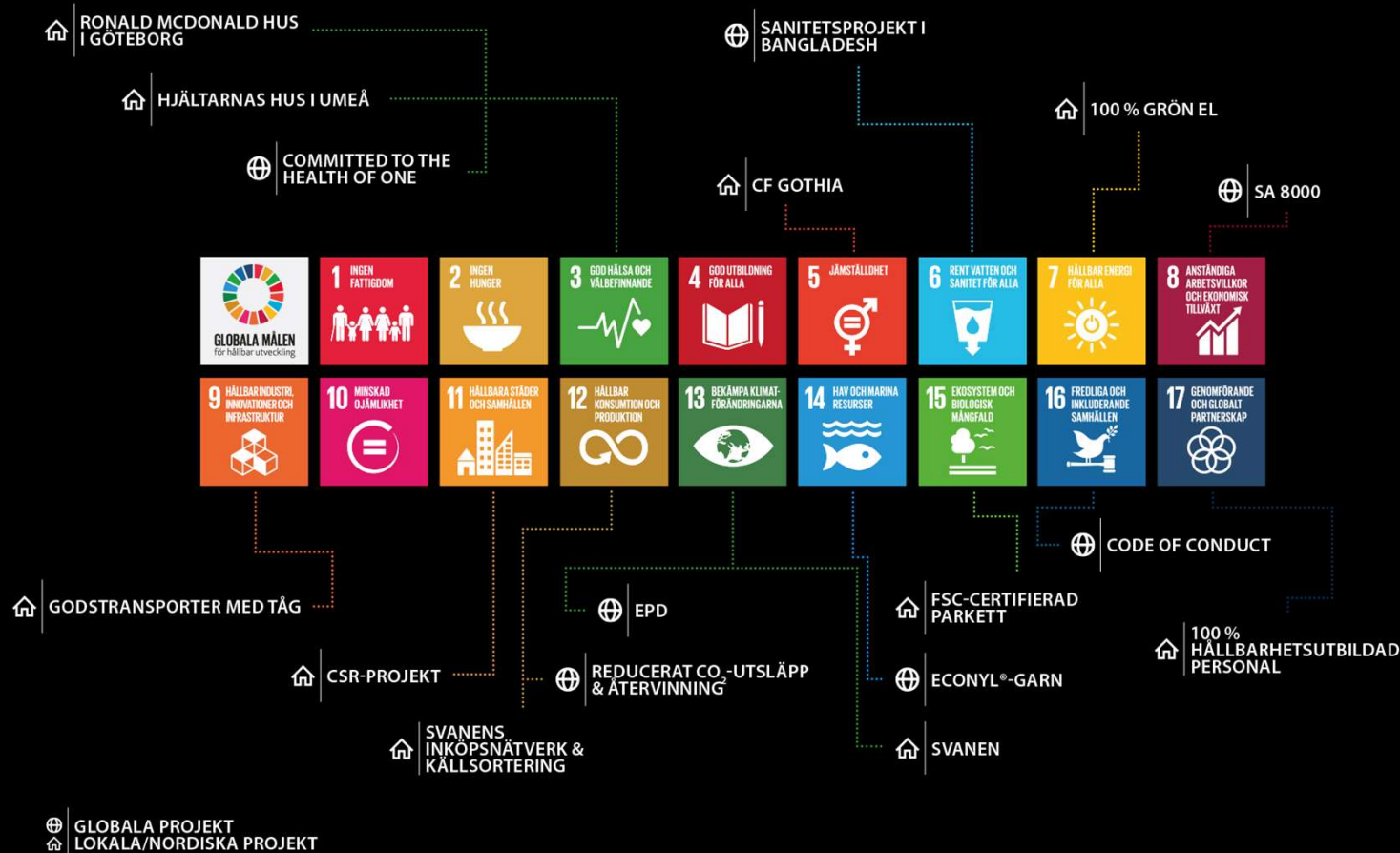
Johan Rockström

Potsdam Institute for Climate Impact Research

- Hög risk (osäkerhetsspannet överskridet)
- Ökande risk (inom osäkerhetsspannet)
- Säker nivå
- Gränsen odefinierad (kunskapsbrist)



FN'S GLOBALA MÅL FÖR HÅLLBAR UTVECKLING



THE CIRCULAR ECONOMY PRINCIPLES

The diagram illustrates the three principles of the circular economy. It features three dark grey circles arranged horizontally. The first circle on the left is titled 'Design out waste & pollution' and includes a sun icon above and a wavy line below. The second circle in the middle is titled 'Keep products & materials in use' and is connected to the first and third circles by two curved arrows forming a loop. The third circle on the right is titled 'Regenerate natural systems' and includes a tree and a hand holding a seedling icon above. The background is a dark blue-grey color with a subtle geometric pattern.

Design out
waste &
pollution

Keep
products &
materials in
use

Regenerate
natural
systems



EU DIREKTIV OCH LAGAR

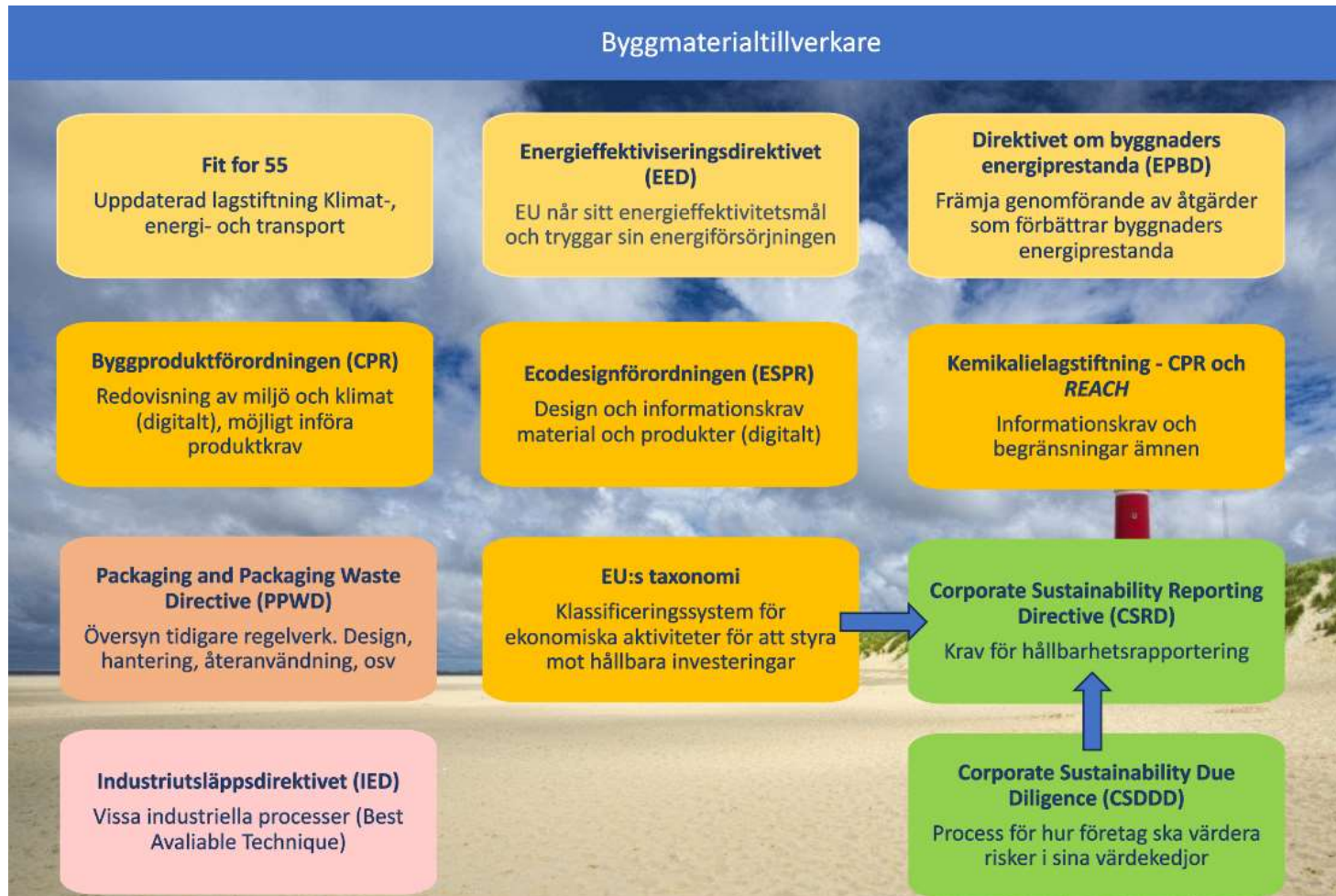


Bild från seminarie med Byggmaterialindustrierna 2024-05-21

Hållbart byggande & moderna byggsystem

KLIMATDEKLARATIONER 2022

Ett lagstadgat krav på nybyggnationer av bostadshus

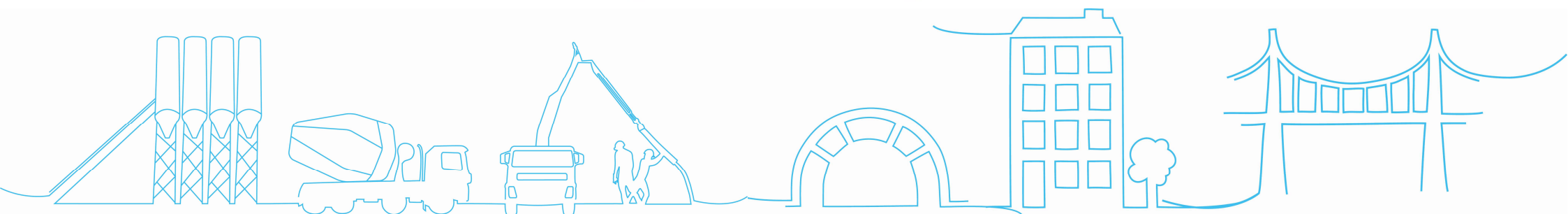


Boverket

Lag och förordning
remiss 2020

Boverkets föreskrifter
remiss 2021

Ikraftträdande
1 januari 2022



FORBO PROJECT PARTNERS

forbo

FLOORING SYSTEMS



**GOING
ROUND**

MOVING FORWARD

HOW AND WHY WE ARE WORKING TOWARDS
MORE SUSTAINABLE FLOORING FOR THE WORLD

we create better environments

Forbo

FLOORING SYSTEMS

GOING ROUND

MOVING FORWARD



CIRCULARITY

To be truly circular, we need to consider every stage of our flooring solutions: from cradle to gate. That means designing floors for today – and tomorrow.

RENEWABILITY

We want to minimize our carbon footprint by maximizing our use of renewable and responsibly sourced materials.

TRANSPARENCY

Through full transparency, we're making it easier for our customers to make the right choices regarding sustainable, safe and circular-ready flooring solutions.

THE PILLARS OF OUR AMBITION

Three words are at the foundation of everything we do: **Transparency, circularity and renewability.** By centering what we do around these values, we ensure that everything that comes from Forbo Flooring Systems delivers value to both people and the planet.



95 YEARS OF CREATING BETTER ENVIRONMENTS

TRANSPARENCY



1928
Founding of Forbo

through the merger of three European Inoleum factories

1995
contributed to the first LCA in the industry

together with the Swedish Council for building research

2000
Founder LCA in flooring industry

In collaboration with Leiden University, confirming the low carbon footprint of Marmoleum

2008
Public environmental report

disclosing performance and ambitions to all our stakeholders

RENEWABILITY

2014
Entire portfolio non-phthalate

leading the industry towards a healthy indoor environments

2013
Introduction full fast flooring vinyl

allowing for end of life reuse & recycling

2011
Launch of post-installation take-back services

in the USA, Sweden, the Netherlands

2010
Reduced Scope 1 & 2 GHG emissions by 45%

by switching to green electricity in all plants

CIRCULARITY

2018
Switched to biogas in Bamber Bridge

Tessera carpet tiles now manufactured without fossil energy



2020
Launch Sustainability Program 2020-2025

with targets on the key environmental and social topics



2021
Successful recycling of 20-year-old Marmoleum

into a new floor in Assendelft, in collaboration with Delft University of Technology

2022
Back to the Floor all over Europe

Introduction of our takeback service in Norway, Finland, Germany, Belgium, and Denmark



2023
Climate Positive verification

Marmoleum cradle to gate without offsetting, and introduction of Marmoleum Cocoa with end of Life recycled content

2024
Develop a new sustainability strategy and program for 2030

Transparens och redovisning med vad vi gör inom hållbarhet redan från 2008...



SUSTAINABILITY REPORT
2022

[See report](#)



SUSTAINABILITY REPORT
2021

[See report](#)



SUSTAINABILITY REPORT
2020

[See report](#)

creating better environments

SUSTAINABILITY REPORT 2023

FORBO FLOORING SYSTEMS

forbo
FLOORING SYSTEMS

MARMOLEUM MILJÖDATABLAD

ENVIRONMENTAL TRANSPARENCY PASSPORT

Marmoleum 2.0, 2.5, 3.2 mm sheet | 1/March/2024 | EPD reference 47908599342.101.1



Forbo's 'Going Round, Moving Forward' philosophy underscores our commitment to circular economy principles, emphasizing the importance of entire product lifecycle sustainable practices. Since 2019 we have reduced scope 1 and 2 Green House Gas emissions by 36%. Since 2023 Forbo sales organisations in 13 countries have been participating in our Back-to-the-floor (BTF) program. Forbo provides Transparency, with focus on Circularity and Renewability. Since 2012 our Sustainability Report is done according to the Global Reporting Initiative (GRI) standards. Aligned with multiple United Nations Sustainable Development Goals (SDGs).



HEALTHY, NATURAL MATERIALS

- Marmoleum is made from up to 98% natural raw materials
- Marmoleum is made from up to 78% bio-based materials (EN17861:2023)
- Free of PVC, PET, synthetic rubber and plasticizers
- REACH compliant
- Excellent indoor air quality: low TVOC's $\le 0.01 \text{ mg/m}^3$
- Compliant to C2C RSL (V4)

CLEAN AIR AND CLIMATE PROTECTION

- Every m² Marmoleum is climate positive, cradle to gate, without offsetting
- 100% renewable electricity
- Solar panels on-site
- Continuous improvement energy reduction and transition projects

CIRCULAR PRODUCT

Reduce: Design out waste and pollution

- Our Back-to-the-floor program offers a proven post-consumer recycling process
- Circular industry partnerships

Re-use & Recycle: Keep materials in use

- Topshield pro, extended warranty
- Contain up to 38% recycled content
- 65 tonnes Marmoleum recycled in BTFP 2023

Renew: Regenerate natural systems

- Over half of the ingredients are derived from renewable sources

SOCIAL FAIRNESS, WATER & SOIL STEWARDSHIP

- SA8000 certification proofs Forbo's willingness to develop, maintain and apply socially acceptable practices throughout the value chain
- Producing Marmoleum does not require water
- Daily cleaning Marmoleum does not require water
- PEFC certified wood flour only
- Due diligence policy on child labour and conflict materials

Healthy natural materials	Third party verified
Product description	Marmoleum 2.0, 2.5, 3.2 mm sheet link to tech. spec sheet
All material content assures a positive impact on material quality and future circularity	Free of PVC, Free of PET, synthetic rubber, and plasticizers. REACH compliant
Low TVOC	Indoor air Gold, Eurofins AgBB compliant
	French Act A+ CDPH 01350
	M1 certified
	Belgian VOC compliant
Health Product Declaration	Link
	Marmoleum has natural bacteriostatic properties which are confirmed by independent laboratories, even against MRSA bacteria.

Clean air and Climate protection	
Manufacturing site	Forbo Flooring BV Assendelft
Site scope 1 & 2 Emissions (2023)*	9470 ton CO ₂

Product Carbon Footprint	Third party verified
Environmental Product Declaration	Link to online EPD
Cradle to gate (A1-A3)**	kg CO ₂ equiv. /m ²
2.0 mm	-0,26
2.5 mm	-0,66
3.2 mm	-1,67
Cradle to grave (1Y) Landfill (A1-C4)***	
2.0 mm	0,11
2.5 mm	-0,22
3.2 mm	-1,09
Incineration (A1-C3)***	
2.0 mm	1,63
2.5 mm	1,71
3.2 mm	1,50

Circular product		
Product weight	2.0 mm	2.3 kg/m ²
	2.5 mm	2.9 kg/m ²
	3.2 mm	3.9 kg/m ²
Total recycled content	32-38 %	
Pre-consumer non-flooring recycled content	21-33 %	Harmonized by EN 17961: 2023
Flooring recycled content	up to 15%	
Renewable content	59-78 %	
Bio-based content	70-78 %	

Social fairness, water and soil stewardship

Site management systems certified on environmental & quality management, and occupational health and safety. To support social equity and fair treatment of workers in our supply chain we adopted the Social Accountability standard SA 8000. We have a child labor and conflict minerals due diligence policy. Our Marmoleum manufacturing process is with zero-water usage.

Composition		Marmoleum 2.0, 2.5, 3.2 mm sheet					
Component	Material	Availability				Amount % recycled (incl. 3rd party)	Origin
		CO ₂ number	Renewable	Recycled	Non-Renewable		
Binder	Ground calcium ash	8001-26-1	Bio-based comp.			25	Europe
	Latex resin	8000-09-7	Bio-based comp.			5	Indonesia
Filler	Wood flour	-	Bio-based	Bio-based waste product from wood processing		23	Germany
	Calcium carbonate	1071-45-3			Abundant mineral	25	Germany
Pigment	Inorganic Manganese	-	Partially bio-based	Pin- and post-consumer waste		14	Internal/External
	Titanium dioxide	131463-07-7			Controlled mineral	7	Global
Other pigments	-	-			Controlled mineral	1	Global
	-	-			Controlled mineral	1	Global
Backing	Jute	-	Bio-based comp.			8	India/SriLanka
	Lanolin	-				1	Netherlands
Marmoleum Cocoa top layer	Cocoa solids	-	Bio-based	Bio-based waste product from local industry		1	Netherlands

Clean energy use	100% renewable electricity
Achievements	Sustainability report 2023 What we do

Biogenic carbon content	kg CO ₂ equiv./m ²
2.0 mm	2,28
2.5 mm	4,13
3.2 mm	5,73
Potential emission prevention by post-use recycling instead of incineration (C3+A4-C2, neglecting partial A1 and A2 reductions)	
2.0 mm	1,39
2.5 mm	1,76
3.2 mm	2,36

* Total CO₂ emissions from manufacturing site operations and purchased energy
 ** CO₂ emissions associated with raw material extraction, transport, and manufacturing of a product
 *** CO₂ emissions associated with the full lifecycle of a product

Fixation type	Glued down For bio-based installation: Lutexol 6% Eurobar Green bio-based Inflexion adhesive (RED Cert) can be used
% residues of installation	Sheet = 6%
Product service life	25 years*
Repairability	yes
Recyclability of cut-offs, post-use	Back-to-the-floor program
Customer/project circularity certification available. Packaging from recycled source and/or recyclable	

Contribution to sustainable building schemes	
BREEM	Marmoleum flooring contributes to the environmental and well-being scores in building rating schemes, on many criteria and therewith meets the building requirements today and in the future. From bio-based and recycled raw material usage, to low VOC's and acoustic performance to the availability of a post-consumer recycling program, HPD and EPD and GRI sustainability reporting. We provide full transparency and required information for your environmental and healthy building scope.
LEED	
DGNB	
WELL	
Australian Green building council	
Ska scheme (RICS)	Meets M12 soft floor covering criteria (Ska Offices Vs 1.2) (Ska Retail Vs 1.0) (Ska Higher Education Vs 1.0)



GLOBAL THIRD PARTY CERTIFIED PRODUCT

Check our website for more information

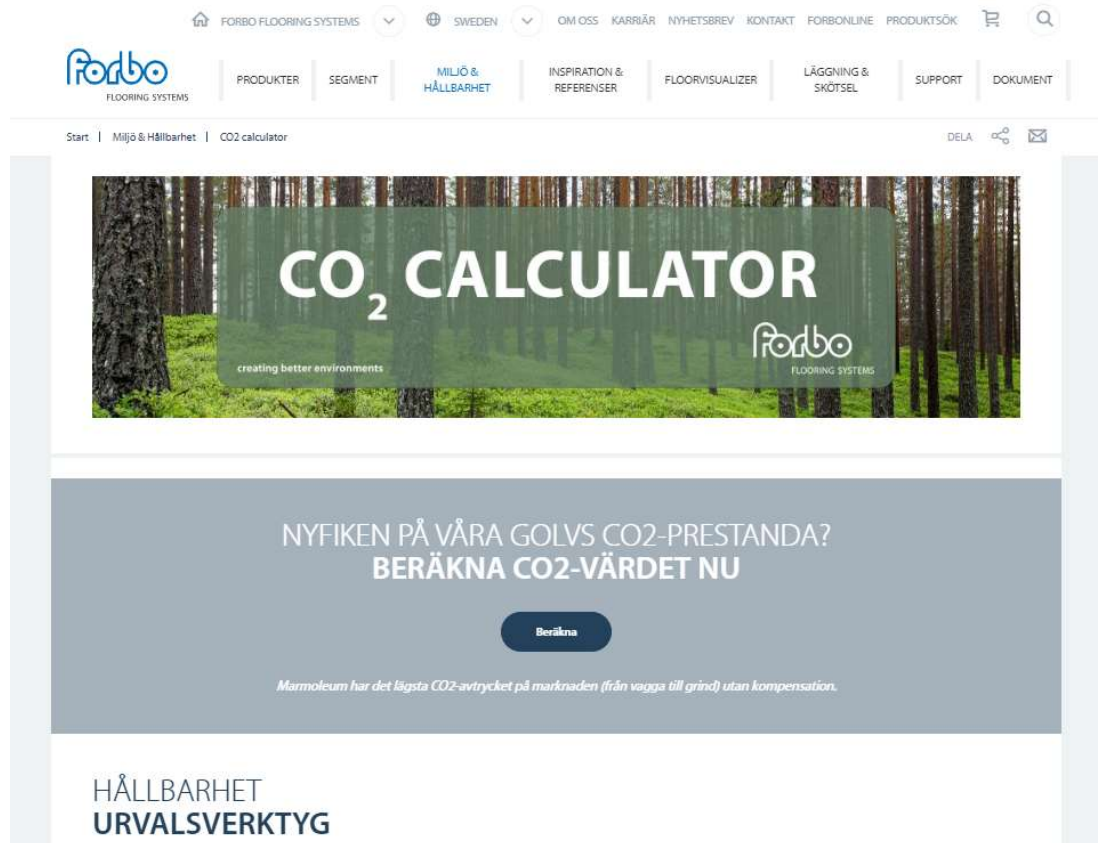
CO2 KALKYLATOR

URVALVERTYGG FÖR ATT SE CO2 PER PRODUKT



Forbo Flooring Systems erbjuder ett komplett sortiment av golv och golv tillbehör för såväl företag som privatpersoner. Med vår breda portfölj kan vi erbjuda en **komplett golvlösning**, vare sig du söker golvlösningar för ett helt sjukhus eller vill lägga nytt golv hemma i köket.

UPPTÄCK VÅRA PRODUKTER



Bedömningssystem svenska marknaden idag

BYGGVARUBEDÖMNINGEN

Kemiskt innehåll, delvis Livscykelkriterier (sociala aspekter)

 **SundaHus**

På väg att fasas ut



BASTA

Ingående komponenter, frivillig EPD och hållbarhetsdata



Ingående komponenter, VOC

Klimatdata och bedömning – önskad framtid

Forbo PIM system

↓ API gränssnitt



BASTA

Produktdata, ingående komponenter samt hållbarhetsdatae (eBVD, EPD)



MOVING FORWARD IN FLOORING

Produktutveckling



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CIRKULARITET BÖRJAR PÅ RITBORDET



LCA & EPD ARBETE I FORBO STARTADE REDAN 1995

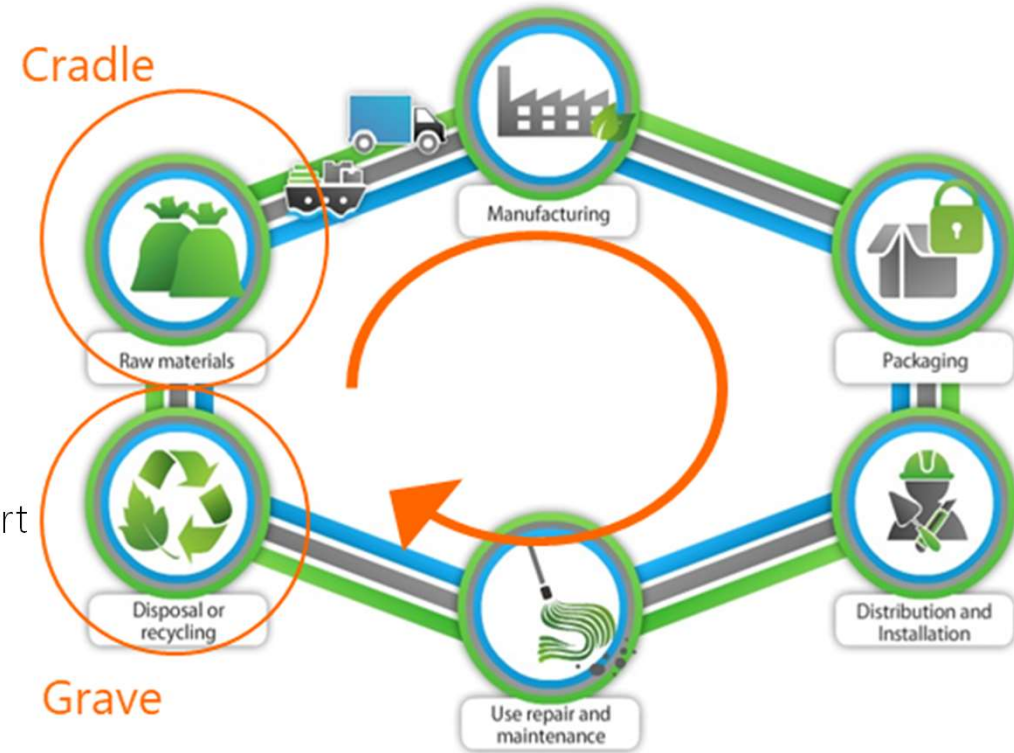
Forbo har idag 60+ produktspecifika EPDer

Enligt ISO standard och 3e partsgranskade

Viktigt för våra kunder och även värdefullt verktyg för vår löpande förbättringsprocess

Varje del i kedjan:

- Råvaror, rätt insatsvaror, mer återvunnet eller förnyelsebart
- Utveckla produktionsteknik, minska energiåtgång
- Distribution och transporter
- Skötsel, underhåll, renovering
- Återvinning – EOL lösningar



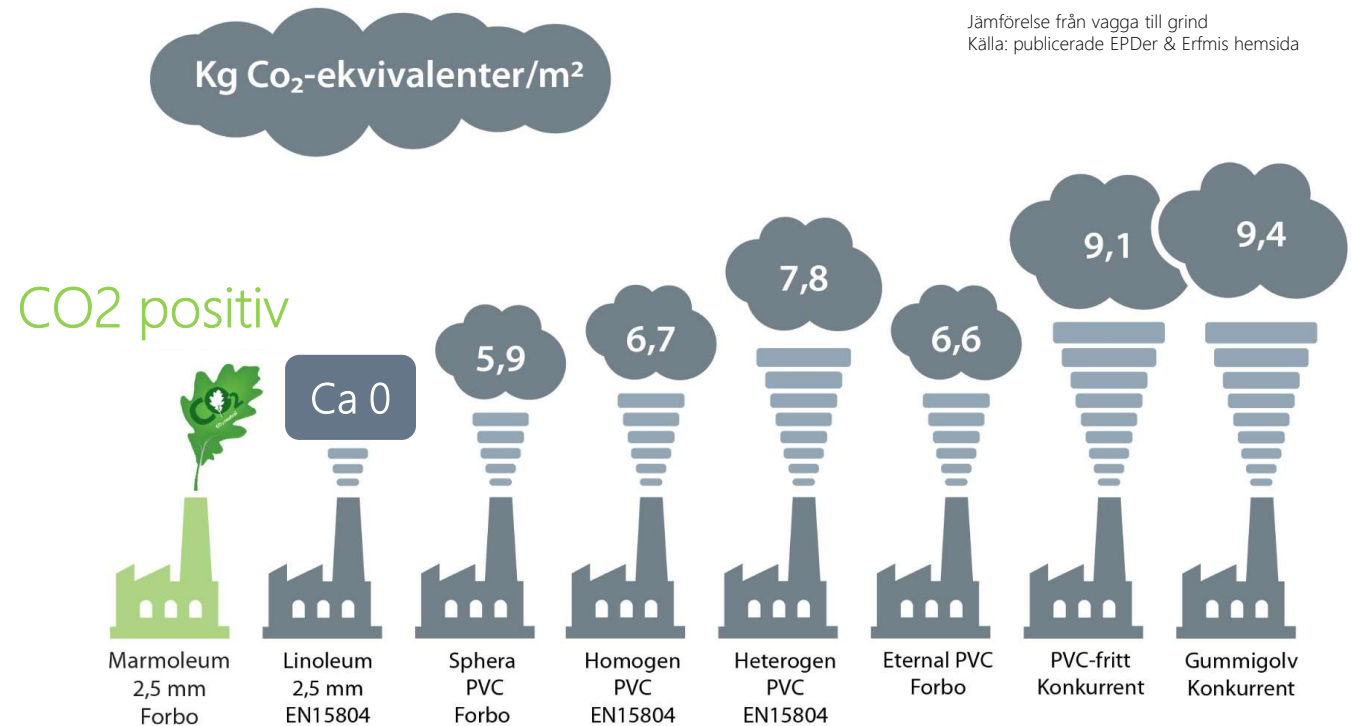
CO²-JÄMFÖRELSE

Marmoleum har varit helt CO₂-neutral sedan början av 2018.

Nu klimatpositiv !
Ledande på vår marknad

Skiljer mycket på vilket CO₂ avtryck varje golv installerar.
Ta medvetna val!

Golvbranschen i Sveriges mål
– vara klimatneutral 2045 !



En skola på 10 000 m² kan skilja 60-100 ton i CO₂ utsläpp

CIRKULÄRA GOLV - MÖJLIGHETER

Löslagda golv i offentliga miljöer

- Elimineras användning av lim som kan orsaka emissionsproblem.
- Installation på högre RF -> möjliggör användning av klimatförbättrad betong
- Enklare installationer.
- Designad för återbruk och återvinning.
- Lätt att byta ut och ersätta utan behandling av undergolv.



NATURLIGA RÅVAROR



VÄRLDENS MEST NATURLIGA GOLV



GOING ROUND MOVING FORWARD

LINOLEUM – DET BIOBASERADE GOLVET

Marmoleum, vårt varumärke i Linoleum, är "cradle to gate* CO2 neutral/positiv utan "compensation/offsetting"

Producerad i Europa med 100% grön el
97% naturligt råmaterial,
61% förnyelsebara råvaror och med
43% återvunnet/återanvänt innehåll

*Marmoleum 2.5mm

Natural raw materials

NATURLIGA RÅVAROR – CIRKULÄRT SAMARBETE



marmoleum® cocoa



Kakao skal är avfallsprodukt från kakao från en lokal Holländsk choklad tillverkare.

“Branchöverskridande cirkularitet - “Cross industry”

GOING ROUND MOVING FORWARD

VINYL – CIRKULÄRA GOLV

Producerad i moderna, miljövänliga, Europeiska fabriker som använder 100% grön el.

Omfattande löslagd kollektion av produkter vilka är enkla att riva ut och är cirkulära.

Låga CO2 utsläpp och återvunnet innehåll som är deklarerat enligt 3e part verifierade EPDer.

All Forbo vinyl produkter är REACH compliant

Hög andel återvunnet material i baksidan av våra produkter.



SPHERA ELITE^{e+}
BIOBASERAT INNEHÅLL

RECYCLED CONTENT 74%

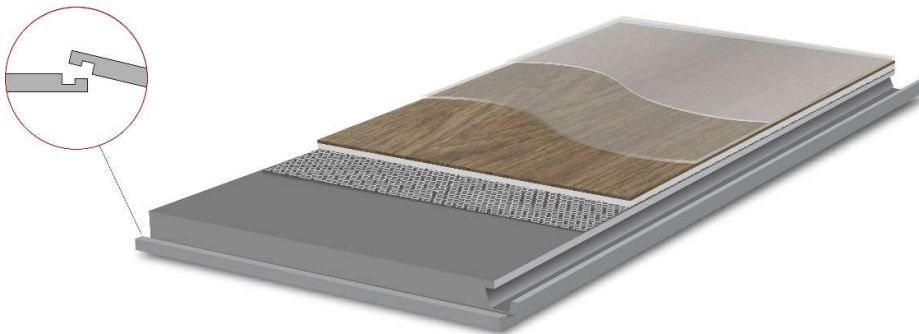
BIO-BASED PVC 54%

MER HÅLLBAR LVT PRODUKT

100% PVC

100% Återvinningsbar

50% Återvunnet innehåll



allura click Flexcore



Acoustic
power

Easier
renovation

Circular

Fast
installation

forbo
FLOORING SYSTEMS





Moderna golv för modern betong

sarlon[®] modul'up

Moderna golv för modern betong



GOING ROUND MOVING FORWARD

TEXTIL

Våra Tessera textil plattor är producerade med 100% grön energi (el och bio-gas)

Baserat på vikt innehåller har Tessera textil plattor bland branschens högsta innehåll av återvunnet innehåll, med ett genomsnitt på minst 60% och 75% i Tessera Create Space 1

Vi har 49% återvunnet innehåll i våra Flotex plattor och plankor

Allergy UK godkänd

Återvinning fungerar väl i UK där tillverkningen sker. Jobbar på lösningar för övriga länder.

ECONYL®
REGENERATED NYLON

tessera® create space 1

creating better environments

forbo
FLOORING SYSTEMS

Textile Carpet Tiles

tessera® create space 1

Tessera Create Space 1 is an industry leader in offering a sustainable textile flooring solution

Produced using energy which is **100% renewable** (electricity and Biogas)



Industry leading **low carbon** content -Cradle to Gate of **0.836 Kg CO₂ eq./m²**, which is on average 5.416 kg CO₂ less than other similar low level loop ranges* – the equivalent CO₂ generated by driving a family car around the world for every 1000sqm sold **



Recycled content of 75%, achieved through using 100% ECONYL regenerated yarn and post industrial recycled content in the backing



Tessera Carpets achieve **Indoor Air Comfort GOLD**** standard for enhanced air quality



The Environmental product declaration clarifies our individual ranges sustainability qualification and environmental impacts and is based on the life cycle assessment cradle to grave of the product, assessed under ISO 14025 and EN 015084, and independently 3rd party verified.



*CO₂ GWP (Global warming potential) of 0.836 Kg CO₂ eq./m² (carbon) verified by independent individual Create Space 1 EPD, based on cradle to gate 01/01/2022. Comparative CO₂ saving based on difference of average cradle to gate GWP of leading standard ranges of similar product type, namely - Interface Heuga 725, Desso Stratos and Desso Essence and Modulys Alpha.

**Based on average diesel emissions of 127.0 g CO₂/km. Source : European Environment Agency 2019.

*** As part of Indoor Air Comfort Gold, product meets the requirements of Nordic Swan, Eco Product Norway, BVB Sweden and Danish Indoor Climate Label (emission class 1).

Tessera carpet tiles are manufactured in accordance to quality Management Systems ISO 9001, Environmental Management Systems in accordance with ISO 14001, SA8000® and ISO 45001.

tessera® topology^{e+}

Design med lågt koldioxidavtryck

- Första kollektionen i Sustainable design range
- Totalt innehåller produkten **75% återvunnet material.**
- Tillverkad med 100% förnyelsebar energi
- EPD värde för Topology **1,40 kg CO2 e/m2 (A1-A3)**



MOVING FORWARD IN FLOORING

FORBO Sverige – lokala initiativ



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FORBO SE - HÅLLBARHET

Utbildning av hela personalen (Ekocentrum)

Kontor och lager (avfall, energi, trp och bilar)

Social hållbarhet

- Barnhem i Ukraina (OperationChange)
- Golvläggarskolan (Material, Yrkes SM support)

Transport CO2 program

- öka HVO och El
- kundbehov, antal lev/v
- mjukvara optimering



TACK !
FRÅGOR?

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