



**tretford® cord carpet tiles
and the environment**



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Introduction

We believe that business should act in a responsible manner for the benefit of all its stakeholders. We consider our stakeholders to include not just our shareholders, our employees, our suppliers and our customers, but also the local society in which we operate and the global society from which we draw our raw materials and into which we sell our products.

This document outlines our approach to issues and practices of environmental concern.

It is not intended to be an exhaustive document but one which reflects an ever-evolving position and a desire to constantly improve.

It is also not a complete document because it concerns only our environmental policy. We acknowledge that an outwardly, environmentally-responsible business is not necessarily a responsible business if its environmental efforts are not consistent with or are undermined by policy decisions taken in other areas. We have been careful to adopt an integrated approach to the development of our environmental initiatives and policies so that they are net positive and sustainable.

We have considered the impact of both our manufacturing operations and the materials and products we consume and produce. Our Environmental Management Systems are continuously reviewed and updated and are integrated at all levels within our organization.

We examine, evaluate and review energy usage in our manufacturing processes and implement energy conservation programs. New processes and cleaner technologies are investigated and used whenever possible. Waste avoidance and reduction and waste recycling initiatives are vigorously pursued and implemented. Raw materials are sourced from suppliers who share our commitment to environmental responsibility, and policies, objectives and targets are set to continuously ensure that the products we manufacture will not compromise nor, as far as is practical, damage the environment.

We aim to achieve the highest standards of environmental performance for all our stakeholders and to adhere to the principle of responsible care and continuous improvement in our business. **tretford® Cord Carpet TILES'** environmental performance has proven to be exemplary. It is our committed intention to keep it that way.

We are happy to communicate openly regarding environmental issues relevant to our business and would welcome any feedback or queries.

Yours sincerely,

Noel Cunningham
Managing Director
Waterford Carpets Ltd.

Hugh C. Kelly
Managing Director
AML Architectural Products Ltd.

Environmental Policy Statement

tretford[®] is committed to pollution prevention and environmental protection. We aim to achieve the highest standards of environmental performance in the interest of all our stakeholders: - employees, suppliers, customers, and also the local society in which we operate and the global society from which we draw our raw materials and into which we sell our products.

We are committed to complying with all environmental legislation and regulations that may apply to the industry and we will make every effort to comply with the requirements of our Integrated Pollution Control License Reg. No. 510. We will adhere to the principles of responsible care and we strive for continuous improvement in its implementation.

Raw materials are sourced from suppliers who share our commitment to environmental responsibility.

We have prepared and implement an Environmental Management System to continuously ensure that the products which we manufacture will not compromise nor damage the environment.

Our Environmental Management System and Environmental Aspects Register are reviewed annually and environmental objectives and targets are set accordingly in order to promote continual improvement.

We will examine and evaluate the environmental implications of any processes and products and cleaner technologies will be investigated and utilised where possible. We will encourage and actively pursue waste avoidance, reduction, re-use and recycling in the activities of the company and throughout the life cycle of our products.

We will continuously examine, evaluate and review energy usage in our manufacturing process and implement an energy conservation programme. We will ensure that adequate operational procedures and emergency plans are implemented and reviewed on an on-going basis. We will ensure that our employees receive adequate training in relation to our environmental policies and procedures and we will review these training needs as may be required.

We are committed to continuous improvement of our Environmental Management System and we will ensure that it shall be integrated at all levels within our organisation. We will strive for ever-improving environmental performance and we will strive to protect the environment for our employees, neighbours and all our other stakeholders.

We will adhere to the principal of responsible care and continuous improvement in our business.

Raw Materials - Eco-Preferred Content

tretford® Cord Carpet TILES are made from carefully selected, predominantly natural raw materials which are sourced from well managed and sustainable sources.

The principal component in **tretford® Cord Carpet TILES** is **Goat Hair** which constitutes 70% of the product's fibre content. The goat hair, a by-product of goat farming for the cashmere industry, is sourced in China and Mongolia where the goats are farmed in large quantities. The goat hair represents pre-consumer recycled content as the hair would normally be discarded being too coarse to be used for mohair cloth. The hair is incredibly durable and hard wearing yet feels surprisingly soft to touch and is inherently anti-static. The hair is clipped, hand picked and sorted and then washed in a solution of mild soap. No chemicals are used and the waste water created is used to irrigate local farmland.

Three colours in the palette are the natural colours of the goat and are undyed. To obtain the balance of the colours, the hair is then dyed in Belgium and shipped to the **tretford®** factory in Wesel, Germany. **tretford®** uses Ciba **dyes** none of which contain heavy metals and all of which are non toxic. All of the chemical constituents of the dyes are biodegradable and there is effectively zero dirty water discharge in this process. This is in part due to goat hairs excellent dye take up of 98%, meaning that a very small amount of dye remains. It can be and is easily retrieved and re-used. This compares for example with cotton which has a dye take up of only 50-60%.

Nylon makes up 30% of **tretford® Cord Carpet TILES** face fibre content and is added to aid performance and ensure longevity of the carpet. Nylon is sourced from Germany where the highest environmental standards prevail.

tretford® Cord Carpet TILES are manufactured using a unique **PVC** fusion-bonding process and backed with high quality filled PVC. PVC bonding requires no water and so produces zero waste water effluent unlike other types of water-based bonding processes. This is one of the lesser known benefits of using a PVC bonding agent. The PVC used contains the highest quality plasticizers and we strictly regulate the stabilizer content in accordance with EU guidelines. Only ingredients from the **EU Positive List** are used. DEHP and DOP are not used. This pure PVC is non-carcinogenic, non-oestrogenic and is also non-bioaccumulative and virtually no dioxins are produced during its manufacture. It is completely inert and can be safely disposed via landfill or recovered via incineration at the end of its life.

All raw materials are sourced from suppliers who share our commitment to environmental responsibility. Our suppliers are regulated where required by their local environmental authorities.

As a percentage of total product weight, **tretford® Cord Carpet TILES'** eco-preferred content is comfortably in excess of 25%*. (*Exact figures are not quoted for commercial reasons.)

Manufacturing – Environmental Management System

Weseler Teppich GmbH & Co KG's facility, where **tretford® Cord Carpet TILES** are manufactured operates to rigorous environmental regulations and is routinely monitored and audited.

ENVIRONMENTAL MANAGEMENT SYSTEM

We have had an Environmental Management System in place which addresses the following issues relating to the production of **tretford® Cord Carpet TILES**.

- Emissions – the gas, liquid and particulate emissions: There are no detectable emissions from the manufacturing process.
- Waste disposal – the waste disposal and recycling rates of all waste (It should be noted that no waste water is produced during the production of **tretford® Cord Carpet TILES**).
- Material minimisation– all product material inputs – including packaging.
- Energy reduction - the energy consumption which may be generated from the product manufacturing process are measured recorded & reported. Weseler Teppich GmbH & Co KG monitor sections of the manufacturing process monthly as part of our Environmental Management System.

tretford® Cord Carpet TILES are an **energy efficient** product. The energy cost of producing one unit of goat hair is fractional when compared with the energy cost of producing one unit of synthetic fibre. Nor do we bleach our goat hair prior to dyeing. In fact some of our carpet colours are the natural colours from the goat which are used and/or blended, undyed.

We continue to constantly examine and evaluate how to improve our manufacturing process to **effect energy conservation**. Examples of implemented strategies to maximise energy efficiencies are the cleaning and scouring of the goat hair in China before being shipped to reduce freight costs, i.e. we ship only clean input raw material.

In addition our goat hair is sorted by hand which reduces our total consumption of carbon-based fuels, leading to further energy efficiencies.

The water used at the goat hair cleaning plant is from groundwater and rain water supplies. The waste water at the end of the process is used to irrigate local farmland. This is feasible since the water has a low COD (Chemical Oxygen Demand); goat hair has a very low lanolin content compared with wool.

Similarly 90% of the water used in the dyeing process is from a local ground water supply and a further 10% is from a recycled water supply. Following the dyeing process the waste water is recycled off-site by a recycling company. The recycling company is licensed to discharge the recycled water to a local canal.

tretford® Cord Carpet TILES' unique PVC fusion bonding manufacturing process uses no water and so produces zero waste water effluent.

On-going initiatives to achieve excellence in Quality Control ensure that there is minimal post industrial waste. Of the waste produced, carpet cut-offs are used for sampling.

Our policies, objectives and targets are continually monitored and set to consistently ensure that the product that we manufacture will not compromise nor, as far as is practically possible, damage the environment.

EMS Manual – TABLE OF CONTENTS – see following:



Weseler Teppich GmbH & Co. KG Environmental Management System Manual

This manual defines the scope of Weseler Teppich GmbH & Co.KG Environmental Management System (EMS) and provides a linkage of system documents to the various elements of the ISO 14001:1996 standard.

The principle elements of the system described in this manual are:

- Environmental Policy
- Environmental Aspects
- Legal and other requirements
- Environmental Objectives and Targets
- Environmental Management Programmes
- Organisational Structure and Responsibilities
- Training, Awareness and Competence
- Communications
- Document Control
- Operational Control
- Emergency Preparedness and Response
- Monitoring and Measuring
- Non conformance and Corrective and Preventive Action
- Records
- EMS Audit
- Management Review

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Installation – Designed For Disassembly

There are distinct and positive energy savings in the use of **tretford® Cord Carpet TILES** over other forms of carpet/carpet tile at the installation stage.

The pliable nature of the product results in easier handling/installation and its soft flexible backing reduces risk of damage to other materials at point of installation reducing the likely need for repair/rework.

US studies have shown that over 60% of installed carpet failures occur due to poor installation and that the greatest number of these failures occurs at the seams, i.e. seam breakdown. **tretford® Cord Carpet TILES** have non-ravel properties mean that this cannot happen with **tretford® Cord Carpet TILES**.

tretford® Cord Carpet TILES 50cm x 50cm format results in much lower wastage than broadloom and is significantly easier to transport and move around site, not requiring any specialist lifting (cranes) or transport equipment on site. It can be moved easily up stairways and in elevators.

In line with the latest work-place requirements we support the use of solvent-free adhesives with low VOC emissions.

An installation of **tretford® Cord Carpet TILES** can be easily “disassembled without the use of specialist tools and equipment”.

Please be aware that as with the replacement of all carpet tiles, a total shade match cannot be guaranteed due to a potential change in appearance of the previously installed carpet tiles, e.g. under traffic loading, or because a different dye batch is used.

In-Service - Durability

tretford® Cord Carpet TILES goat hair is one of the **toughest natural carpet fibres** available resulting in a product which has a longer life. The highest quality PVC bonding agents used in **tretford® Cord Carpet TILES** also mean no flaking, rotting, warping or peeling. Longer life means less frequent replacement which is better for environment. **tretford® Cord Carpet TILES** are extremely hard wearing and, over the past 40 years, has become synonymous with incredible durability in even the most demanding commercial environments.

tretford® Cord Carpet TILES' unique construction and the rigorous **quality control** applied during manufacture also ensure one of the lowest industry service failure rates. This reduces the incidence of failure requiring replacement to a level far below the industry average.

tretford® Cord Carpet TILES carpet can be **easily repaired or replaced**.

Each of **tretford® Cord Carpet TILES'** 32 colours is given a star-rating based on their **soil hiding characteristics**. 3-star colours are suitable for heavy soiling areas, 2-star for medium soiling and 1-star for low soil environments. This helps specifiers and end-users make the correct colour choice in the first instance.

The realistic **service life** of **tretford®** carpet is:

- 15-20 years for residential applications
- 7-12 years for commercial applications

However lack of a regular and **effective maintenance programme** and the lack of appropriate entrance matting negatively affect the service life of the carpet.

We assume responsibility for the constant evaluation (and re-evaluation) and promotion of the latest, most effective and most environmental-friendly, end-user maintenance systems. Currently, we recommend that **tretford® Cord Carpet TILES** be cleaned with a **dry or low moisture cleaning system** such as Host®. Low moisture systems are suitable for both periodic and deep cleaning and are guaranteed not to promote mould or mildew growth.

The Host® system is safe and non-hazardous; virtually no VOCs are emitted from the organic **biodegradable cleaning compounds**. Cleaning with this system allows users to return to their carpeted room immediately. Wet/steam cleaning is also an acceptable method of cleaning provided it is done properly. However it does not offer the same environmental benefits as the dry/low moisture cleaning systems in terms of water usage. A low moisture cleaning system uses water at a rate of less than 1ml/m² e.g. If as recommended a carpet is cleaned every six months over its 10 year life, therefore less than 20ml/m² of water would be used over its entire lifetime on maintenance.

Goat hair is a **natural insulator** which means energy savings. It has excellent **acoustical** properties further improving the in-door air environment. And, of course, breathable natural fibres are now proven to positively affect **in-door air quality**. In-service carpet VOC's (in-door air quality indicators) have been routinely tested and results are **below detectable limits**. As mentioned previously adhesive and maintenance chemicals also result in very low VOC's.

In addition, **tretford® Cord Carpet TILES** carry a life-time warranty against edge ravel and fraying which guarantees that seams will never breakdown.

tretford® Cord Carpet TILES also carry a standard 5yr wear warranty but this can be extended to 7yrs, 10yrs or even 15 yrs on request, subject to the colours chosen and the characteristics of the individual installation/project for which it has been specified. As a general guide, 3 star colours offer the best soil hiding and appearance retention characteristics and will generally qualify for longer wear warranties.

Please note that in offering our warranties, Tretford uniquely takes appearance retention into account. Typical warranties consider only percentage fibre weight loss over time so it is possible for a product that has been warranted for up to 15 years to require replacement after as little as 6 months due to the unacceptable state of the carpet's appearance.

APPENDED – SAMPLE PROJECT-SPECIFIC WEAR WARRANTY (> 7 yrs and < 15 yrs - see page 15 for example)

Post Consumer

While **tretford® Cord Carpet TILES** are 95% non-reusable they can be used as **underlay**. In addition, tretford's high calorific content makes it suitable for use in **energy recovery** via incineration. **tretford® Cord Carpet TILES** contain no toxic or proscribed constituents that limit its safe disposal.

We are currently working with a pilot scheme for solid waste recovery using Tretford TILE and ROLL products which will provide an energy source for another manufacturer as part of our Product Stewardship Program. Further information to be advised.

Carpet recyclability offers potential but for the moment, guarantees very little; only a small percentage of post-consumer carpet globally can be and is being recycled energy efficiently. While commitment to producing recyclable products is essential without its associated recovery infrastructure it is fruitless – both should be pursued in tandem.

Modularity

tretford® Cord Carpet TILES offer all the advantages of modularity:

1. They are easily transported and require no specialist lifting or transportation equipment, e.g. cranes, in transit or on site.
2. They are easily man-handled during installation, reducing incidental damage to other finishes and therefore the need for rework.
3. They are easily installed and wastage is low (generally less than 3%).
4. They allow for easy replacement of damaged, stained or worn areas without the need to replace the entire installation.

Where **tretford® Cord Carpet TILES** are not being fitted over raised access flooring, additional environmental benefits are realised if **tretford®** sheet is installed rather than tile.

1. **tretford®** sheet weighs almost 50% less than **tretford®** tile. This means approx 50% less raw materials need be sourced and transported to the manufacturing plant, approx 50% less raw materials need to be processed and approx 50% less finished product (by weight) needs to be transported from the manufacturing plant to the installation site.
2. It should be noted that up to 20% more **tretford®** sheet can be fitted in a container than tiles reducing energy consumed in transport by almost the same amount. This is because (a) the weight of tiles (almost all tiles, not just **tretford®**) mean container weight limits are hit before a container is full and (b) 2m wide **tretford®** can be stood on end leaving minimal vacant space in a container.

The majority of the additional material used in the manufacture of tile (again, any tile) over broadloom is petroleum-based (whether PVC or otherwise, whether recycled or virgin). Unless a tile format is required to allow access to a subfloor, there is no need to apply this secondary tile backing; **tretford®** sheet can and, we would respectfully suggest, should be used instead. **tretford®** can be cut & assembled in regular standard dimensional pieces should that be the requirement for the project – however the two metre wide broadloom nature of the product minimizes dramatically any issues of wastage.

ISO 14001 CERTIFICATION

tretford's EMS is modelled on the requirements of ISO 14001 and we have been operating our plant in accordance with that standard since implementing our EMS.



Certificate of Registration

This document certifies that the quality administration systems of:

Waterford Carpets Ltd

IDA Industrial Park, Cork Road, Waterford

has been assessed and approved by

ISO Competitive Edge Limited

to the following quality administration systems, standards and guidelines:-

ISO 14001:2004 Environmental

The approved quality administration systems apply to the following:-

Manufacture and Treatment of Nature Fibre Carpet and Rugs.

Approval Certificate No: PADH083601

Current Certificate: 28th October 2009

Original Approval: 22nd August 2008

Certificate Expiry: 27th October 2010

This Certificate remains valid while the holder is working in accordance with the standards and guidelines stated above which will be audited by ISO Competitive Edge Limited. This certificate remains the property of, and must be returned to, ISO Quality Services Limited on reasonable request.

On behalf of ISO **Quality Services** Limited

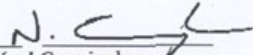


On behalf of ISO Competitive Edge Limited



GECA Certification - Pending

tretford® has applied for the GECA certification which is still pending certification.

tretford	waterford carpets limited
	Industrial Park, Cork Road, Waterford, Ireland. Telephone: +353 (0)51 375941 Fax: +353 (0)51 379607 E-mail: info@tretford.ie Website: www.tretford.com
Mr. Hugh Kelly, AML Architectural Products Ltd, B3 Calmount Park, Ballymount, Dublin 12	15 th January 2009
Dear Hugh,	
This letter is to confirm that Waterford Carpets Ltd. are the manufactures of the Tretford brand of carpets.	
The GECA certification of our products is underway and completion of this process is expected by the end of the 1 st Quarter 2009.	
Yours Sincerely,	
 Noel Cunningham Managing Director	
PAGE 02/02	Registered Office: Industrial Park, Cork Road, Waterford. Registered No: 27574
WATERFORD CARPETS LT	353-51-379607
15/01/2009	10:18

Sample Wear Warranty

SAMPLE ONLY

“X” YEAR WEAR WARRANTY

for

tretford® cord carpet tiles

This warranty is offered and applies to XYZ Development Projects, [Address, Country].

Subject to the qualifications in paragraphs (1) to (4) below, if:-

- (a) **tretford®** cord carpet tiles are installed in XYZ Developments Projects, Address 1, Address 2, Address 3 being a commercial premises (i.e. non-residential and non-industrial),
- (b) **tretford®** cord carpet tiles are installed by **tretford®** cord carpet tile approved installers in accordance with **tretford's** published technical recommendations as at the date of initial purchase, and
- (c) the backing of **tretford®** cord carpet tiles, being PVC, is exposed through wear of the surface fibre within “X” years from the date of installation of the new **tretford®** cord carpet tiles,

Weseler Teppich GmbH & Co KG, the manufacturers of **tretford®** cord carpet tiles, will replace or repair (at their discretion) any defective area at their expense and pay the costs of the installation of replacement product or repair at prevailing flooring trade rates. In the event the carpet colour in question is no longer available, it will be replaced with **tretford®** carpet tiles of the same quality in a similar colour.

- (1) This warranty covers normal, abrasive wear only and does not include pulls, cuts, pilling, shedding, matting, use on stairs, tracking, burns, castor damage, pet damage or damage caused by accidents or misuse, or the use of improper cleaning agents or methods.
- (2) The affected area has been maintained in accordance with **tretford's** published technical recommendations.
- (3) Any additional costs whether directly or indirectly related (including the moving of partitioning, workstations, furniture or wiring) will not be the responsibility of Weseler Teppich GmbH & Co. KG.
- (4) If requested by Weseler Teppich GmbH & Co. KG a sample of 4 tiles from the affected area must be provided to Weseler Teppich GmbH & Co. KG for testing to verify any complaint.

The benefits covered by this warranty are in addition to all other rights and remedies in respect of **tretford®** cord carpet tiles which the consumer has under the law. This warranty is valid only to the original purchaser and all claims must be processed through an authorised **tretford®** cord carpet tile distributor or agent.

tretford® cord carpet tile is manufactured using organic goat hair. Weseler Teppich GmbH & Co. KG, the manufacturer of **tretford®** has supplied their extended 'standard' wear warranty to “X” years – bearing in mind that we acknowledge that there are 2 & 3 star colours being used. In all instances, carpet manufacturers make provision for the premature wear that will occur under castor chairs and in **tretford's** case this will not void the warranty.

Applications for an extension of this warranty to cover other installations should be made and will be accepted and considered on a project-by-project basis.

Rudolph Welcker
Managing Director
Weseler Teppich GmbH & Co. KG
[Date]

Green Star Office Interiors Mat-2 Flooring Calculator of Tretford Corded Goat Hair Carpet TILES:

Green Star™ Office Interiors Version 1.1

Flooring Calculator

Total Flooring Area in the Fitout: **200** m² Total Percentage **76** Points Awarded for this Credit: **4**

				Resource Utilisation		Management							Reusability		Product Score (%)	
Product Classification	Name of Flooring Product and Supplier	Brief Description of Flooring	Area of Flooring (m ²)	Eco Preferred Content	Durability	EMS	EMS ISO 14001 Certified	EMS Includes				Product Stewardship	Modular	Designed for Disassembly		
								Waste Minimisation	Energy	Emissions	Materials Minimisation					
1																
2	New	Tretford Cord Carpet Tiles	70% Goat Hair Fibre, corded contract carpet tiles	200	<5%	≥7yrs and ≥10yrs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	<90	76



SCIENTIFIC CONSULTANTS IN RISK ASSESSMENT AND MANAGEMENT, PRODUCTS, PROCESSES, OH&S, ENVIRONMENT

Emission Test Certificate

Friday July 27th, 2007

Supplier: Gibbon Group (14 Moonbi Street, Brendale Queensland 4500)

Sample Description: Tretford Cord Carpet Tile.

Date Tested: July 2007

Test Method: Carpet & Rug Institute Green Label test program incorporating
ASTM D5116-97 "Standard Guide for Small-Scale Environmental Chamber
Determinations of Organic Emissions from Indoor Material/Products".

Emission Data:

Green Building Council Green Star Office Design Specification (version 2) IEQ-13	Tretford Cord
Total Volatile Organic Compound emission rate < 0.5 mg/m ² /hr (24 hours)	Total Volatile Organic Compound emission rate 0.35 mg/m ² /hr (24 hours)
Formaldehyde emission rate < 0.05 mg/m ² /hr (24 hours)	Formaldehyde emission rate 0.01 mg/m ² /hr (24 hours)
4-Phenylcyclohexene emission rate < 0.05 mg/m ² /hr (24 hours)	4-Phenylcyclohexene emission rate < 0.01 mg/m ² /hr (24 hours)
Styrene emission rate < 0.4 mg/m ² /hr (24 hours)	Styrene emission rate < 0.01 mg/m ² /hr (24 hours)

Dr. Vyt Gamys
PhD, BSc(Hons) AIMM, ARACI, ISIAQ
ACA, AIRAH, FMA
Managing Director and Principal Consultant

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