



BY APPOINTMENT TO H.M. THE QUEEN  
MANUFACTURERS OF FLOORCOVERING  
FORBO FLOORING UK LTD, KIRKCALDY



## The Black and White Guide to 'Green'

Flax, a key ingredient of Marmoleum

### Forbo's environmental credentials

creating better environments



FLOORING SYSTEMS

# Contents

Creating better environments	3
A sustainable future	4
Measuring our footprint	5
Green design	6
Forbo's four R's in practice	
Reduce	7
Renewable	9
Reuse and recycle	10
Green performance	13
Creating better indoor environments	14
Our environmental approach by product range	
Linoleum	16
Carpet tiles	18
Project vinyl	20
Flotex	21
Entrance flooring systems	22
The way forward	24
Environmental schemes and terms explained	25
Forbo's BREEAM ratings	26
Forbo's green certifications	27
What to do next	27

# Creating better environments

**Forbo Flooring Systems is a global producer of flooring solutions and is the world leader in linoleum with a market share of over 65%.**

**We pride ourselves on offering a truly comprehensive product portfolio with leading edge products specifically designed to cater for each area of a project, from the entrance, through circulation and communal zones, to each individual space in the building.**

**We are also a major British manufacturer with five UK manufacturing plants employing more than 500 UK staff.**

Our company ethos of 'creating better environments' pervades all our actions. From the way we design our products and source raw materials to the way we manufacture and despatch. Of course it doesn't stop there. Our environmental responsibility extends to our products during their use and what happens at the end of their useful life.

In the following pages we'll try and stick to the facts of the matter. We'll take a look at the independent methods we use to measure our environmental impacts and how we build 'greenness' into our processes and products. We'll also try and give an insight in to the many environmental schemes out there to enable our customers to make a choice of flooring using sound environmental information.

If you would like more details on anything in this brochure, please don't hesitate to contact us on **0800 0282 162** or email **info.flooring.uk@forbo.com**

## **Our environmental achievements date back over a decade and are truly global:**

- Founding member and presidency of the Green Building Council in North America, Holland and Germany. Member of the UK Green Building Council
- Leading member of Carpet Recycling UK
- Member of VinylPlus for increased recycling of post consumer PVC and shareholder of the European Vinyl Recycling facility AgPR in Germany
- The Forbo Way to Win Sustainability project which encourages every Forbo employee around the globe to actively participate in reducing our environmental impact has generated 1700 ideas so far
- The Netherlands: Dutch environmental quality mark since 1998
- Scandinavia: Nordic Swan Label since 1996
- Germany: the natureplus Seal of Quality since 2004 and more recently the Blue Angel mark
- Australia and New Zealand: the 'Good environmental Choice Eco-label' since 2007
- USA: SMART since 2008

# Forbo Flooring Systems' sustainability policy

As a global leader in flooring systems we have a responsibility to all our stakeholders, to create a better environment. The way we serve and drive the market sets the pace and standard for world class flooring solutions. Sustainable development and 'creating better environments' are integral parts of all of Forbo Flooring Systems' activities.

Founded in 1928, Forbo's first product was linoleum – made from renewable natural raw materials, fully biodegradable and environmentally friendly. We have been at the forefront of sustainable awareness fulfilment for over 80 years. This global sustainability awareness has grown in the last decade, becoming clear that natural source depletion and global warming are two practices

that cannot continue as they have in the past if we are to fulfil our obligations to future generations. It is these obligations, to future generations, that we will comply to and in doing so act as a sustainable enterprise.

Forbo underwrites the broad and all inclusive definition for sustainable development as it has been accepted by the United Nations Commission on Environment and Development, General Assembly Resolution, 1987.

*"Developments that meet present needs without compromising the ability of future generations to meet their needs."*

The United Nation's definition of sustainability recognises three individual dimensions that together make up a sustainable policy, they are:

**The Economic dimension:**  
the way in which the company organises its position in the market place to actively develop its sustainable profile by using its economic stability and profitability for continuous improvement.

**The Social dimension:**  
the way in which Corporate Social Responsibility and Corporate Governance are defined and followed within the company.

**The Environmental dimension:**  
the way in which measures specific to improving the environmental impact of the processes and products of the company are regulated and executed.

Forbo Flooring Systems supports these dimensions in a constructive and consistent manner through the following principles:

- "Compliance Plus" – a commitment to go above and beyond Government regulations and requirements
- Integrating sustainability considerations into all our business decisions
- Regular monitoring of progress and review of sustainability performance
- Commitment to continuous improvement
- Promoting Sustainability throughout our value chain, and expecting our suppliers and customers to comply with this

- Ensure that all staff are fully aware of our Sustainability Policy and are committed to implementing and improving it



*J. Schneider*  
**Jens Schneider**  
Executive Vice President, Forbo Flooring Systems

**Forbo Flooring Systems fully commits to being a sustainable partner to all our stakeholders.**

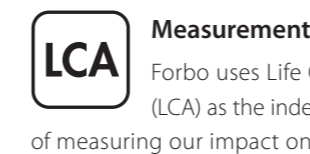
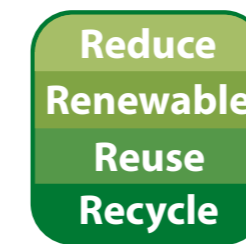
# Reducing our environmental footprint

## Our target

To continuously minimise the environmental impact of Forbo Flooring Systems as measured by the weighted categories in our independently verified Life Cycle Assessment measurement system by 25% before the end of 2015 (cf 2009).

We shall succeed by:

- Applying Forbo's 4 R's



Forbo uses Life Cycle Assessment (LCA) as the independent methodology of measuring our impact on the environment. Based on LCA assessment we already out perform the industry average in resilient flooring categories. Forbo's range of textile products is currently being assessed.

## Measuring our LCA

The LCA is calculated for 1m<sup>2</sup> installed floor covering from cradle to installation. We based our LCA calculation on the weighed mass of all the products we produced. We also included the energy consumption of all our offices and warehouses worldwide.

When evaluating our LCA, we took into account the following environmental impact categories:

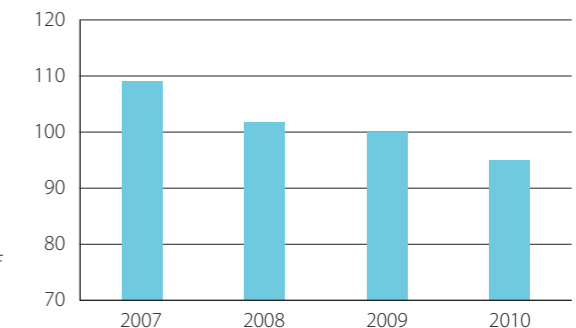
- Acidification potential
- Eutrophication potential
- Ozone layer depletion potential
- Photo oxidant creation potential
- Abiotic depletion potential
- Global warming potential

We strongly believe that creating better environments means reducing all environmental impacts and not only Global Warming. Therefore, we equally weight all six impact categories and express them in one index figure.

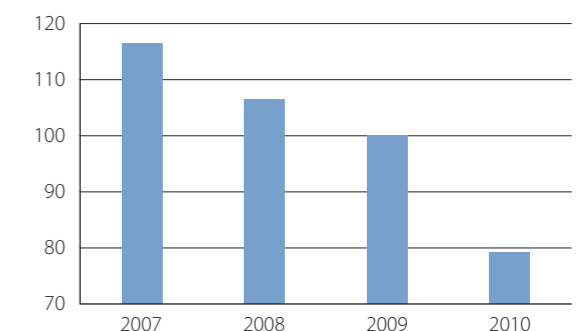
The LCA index – Environmental Footprint – shows that we have continued to improve our performance for the fourth straight year. The carbon footprint – Global Warming Potential – has been reduced by over 30% since 2007. This is partly due to our policy of purchasing renewable forms of electricity and our internal waste reuse and recycling programmes.

The following pages provide more detail on the activities and programmes we are undertaking to continue to reduce our LCA index – Environmental footprint – and thereby achieve our challenging target.

**LCA INDEX**  
ENVIRONMENTAL FOOTPRINT



**GLOBAL WARMING POTENTIAL INDEX**  
CARBON FOOTPRINT



# Green design

*'When we begin with our blank piece of paper, we start to design with the end in mind.'*

**Andy Hall**

*Vice President of innovation and product management*

Forbo's product development is focused on reducing the use of virgin raw material and developing processes and products that result in the lowest proven environmental impact as measured through LCA (Life Cycle Assessment). We work closely with our suppliers to source new, low impact materials that help us achieve a 'Compliance Plus' rating. We also 'design engineer' our products to ensure that they use the minimum amount of raw material without compromising on performance.

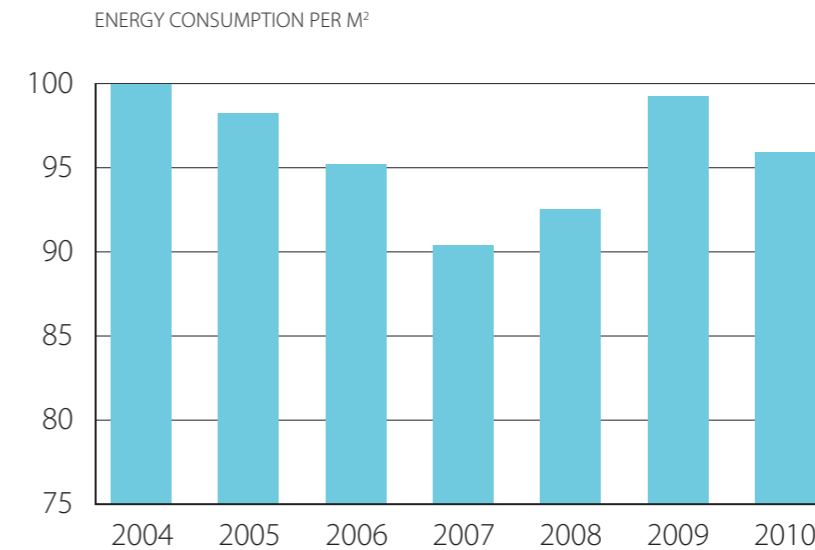


### Examples:

- The backing of our Westbond and Flotex tiles comprises up to 74% reused and recycled PVC material
- A £multi-million investment in new tufting technology allows us to produce carpet tiles with heavy contact performance using less material
- Our project vinyl ranges such as Eternal, Step and Flex Design contain up to 45% reused post industrial waste
- Marmoleum's construction is based on abundant, renewable raw materials such as linseed oil, tall oil, rosin and wood flour. Approximately 70% of Marmoleum's raw materials are harvestable within 10 years of planting
- 40% of Marmoleum's content is recycled post industrial waste
- The Westbond Natural range of carpet tiles is made from undyed British wool, a natural and renewable resource
- We use 100% recycled aluminium in our Nuway entrance systems and many of the ranges are double sided allowing twice the wear before they need to be replaced
- By working closely with a new supplier to maximise the use of recycled material we are able to produce our Tessera Inline carpet tile range with a recycled yarn content of up to 55%

## Reduce Renewable Reuse Recycle

**Our focus on environmental manufacturing has resulted in a variety of new and unique processes. These processes also form the basis for measurement and monitoring to help us reduce our environmental impact.**



### Examples:

#### Manufacturing

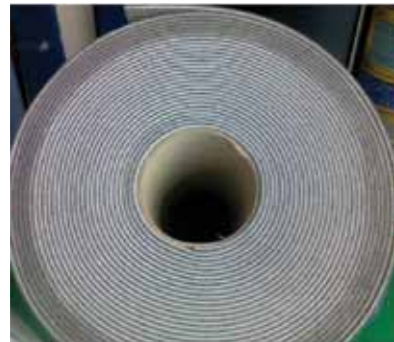
- Our Marmoleum production has reached a material efficiency of approximately 98% making our Marmoleum almost a 'closed-loop' product
- Through modern cutting technology we've dramatically reduced our carpet tile cutting waste by 80% and the little waste material that is now generated is processed into material used for repairing road surfaces or is sent to a 'waste to energy' facility
- The production of Tessera's random lay carpet tile collection has been made possible through the use of advanced CMC tufting technology. Installation waste is reduced to 2% when random lay carpet tiles are fitted

#### Energy

- We are pleased to report the upward trend in 2008 and 2009 reversed in 2010. Our energy consumption per m<sup>2</sup> of product produced fell by 2.1% in 2010 compared to 2009, in line with our targeted reduction of 2%
- Although we are not back to the levels of 2007 we are confident that further improvement will be gained. This will mainly be achieved through the large number of improvement projects that were raised through the 'Forbo Way to Win' employee ideas programme (see page 8) and also volume growth through our manufacturing plants

Reduce Renewable Reuse Recycle

We recently rolled out an internal awareness programme – The Forbo Way to Win. We used this to introduce our sustainability policy and to strengthen our employee's engagement by providing a platform for them to contribute to our efforts in reducing our environmental impacts. The programme generated over 1700 ideas resulting in 600 possible projects, some of which have already been successfully implemented.



Flotex with cardboard core



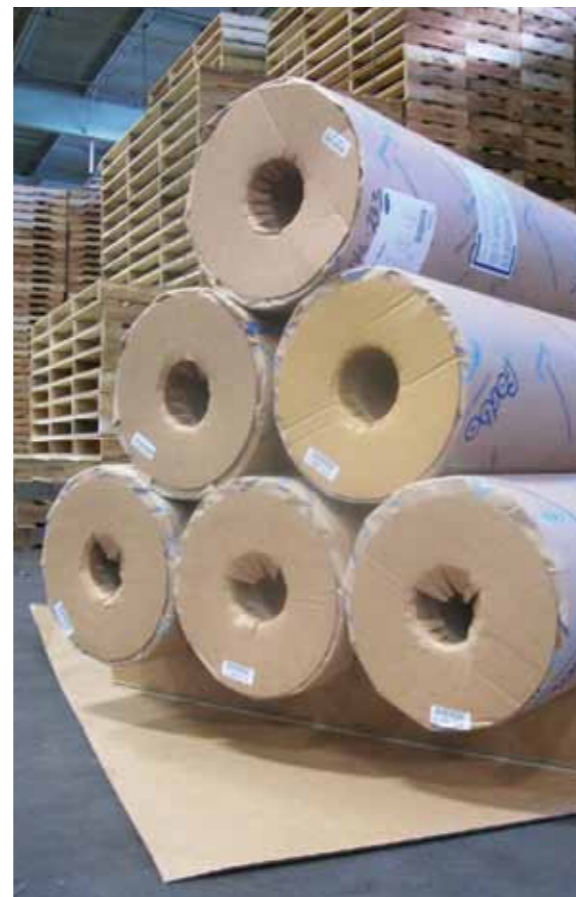
Flotex without cardboard core



Reusable wraps on our carpet tile top cloth

Examples:

- Replacing wooden pallets with recycled cardboard pallets in the USA. Less transport weight, less virgin raw material, easy to recycle again
- Using different sizes pre-cut lengths of paper for the automatic packing machine at Forbo in France. Reducing annual paper consumption by 2%
- Rewinding yarn ends and reuse in producing Tessera carpet tiles. Reduced waste and use of virgin raw material
- Reducing the amount of water to produce steam at Forbo Ripley. Reduced energy needed to produce Flotex
- Using warm exhaust air from air compressor installations for space heating at one of our Forbo sites in Holland. Reduced energy needed to heat production areas during winter time
- Elimination of the cardboard cores in the Jumbo rolls of Flotex – without any compression damage. Reduced cardboard use of 50 tonnes per year
- Replacement of the virgin polythene, used to protect carpet tile top cloth prior to backing, with reusable wraps. Reduction in the use of virgin raw materials



Recycled cardboard pallets

Reduce Renewable Reuse Recycle

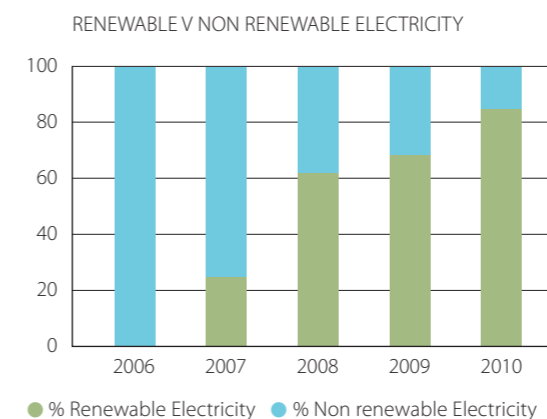


Energy

- Our use of renewable electricity continues to grow and now accounts for over 86% of the total electricity our 12 manufacturing facilities consume. This has helped to reduce our carbon footprint still further
- The total amount of CO<sub>2</sub> that we have taken out of the environment is now over 125,000 tonnes since 2007. We believe that this is the most responsible course of action, preferring this method to that of simply trying to offset
- The growth in the use of renewable electricity in 2010 has altered our overall primary energy mix. In 2010 this figure approached 46%, which compares positively with most other flooring companies

Materials

- Linseed Oil, Rosin, Tall Oil, Cork, Wood flour, Wool, Jute, Wood, Cardboard and Paper – renewable materials form a significant part of what we purchase in order to deliver the products our customers demand. In 2010 on average over 36% of our products were made up of renewable materials. Of course the vast majority of these materials are used in the production of Marmoleum, which is our most sustainable product, but as non renewables begin to run out, their prominence along with other sustainable materials will become more important in our future product developments

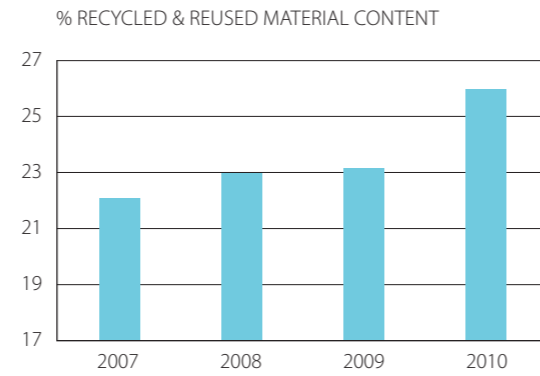


Reduce Renewable Reuse Recycle

**It's important to recognise that recycling is not always the best option in terms of energy usage and recovery. If product has to be shipped a long distance to a recycling plant, the environmental impact of the journey on the LCA may be negative. It's therefore important to understand all impacts of the recycling and re-use programmes.**

Firstly, we must explain what we mean by reuse and recycling. Forbo define reuse as being "waste generated that after processing can be fed back as a raw material into the same site's manufacturing processes". Our definition of recycling is "material diverted from the waste stream during a manufacturing process that is sent to a third party (other Forbo sites or external recyclers) for them to use as a raw material."

- 2010 saw an increase in the amount of product waste that we were able to both reuse and recycle to almost 80%. If we include the waste used to produce energy – waste to energy – then the figure is approaching 95%
- Only 5% of the product waste we generate is landfilled. This is contributing to less raw material depletion and reducing further the CO<sub>2</sub> emissions involved in producing virgin materials
- Across the division, over 25% of our product is made from recycled & re-used materials. Increasing the recycled and reused content will continue to be one of our major deliverables in the years to come



**Save a Sample scheme**

Sample material is needed to show decision makers how wonderful our products look! These loose samples are often only used once and are then thrown away. At the end of 2010 we initiated a take back programme for both re-use and recycling of the samples. The service has proved very popular and, as over 90% of samples returned have been of high enough quality to be used again as sampling material, we've reduced the use of virgin raw materials.



Reduce Renewable Reuse Recycle



Recycled Marmoleum at our Kirkcaldy production plant



Recycled tile backing being produced at our Ripley plant

**Installation waste**

- When it comes to renovation or new build projects, installation waste of floor coverings normally gets mixed up with the regular building waste. For Marmoleum this doesn't present an issue as all waste is bio-based and can be incinerated without any harmful effects, generating a high calorific value. The amount of energy that can be recovered from linoleum waste is 65% more than is used in production
- For vinyl and textile floor coverings the quality of installation waste is vital. Forbo participates in a number of professional installation waste collection programmes. With our participation in these schemes, we hope to gain knowledge and provide motivation for third parties to develop their expertise
- Forbo is one of the participating members of VinylPlus, an organisation committed to increasing PVC waste recycling in Europe

**Post consumer waste recycling**

We are actively seeking ways in which we can contribute further in the field of post consumer waste, for example, we have facilitated the take back of carpet in the UK which has enabled material to be reused that would have ordinarily ended up as landfill. We have done this through our involvement with Carpet Recycling UK (CRUK). See page 25 for more details of CRUK and visit [www.forbo-flooring.co.uk/environment](http://www.forbo-flooring.co.uk/environment) for case studies on our carpet tile reclamation schemes.

Forbo Flooring is taking part in additional recycling initiatives all over Europe such as GBR in Sweden and SFEC in France and is a founding member of EPFLOOR. EPFLOOR membership is composed of all the major Western European Vinyl flooring manufacturers representing over 90% of the production. Since 2001, the EPFLOOR members have provided increasing funds for supporting the recycling of post-consumer vinyl waste. The increase in collection of waste has been a priority since 2004 resulting in 2200 tonnes of recycled waste in 2010.

Reduce Renewable Reuse Recycle

**Waste**

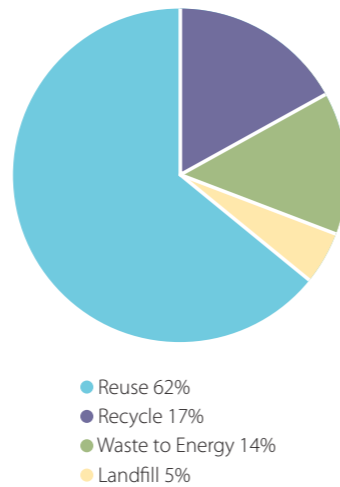
Reducing waste remains one of our main priorities. It impacts both financially (material usage, energy, disposal costs) and environmentally. At the same time, it is recognised that we also have a responsibility to dispose of those wastes we do generate with minimum impact on the environment.

**Through reuse and recycling options**

- Our waste performance index measured as mass production waste as a percentage of input remains very static. Although 2010 showed a slight increase in comparison to 2009 this is well within the levels we have seen during the last four years
- All Forbo's sites within the UK participate in Shred It's shredding and recycling programme and saved 77 trees from destruction in 2010



PRODUCT WASTE BREAKDOWN 2010

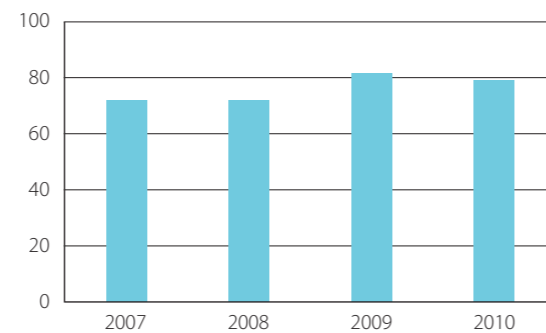


**Examples:**

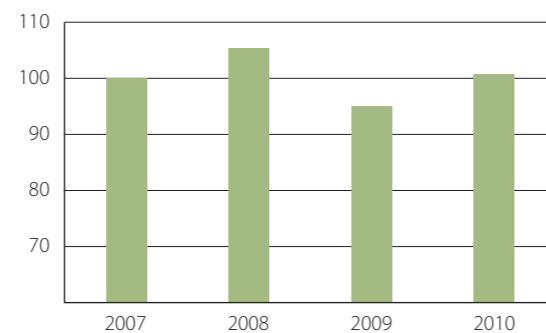
**Recycling of post industrial waste**

- Recycling of post industrial waste into our products is one of the best ways to reduce our total environmental footprint. Many years ago we started to recycle waste products from other industries into our linoleum products. During the last 10 years this has been optimised. In our Ripley plant we have a department where a mixture of internal scrap and post industrial waste is recycled and reused into backing for our Flotex tiles
- In 2009 we increased our recycling efforts, developing a backing for our Westbond carpet tile products
- The Ripley plant processes the group's PVC waste as well as that of our competitors, reducing the amount of waste going to landfill from the flooring industry as a whole
- Rubber and aluminium waste from our Nuway production at Telford is recycled. The rubber is used in bowling clubs and equestrian centres
- Investment in re-processing in one of our carpet tile plants has resulted in reducing yarn waste to landfill by 75 tonnes per annum

% REUSED AND RECYCLED PRODUCT WASTE



WASTE PERFORMANCE INDEX



# Reducing our footprint post sale

The less time, energy, resources and materials required to maintain the appearance and performance of a flooring product in situ, the less environmental impact the product makes. The proven durability of a product backed up by robust guarantees also lessens the impact as products don't need to be replaced as often.



**Examples:**

**Maintenance**

- Installation of our entrance system products can stop up to 90% of dirt entering a building thereby reducing the amount of cleaning needed and saving on chemical usage
- Our floor care instructions have been developed to focus on optimising the use of water and energy. We have engineered many of our resilient ranges such as Marmoleum, in such a way that we can safely advise dry/spray maintenance in most cases
- The PUR pearl finish on some of our project vinyl ranges ensures that chemical usage through cleaning is greatly reduced
- Flotex flocked flooring can be easily cleaned using standard equipment and without harsh chemicals
- Forbo's carpet tile ranges are suitable for cleaning using Dry Fusion which uses little water and only neutral cleaners

**Durability**

- Durable coatings such as PUR pearl on our vinyl ranges and Topshield on our linoleum ranges extend the economic life of our flooring. The Topshield finish allows a complete renovation of the floor extending the product's life even further and improves the LCA (Life Cycle Assessment) score by 14%
- Most of Tessera's carpet tile ranges are offered with an optional Softbac® backing. This backing is made from recycled plastic drinks bottles and it extends the guarantee by 50%, which in most cases means to 15 years
- Nuway tuftguard, heavy duty, flameguard and FR are all double-sided and are all offered with a structural guarantee of up to 15 years



# Creating better indoor environments

For years we have been working to produce products which have the lowest volatile organic compound emissions (VOC's).

## Air quality

Both Marmoleum and Flotex hold the Seal of Approval from the British Allergy Foundation for the positive effect that they have on the lives of allergy sufferers.



**AgBB/DIBt** – To establish the fundamentals for a uniform and reproducible health-related evaluation of building products, the Committee for Health-related Evaluation of Building Products (Ausschuss zur gesundheitlichen Bewertung von Bauprodukten - AgBB) – has developed criteria for testing and an evaluation scheme for VOC emissions from building products suitable for indoor usage. The evaluation scheme sets quality standards relevant to health for future production of building products for use indoors and fosters the development of particularly low-emission products.

All Forbo Flooring products have been tested to this standard and fulfil all requirements.

**LEED®** – this is an environmental scheme operating in North America and which some UK architects like to use. Forbo has recently undertaken testing of some of its product ranges in accordance with the requirements of California Specification Section 01350 which relates to indoor air quality and low emitting materials. All Forbo products except Nuway entrance systems, have been assessed to ensure they meet the requirements.

**Carpet and Rug Institute Green Label scheme** – this is also part of LEED®. Products from the Tessera and Westbond ranges meet the requirements of this scheme.



## Infection control

Forbo's Marmoleum Flooring has been specified extensively in hospitals and healthcare environments throughout the world for its outstanding performance characteristics, natural raw materials and exceptional hygiene properties.

Forbo commissioned Independent testing by Professor Gemmell of the Bacterial Infection and Epidemiology Department of the University of Glasgow, to determine the bacteriostatic attributes of Marmoleum. The results of the tests 'support Marmoleum's use as a recommended flooring product to be used in hospitals in the fight against infection for both MRSA and Norovirus (winter vomiting virus)'.

Testing by the Centre de Recherche Industrielle in Quebec has also confirmed that 'Marmoleum proves its bacteriostatic efficiency against Clostridium difficile when tested according to the TNO seed layer method, the AATCC 100 method and the vivo simulations method'.

Forbo's Flotex also has anti microbial properties. The anti microbial Sanitized® treatment of the Flotex base ensures continuous protection against bacteria such as MRSA and E Coli and moulds such as athlete's foot. The Sanitized treatment is compounded into the Flotex backing, continually refreshing the anti microbial performance without degradation through cleaning. This makes Flotex the ideal floor covering for healthcare and educational institutions.

To receive a pack including all the independent test reports please ring 0800 731 2369.



\*Sanitized® is a registered trademark of SANITIZED AG License No 2893.04



I was invited to test Forbo's Marmoleum flooring for antibacterial activity as I had heard much about its bacteria fighting qualities. I have to admit, along with most of the scientific world, to having a degree of scepticism about these proclaimed qualities. I am now delighted to say that, after robust testing, the claims are shown to be quite true... Marmoleum does indeed inhibit the growth of several bacteria including MRSA.

**Professor Curtis G Gemmell B.Sc., PhD, FRCPath**  
 Professor of Bacterial Infection and Epidemiology,  
 University of Glasgow  
 Director of the Scottish MRSA Reference Laboratory

Over the previous pages, we've shown how Forbo is working towards its challenging sustainability target detailed on page 5. Over the following few pages, we will demonstrate how these global programmes are reflected in the environmental profiles of our products.



# Linoleum...

**Forbo's Marmoleum complies with more environmental quality marks than any other flooring product in the world.**

- According to a LCA study of the University of Leiden in the Netherlands, Marmoleum is the most sustainable resilient floor covering in the world
- Linoleum has been assessed by the BREEAM scheme and achieves A+ in many key segments. See page 26 for details
- Certified by the British Allergy Foundation, linoleum is proven to have a positive impact on the lives of allergy sufferers
- Forbo is the only linoleum manufacturer to achieve the nature plus certificate, a very strict German eco mark
- Marmoleum has also been awarded Cradle to Cradle silver certification
- Linoleum is fully biodegradable in a controlled environment

## A selection of our International environmental awards



\*Generic BRE rating



# ...today, tomorrow, forever

Marmoleum is a natural product comprising:

- **97% natural raw materials**
- **70% rapidly renewable materials**
- **40% recycled content**



### Linseed oil – renewable

Linseed oil, the key raw material of linoleum, is obtained by pressing the seeds of the flax plant. Oxidizing the oil creates a thick spongy mass we call cement, which forms the basis of linoleum.



### Rosin – renewable

Rosin is a binding agent that, together with linseed oil, gives our linoleum its strength and flexibility.



### Wood flour – renewable

Wood flour from controlled forests is used to bind pigments, ensure colourfastness and optimise a smooth surface, it's the secret to why our linoleums maintain their beautiful, vibrant colours throughout their lives.



### Jute – renewable

Natural jute is used as a backing on which to calendar the linoleum cement.



### Limestone

Limestone, very finely ground, is used to achieve a specific density in our linoleum.



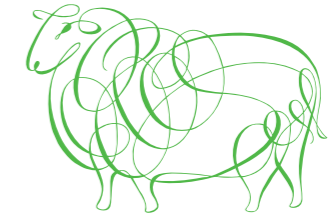
### Pigments

The most beautiful colours are created by using ecologically responsible pigments. Forbo pigments therefore do not contain heavy metals such as lead and cadmium.

# Carpet Tiles

- Tessera and Westbond carpet tile ranges have been assessed under the BREEAM scheme and achieve A/A+ in many key sectors. See page 26 for details
- Many Tessera and Westbond ranges also comply with the CRI Green Label Plus scheme, a measure of indoor air quality required by the LEED® build scheme
- SOFTbac®, an optional Tessera tile backing is made from 90% recycled polyester and is itself, fully recyclable
- Westbond tile backing is produced using up to 74% recycled PVC
- Our ultrasonic tile cutting process reduces tile waste by 80% compared to traditional press cutting methods. The little waste now generated is sent for recycling into road repair material or to a 'waste to energy' facility
- Forbo has used ultrasonic cutting for over a decade and has prevented over 5,000 tonnes of waste going to landfill
- 97% of our packaging is made from recycled or renewably sourced materials. 100% is recyclable. We also offer a 'no box' option for bulk deliveries
- One of Forbo's Vice Presidents is a director of Carpet Recycling UK

- Westbond offers a range containing pure and natural undyed wool with a recycled backing, Westbond Natural. Forbo has also joined the 'Campaign for wool' in an effort to promote the use of this natural and renewable resource
- Through discussions with several suppliers, we now ship latex trim waste to a local contractor who uses it in equestrian flooring, thereby reducing waste going to landfill
- A selection of Tessera ranges have been designed to include unusually high recycled yarn content e.g. Inline contains up to 55% recycled yarn
- Investment in reprocessing has reduced the amount of yarn waste sent to landfill by 75 tonnes
- Tessera's random lay carpet tile collection reduces installation waste to 2% and avoids the need for attic stock



**THE CAMPAIGN FOR WOOL**  
PATRON: HRH THE PRINCE OF WALES



Tessera Inline – loop pile

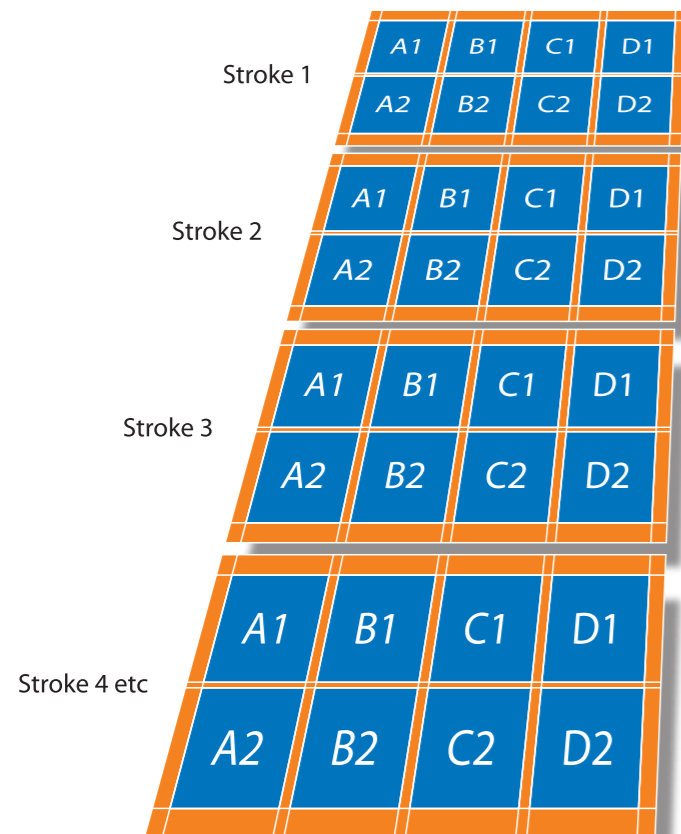


Tessera Circulate – random lay and batchless



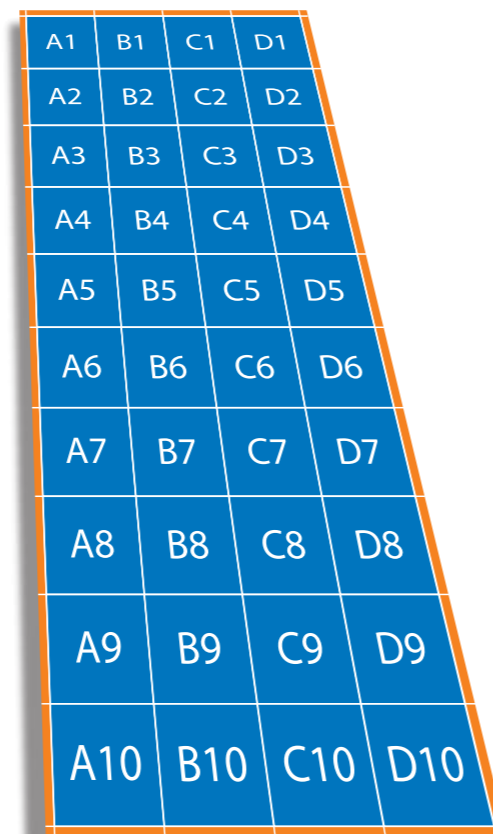
Reprocessing of yarn waste has significantly reduced landfill

**Carpet Tile – Press Cutting  
(Typical Method)**



**Area Yield = 90.5%**

**Carpet Tile –  
Ultrasonic Cutting**



**Area Yield = 98.5%**

# Project Vinyl

- Forbo is a member of 'VinylPlus', an ambitious sustainability programme operated by the leading companies in the industry to increase the recycling of PVC across Europe
- All Forbo's project vinyl ranges meet the European air quality requirements as defined by AgBB/DIBt
- Many of the products in Forbo's project vinyl ranges contain up to 45% reused PVC production waste in their backing layers
- Forbo has established a unique process to optimise the reuse of PVC waste, reducing the need for virgin PVC material
- High performance, durable PUR pearl coatings extend the economic life of the floor covering and reduce the amount of maintenance needed
- All Forbo's project vinyl ranges are manufactured in sites certified to ISO14001 and use renewable electricity

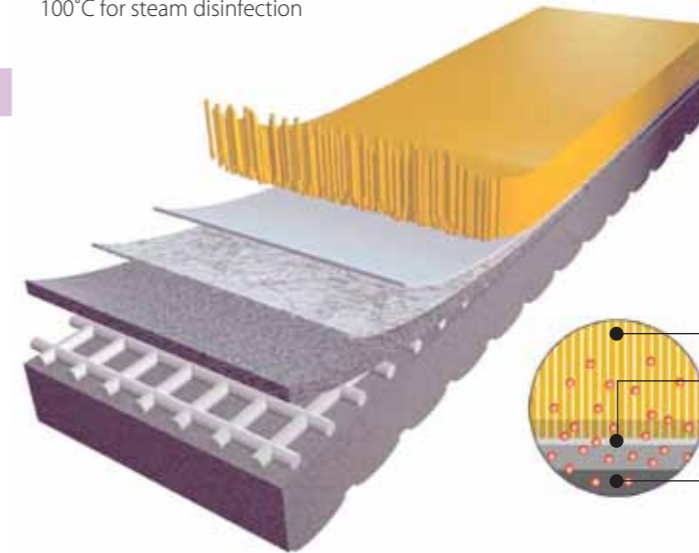


# Flotex Flocked Floor Covering

- Flotex is the only flocked floor covering to have been assessed under the BREEAM scheme and achieves A/A+ in many key sectors – see page 26 for details
- Flotex tile backing is produced using up to 74% reused and recycled PVC
- Due to a highly effective anti microbial treatment, 'Sanitized', Flotex offers constant protection against MRSA, E Coli and the development of dust mites
- Being completely waterproof, Flotex is a truly washable textile floor covering and can be cleaned at 100°C for steam disinfection
- Proven to have a positive impact on the lives of allergy sufferers, Flotex is certified by the British Allergy Foundation
- Flotex meets the requirements of California Specification section 01350 which relates to indoor air quality



\*Sanitized® is a registered trademark of SANITIZED AG License No 2893.04

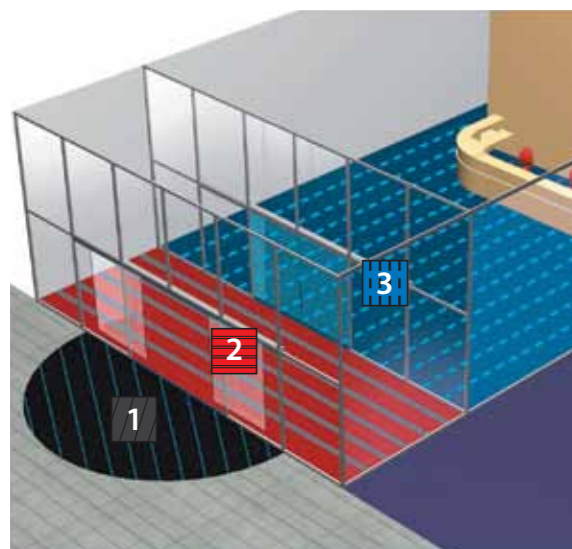


- Nylon 6.6 flocked pile
- Adhesive layer containing Sanitized® anti-microbial agent
- Migration of Sanitized® anti-microbial agent into pile and backing




# Entrance Flooring Systems

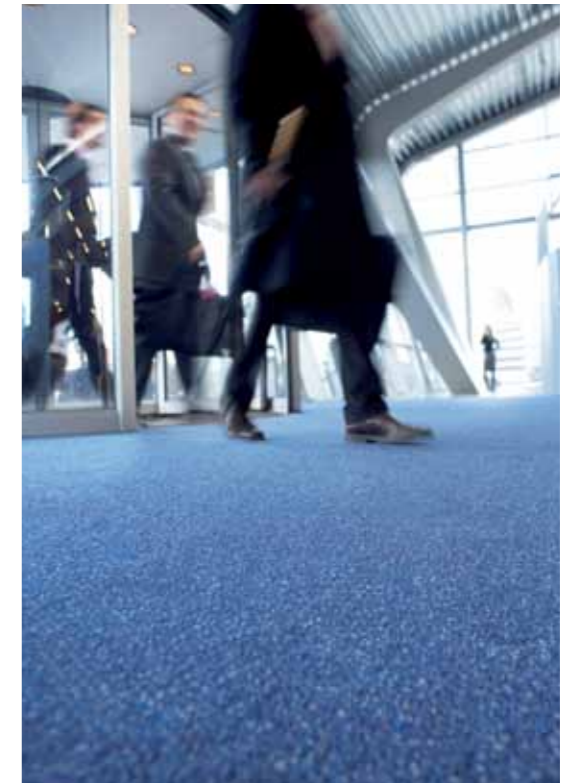
Installing an effective entrance system can stop up to 90% of the dirt and moisture entering a building. As a result, this may save up to 65% of the lifetime cleaning costs of the floor and reduce the use of cleaning materials.



## A zoned approach

- 1 External primary matting**  
Outside the building entrance, primary matting is the first line of defence against footborne soil, scraping the coarsest dirt from the soles of shoes before they cross the threshold.
- 2 Internal primary matting**  
Immediately beyond the external matting, internal primary matting is required to remove footborne moisture and finer particles of soil.
- 3 Internal secondary matting**  
Flooring leading away from the entrance area – in the reception, corridors etc – must be specifically designed to withstand heavy traffic and intensive cleaning regimes. They will be prone to residual soiling and will inevitably require a high level of cleaning to maintain performance and appearance.

- Many of the products in the Coral range have been BREEAM certified. For details please see page 26 
- Our Nuway range was the first rigid entrance system to be assessed by BREEAM. However, as no other manufacturer has submitted a comparable product for certification, it's not possible to provide a BREEAM rating for Nuway
- The construction of most Nuway entrance mats allows them to be reversible, effectively doubling their lifespan
- The aluminium scraper bars in Nuway are made from 100% recycled aluminium
- Rubber or aluminium waste generated by the Nuway production process is recycled. Rubber pips are sent to crown bowling clubs for gully lining and other rubber waste is used in equestrian centres
- Any yarn waste from our Coral production is reused by the yarn supplier
- The Coral manufacturing plant has achieved virtually zero landfill. Waste yarns from Coral manufacturing are used in small entrance mats
- Coral meets the requirements of California Specification section 01350 which relates to indoor air quality



# The way forward

Forbo is continually looking for opportunities to create better environments. Below are some examples of the areas where we hope to make further improvements.



## Energy

We expect that the use of renewable electricity will increase with 10 of our 12 production facilities having some or all of their electricity supplied from renewable sources. This means that more than 95% of the electricity used across our plants will come from a renewable source.

## Reuse and Recycling

Our R&D, Engineering and Innovation teams will play an important role as we analyse the way we engineer our products and processes. In terms of waste we generate, we will build upon our sound reuse and recycling opportunities to minimise environmental impact and maximise economic opportunity.



## Water

We recognise that although most of our production processes do not use water, we will gather data in respect of our water usage. Water is becoming an increasingly important resource and we shall determine a baseline from which we will measure our improvements.

## Green Design and Innovation

We believe that design, in environmental terms, is a very important link in the chain and if we are to improve our LCA result then design has a central role to play. Forbo Flooring is placing great emphasis on Green Design and Innovation. It is recognised that if we are to achieve our divisional goals of becoming a sustainable and environmental leader then we have to do things differently.



## Suppliers

We have been exploring how we can work together with our main raw material suppliers to create a better environment through the reduction of our LCA by 25%. We will begin to use an environmental scorecard to evaluate the environmental performance and the selection of our suppliers.

# Guide to green certification

## ISO 14001

This is the framework by which a business addresses the issues surrounding its environmental impacts, including legal compliance.

## BRE

The Building Research Establishment was established 80 years ago and has a growing focus on improving the environmental performance of buildings.



## BREEAM

Building Research Establishment Environmental Assessment Methodology. This scheme measures the environmental impact of a material or product over a set time period of 60 years.

The scheme was reclassified in 2009 and now the environmental rating of a product differs depending on its application e.g. the same product could achieve different BREEAM ratings if being used in a school rather than an office.

Also, where the manufacturing process for a category of products is similar across many companies, e.g. vinyl, the manufacturers may choose to display a generic rating rather than one for each specific product. In this case, individual BREEAM product certificates will not be available.

Please see chart overleaf for BREEAM ratings for all Forbo products.

## UK Green Building Council

Their mission is to dramatically improve the sustainability of the built environment, by radically transforming the way it is planned, designed, constructed, maintained and operated. Forbo is a member.



## LEED® CHPS – 01350

Leadership in Energy and Environmental Design. This is the leading green building certification programme in the US. LEED® is a points based system for evaluating the environmental profile of a building. Unlike BREEAM, no single product can obtain a LEED® credit.

## Green Label Plus scheme

This forms part of the LEED® scheme. This is a voluntary industry testing programme for carpet and adhesive products which aims to establish the highest standard for indoor air quality ever set by the US carpet industry.



The Carpet and Rug Institute of America (CRI) created Green Label Plus to identify carpets and adhesives that are tested by an independent, certified laboratory and meet stringent criteria for low chemical emissions.

## CRUK

Forbo Flooring is a member of Carpet Recycling UK.

CRUK has a target to divert 25% of carpet waste from landfill by 2015 recovering valuable raw materials. Since its inception in 2008, the landfill diversion rate has increased from 2% to 10% with more than 40,000 tonnes of waste carpet being recovered in 2010.



Carpet Recycling UK commissions research and provides technical support to recyclers, Regular regional 'meet the recycler' sessions increase the awareness that carpet can be recycled and have led to increased reprocessing capacity being installed. Specialist carpet recyclers have increased from 6 to 30 in the last 2 years.

For case studies showing how Forbo has worked with CRUK on carpet tile reclamation schemes, please visit [www.forbo-flooring.co.uk/environment](http://www.forbo-flooring.co.uk/environment)

## SKA Rating

This is an environmental labelling method, operated by the Royal Institute of Chartered Surveyors, designed to rate and compare the environmental performance of fit-out projects for office buildings in the UK. SKA rating labels 100% of the environmental performance related to fit-out projects, rather than being a whole building assessment. It can be used in conjunction with or alongside other labels such as BREEAM. Forbo's products comply with the 'Good practice measures for offices' as detailed in the 'Soft flooring' criteria of the SKA rating scheme.



BREEAM generic ratings for floor coverings						
Product Description	Offices	Schools	Healthcare	Domestic	Retail/Leisure (Durability)	Retail/Leisure (Fashion)
Allura – Printed laminate PVC floor covering (EN649)	A	A+	A+	A	A+	A+
Acoustic Vinyl PVC floor covering with a foam layer (EN651)	A	A+	A+	A	A	A+
Colorex – Homogeneous PVC floor coverings (EN649)	A	A+	A+	A	A+	A+
Compact Vinyl Heterogeneous PVC floor coverings (EN649)	A	A+	A+	A	A+	A+
Cushioned Vinyl – Classic Cushioned PVC floor covering (EN653)	–	–	–	A+	–	–
Cushioned Vinyl – Novilon, Novilux, Cushionflor Cushioned PVC floor covering (EN653)	–	–	–	A	–	–
Safety Flooring – PVC floor covering with enhanced slip resistance	A	A+	A+	B	A	A+
Linoleum – Plain and decorative linoleum (EN548)	A	A+	A+	A	A+	A+






BREEAM specific ratings for product ranges						
<b>Ripley – Flotex</b>						
Flotex F50 tile with recycled backing	B	B	B	B	B	A+
Flotex F200 sheet with PVC backing	A	A	A	A	A	A+
<b>Bamber Bridge – Tessera</b>						
Alignment	B	B	A	B	B	A+
Apex	A	A	A	A	A	A+
Arran	B	B	A	B	B	A+
Barcode	A	A	A	A	A	A+
Ethos	A	A	A	B	A	A+
Format	A	A	A	B	A	A+
Helix	B	B	A	B	B	A+
Inline	A	A	A	B	A	A+
Mlx	B	B	A	B	B	A+
Optimum Create Loop	B	B	A	B	B	A+
Primera <sup>2</sup>	A	A	A	B	A	A+
Rippleweave	B	B	B	B	B	A
Sheerpoint	B	B	A	B	B	A+
Sottsass	A	A	A	B	A	A+
Teviot	A	A	A	A	A	A+
<b>Softbac® Results</b>						
Alignment with Softbac®	A	A	A	B	A	A
Barcode with Softbac®	A	A	A+	A	A	A+
Helix with Softbac®	A	A	A	B	A	A
Mix with Softbac®	B	B	B	B	B	A
Rippleweave with Softbac®	A	A	A	B	A	A
Sottsass with Softbac®	B	A	A	B	B	A
Teviot with Softbac®	A	A	A+	A	A	A+
<b>Krommenie – Coral</b>						
Coral Brush Activ	B	B	B	C	B	A
Coral Classic	B	A	A	B	B	A+
Coral Duo	B	A	A	B	B	A+

## BREEAM ratings – a note of caution

As you can see from the table opposite, we could claim that all of our products have an A+ rating and leave it there, because in a retail application, this is what we achieve. However, we show all

our ratings by application to allow you to make an informed choice. If other manufacturers claim A+ ratings, please check that the manufacturer is being specific about the application.

## The green guide to Forbo

	Linoleum	Tessera	Westbond	Project Vinyl	Flotex	Coral	Nuway
<b>BREEAM</b> 	Generic rating	Certification by product range	Certification by product range	Generic rating	Certification by product range	Certification by product range	
<b>Indoor Air quality:</b> 	Allergy UK certified				Allergy UK certified		
<b>AgBB/DIBt</b>	Pass	Pass	Pass	Pass	Pass	N/A	N/A
<b>CHPS 01350</b>	Pass	Pass	Pass	Pass	Pass	Pass	N/A
<b>Carpet and Rug Institute</b> 		Yes					
<b>Produced using renewable electricity</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>LCA independently assessed</b>	Yes	Currently being assessed	Currently being assessed	Yes	Currently being assessed	Currently being assessed	N/A
<b>Guarantee</b>	Up to 25 years	Up to 15 years with Softbac®	Up to 10 years	Up to 15 years	Up to 10 years	Up to 5 years	Up to 15 years
<b>ISO 9001, ISO 14001</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Member of CRUK</b> 	N/A	Yes	Yes	N/A	N/A	N/A	N/A
<b>Member of GUT/ERFMI</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Member of UK Green Building Council</b> 	Yes	Yes	Yes	Yes	Yes	Yes	Yes

## What to do next

We hope that this brochure has given you an insight into the wide array of environmental credentials available along with an understanding of why Forbo has chosen the Life Cycle Assessment approach.

We have a very challenging target to meet by 2015 and hopefully, we've shown how steps are already being taken to help us meet this target.

Should you have further queries on our environmental profile, or questions about any Forbo product, please don't hesitate to get in touch.

Please contact your local Forbo Business Area Manager, ring **0800 0282 162**, email [info.flooring.uk@forbo.com](mailto:info.flooring.uk@forbo.com) or visit our website at [www.forbo-flooring.co.uk](http://www.forbo-flooring.co.uk)

Forbo Flooring Systems is part of the Forbo Group, a global leader in flooring, bonding and movement systems, and offers a full range of flooring products for both commercial and residential markets. High quality linoleum, vinyl, textile, flocked and entrance flooring products combine functionality, colour and design, offering total flooring solutions for any environment.



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FLOORING SYSTEMS