forbo
FLOORING SYSTEMS

1. sus·tain (sə-stān)

creating better environments

SUSTAINABILITY

1. sus·tain (sə-stān)

tr.v. sus·tained, sus·tain·ing, sus·tains
1. To keep in existence; maintain.
2. To supply with necessities or nourishment; provide for.
3. To support from below; keep from falling or sinking; prop.
4. To support the spirits, vitality, or resolution of; encourage.
5. To bear up under; withstand: can't sustain the blistering heat.
6. To experience or suffer: sustained a fatal injury.
7. To affirm the validity of: The judge has sustained the prosecutor's objection.
8. To prove or corroborate; confirm.
9. To keep up (a joke or assumed role, for example) competently.

[Middle English sustenen, from Old French sustenir, from Latin sustin re : sub-, from below; see sub- + tenere, to hold; see ten- in Indo-European roots.]

sus·tain a·bil i·ty n.
sus·tain a·ble adj.
sus·tain er n.
sus·tain ment n.

2. Sustainability is a characteristic of a process or state that can be maintained at a certain level indefinitely. The term, in its environmental usage, refers to the potential longevity of vital human ecological support systems, such as the planet's climactic system, systems of agriculture, industry, forestry, and fisheries, and human communities in general and the various systems on which they depend.

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

This definition was created in 1987 at the World Commission on Environment and Development (the Brundtland Commission).

Sustainability, as defined within the North American construction industry, is not as clear and concise as the definitions above. Marketing-driven greenwash utilizing emotional appeals, in the absence of scientifically based product standards, can distort the efforts of even the most well-intentioned development. At Forbo we have a clear, simple guiding principle of "Compliance Plus" that ensures that we are "creating better environments" through the continuous improvement of our products and processes. "Compliance Plus" requires us to do more, to lead, to innovate, to improve all of our processes and products beyond compliance with required standards. "Compliance Plus" impacts all aspects of our activities, inclusive of health, safety, and environment.

For guidance in this process we look, wherever possible, to outside, independent reputable sources. Here is our roadmap:

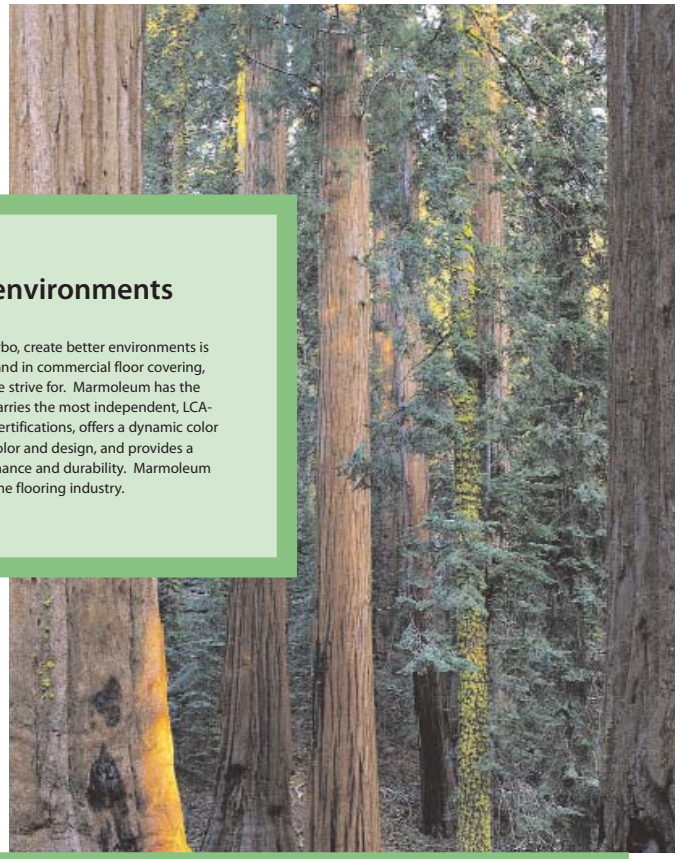
- Utilize independent, 3rd party, peer-reviewed, ISO-based Life Cycle Assessment (LCA) methodology to ensure correct decision making and provide indication of areas for improvement.
- Pursue applicable LCA-based independent product certifications **that are based on ANSI accredited standards organizations** wherever possible to ensure benchmarking.
- The overall system must be rigorously controlled to ensure repeatability through ISO-14001 certification and compliance.
- Provide transparency and reporting through the publication of our annual Health, Safety, and Environment Report, which can be downloaded at www.forboflooringNA.com.

creating better environments

The cornerstone of how we, at Forbo, create better environments is Marmoleum. A leading global brand in commercial floor covering, Marmoleum epitomizes all that we strive for. Marmoleum has the lowest environmental footprint, carries the most independent, LCA-based environmental labels and certifications, offers a dynamic color palette that makes it a leader in color and design, and provides a 100 year + track record of performance and durability. Marmoleum sets a benchmark unmatched in the flooring industry.

marmoleum®

As long as the sun shines, and the rain falls, we can produce Marmoleum®.



Forbo's history of environmental commitment

1990 Start employment of Health, Safety and Environment Specialists

1992 ISO 9001 Certification

1993 First LCA Study Completed

1995 Second LCA Study Completed

1996 Scandinavian Nordic Swan Label Granted

1997 ISO 14001 Certification

1997 Winner Sequoia Award

1998 Government Granted Self-regulating Company

1998 Received the Netherlands Environmental Quality Mark (Milieukeur)

2000 Given the German TÜV Environmental Label

2000 Third LCA Study Completed

2001 Received the Austrian Eco Label UZ42

2004 German Nature Plus certificate granted

2004 Australian Environmental Choice label received

2005 Received New Zealand Environmental Choice label

2007 Received SMART© label

life cycle assessment

Why LCA (Life Cycle Assessment)?

What is more important to you – clean water? Or clean air? Obviously both. Unfortunately, however well-intentioned, decisions are made regularly on our behalf that may have undesirable consequences. Why? Because a process or product's influence upon the environment can result in a relatively complex outcome. Reduce. Reuse. Recycle (in that order) is great guidance from a simplistic perspective. But, in particular, recycling as well as down-cycling, upon closer scrutiny may have significant detrimental environmental impact in many cases. Therefore such single attribute claims require careful consideration.

Reduce. Reuse. Recycle.

The development of a company's environmental profile should be grounded in the simplest terms.

Reduce
Reuse
Recycle

Most of us are aware of these three words most closely associated with the triangle. The order of the 3 R's are important. A company must first choose to improve its environmental performance by **R**educing energy demands, use of natural resources, and waste. **R**euse scrap back into manufacturing and when possible gathering that waste from other processes. Finally, **R**ecycle what cannot be used by finding a home for the waste in another product or process.

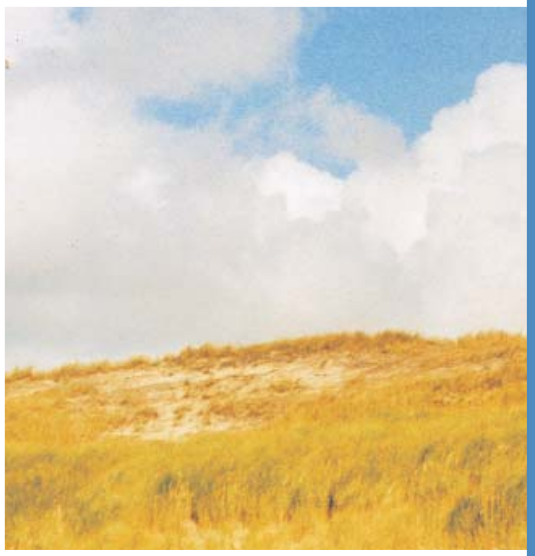
Establishing an Environmental Footprint

A manufacturer must establish the full impact its products and processes have on the environment - this is known as an environmental footprint. The best way to establish this is to conduct an ISO-compliant **Life Cycle Assessment (LCA)**. Life Cycle Assessment is the full assimilation of the environmental impact of a given product, process, or service throughout its lifespan.

The term "life cycle" refers to the fundamental understanding that a fair, holistic assessment requires the analysis of all process elements, inclusive of raw material extraction, processing, manufacturing, distribution, use, and end of life outcome, including all intervening transportation steps. This is the life cycle of the product. This assessment can be used to optimize the environmental performance of a single product or to optimize the environmental performance of an entire company.

The International Organization for Standardization (ISO) has developed environmental management standards (ISO 14000) that incorporate LCA protocol (ISO 14040).

The ISO 14001 environmental management standards exist to help organizations repetitively duplicate, measure and report, and improve how their operations impact the environment. Further, they enable compliance with applicable laws, regulations, and other environmentally oriented requirements.



Huntsville Hospital, Huntsville, AL photo: Michael Parker

field to field

Life Cycle Assessment equally measures a product's environmental footprint through its entire life cycle against 12 Environmental Impact Categories (EIC). A bio-based product's Life Cycle (like Marmoleum) can be organized into 3 categories covering all process elements:

1. Field to Gate
2. Gate to Gate
3. Gate to Field/Final Disposition

Forbo Flooring Systems manages an internal program called "Field to Field," as Marmoleum is 97% organic based and 76%, by weight, bio-based. Our goal is to return as much benefit to the earth as it has given us through its fields, farms, and forests.

Field to Gate covers the processes of Raw Material Acquisition, and Pre-processing. These process elements, generally involving outside companies and suppliers, are often overlooked by many manufacturers when stating their environmental impact, either due to lack of commitment to find data, or direct avoidance of significant negative impacts.

Gate to Gate covers the impacts within a manufacturer's facility. This is the easiest for a manufacturer to control and usually the information is made available to the public.

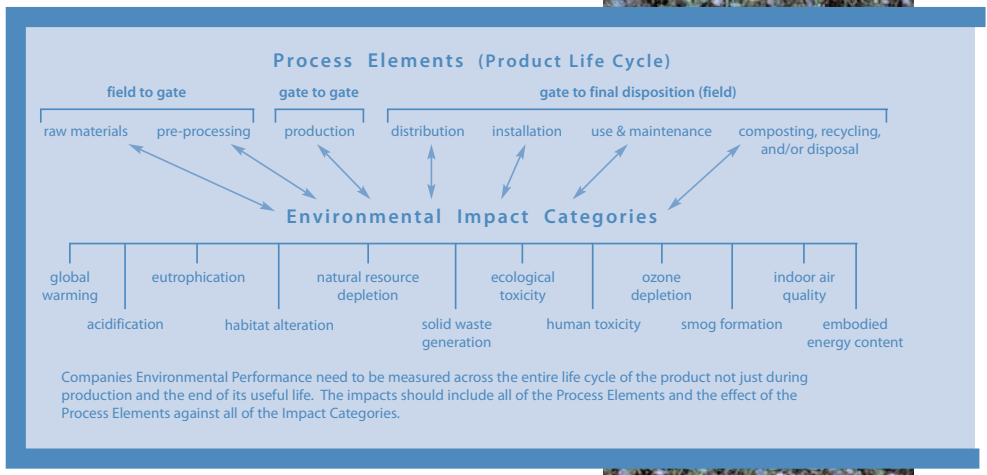
Gate to Field covers the Distribution, Installation, Use and Maintenance, and End of Life Outcome. Impacts here are often represented by manufacturers as life cycle costing, yet life cycle costing only measures the financial, non-environmental impacts.

The effects of the seven Process Elements are measured equally against the following 12 Environmental Impact Categories (see chart below): Global Warming, Acidification, Eutrophication, Natural Resource Depletion, Solid Waste Generation, Ecological Toxicity, Human Toxicity, Ozone Depletion, Smog Formation, Indoor Air Quality, Embodied Energy Content, and Habitat Alteration. The cumulative impacts of all process elements across all impact categories forms the full Life Cycle Assessment.

Life Cycle Assessments are the foundation to scientifically understanding a product, process, or service's full impact on the environment. The information learned from an LCA can help a company identify areas that need attention, chart future environmental improvements, and develop new products that have a lower environmental burden. ISO compliant LCAs should be the basis of any legitimate environmental certification or label, and can be used for comparing materials for selection. This information is also critical for the validation of any lawful marketing that references sustainability.

Forbo offers an independently done, 3rd party peer reviewed, publicly disclosed LCA for any and all products that are promoted on their environmental attributes. We do this to eliminate the marketing distortions and emotional appeals so prevalent in the industry today.

Marmoleum® is one of the first floor coverings to publish an independently done, peer reviewed LCA study.
A downloadable version of this report can be found on: www.leidenuniv.nl/cml/ssp/publications/lcalinoleum.pdf



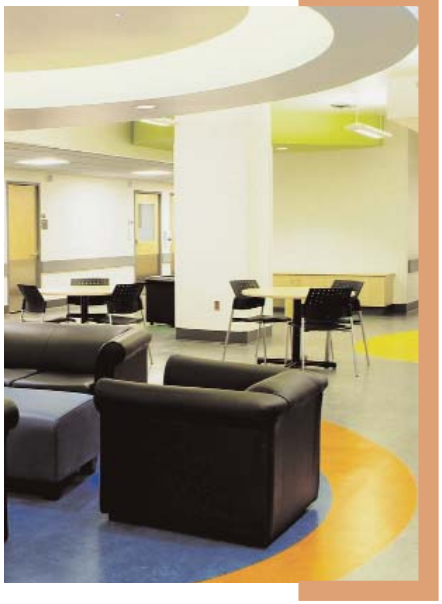
LEED®

The United States Green Building Council (USGBC) and Canadian Green Building Council (CaGBC) define LEED® as follows:

What is LEED®?
The Leadership in Energy and Environmental Design (LEED®) Green Building Rating System™ is the nationally accepted benchmark for the design, construction, and operation of high performance green buildings. LEED® gives building owners and operators the tools they need to have an immediate and measurable impact on their buildings' performance. LEED® promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality.

As clearly stated in their definition, LEED® does a very good job of assessing the building as a system. A building, however, is really a collection of thousands of products combined to form an operational system. So although establishing criteria for products, LEED® does not provide clarity on specific product selection.

LEED® is a point-based rating system for evaluating the environmental profile of a building. **No single product can obtain a LEED® credit**. Marmoleum helps in contributing to LEED® point accumulation as follows:



LEED®-CI Certified Project: St. Paul's Hospital, Vancouver, B.C. photo: Johann Wall
Johnston Davidson Architecture + Planning Inc.
D.L. Watts Flooring Ltd.

The LEED® Rating System evaluates products of six categories, in which one can obtain credits:

- Sustainable Sites
- Water Efficiency
- Energy & Atmosphere
- Materials & Resources
- Indoor Environmental Quality
- Innovation in Design & Process

Forbo products contribute to:

LEED® NC (New Construction)
Category Materials & Resources:
MR Credit 2.1: Construction Waste Management
MR Credit 2.2: Construction Waste Management
MR Credit 4.1 Recycled Content
MR Credit 4.2 Recycled Content
MR Credit 6 Rapidly Renewable Materials

Category Indoor Environmental Quality:
IEQ Credit 4.1 Low-Emitting Materials
Option 3 - Flooring Systems (LEED® for Schools)

LEED® CI (Commercial Interiors)
Category Materials & Resources:
MR Credit 2.1: Construction Waste Management
MR Credit 2.2: Construction Waste Management
MR Credit 4.1 Recycled Content
MR Credit 4.2 Recycled Content

Category Indoor Environmental Quality:
IEQ Credit 4.1 Low-Emitting Materials

LEED® EB (Existing Buildings)
Category Materials & Resources:
- Credit 2 Optimize Use of Alternative Materials
- Credit 3 Optimize Use of IAQ Compliant Products

Note: Although Forbo does not currently have manufacturing facilities that qualify for Materials and Resource Credits 5.1 and 5.2 Regional Materials, there is an exception for projects in the northern midwest where flax is grown and seeds are pressed (extraction point).

More information on the USGBC, CAGBC, and the LEED® Rating System can be found at www.usgbc.org and www.cagbc.org.

For updated information on LEED® compliance, please visit www.forboflooringNA.com.

contribution beyond the credits

LEED® beyond the credits… (understanding what the contribution of a manufacturer's product toward LEED® credits implies). Many manufacturers think that by listing the LEED® credits they feel their product contributes to, or in some cases, want you to think they contribute to, is enough. This, on the surface, can make unequivalent products look to have equal contributions for LEED® projects. This is not necessarily the case when it comes to those LEED® credits that are financially based. Materials & Resource credits that involve Recycled Content and/or Rapidly Renewable Materials **ARE** financially based.

For example:
On a project that is making the decision to apply for the Recycled Content Credit(s), Marmoleum will apply $2.25 per every $10.00 spent on flooring material towards this credit. This is based on Marmoleum's Pre-Consumer (Post Industrial) Recycled Content of 45%. This compares to $0.25 for vinyl and rubber floors that normally contain less than 5% Pre-Consumer Recycled Content for the same $10.00 investment.

Another example:
For that same $10.00 being spent on flooring materials, Marmoleum Sheet (33% RRM) will apply $3.30 and Marmoleum Tile (23% RRM) will apply $2.30 towards the Rapidly Renewable Materials Credit. This compares to $1.00 for rubber, or other bio-based flooring, that normally has less than 10% rapidly renewable ingredients in its construction.

So when you look beyond the LEED® compliance of a product and look towards its true LEED® contribution, Forbo Marmoleum is in a LEEDership position.

LEED® Silver Certified Project: C-TEC, Newark, OH photo: Nicole Dixon
L. Robert Kimball Architects
Legacy Flooring of Columbus

C-TEC, a Newark, Ohio based career and technical public school, has recently installed approximately 11,000 sq. yds. of Forbo's Marmoleum in its new and renovated 313,165 sq. ft. USGBC LEED® Silver Certified school building. The flooring product is frequently discussed by groups touring the facility marvelling as the twenty various colors of Marmoleum blend beautifully together in a stunning installation by Legacy Flooring of Columbus, Ohio.

"Marmoleum has made a huge difference in the attitude of the building" says Superintendent Ronald Cassidy. "The rooms and hallways are fresh and it is amazingly soft to walk on."

"Maintaining Marmoleum is really pretty simple, just clean it with a light application of cold water" says Facility Manager Rick Orr. "We will never have to strip the floor. Once a year we light scrub and apply 1 or 2 coats of Johnson's Matte Finish Water Based Wax. Our custodians love it and it's there for the long term. This regiment of cleaning has drastically reduced operational costs as well," continues Orr. "They say that seeing is believing, so I invite anyone to visit and talk with the people that maintain the floor every day."

labels, certifications, and standards

Going back to the definition of sustainability, the most confusing and difficult area to address is the topic of individual product certification. In our economy, driven by capitalism, where there is confusion, there is profit opportunity. As such, numerous organizations have introduced numerous labels, certifications, and standards to the market, further confusing an already complex landscape. Forbo focuses on standards developed by independent organizations utilizing an American National Standards Institute (ANSI)-accredited, consensus process. There is no way to know the validity or degree of arbitrary decision making behind a standard not done in this process.

Another level of complexity is created by Trade Organizations. Environmental labels, certifications, and standards need to raise the bar, to extend and test the manufacturer striving for approval. Trade Organizations, by definition, need to cater to their entire membership, and, as a result, will defer to the lowest common denominator, rather than rewarding leadership activities with distinction. They clearly fulfill their responsibility in contributions toward safety and standardization within product categories, but when forward leading momentum is required, it is a built-in conflict of interest.

Nicholas J. Begich Middle School, Anchorage, AK
photo: Ken Graham Photography.com

Evaluating different sustainable labels, certifications, and standards

When evaluating the validity of any label, certification, or standard, including one for sustainable products, the most important process lies in the development of the associated criteria. The following simple questions should be asked:

How were the criteria developed?
Criteria developed following a clear and transparent process, including involvement and balloting by all relevant stakeholders.

- This approach is how ASTM, ISO, and USGBC and CaGBC standards have been developed, following ANSI guidelines.

- or -

Criteria developed following a closed process.

- These types of labels, certifications, or standards, however well intentioned, potentially put the scope and definition into the arbitrary hands of consultants, trade organizations, and single attribute special interests, often in a non-transparent process.

Did the development of the label, certification, or standard incorporate ISO-compliant Life Cycle Assessment (LCA), utilizing all process elements and Environmental Impact Categories?
Ensures the label, certification, or standard does not address a single attribute, but rather the overall environmental footprint, inclusive of the triple bottom line.

USA
In 1997, Desk Top and Bulletin Board were declared winners of the much coveted AWFS Sequoia Award. The Sequoia Award, presented by the Association of Woodworking and Furnishing Suppliers, is granted to organizations within the industry that demonstrate environmental innovation and leadership in conservation techniques, applications and processes.

The Netherlands
In 1998 Marmoleum®, Walton and Corklinoleum received the Netherlands Environmental Quality Mark. This Dutch Eco label covers the whole life cycle. In addition, packaging and product information must all meet strict requirements. Products carrying this label, such as Marmoleum®, have a low environmental impact.

Scandinavia
The Nordic Swan Label aims to stimulate environmentally minded purchasing behavior by disseminating information among users. Maintaining this label is an indication of continued commitment to ever improving performance, as with each re-certification the performance standard is raised.

Austria
In 2001 Marmoleum® received the Austrian environmental label UZ 42. By receiving this label we prove that we offer an environmentally friendly option in resilient flooring. For UZ 42 products are evaluated on contents of halogens, heavy metals, bactericides and fungicides and on emissions. The environmental impact during production, use and disposal is also assessed. UZ 42 is only given to products that are amongst the most environmentally friendly alternatives available.

Australia
The 'Good Environmental Choice' Ecolabel is awarded to those products that meet or exceed voluntary standards of environmental performance. The verification procedure is managed via a Documented Quality Management System and Certification Program Manuals which have made significant use of the ISO 14 000 series. The program considers key environmental impacts along the product's life cycle and delivers independent product environmental information for a wide range of consumer and building products.

New Zealand
The New Zealand Ecolabeling Trust is a voluntary, multiple specification based environmental label, initiated and endorsed by the New Zealand Government to reduce the environmental impact of products. It provides a credible and independent guide for consumers who want to purchase more environmentally friendly products.

Germany
In 2004 Forbo was the first resilient flooring company to obtain the Nature Plus certificate for Marmoleum®. Nature Plus is a Europe-wide environmental product label testing products on environmental, health and functional characteristics.

SMART© Consensus Sustainable Product Standards

SMART© (Sustainable Materials Rating Technology) Consensus Sustainable Product Standards (CSPS) evaluates the environmental performance of building products over their life, providing the definitive standard for what constitutes a "sustainable" building product. Credits are earned for satisfying each criteria, and different levels of certification are awarded based on total credits earned. The SMART© Consensus Sustainable Product Standards was instituted by MTS, representing all stakeholders involved in the building industry, and is open to public scrutiny.

By using the 24 Sustainable & Environmental Product Evaluation Criteria as the background in the development of the SMART© Consensus Sustainable Product Standards the building product Score card was created. The use of the Sustainable Materials Rating Technology© score card allows for transparent communication of a building product's economic, environmental, and social impact to be evaluated and rated Sustainable, Sustainable Silver, Sustainable Gold, or Sustainable Platinum.

Sustainable & Environmental Product Evaluation Criteria

1. Sustainable: Triple Bottom Line
2. Consensus: ANSI Accredited Process
3. ISO Compliant Life Cycle Assessment (LCA)
4. Independent Certification
5. Third Party Global Auditing: Manufacturer & Supplier Facilities
6. Climate Change Pollution Reductions
7. Encourages No or de Minimums Toxins Including Endocrine Disruptors
8. Eliminates Stockholm Treaty Toxic Chemicals
9. Decertification for Noncompliance
10. Rules Preventing Industry Trade Association Dominance
11. Approved Standard
12. Performance Based: Tangible Impact Measures
13. Reasonable Costs Associated with Use & Implementation
14. Accessibility: Multiple Products Across Multiple Platforms
15. Multiple Levels of Compliance / Certification Certified, Gold, Platinum
16. Environmental Protection Agency (EPA) Requirements for Environmentally Preferable Purchasing(EPP) Product Certifiers
17. Requires Product Performance Durability
18. Federal Trade Commission (FTC) Environmental Marketing Requirements
19. Public Access to Criteria & Methodology
20. ISO 14020 Environmental Label Principles
21. Requires Continuous Improvement
22. Requires Product Reuse / Reclamation Consistent With FTC Requirements
23. ISO 14024 Environmental Label Requirements
24. ISO 14021 Environmental Label Requirements

Key
environmental benefits criteria
social benefits criteria
economic benefits criteria

Jack Evans Police Headquarters, Dallas, TX
photo: Mark Trew

The SMART© Flooring Standard is the only independently done, peer reviewed consensus based standard that meets the environmental principles most inline with Forbo Flooring Systems' core values and sustainable objectives.

Which label, certification, or standard meets all 24 criteria?

- Certified Organic Products ..... NO
- Cradle to Cradle ..... NO
- CRI Green Label ..... NO
- Energy Star ..... NO
- EPEAT ..... NO
- EU Product Label ..... NO
- Forest Stewardship Council ..... NO
- Global Reporting Initiative ..... NO
- Green-e Power ..... NO
- Greenhouse Gas Protocol ..... NO
- Green Seal ..... NO
- GreenSpec ..... NO
- National Sanitation Foundation ..... NO
- RFCI's Floor Score ..... NO
- Sustainable Forestry Initiative ..... NO
- SMART© Flooring Standard ..... YES

Several of these labels, certifications, or standards are industry specific, single attribute focused, and are appropriate for the segment they were developed for. However, none of them are as appropriately suited for the evaluation of sustainable criteria for broad-based product selection as SMART©.

SMART©

MTS

Sustainable Materials Rating Technology©

SMART BUILDING PRODUCT STANDARD© SCORECARD

Yes	?	No			
			Safe for Public Health & Environment (PHE)	**31 Points**	
1			PHE 1-1	Feedstock Inventory Documentation	Required
1			PHE 1-2	Input Stockholm Chemicals	Required
1			PHE 1-3	Output Stockholm Chemicals	Required
1			PHE 3-2	Minimize Indoor Air VOCs	1
1			PHE 3-3	Minimize Indoor Air Carcinogenic VOCs	1
1			PHE 3-4	Green Cleaning Procedures	1
1			PHE 4-2	Minimize Indoor Formaldehyde Emissions	1
2			PHE 2-1	Inventory human and ecological health chemical emissions	2
			PHE 2-2	Inventory Air, Water & Waste Pollutants	2
			PHE 2-4	Reductions Beyond Compliance	8
			PHE 3-1	10-25% Reduction in Toxic Chemicals & Media Pollutants	2
			PHE 4-1	26-50% Reduction in Toxic Chemicals & Media Pollutants	2
			PHE 5-1	51-75% Reduction in Toxic Chemicals & Media Pollutants	2
3			PHE 5-2	Supply Chain inventory and limit on Stockholm Chemicals	3
			PHE 6-1	No or De Minimis Toxic Chemicals & Media Pollutants	3

Yes	?	No			
			Renewable Energy & Energy Reduction (RE&ER)	**36 Points**	
			Manufacturing Facility Only:		
1			RE&ER 1-1	Energy Inventory	Required
2			RE&ER 2-1	1% Renewable Energy or 0.2-0.5% Energy Reduction (From Inventory Baseline)*	2
			RE&ER 2-2	Cleaner & Greener Certification Level 2	1
2			RE&ER 3-1	2% Renewable Energy or 0.5-1% Energy Reduction	2
2			RE&ER 3-2	5% Renewable Energy or 1.1-2% Energy Reduction	2
2			RE&ER 3-3	8% Renewable Energy or 2.1-4% Energy Reduction	2
			RE&ER 3-4	Certification of Climate Change Emission Reductions	1
2			RE&ER 4-1	11% Renewable Energy or 5-7% Energy Reduction	2
2			RE&ER 4-2	15% Renewable Energy or 8-20% Energy Reduction	2
2			RE&ER 4-3	20% Renewable Energy or 21-30% Energy Reduction	2
2			RE&ER 5-1	26% Renewable Energy or 31-40% Energy Reduction	2
2			RE&ER 5-2	35% Renewable Energy or 41-50% Energy Reduction	2
4			RE&ER 5-3	50% or More Renewable Energy or 51-100% Energy Reduction	4
			Upstream Stages:		
			RE&ER 5-5	1-9% Renewable Energy or 0.5-7% Energy Reduction	3
			RE&ER 5-6	10-18% Renewable Energy or 8-20% Energy Reduction	2
			RE&ER 6-1	19-27% Renewable Energy or 21-40% Energy Reduction	2
			RE&ER 6-2	28-35% or More Renewable Energy or 41-100% Energy Reduction	4

* For all Renewable Energy & Energy Efficiency (RE) percentages: Future energy reductions as measured by total energy reduced per square yard of product or over an entire facility involved in making the certified product. Point totals are additive for all percentages above 1%.

Yes	?	No				
			Biobased or Recycled (MATLS)	**30 Points**		
1			MATLS 1-1	Inventory Biobased and Recycled Content Materials		Required
1			MATLS 2-1	5% biobased, recycled content, or EPP material		1
1			MATLS 2-2	10% biobased, recycled content, or EPP material		1
1			MATLS 2-3	15% biobased, recycled content, or EPP material		1
1			MATLS 2-4	20% biobased, recycled content, or EPP material		1
1			MATLS 3-1	25% biobased, recycled content, or EPP material		1
1			MATLS 3-2	30% biobased, recycled content, or EPP material		1
1			MATLS 3-3	35% biobased, recycled content, or EPP material		1
1			MATLS 3-4	40% biobased, recycled content, or EPP material		1
1			MATLS 4-2	45% biobased or recycled content		1
2			MATLS 4-3	50% biobased or recycled content		2
2			MATLS 4-4	60% biobased or recycled content	Recycled: 3	Biobased: 4
2			MATLS 5-2	70% biobased or recycled content		2
			MATLS 5-3	75% biobased or recycled content	Recycled: 2	Biobased: 3
			MATLS 5-4	80% biobased or recycled content	Recycled: 3	Biobased: 4
2			MATLS 6-2	88% biobased or recycled content		2
			MATLS 6-3	91% biobased or recycled content	Recycled: 2	Biobased: 4
			MATLS 6-4	94% biobased or recycled content	Recycled: 3	Biobased: 4
			MATLS 6-5	97% biobased or recycled content	Recycled: 4	Biobased: 5

Yes	?	No			
			Facility or Company Based (MFG)	**18 Points**	
1			MFG 1-1	EMS Environmental Policy & Targets	Required
1			MFG 1-2	Social Indicator Reporting for Manufacturers	Required
1			MFG 2-2	LCA Process	Required
			MFG 2-1	Social Indicator Reporting for Suppliers	1
1			MFG 3-1	Transparent Secondary Materials Reclamation System	1
			MFG 3-2	Transparent Materials Reclamation System	2
			MFG 3-3	Transparent Repurpose Materials Reclamation System	2
2			MFG 4-1	Identify Adopted Design for Environment Process	2
2			MFG 5-1	Environmental Management System Certification	2
2			MFG 6-1	Sustainable/EPP Product Transaction Disclosures	2

Yes	?	No			
			Reclamation, Sustainable Reuse, & End of Life Management (EOL)	**23 points**	
1			EOL 1-1	Operational Reclamation and/or Sustainable Reuse Programs	Required
1			EOL 1-2	Performance Durability	Required
2			EOL 2-1	Extended Product Life of System	2
			EOL 2-2 -- 2-4	1-6% Product Reclamation and/or Reuse [1 pt every 2%]	3
			EOL 3-1 -- 3-3	7-12% Product Reclamation and/or Reuse [1 pt every 2%]	3
			EOL 4-1 -- 4-4	13- 20% Product Reclamation and/or Reuse [1 pt every 2%]	4
			EOL 5-1 -- 5-5	21- 30% Product Reclamation and/or Reuse [1 pt every 2%]	5
			EOL 6-1 -- 6-4	30% or More Product Reclamation and/or Reuse [1 pt for 2% until 38%]	4

Yes	?	No			
			Innovation in Manufacturing (IM)	**19 Points**	
14			IM - 1-1	EOL 6-5 -- 6-11 2 pts for every 10% more Reclamation [39-100%]	14
5			IM - 1-2	Dematerialization (less material by % weight)	5

Yes	?	No		
10			**Subtotal Required Credits**	
90			**Product Total**	

MTS Certified Flooring Achievement - Sustainable 28-40 pts **Silver** 41-60 pts **Gold** 61-89 pts **Platinum** 90-157 pts

movement forward

symbol key

raw material acquisition
pre-processing
manufacturing
transportation/distribution
installation, use & maintenance
end of life
air
land
water
habitat

Since the publishing of our Marmoleum LCA in 2000, Forbo has taken several steps to lower Marmoleum's environmental impact.

process element | environmental impact category

- **1997-2006 production facility energy efficiency index (EEI)** shows improvement of 15.1%. The EEI expresses the amount of electricity and gas per m^2 of product produced.
- **2000-2006 production facility overall water reduction** of nearly 5% overall (Drinking water for sanitary use and ground water for processes).
- **2000-2006 production facility solid waste** was reduced by 50% while increasing production over the same time frame. 25% of our solid waste was diverted from the landfill by recycling in 2006.
- **2001 product innovation** Introduction of Tall Oil (a post-industrial waste) to replace a portion of the linseed oil in Marmoleum resulting in an improvement of our eutrophication impact by 40%.
- **2002-2006 production facility emission reductions** CO2 emissions reduced by 22% . NOx emissions down 6.5%. Overall VOC emissions down 46%.
  - Emissions that affect the ozone layer have been lowered by 66% over 2000 levels.
  - During this time, production volumes increased substantially.
- **2005 product innovation** Introduction of TopShield. TopShield dramatically reduces the need for chemical use in cleaning and maintenance. Along with this improved performance, TopShield also shows positive effects on environmental impact when calculated through the LCA methodology. The chart on the next page clearly demonstrates that environmental performance and functional improvement can go hand in hand.
- **2006 production facility capital investment** Forbo installs individual KWh meters on all equipment and systems that give more clarity about how much energy each department, machine or process consumes, as a means to determine further energy reduction opportunities.
- **2007 production facility green power** Forbo converts its Assendelft site to 100% renewable green energy. The Assendelft location is our largest production facility and is the main factory for Marmoleum production.
- **2007 production facility capital investment** Preparations are made to replace all Freon-containing cooling systems. The new system is scheduled to come online in early 2008.
- **2007** Forbo Marmoleum receives MTS SMART© Consensus Sustainable Product Standards – Sustainable Platinum level certification under the Sustainable Building Product Standard.
- **2007** Forbo donates a portion of global sales of specific Marmoleum products to the World Wildlife Federation (WWF).

on the local front

process element | environmental impact category

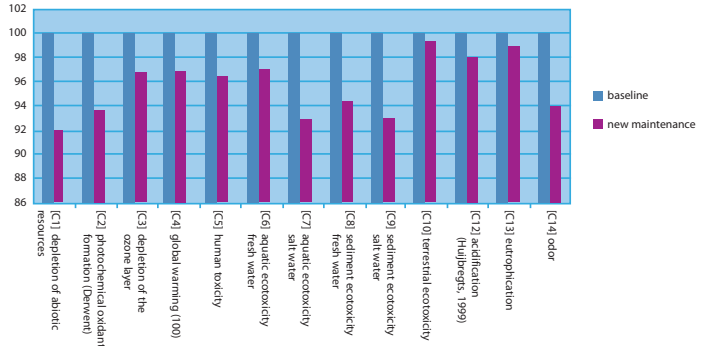
- **2003** - Forbo, and all sample vendors, replaced indoor electric lighting methods of "bleaching" linoleum material for sample use with outdoor greenhouses. The green-house uses natural sunlight to dissipate the drying room yellowing that naturally occurs in linoleum after production. This method has not only provided a faster turn around time for Forbo, but has also resulted in a 27% savings in energy consumption in our Hazleton facility.

- **2005** - Forbo announces and funds an industry leading sample "take back" program. This program allows the design community and others to return any sampling produced by Forbo free of charge. Forbo will arrange for sampling to be shipped back or picked up by our local employees. The sampling will be reconditioned and reused if the style is current, or, substantially recycled or used in our composting if discontinued. This program includes loose samples, folders, strap sets, and box sets.
- **2005** - Previous method of printing technical specifications and data is replaced with electronic data downloadable from website, and available on CD.
- **2006** - Forbo Way to Win (FWW) Introduced. The one constant in the past years at Forbo has been "change". Change demands new approaches, new methods, and new thought processes. Preservation of the status quo creates failure, not the status quo. The FWW is a simple set of guiding principles to lead Forbo in a consistent, positive manner. Inspiring, Daring, and Caring are the basis of the FWW.
  - People who are committed to values, quality, and performance. Who give their all with eagerness, skill, and energy. Who ensure that every contact with us – and everything we do – becomes a rewarding experience for all concerned. So that our customers and business partners become convinced and convincing ambassadors for our company and our brand.
  - With this simple commitment, Forbo has partnered with its employees to develop and implement personal commitments in helping the environment. These individual commitments have ranged from recycling targets to energy reduction in our employees homes, children's schools, to places of worship.
- **2007** - Forbo announces Marmoleum Scrap Composting Pilot Program with Ace Waste of Reston, VA. (www.acewasterecycling.com) This program, which collects jobsite scraps from the Mid Atlantic Region along with roll ends and trimmings from our NE distribution facility, has diverted nearly 20 tons per month of solid waste since its inception. This program has reduced the solid waste from the distribution facility by 85%. While still in its pilot phase, it is anticipated to go throughout North America, partnered with additional environmentally committed waste composting and recycling companies.

* please check website for updates on our local initiatives

Marmoleum Scrap Composting Program
Forbo Warehouse, Hazleton, PA

Comparison previous situation (baseline) vs. Topshield (new maintenance) 2.5 mm linoleum



sustainability in the corporate culture

In order to bring some clarity to the term "sustainability," we have identified the following factors:

- why manufacturers should utilize LCA as a tool and guide for reducing their environmental footprint and the outcomes of Forbo's publicly disclosed LCA's
- how the LEED® rating system has impacted the built environment, and Forbo's contributions to credits within the system
- the reasons for demanding a rigorous, consensus based, third party validated, sustainable product standards and why SMART© is a benchmark standard

This comprehensive approach would not be possible without sustainability being woven into the very core of our corporate culture. Sustainability is viewed as a never ending process at Forbo, as there is no environmentally perfect product or process. Sustainability must start in the board room and not the marketing department. Marketing activities, unsupported by boardroom level investments, are doomed to a nice story, pretty pictures, and complete environmental failure (aka "greenwash").

Natural raw materials are only the start of our strong environmental performance. State of the art processes ensure that each production stage causes minimal environmental impact. On average, 12% of our total capital investments are spent on measures designed to further improve health, safety, and environmental performance (the triple bottom line). All decisions as they pertain to product improvement, development, and innovation go through the PCB (Product Coordination Board). This board consists of the persons globally responsible for all factory production, R&D, product management, international environmental committees, and overall business management. In order to insure that our mission stays on course we have incorporated "design for the environment" into the decision making process. This "design for the environment" is a checks and balances environmental policy developed by Forbo's international environment committee. At different stages in the decision process, "go" / "no go" points have been set to ask various environmental questions. If the environmental policy has not been achieved then it is a "no go" until compliance to the policy has been met.

Triple bottom line commitments include not losing sight of our social equity obligations. Every Forbo business unit globally has been directed to support and actively participate in relevant local environmental organizations. It is our goal to help educate the public, and play an active role in the sustainable movement both locally and globally. In North America, we were charter members of the USGBC, CaGBC, the Alliance for Sustainable Built Environments (ASBE), and the Institute for Market Transformation to Sustainability (MTS). Currently in our "field to field" efforts in North America, not only are we improving our environmental footprint, but supporting the socioeconomic position of today's farmer.

> Following our surveys of best practices to best yield, we have been able to give the farmers more prescriptive practices to optimize their yields while minimizing their environmental footprint. The movement to precise in drill-row fertilizer placement and the incorporation of minimum/no till procedures are now the norm for 74.4% of all flax growers.
>
> Because of your introduction (to us) of both Forbo's corporate culture of environmental sustainability and Life Cycle Assessment, starting behind the farm gate, has had payoffs already.
>
> (Forbo) has been on the ground working with the Flax Canada 2015 Inc., flax growers and provincial governments to set a hurdle rate for the manufacturing industry. I'm looking forward to carrying this message to an ever widening audience in agriculture.

John Oliver
Chair, FC2015 Inc.

October 25th, 2007

FC2015
Flax for all Seasons

Mr. Tim Cole
Director of Environmental Initiatives
Forbo Flooring North America
2 Maplewood Drive
Hazelton, PA 18202
USA

Flax Canada 2015 Inc.
405 -167 Lombard Avenue
Winnipeg, MB Canada
R3B 0T6

P. 204.982.2116
F. 204.982.1963
www.fc2015.ca

Dear Tim,

I wanted to take a moment and relate some of the successes of the Forbo/Flax Canada 2015 Inc. working relationship. There have been several which stood out since we started.

Best practices at the farm level. Following our surveys of best practices to best yield, we have been able to give the farmers more prescriptive practices to optimize their yields while maximizing their environmental foot print. The movement to precise in drill row fertilizer placement and the incorporation of minimum/no till procedures are now the norm for 74.4% of all flax growers.

We are planning training sessions with the certified crop consultants in the three Prairie Provinces and major flax grower meetings in the 1st quarter of 2008 to continue to drive the management practices further. As well, with your thinking on the Life Cycle Assessment, starting in the farmer's field, we are working with other crop commodities to build more sustainable 3 and 4 year crop rotation.

Because of your introduction (to us) of both Forbo's corporate culture of environmental sustainability and Life Cycle Assessment, starting behind the farm gate, has had payoffs already. The high profile work-shop with the Alberta government in September 2007, has led to the Manitoba and Saskatchewan governments asking for help. Meetings are already being scheduled. The Life Cycle Assessment is gathering a much wider audience than just the flax industry in Canadian agriculture.

Tim, you and Jacco Vlaar have been on the ground working with Flax Canada 2015 Inc., flax growers and provincial governments to set a hurdle rate for the manufacturing industry. On behalf of Flax Canada 2015 Inc., I want to thank you for your effort. I'm looking forward to carrying this message to an ever widening audience in agriculture.

Best regards,

John Oliver
Chair, FC2015 Inc.

Through our partnership with the International Flax Council and support from the Canadian Department of Agriculture, Forbo is assisting in the communication of "best practices" to flax farmers. It is clear that the decisions they make in the field have a direct impact on their local environment, as well as the environmental footprint of Marmoleum. These efforts also carry the goal of tripling flax production in western Canada by 2015.

Work on the grower end is the first field in our "field to field" program. End of life is the other field. Today's farmer and even general contractors may find value in the results of our pilot composting project. After diverting thousands of tons of Marmoleum scrap in 2007, in such a project, we anticipate a roll out program to mainstream this throughout North America in the coming years. The program started in our US warehouses where a project team designed and built containers out of reused lumber and cardboard from pallets and shipping braces. These containers of reused lumber and cardboard, along with the Marmoleum scrap they hold, get ground up with public yard waste to make compost. This compost is suitable for use in farmers' fields, vegetable gardens, and home flower beds. Long term prospects of the program envision a future for Marmoleum scrap to never leave the job site, but rather be ground on site by a licensed contractor along with other products such as drywall scrap, and untreated lumber. This would eliminate the need for a take back program resulting in the lowest footprint possible. Partnering with leading companies like Ace Waste in Washington, DC has helped to open our eyes as to how we can put the natural raw materials of Marmoleum back into the earth where they came from.

The final aspect of the corporate commitment to sustainability is "transparency". It is always easy to communicate the good things that you do, however, the sign of true sustainable commitment is to publicly disclose all aspects of one's environmental footprint . As stated earlier, there is no perfect product or process and public disclosure of full impacts and improvements is necessary for transparency. This can be done in many ways. Forbo annually publishes a Health, Safety, and Environment Report available to all interested parties (www.forbofloooringNA.com). Further, our LCA data is also made readily available. All Forbo employees and stakeholders are encouraged to share their ideas on "creating better environments" within and outside of our organization.

> The opportunity to help close the loop on a flooring product that is comprised completely of organic materials is incredibly exciting. The current testing we have underway is proving that this goal (dubbed "field to field") is very much achievable.
>
> In the next few months, we should see finished compost available from Forbo scrap, and then will see that this material is completely indistinguishable from other high quality composts. Once accomplished, making the "field to field" program more widely available is our next goal.
>
> Another outcome of this project is to see Forbo scrap used directly on construction sites in the future. We are starting to see this now with wallboard, when it is ground up and land spread. There is no reason the Forbo scrap can't also be similarly processed.

Ken Mogul
President
Ace Waste

ACEWASTE

December 10, 2007

Mr. Tim Cole
Forbo Flooring
2 Maplewood Drive
Hazelton, PA 18202

Dear Mr. Cole,

It has been a pleasure working with you to develop a composting infrastructure for Forbo's Marmoleum scrap. The opportunity to help close the loop on a flooring product that is comprised completely of organic materials is incredibly exciting.

All of us involved in this project want to see the Forbo scrap become a readily accepted ingredient in composting, and then have the resulting compost be used routinely. The current testing we have underway is proving that this goal (dubbed "field to field") is very much achievable.

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Another outcome of this project is to see Forbo scrap used directly on construction sites in the future. We are starting to see this now with wallboard, when it is ground up and land spread. There is no reason the Forbo scrap can't also be similarly processed.

We look forward to continuing our relationship and our success.

Best,

Ken Mogul

Ken Mogul
President

LEED®, follow, or get out of the way.

Marmoleum versus PVC and other flooring

"Lead, follow, or get out of the way". This famous marketing slogan helped inspire employees and consumers alike to save a dying automobile company. Much of the same applies to environmental stewardship and the sustainability movement today. It requires inspired individuals to take it upon themselves to make a difference by their leadership actions as opposed to words. Waiting for the government or other regulatory action to follow takes far too long and allows too many adverse impacts in the interim period.

The following depicts some examples of the time lag between health and environmental risk identification and regulatory action.

Element	Risk Identified	Regulatory Action Taken	Time Delay
Lead (Paint)	1949	1970	21 years
Lead (Gasoline)	1920	1986	66 years
Dichloro-Diphenyl-Trichloroethane(DDT)	1962	Worldwide agricultural ban in 1972	10 years
Asbestos	1970	1989	19 years
PVC w/(DEHP), (DBP), (BBP), (DINP), (DIDP), (DNOP)	2003	California bans the use of these six plasticizers in children's toys in 2007	

The time lapses beg to ask the question, "How do you know that Plasticized PVC isn't tomorrow's health concern?" Clearly the answer is you don't.

Forbo is a "Marmoleum first" manufacturer, however, the truth is that Forbo is also a PVC flooring manufacturer. Why? Forbo currently competes primarily in the commercial market with a strategic business goal of being the global leader in commercial resilient flooring. As a result, there are certain performance requirements (i.e. slip-resistant flooring), visuals (i.e. wood grain pattern), or maintenance characteristics (i.e. surgical suite) for which Marmoleum is not yet suitable. Forbo applies LCA methodology to optimizing the environmental profile of the production of its PVC-based products as well, but they comprise less than 10% of the total volume sold.

PVC is a polarizing term in the industry today. What is even more confusing is that PVC may not be the most detrimental plastic floor! Several manufacturers have jumped on the marketing bandwagon of producing a "non-PVC" , "PVC-free", or other similar termed floor. This is presumed a positive development only on the basis that PVC is an environmental negative. No independently done, third party peer reviewed LCA analysis is published on these floors and, in Forbo's own analysis of and/or development of these floors, many actually have a worse environmental profile than traditional PVC-based alternatives. This only further serves the need for independent, LCA-based product standards.

the opportunity to make a difference

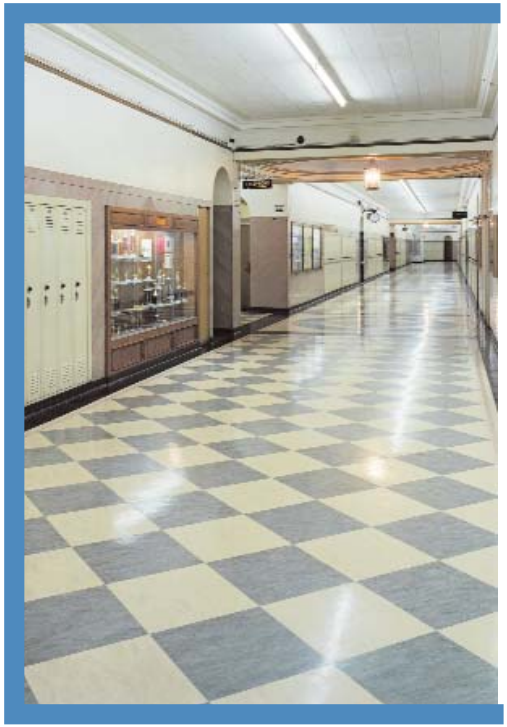
The flooring industry is an evolutionary business, not revolutionary. It evolves over time, however, there are occasional historical benchmarks of dramatic shifts in the market. One of those occurred in the 1970's when, for environmental and health reasons, the market rapidly shifted from VAT (Vinyl Asbestos Tile) to VCT (Vinyl Composition Tile). This was driven by the asbestos component in VAT. VCT, which is the cheapest most expensive floor covering you can purchase, is THE base grade commercial resilient flooring used in the industry today. This is driven by first cost concerns, rather than cost of ownership. It is now time for the market to make a major shift again.

For improved health and cost performance, it is time to move away from a high chemical usage for cleaning and maintenance, plasticized PVC-based product, to the only occupancy ready product with a third party, peer-reviewed publicly disclosed LCA analysis showing its exceptional environmental and performance profile, MCT – Marmoleum Composition Tile.

The Market Signals Align
Plasticized PVC, a petroleum based raw material, is rapidly increasing in price. As such, VCT, which utilizes PVC as a raw material, has rapidly increased prices in the market. At the same time, the environmental and health concerns about plasticized- PVC continue to penetrate the market. VCT product price increases have dramatically narrowed the gap between the installed prices of VCT and the installed prices of MCT, making market transformation rapidly achievable.

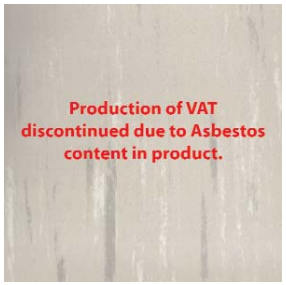
Forbo will guarantee that MCT will INSTALL for $2.75-$3.45 ft² (in Canada: $3.50-$3.95 ft²), material, adhesive, and labor inclusive (exclusive of subfloor preparation and moisture mitigation).
In addition, MCT offers the following benefits:

- Occupancy Ready finish (Topshield), meaning the floor does not require any initial coats of finish (visit www.floorcostcomparison.com)
- 10 times higher indentation resistant, and better stain resistance
- Inherent bacteriostatic efficacy including MRSA and C-difficile
- Natural anti-static properties to repel dust and dirt, making it easy to maintain a clean and healthy environment
- Made from readily renewable raw materials
- Passes CHPS 01350 and other stringent IAQ standards



Grosse Pointe South High School, Grosse Pointe, MI
photo: Beth Singer Photography

IT IS TIME FOR A CHANGE.



Vinyl Asbestos Tile (VAT)
1970's

Vinyl Composition Tile (VCT)
1980's

Marmoleum Composition Tile (MCT)
2008 and beyond

triple bottom line thinking – triple bottom line actions

Companies today are valued in many different ways. There are hard and solid financial evaluations of fiscal strength, but there are also enormous valuations placed on intangible assets such as brand. For many companies, "brand" is worth more than all their tangible assets combined. What is the value of a company that thinks and acts in terms of economics, ecology, and EQUITY (the social kind)?

On a practical level, the triple bottom line means expanding the traditional accounting methodology of evaluating a business' performance beyond the financial, taking into account environmental and social equity aspects. Forbo has taken tangible steps in recognition of this, the first of which was the publishing of the annual Health, Safety, and Environment report in parallel to our Fiscal Annual Report. This practice began in 1999 and the current report can be downloaded from www.forboflooringNA.com (under "Environment"), and provides complete transparency to our overall performance.

We believe Marmoleum provides a microcosm of the way the triple bottom line should work. Not only is it a global product in terms of application, but it is a global product in terms of production. Agriculture-based and recycled industrial by-products form the raw material basis and are supplied from three continents. Economies of the supply chain vary from developing third world countries, to highly mature industrialized nations.

We take our role in developing economies very seriously. Again applying "Compliance Plus" principles to move beyond "no child labor" our major suppliers in this area are also required to invest in schools for the children of their workers.

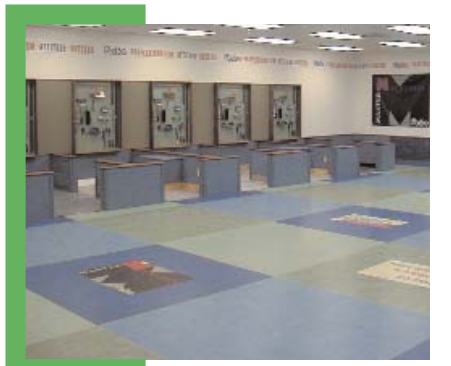
The following is an excerpt from an audit letter from Forbo's jute supplier:

> "We would like to confirm that we are complying with all national laws and regulations concerning
> - Social and working conditions:
> We have taken several steps like running of school for the children of our workmen, conducting health check up programme, Regular cleaning of labour lines etc."

Likewise we have maintained our commitment to the economies and people that built our company. We have maintained our large production base, while investing heavily in production efficiency, to compete effectively on a global scale in our original Western European manufacturing facilities. While difficult economic times have forced plant closures over the years, Forbo has never closed a flooring production facility to re-open it somewhere else with lower labor costs.

Finally, most Forbo Flooring Systems products are installed by local labor. To this extent, Forbo offers the most comprehensive installation training available in the floorcovering industry. Forbo offers the following training programs:

1. On-site and local installation clinics.
2. Associate Mechanic certifications are offered in Hazleton, PA, Dallas, TX, and Reno, NV , also in conjunction with the national INSTALL Program of the Carpenters Union.
3. Master Mechanic certifications are offered in Hazleton, PA, Dallas, TX, and Reno, NV.
4. Training the Trainer for the INSTALL Program.



conclusion

We ask you to go back and look at the definitions of sustain again and reflect on them in Forbo's perspective:

sus·tain (sə-stān)
tr.v. sus·tained, sus·tain·ing, sus·tains

1. To keep in existence; maintain.
   Marmoleum, our core product, has been in continuous production for over 150 years and continues to be an innovative leader in color, design, and performance still today.
2. To supply with necessities or nourishment; provide for.
   Forbo's triple bottom line commitment ensures that all stakeholders expectations and needs are fulfilled.
3. To support from below; keep from falling or sinking; prop.
   As a charter member of the USGBC, CaGBC, MTS, and ASBE, Forbo has long been a supporter of the environmental movement.
4. To support the spirits, vitality, or resolution of; encourage.
   Forbo's continual innovation in product and styling makes sustainability easy to design with.
5. To bear up under; withstand.
   Forbo's commitment to ongoing education and transparency is communicated through the most professional and educated organization in the industry.
6. To experience or suffer.
   Forbo has remained committed to sustainable products and processes during bad economic times as well as good and have sustained this effort for decades.
7. To affirm the validity of.
   Forbo strongly supports consensus based, independently certified sustainable product certifications and Marmoleum carries more independent environmental certifications than any other floor covering in the world.
8. To prove or corroborate; confirm.
   Forbo, through transparency and full disclosure, guarantees that our stakeholders committed to sustainability truly are accomplishing their goals.
9. To keep up competently.
   Forbo remains the world leader in linoleum and sustainable floor covering solutions.

below: jute in natural form

marmoleum®

MCT

marmoleum® composition tile

certified sustainable tile

Forbo Flooring Systems uses FSC-certified paper and cardboard and soy-based ink in the printing of its marketing and corporate materials. Additional copies of this brochure, and other Forbo literature, can be downloaded from www.forboflooringNA.com

Forbo Flooring Systems
P.O. Box 667
Humboldt Industrial Park
Hazleton, PA 18202
ph: 570-459-0771
1-800-842-7839
fax: 570-450-0258
www.forboflooringNA.com
www.floorcostcomparison.com

Forbo Flooring Systems
Canadian office
25 Pollard Street
Richmond Hill, ON L4B 1A8
ph: 416-661-2351
1-866-661-2351
fax: 416-661-5362
www.forboflooringNA.com
www.floorcostcomparison.com

01/08/10K/MDW