Education

SOLUTION GUIDE

Designing Schools of the Future

Tarkett

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DESIGNING SCHOOLS
OF THE FUTURE

Architects, interior designers, estate managers…

You are building the schools of tomorrow.
More flexible, modular, dynamic.
Schools designed for everyone's well-being… and to preserve the planet.
Schools that are ever more inclusive, more connected, more open.

We ask a lot of you.
You are at the heart of every challenge facing society.

That's why we at Tarkett stand resolutely at your side.
We put the well-being of people and of the planet at the heart of what we do.
We're with you all the way, from decision-making and set-up and through the lifecycle of innovative solutions that address your problems and challenges.
We are committed to doing everything we can to support you every day.

Tarkett, supporting the Education Community

EUC Lillebælt - FREDERICIA, DENMARK

STUDIES SHOW THAT THE LEARNING ENVIRONMENT INFLUENCES EDUCATIONAL ACHIEVEMENT.*

- Colour can be used to achieve functional benefits such as helping wayfinding through contrast and signage, increasing attention spans, and reducing eye fatigue.
- Being able to clearly hear without the distraction of background noise improves communication, working and learning efficiency.
- Good natural light (supplemented by artificial light when necessary) promotes physical and mental comfort while reducing eye strain.
- Better indoor air quality can prevent asthma and allergies, and reduce absenteeism.
- The carbon footprint of a building is extremely important, which is why construction and renovation need to take in consideration increasing sustainability standards.
- Building cleanliness improves student behaviour, creating respect and a sense of pride in the institution as well as enhancing staff retention.

These are among the factors that create an optimal learning environment conducive to students' academic personal development and staff retention.

* Source: University of Salford, Manchester - Clever Classrooms / CIRI (Cleaning Industry Research Institute) Healthy School Environments and Enhanced Educational Performance.

CARING ABOUT INDOOR AIR
QUALITY & WELL-BEING

Children spend five days out of seven at school, mostly indoor. Studies show that the air inside a building is up to five times more polluted than the air outside. This is attributed largely to concentrations of Volatile Organic Compounds (VOCs), dust and allergens. One of the highest risk factors for developing asthma, especially among infants, is exposure to indoor allergens. This is why indoor air and environmental quality matter so much to the overall well-being of the young.

Asthma affects 14% of all children worldwide and is a major cause of school absenteeism.*

CONSIDER INDOOR AIR QUALITY

Indoor air quality is impacted by airbone particules (such as dust), and Volatile Organic Compounds (VOCs). You may reduce emissions at source by wisely choosing construction materials, furniture and cleaning agents.

OUR RECOMMENDATIONS

- Select floor and wall coverings which are **guaranteed to have the lowest VOC emissions**, ideally 10 to 100 times lower than European standards requirements (<1000µg/m³ after 28 days).
- Choose surface treatments that **need less maintenance** (with no stripping or polishing) to prevent exposing pupils and academic staff to harmful chemicals.
- **Reduce concentration of fine dust in the air** by selecting innovative floors/carpets that capture the invisible dust particles in the air and prevent them from becoming airborne again until they can be vacuumed away.
- Go further and choose **asthma and allergies approved products**, such as Allergy UK approval which assess the reduced presence of allergens on the surface and also the composition of the flooring and wall coverings.

GOOD MATERIALS FOR BETTER INDOOR ENVIRONMENT

Carefully-selected materials will have an influence on the indoor environment and will reduce potential effects on children's health. As an example, phthalates are common contaminants in the indoor environment, and research suggests that they may have a detrimental effect on human health.

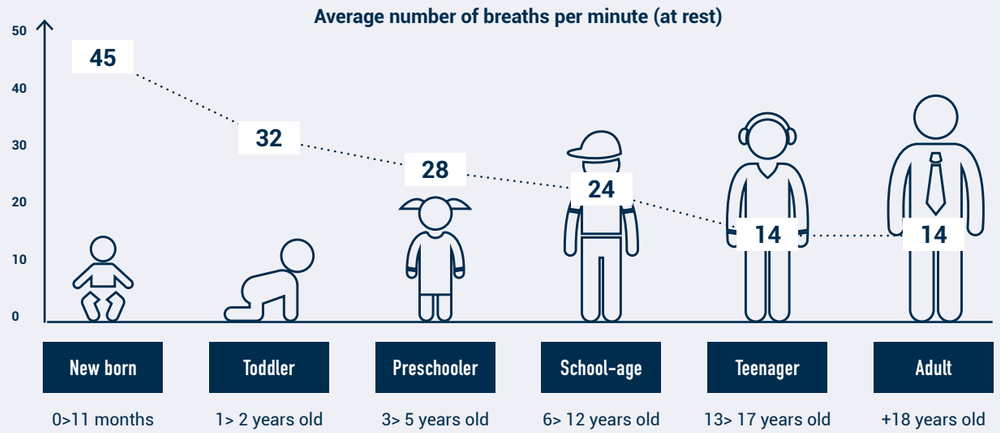
OUR RECOMMENDATIONS

- Opt for flooring solutions that are **phthalate-free**.
- Ask for transparency from your supplier. Third-party endorsements, such as the Material Health Statement (MHS) which assess materials for their impact on environment, people's health, is a reliable source of information.
- Select suppliers that have knowledge of the chemical components of each raw material and who continuously optimise towards safer materials. (Cradle to Cradle® approach is a reference to developing products).

* Source: Forum of International Respiratory Societies (FIRS)

CHILDREN'S BREATHING: THE CRUCIAL DIFFERENCE

Why are young lungs different? A child's respiratory system is not simply a miniature version of an adult's. The lungs of a newborn baby have around 50 million alveoli, while adult lungs have 300 million. This is why air quality and emissions are even more important for younger children.



REDUCING THE ENVIRONMENTAL IMPACT OF EDUCATIONAL BUILDINGS

Designing sustainable buildings and adopting a life-cycle approach for their construction is key to reducing their environmental impact. It also contributes to the students' and staff's well-being and good health. More and more parents and local authorities want environmentally friendly buildings that set an example to others and form a focal point for their surrounding communities. Reducing CO_2 emissions when bulding a school is nowadays a key challenge for participating in the overall reduction in global warming.

In 2015, the COP21 Paris Agreement set out a global framework to avoid dangerous climate change by limiting global warming to well below 2°C and pursuing efforts to limit it to 1.5°C by 2050.

REDUCE THE CARBON FOOTPRINT

One of the main challenges in the future will be to limit our environmental footprint to mitigate climate change. The construction of education facilities needs to participate, and reduce the embodied and operational carbon emissions of the buildings.

OUR RECOMMENDATIONS

- Ask for product specific **EPDs*** to help you calculate the carbon emissions of the building.
- Select suppliers that are constantly working to reduce the impact of their products during the entire life cycle.
- Ensure that selected materials are truly low carbon on the whole building life cycle and not only **"Cradle to Gate"** (i.e. from raw material extraction to the factory gate).
- Choose **"Cradle to Cradle®"** approach encouraging product end-of-life recycling which has a high impact on effectively reducing carbon footprint.
- Consider **cleaning and maintenance optimisation:** it will also impact embodied carbon emissions.

THINK RECYCLING

Closing the loop on waste, preserving our planet's natural resources and developing a circular economy is one of the main ways of reducing our impact on climate change.

OUR RECOMMENDATIONS

- Choose productions that preserve natural resources through responsible sourcing, use of materials that are abundantly available in nature, rapidly renewable or recyclable.
- Opt for floors produced with recycled materials instead of raw materials.
- Consider partners that can recycle not only production waste but also post-use waste
- Make sure that your selected suppliers have an effective recycling programme in place, by both collecting and treating waste.

* Environmental Product Declarations
**Source: https://www.un.org/sustainabledevelopment/climate-change-2/

THE RIGHT CHOICE OF FLOORING CAN HELP ACHIEVE THE HIGHEST STANDARDS OF SUSTAINABILITY

Green building labels (such as BREEAM, DGNB, LEED, WELL and others) set guidelines and standards for indoor air quality, water and energy consumption, and waste management. The table below shows how flooring can address these requirements and help gain points for obtaining sustainable labels.

CHALLENGES	TARKETT CONTRIBUTION
CLIMATE AND CIRCULAR ECONOMY • **Avoid** sending construction waste to **landfill**, encouraging recycling • Select **building materials** whose **environmental impact are low** • Select **building materials** whose **environmental impacts are quantified**	• ReStart®, our take-back and recycling programme where we certify the amount you contribute to • Offering recyclable products, and we effectively recycle post-use some categories of our floorings (lino, homogeneous, carpet...) • Using recycled content in the production of our products • Availability of product specific EPDs • Producing flooring collections containing bio-based or bio-sourced materials.
GOOD MATERIALS • Select products whose **raw materials present no harm to people or environment** • Select **products** that are **durable** (avoid degradation) and are **easily maintained/replaced** • Select suppliers who have **ISO 14001 and 9001** certifications	• Availibility of MHS • Our PVC is phtalate-free* • The materials we use are Cradle to Cradle® assessed by a third party • Tarkett is ISO 14001 and 9001: 2015 certified • Resilient floorings that are durable and can easily be repaired or replaced * In our European production sites
HEALTH AND WELL-BEING • Select **low-emitting** materials • Acoustic Comfort • Visual comfort	• Floorings with VOC emissions level between 10 and 100 times lower than the most stringent standards • Floor score certified products (low emitting materials) • Products that are assessed and approved by Allergy UK • Floor finishes contribute to reducing impact noise and increase sound absorption • Floorings with LRV between 20 and 60% as recommended by the EN 12464-1 Lighting standard

Tell us about your objectives and the green-label certification you're aiming for, and our teams will advise you on the best flooring solutions.

COMMITING TO SUSTAINABLE SCHOOLS

CLIMATE AND CIRCULAR ECONOMY

We continuously work on closing the loop on waste, using more recycled content to preserve our planet's natural resources, and ultimately reducing our carbon emissions and impact on climate change.

- 6 recycling centres and 5 sustainable production sites in EMEA
- Our ReStart® programme offers hassle-free flooring take-back
- Recycling waste and post-use
- Using and increasing use of recycled content in our products
- Continually working to reduce our products' carbon footprint – scope 1 to 3

GOOD MATERIALS

We offer radical transparency about our products and subject ourselves to external scrutiny, so you can be clear on the health and environmental performance of our flooring and confident in your choice.

- Phthalate-free products
- Responsible use of PVC
- Full transparency on our production, providing third-party assessments (EPD, MHS)
- Product development following Cradle to Cradle® approach

HEALTH & WELL-BEING

We produce floorings that will not have negative impact on health, and participate in creating healthy indoor spaces with the highest standards of Indoor Air Quality.

- Floors with VOC lower than the most stringent regulations
- Asthma & allergies certifications
- Developing cleaning protocols to reduce use of biocides and harmful chemicals
- Reducing the concentration of fine dust in the indoor air

WHAT WE CAN OFFER YOU

- We help you hit your sustainability targets and reach green building labels such as LEED, WELL and BREEAM.
- We offer products with industry-best accreditation levels (Cradle to Cradle certified® products, Allergy UK,...)
- We offer products with low carbon footprint (certified with EPD)
- We provide you a hassle-free take-back and recycling scheme and certify the amount you contribute, recycling not only waste but also post-use.
- We provide detailed & specific Environmental Product Declarations (EPD) and Material Health Statements (MHS), which offer total transparency for the ingredients used in our flooring.

EASY CHOICES WITH OUR CIRCULAR SELECTION

The need for sustainable flooring is obvious in many of your projects, but the choice may not be always easy to do.
You often wonder which one will participate better in the overall carbon footprint reduction, but also suits your needs for learner-centric buildings?
Your quest for sustainable flooring can be complex and confusing, and sometimes you just don't have all the information you need.

At Tarkett, we want to help you make informed choices.
That's why we created our "Circular Selection", with products that respect all of the below criteria:

GOOD MATERIALS*

+

PHTHALATE **FREE**

+

≤ 10 µg/m³ **OPTIMAL INDOOR** AIR QUALITY

+

RECYCLABLE **POST USE**

WHICH PRODUCTS ARE BEST SUITED FOR EDUCATION PROJECTS?

TARKETT LINO
Bio-based linoleum flooring

- Cradle to Cradle certified® Gold or Silver

EXCELLENCE GENIUS
Heterogeneous vinyl

- Installation with no glue

iQ NATURAL
Bio-attributed homogeneous vinyl

- Amongst the lowest carbon footprint resilient flooring

AIRMASTER
Fine dust reducing carpet tiles

- Awarded with GUI Gold Plus label

* With a third party assessment made according to Cradle to Cradle® principles.

IMPLEMENTING THE LIFE CYCLE COST APPROACH

The economic aspect is key in the education sector where costs must be optimised and carefully considered. However, choices must not be driven only by the initial cost of purchase and installation. The overall life cycle of the product must be considered (durability, reparability, cleanability, and maintenance). Wrong choices can end up in costing more over time, both environmentally and economically.

Purchase and installation represent less than 10% of the total cost of the overall flooring life cycle.
90% of the total cost is related to cleaning and maintenance.

ANALYSE LIFE CYCLE COST

Assessing the total cost of materials over the whole building life cycle means analysing not only the initial cost of purchase and installation, but also cleaning costs, replacement costs and consumption of water, energy and chemicals required for maintenance.

MAKE CLEANING EASIER AND HEALTHIER

Cleaning regimens often involve chemicals and are physically demanding, which can impact maintenance and staff health.

OUR RECOMMENDATIONS

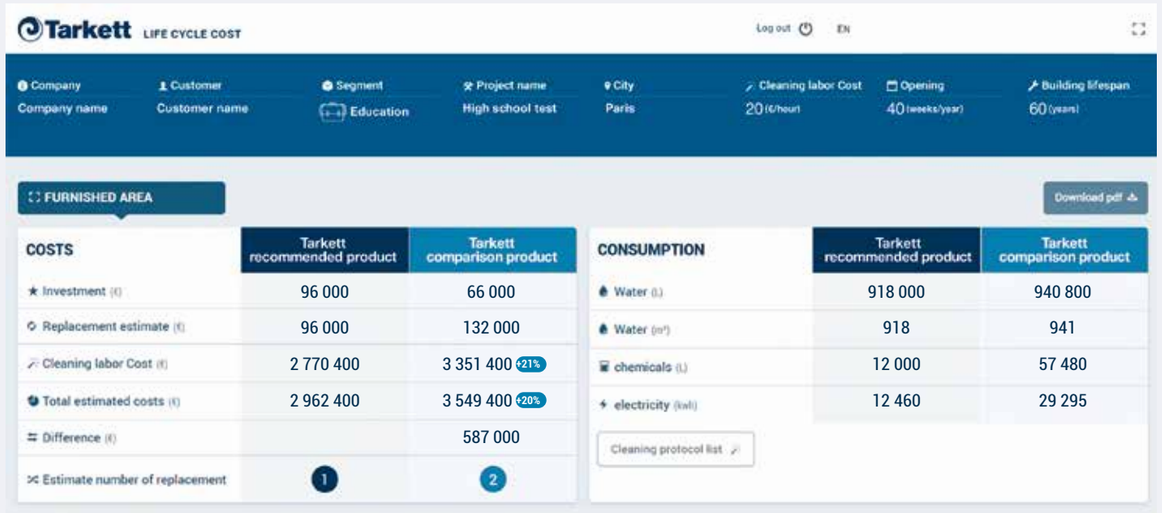
- Select products that will last, provide consistent **long-term performance,** and offer easy installation as well as **low life cycle costs.**
- Choose flooring that's **quick and easy to clean and maintain.** Removing the need for wax or stripper will also save cost and time.
- Do not discard what seems an expensive option upfront: a top-quality surface treatment can reduce maintenance costs because it needs less intensive cleaning.

OUR RECOMMENDATIONS

- Choose floor coverings with **no requirement for wax or stripper** and the chemicals they contain.
- These floors will be **easier and quicker to maintain, and will lower impact** by reducing chemical, water and energy consumption.
- They will also **minimise staff exposure to chemicals.**

HOW TO ESTIMATE YOUR SAVINGS WITH OUR LCC SOFTWARE

Tarkett Life Cycle Cost (LCC) is a key contributor to sustainable construction that consider social, environmental and economic aspects of the building during its lifetime.This virtuous approach aims at assessing the total cost of materials over the whole building life cycle including initial costs (purchasing & installation), maintenance costs and replacement costs. This tool is relevant and will help you make your flooring decision.



To obtain an estimated total ownership cost for any of our flooring solutions, please speak to your local contact.

USING COLOUR TO SUPPORT STUDENTS' LEARNING ABILITY

Designing schools and other academic facilities should aim to encourage students' ability to learn and help create a positive educational environment. More than just part of the decor, colour directly affects how people feel and behave, particularly in their formative years, and the colours which have the greatest impact on performance are the ones people like best. The choice of colour for school and university interiors should be guided by the age of the students who use them, as the reaction to colour varies by age group.

Memory improves by 55-78% in children surrounded by their preferred colours.*

USING COLOUR TO SHAPE THE ENVIRONMENT

Colours, patterns and materials can help to define spaces and support their purpose, such as providing stimulation or encouraging a learning mindset.

OUR RECOMMENDATIONS

- Use different **materials, patterns and colours** to differentiate areas according to the activity - from learning zones to transition spaces or sociabilisation areas
- In large spaces, colour can help with **spatial orientation,** support function and create a welcoming atmosphere.
- Choose materials according to the needs of flexibility and modularity, to be able to change a space according to the situation or occasion.

MATCHING COLOUR TO AGE

Use the emotional effect of colours to support the function of the space concerned (e.g. promoting sociability or creating reassurance, calming the mood or inducing concentration).

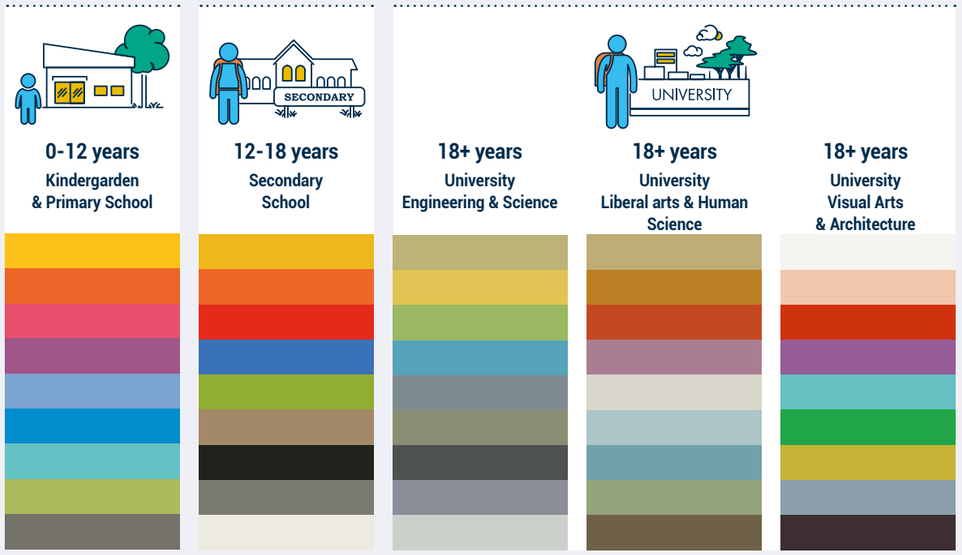
OUR RECOMMENDATIONS

- Switch colours, materials, and patterns to **stimulate perception** and emotion according to age.
- Adapt colour combinations to meet the evolving needs and tastes of children during their development.
- Vary the **coloured spaces, saturations and luminosities** in order to give all children the chance to feel comfortable in a given space.
- Adjust the degree of **colour saturation** for light intensity to prevent glare and eye fatigue.

* Source: Cockerill, I.M. & B.P. Miller: 'Children's Colour Preferences and Motor Skill Performance with Variation in Environmental Colour' (1983)

A COLOUR PALETTE FOR EACH AGE GROUP

Beyond its decorative contribution, colour acts directly on emotions, behaviours and well-being. Harnessing this capability is important for creating high-quality spaces. To better understand the influence of colours and materials in learning environments, Tarkett has conducted extensive interviews with children and students, international schools and childhood experts, interior designers and architects.
We can propose palettes of colours suitable for each age group and its educational spaces.These colour suggestions should be used as a working basis and adapted to the specific context of each project.



REDUCING NOISE
TO MINIMISE DISTURBANCE

Studies show that noise affects children much more than adults in tasks involving **speech perception** and listening comprehension. Reducing noise in academic environments is therefore important to help students learn effectively. Students themselves generate noise of course, but it also comes from the impact of feet and chairs on the floor above or from communal spaces. **Limiting noise** in study areas like classrooms, lecture theatres and librairies is vital for concentration, while making corridors and cafeterias quieter contributes to a more relaxed atmosphere.

A quiet classroom of 30 students generates around 50dB of ambient noise, requiring the teacher to speak at 65dB to be heard.*

Intelligibility drops by up to 70% in noisy environments, making concentration and learning much harder.**

MINIMISE IN-ROOM AMBIENT NOISE

Shuffling feet, scraping chairs and falling objects are among the many causes of in-room noise that prevents effective learning and study.
The covering used for floors, walls and ceilings can absorb ambient noise, helping create a calmer environment that encourages concentration.

OUR RECOMMENDATIONS

- **Choose flexible flooring over tiling.** Ceramic tiles reflect sound and add to the general noise, whereas flexible flooring contributes to reduce indoor ambient noise.
- Choose a **class A<65dB** (NFS31-074) vinyl or linoleum flooring for the noisiest areas.
- Opt for carpet flooring with a high absorption coefficient (ISO 354) for keeping things quieter in large spaces like lecture theatres or libraries.

MINIMISE NOISE FROM ADJACENT ROOMS

Movements in corridors or activities in adjacent classrooms increase the surrounding sound level.
In some countries, regulation limits the amount of impact noise allowable from overhead to 60dB (EN ISO 717/2).

OUR RECOMMENDATIONS

- A flooring with an **acoustic backing** will significantly reduce impact noise transmission.
- For classrooms, choose a floor with good indentation resistance and **acoustic performance** to reduce impact sound while preventing damage from chair legs.

* Source: Dr Paul McCarty and Jack Rollow's 2005 Los Angeles Unified School District (LAUSD) study
**Source: AFT = American Federation of Teachers

HOW FLOORING CONTRIBUTES TO IMPROVED ACOUSTIC COMFORT

The flooring can contribute to reduce impact noise caused by footsteps, rolling furniture, scraping chairs, falling objects in the room, and adjacent rooms. In large spaces subject to reverberations, carpet flooring will contribute to absorb airborne noise.

	TARKETT SOLUTIONS	IMPACT SOUND INSULATION EN ISO717/2	IN ROOM IMPACT NOISE NFS31-074	SOUND ABSORPTION ISO 354
Vinyl on foam backing	Tapiflex	ΔLw > 17 dB	Class A Ln,e,w < 65 dB	-
Linoleum on foam backing	Linoleum Silencio xf²	ΔLw = 19 dB	Class A Ln,e,w < 65 dB	-
Compact linoleum	Linoleum xf²	ΔLw = 6 dB	Class C Ln,e,w < 85 dB	-
Compact vinyl	Acczent Platinium 100	ΔLw = 9 dB	Class B Ln,e,w < 75 dB	-
	Acczent Excellence 80	ΔLw = 3 dB	Class C Ln,e,w < 85 dB	-
Carpet	Air Master	ΔLw > 22 dB	Class A Ln,e,w < 65 dB	0.15α_w
	Air Master with Sound master backing	ΔLw up to 31 dB	Class A Ln,e,w < 65 dB	0.30α_w
Ceramics	-	-	Class D Ln,e,w ≥ 85 dB	-

HELPING STUDENTS FLOURISH
THROUGH SPORT

Gyms and sport are increasingly recognised as **essential features of the learning environment**. As well as promoting health and well-being, physical education as a collective activity brings people together. With more schools and universities offering sports facilities, the choice of **sports surface** matters more than ever. The main factors to consider are what the surface will be used for and the typical user profile. The right surface will enhance player comfort, make play more enjoyable and **improve performance**, while colours link to the learning environment.

Up to 80% of children attending school in Europe only practise sport at school.*

CHOOSE THE SURFACE ACCORDING TO GYM USAGE

Gyms are generally used for sport, but some must occasionally accommodate other activities such as exams or social events. Usage is the first thing to consider when fitting out a gym.
Another key factor is the typical gym-user profile. For example, the heaviest the player is the more shock absorbent the surface will need to be.

CONTRIBUTE TO A HEALTHIER ENVIRONMENT

Players breathe 8-10 times more while exercising substantially increasing their sensitivity to pollutants. Playing sport in a healthier environment with good indoor air quality and limited pollutants is a must, especially for children.

OUR RECOMMENDATIONS

- **Sport only:** Prioritise shock absorption, vertical deformation and friction levels that reduce the risk of muscle and joint pain. Users' weight will also help to define the most appropriate sports floor.
- **Multi-use:** Wear and tear, indentation and rolling load resistance must be factored in.

All these parameters are governed by a European standard: EN 14904.

OUR RECOMMENDATIONS

- Minimise the risk of respiratory disease by choosing flooring with **extremely low VOC emissions.**
- Give preference to floorings that **need less glue** during installation for a more sustainable approach.

* Source: European Parliament – 2016 briefing – Physical Education in EU schools

WHY DOES EXPOSURE TO UNCLEAN AIR DURING SPORT AFFECT CHILDREN MORE?

Indoor air quality is essential for the health of athletes, especially children whose immature lungs are at greater risk from indoor air pollution.

WITHOUT
sports activity

ATHLETES
during sports activity

CHILDREN
during sports activity

PROMOTING ACCESSIBILITY AND INCLUSION

Today's schools and universities welcome a wide range of people, from students of all ages to teaching, administrative and maintenance staff. Furthermore, efforts to make education more **inclusive** mean provision must be made for students with disabilities, such as impaired vision or reduced mobility. Difficulty in finding one's way often leads to a **loss of confidence** and can be unsettling. With so many users, these spaces must be easy to navigate, utilising colours and daylight to promote **traffic flow** and help guide people around the building.

An estimated 19 million children are vision-impaired.*

ENHANCE VISUAL PERCEPTION

Colour contrast is vital to help people with visual impairment identify doors, furniture or changes in floor level, enabling them to perceive their surroundings more easily. Careful combinations of light and colour can give these users the confidence to make full use of the building.

OUR RECOMMENDATIONS

- **A difference of at least 30 Light Reflectance Value (LRV) points** between floor and wall-covering colours is advisable.
- **Use warning tiles** to indicate a level change and **tactile strips** to help visually-impaired users navigate entrances and corridors.

ENSURE SMOOTH TRAFFIC FLOW

Smooth traffic flow can be difficult in large buildings with many users trying to circulate simultaneously, between classes for example. The risk of falling should be considered in areas prone to water and viscous-liquid spillages.

OUR RECOMMENDATIONS

- **Use floor colours** to help signal and differentiate key spaces.
- **Effective signage** should be recognisable, concise and clearly visible to all. Floors and walls can be used for signage.
- Flooring choices will be driven by the likelihood and extent of **spillages.**

* Source: World Health Organisation

COLOUR CONTRAST CAN HELP WITH IMPAIRED VISION.

These images show how a child with impaired vision is affected compared to a child with full vision.
A difference of 30 points LRV makes it possible to distinguish between the floor, walls, board and furniture when moving around, leading to fewer injuries.

USE LRV TO ENHANCE CONTRAST

Light Reflectance Value, or LRV, measures how much light a colour reflects. The higher the difference in LRV, the greater the contrast.
LRV is measured on a scale ranging from 0% (pure black that absorbs all light) to 100% (pure white that reflects all light).

A SOLUTION FOR EVERY SPACE

LEARNING AREAS:

1 CLASSROOMS 24
2 LECTURE ROOMS & LIBRARIES 26

COMMUNAL AREAS:

3 TRANSITIONAL SPACES 28
4 CORRIDORS 30
5 CAFETERIA 32
6 STAIRWAYS 34

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LINOLEUM SILENCIO XF²

Caroline Aigle Public High School - NORT-SUR-ERDRE, FRANCE

REDUCE POLLUTANTS FOR A HEALTHIER LEARNING ENVIRONMENT

Specify flooring solutions that help improve indoor air quality. On average, students and teaching staff spend 40% of their day in the classroom. Good air quality not only contributes to well-being and academic performance but also reduces the health risks from asthma and allergies.
International standard ISO 16000-6 fixes the maximum permissible TVOC level at <1000µg/m3 after 28 days. However it is preferable to select the lowest VOC level solution.

	LINOLEUM SILENCIO xf²	TAPIFLEX EXCELLENCE 80	TAPIFLEX PLATINIUM 100	iQ GRANIT ACOUSTIC
TVOC after 28 days	<10 µg/m³	<10 µg/m³	<10 µg/m³	<10 µg/m³
Phthalate-free	Naturally phthalate-free	✔	✔	✔

LEARNING AREAS: CLASSROOMS

Classrooms are becoming more and more flexible to encourage group-based projects, collaboration and creativity, desks in rows are now replaced by modular furniture and rolling chairs allowing quick space reconfiguration. Active learning strategies produce necessarily more noise that can affect users of neighbouring rooms.

Classroom Essentials

- Acoustic comfort
- Resistance to indentation and abrasion
- Heavy-traffic resistance
- Easy cleaning
- Indoor air quality

TARKETT- RECOMMENDED SOLUTIONS

Tapiflex Platinium 100
HETEROGENEOUS VINYL

- High acoustic performance: sound reduction of 17dB, rated Class A<65dB (NF S31-074)
- High resistance to scratch, wear and tear thanks to its inlaid construction (1mm opaque wear layer) and 0.07mm indentation
- Easy cleaning thanks to TopClean XP PUR surface treatment
- Good indoor air quality: phthalate-free and very low TVOC emissions (<10µg/m³ after 28 days)

Added value: Good balance between acoustic performance and wear resistance

Linoleum Silencio xf²™
LINOLEUM ACOUSTIC

- High acoustic performance: sound reduction of 19dB, rated Class A<65dB
- Easy cleaning and maintenance: xf² surface treatment and very favourable life cycle cost
- Good indoor air quality: very low TVOC emissions
- Made of 65% of bio-based materials
- Cradle to Cradle Silver certified®
- Reviewed, tested, approved by Allergy UK
- Recyclable through our ReStart® Programme (Installation and Post use waste)

Added value: Bio-based, durable materials

Tapiflex Excellence Genius
HETEROGENEOUS VINYL LOOSE-LAY

- High acoustic performance: sound reduction of 19dB
- Resistance to high traffic and rolling furniture
- Good indoor air quality: phthalate-free and very low TVOC emissions
- Recyclable through our ReStart® Program (Installation and Post use waste)
- Glue-free installation for a quick installation and removal
- Compatible installation on multiple subfloors

Added value: The completely flexible classroom

OTHER SUITABLE RANGES: **iQ Acoustic, Tapiflex Excellence and Safetred Universal Acoustic**

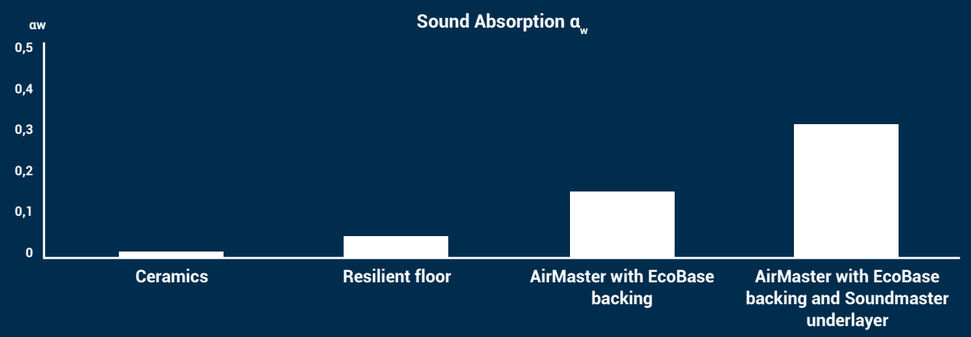
Find all technical data on pages 40-44

AirMaster® Atmos

CSG Liudger, Burgum 2020 - BURGUM, NETHERLANDS

CONTRIBUTE TO SOUND ABSORPTION

Creating a quiet environment in huge and crowded lecture rooms and libraries can be challenging. Structured and soft surfaces are best for absorbing noise and are even more effective with carpet.



LEARNING AREAS:
LECTURE ROOMS & LIBRARIES

The Indoor Environmental Quality (IEQ) in educational buildings is really important knowing that students spend most of their time at school. In places with high density of students like in lecture rooms or libraries, it is especially crucial to ensure good indoor air quality, acoustic, and visual comforts.

Lecture rooms & Library Essentials

- **Acoustic comfort**
- **Indoor air quality**
- **Visual comfort**
- **Heavy-traffic resistance**

TARKETT- RECOMMENDED SOLUTIONS

AirMaster with EcoBase backing

CARPET TILES

- High acoustic performance: sound reduction of at least 23dB depending on the pattern chosen with a noise-absorption coefficient of 0.15 α_w
- Sound reduction may be improved up to 31dB and 0.30 α_w when combined with SoundMaster backing
- Good indoor air quality: reduces the concentration of fine dust in the air
- First and only carpet product awarded with GUI Gold Plus label
- Cradle to Cradle Silver certified®

Added value: Acoustic comfort & good indoor air quality

AirMaster Savera and Savera Shade

CARPET TILES

- High acoustic performance: impact sound reduction: 24dB and sound absorption: 0.15 α_w
- Good indoor air quality: reduces the concentration of fine dust in the air
- First Airmaster collection offered in plank format
- 6 solid colours + 6 transition colours for a subtle transition effect
- Can be installed in a variety of formations and even combined with Tarkett's Luxury vinyl tiles (iD Square)
- First and only carpet product awarded with GUI Gold Plus label
- Cradle to Cradle Silver certified®

Added value: Creates distinctive and elegant spaces

OTHER SUITABLE RANGES: **Tapiflex Excellence 80, Linoleum Silencio xf², Safetred Ion Linen Acoustic**

Find all technical data on pages 40-44

ID INSPIRATION 70/ DESSO FIELDS

Veurs High School - LEIDSCHENDAM, NETHERLANDS

CREATE SEAMLESS FLOOR TRANSITIONS

Transitioning from one floor covering to another can be difficult because of the difference of thickness. Levelling the subfloor or using transition strips are often required.
With Tarkett Fusion, we bring high-quality, resilient luxury vinyl tiles and carpet tiles together. Produced in tile or plank format across a range of patterns, colours and styles, Fusion offers endless possibilities to create beautiful flooring designs.

COMMUNAL AREAS:
TRANSITIONAL SPACES

Learning environments should support the shift from passive learning to active learning. Thus, the role of transitional spaces grow in importance as they offer opportunities for social interactions and informal learning. These large spaces should incorporate a variety of human scale spaces to avoid feeling overwhelmed and to create inviting environments. Playing with floors can help to create distinctive spaces in an open floor plan.

Entrance Essentials

Heavy-traffic resistance

Easy cleaning

Visual comfort

TARKETT- RECOMMENDED SOLUTIONS

iD Inspiration 70
LUXURY VINYL TILES

- High quality for high traffic areas
- Unequalled resistance to wear thanks to the new TEKTANIUM PU coating
- Good indoor air quality: phthalate-free and very low TVOC emissions (<10µg/m³ after 28 days)
- 100 decors/7 standard formats, and Ultra matt finish

Added value: Variety of designs and formats to play with

AirMaster® EcoBase™ /iD Square
CARPET TILES/LUXURY VINYL TILES

- High quality for high traffic areas with 15dB sound reduction
- Easy to install and just as easy to remove, without damaging the substrate
- 7 formats that can be mixed together
- Perfect fit with carpet tiles thanks to similar thicknesses (difference in height is < 2.5mm) and matching designs, to ensure seamless transitions without any strips

Added value: Variety of contrasting textures to play with

OTHER SUITABLE RANGES: **iQ Range, Acczent Excellence 80, iD Click Ultimate**

Find all technical data on pages 40-44

ACCZENT EXCELLENCE 80 + FLOORCRAFT

West Lakes Shore School ADELAIDE, SOUTH AUSTRALIA

BOOST STUDENTS' SENSE OF BELONGING TO THE SCHOOL USING OUR FLOORCRAFT SERVICE

Inviting and safe spaces with effective wayfinding systems give students feelings of security, inclusion and community, and contribute to creating a strong school's identity.

Our floorcraft sonic-cutting customisation service allows elements from basic lettering to logos or more sophisticated design elements to be incorporated into our flexible floor covering. You can choose pre-existing playful designs from our catalogue or wayfinding features which can easily be integrated for attractive and useful signage.

You can also provide a logo, graphic or pattern for a bespoke project.

COMMUNAL AREAS: CORRIDORS

If the building is a human body, the corridors are its veins. Students and teachers use them to circulate between classrooms and other areas. Corridors must promote wayfinding but also withstand heavy wear while being quick and easy to clean.

Corridor Essentials

- **Heavy-traffic resistance**
- **Easy cleaning**
- **Visual comfort**
- **Wall protection**

TARKETT- RECOMMENDED SOLUTIONS

Tapiflex Excellence 80

HETEROGENEOUS VINYL

- Traffic resistance and easy cleaning with TopClean XP top treatment
- High acoustic performance: sound reduction of 19dB, rated Class A<65dB (NF S31-074)
- 127 stunning patterns and colours
- Visual comfort with matt finish to prevent glare
- Full floor, wall, and stairs coordination
- Good indoor air quality: phthalate-free and very low TVOC emissions

Added value: Combine design possibilities and acoustic comfort

Linoleum xf²™

LINOLEUM

- Easy cleaning and maintenance: xf² surface treatment (no wax no polish) and very favourable life cycle cost
- Made of 76% of bio-based materials
- Good indoor air quality with very low TVOC emissions
- Cradle to Cradle Silver certified®
- Allergy UK approved
- Recyclable through our ReStart® Programme (Installation and post use waste)

Added value: Bio-based and durable materials

OTHER SUITABLE RANGE: **iQ Range, Safetred**

WALL PROTECTION

ProtectWall 1.5

- High-performance wall protection from stains, scratches and impacts
- Traffic resistance and easy cleaning with TopClean XP top treatment
- Full floor & wall coordination
- Good indoor air quality: phthalate-free and very low TVOC emissions

LinoWall

- Bs2-d0 fire certification
- 10 colours and simple patterns, ideal to coordinate with Etrusco floors
- Allergy UK approved
- Exclusive xf² surface treatment for excellent durability, cleanability and stains resistance
- Recyclable through our ReStart® Programme (Installation and post use waste)
- Cradle to Cradle Silver certified®

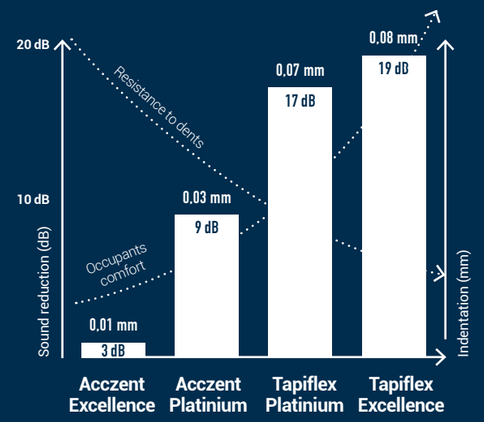
Find all technical data on pages 40-44

ACCZENT EXCELLENCE 80

Simone Veil High School - LIFFRÉ, FRANCE

FIND THE RIGHT BALANCE BETWEEN ACOUSTIC PERFORMANCE AND RESISTANCE TO DENTS

A lower indentation value offers better resistance to dents from chair and table legs. The right balance between withstanding indentation and reducing noise ensures acoustic comfort and a good-looking floor able to cope with impacts from furniture legs over time.



COMMUNAL AREAS: CAFETERIA

Mealtimes represent a welcome break in the academic routine, offering students the chance to relax and mix with their peers. Filled with the sound of voices, laughs and scraping chairs, the cafeteria can be a noisy place. The food preparation and serving areas are prone to stains and spillages too, so the floor covering must ensure a pleasant, hygienic environment for students and staff.

Cafeteria Essentials

- Heavy-traffic resistance
- Easy cleaning
- Acoustic comfort
- Visual comfort
- Wall protection
- Resistance to indentation and abrasion

TARKETT- RECOMMENDED SOLUTIONS

Acczent Platinum 100

COMPACT HETEROGENEOUS VINYL

- High resistance to scratch, wear and tear thanks to an inlaid construction (1mm opaque wear layer) and 0.04mm indentation
- Traffic resistance and easy cleaning with TopClean XP top treatment
- Easy cleaning: Roll format with hot-welded joints providing a watertight surface to remove stains
- High acoustic performance: Reduction of impact noise by 9dB
- Good indoor air quality: phthalate-free and very low TVOC emissions

Added value: Good balance between acoustic performance and resistance to indentation

Acczent Excellence 80

COMPACT HETEROGENEOUS VINYL

- Traffic resistance and easy cleaning with TopClean XP top treatment
- Visual comfort with matt finish to prevent glare
- 127 stunning patterns and colours
- Full floor, wall, and stairs coordination
- Good indoor air quality: phthalate-free and very low TVOC emissions

Added value: Combine design possibilities and performance

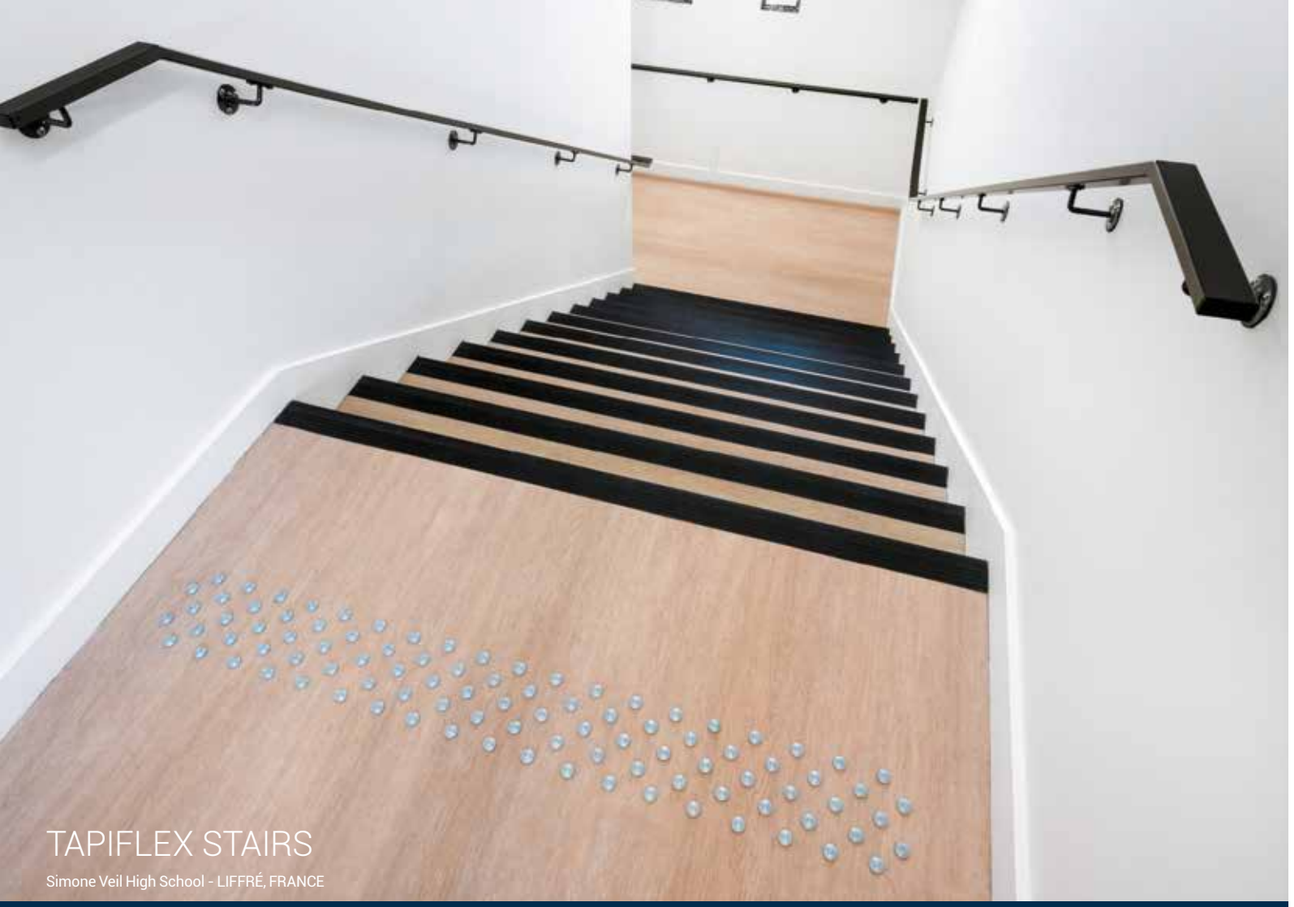
OTHER SUITABLE RANGE: **iQ Range**

WALL PROTECTION

ProtectWall 1.5

- High-performance wall protection from stains, scratches and impacts
- Traffic resistance and easy cleaning with TopClean XP top treatment
- Full floor & wall coordination
- Good indoor air quality: phthalate-free and very low TVOC emissions

Find all technical data on pages 40-44



TAPIFLEX STAIRS

Simone Veil High School - LIFFRÉ, FRANCE

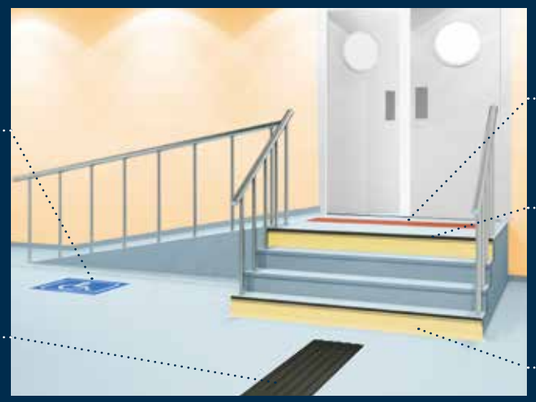
INCREASE SAFETY IN STAIRWAYS

As stairways are a common location for falls, particular attention should be paid to these areas.
Handrails, tactile warnings and visual cues will help to enhance visual awareness.
Several contrast calculation methods are commonly used:
- **LRV difference: The ISO 21542 requires at least 30 points of LRV difference for visual contrast**
- **The Weber contrast defined as (LRV1-LRV2)/LRV1: a minimum of 50%, preferably 70%, is recommended to achieve a good contrast.**

Tarkett provides a full range of accessories to fulfil these requirements. Our Tapiflex Stairs range is designed for optimal contrast between steps and stair nose.

Signage: Tarkett's Floorcraft service offers a range of signs to indicate lifts, wheelchair ramps and exits. These feature contrasting colours to aid recognition.

Tactile strips use texture, resonance or shape to show the way. They can be easily detected by a foot or stick.



Warning tiles can be used to highlight potential hazards and changes in level.

Striped stairnoses in contrasting colours will prevent slipping and falls.

The first and last risers must have a contrast of at least 60 LRV points to make changes in level more visible.

COMMUNAL AREAS: STAIRWAYS

School and college timetables often require students and teaching staff to move quickly between classes. This leads to the intensive, simultaneous use of stairways, which significantly increases the risk of falls. Clearly signaling changes in floor level via textured surfaces and contrasting colours is an effective way of tackling the problem.

Stairway essentials

Visual comfort | **Slip resistance** | **Easy cleaning**

TARKETT- RECOMMENDED SOLUTIONS

Tapiflex Stairs
ACOUSTIC HETEROGENEOUS VINYL

- Over 20 design and colours
- Full floor, wall & stairs coordination
- Integrated contrasting stair noses
- 5 unique phosphorescent stair noses
- High acoustic performance: sound reduction of 18dB
- Fast self-adhesive option
- Phthalate-free

Added value: Noise reduction and contrasting stair noses

Tapiflex Stairs self-adhesive
ACOUSTIC HETEROGENEOUS VINYL

- Unique on the market, comparable performances to the glue down version with extra assets
- Staircases stay open during step-by-step installation and renovation
- Immediately available for use after installation
- Installation time reduced by 30%
- Safe dry glue

Added value: Fast and easy installation with immediate traffic possible

OTHER SUITABLE RANGES: **Acczent Excellence 80, iQ Range, Linoleum xf²**

ACCESSORIES

Aluminium Stair Nosing
- High quality for high traffic areas
- Compatible with heterogeneous and homogeneous vinyls in rolls and linoleum

3D Studs
- Ready-to-use tactile
- Fit over the existing floor covering

Warning tiles
- Colour-coordinated to contrast with flooring
- Highlight changes in level
- Glued or self-adhesive
- Comply with accessibility and safety requirements

Find all technical data on pages 40-44

OMNISPORTS REFERENCE MULTI-USE

Teddy Riner Gymnasium - LESQUIN, FRANCE

CHOOSE THE RIGHT SPORT FLOORING

Usage and user profile will drive the choice.

		 POINT ELASTIC FLOORINGS		 AREA ELASTIC FLOORINGS		 COMBINED ELASTIC FLOORINGS
Type of usage	Multi- sports	✔		✔		✔
	Multi- use	✔	With an adapted floor protection	With an adapted floor protection	✔	With an adapted floor protection
Athletes' weight		Light /Medium		Medium/High		Light / Medium / High
Sport performances		High sports performance Vinyl solutions ▶ Multi-sports, versatility and cost effectiveness		Very high performance Wooden systems and wooden sub-construction associated with compact resilient flooring ▶ Performance and energy for competition level	Very high performance Wooden sub-construction associated with compact resilient flooring ▶ Performance and multi-use	Very high sports performance Wooden sub-construction associated with compact resilient flooring with cushion backing ▶ Performance and extreme comfort
Tarkett solution		Omnisports Reference		. Reflex M Evolution . Multiflex M . Flexlock . Proflex M . Lumaflex Energy Omnisports Compact . Lumaflex Energy Linosport xf²	. Lumaflex Evolution Omnisports Compact . Lumaflex Evolution Linosport xf² . Lumaflex Extreme Linosport xf²	. Lumaflex Energy Omnisports Reference Multi-use
		. Multi-use	. Omnisports Active + . Omnisports PurePlay"			

SPORTS AREAS:
SPORTS HALL

Sports halls or gyms need to be versatile, often catering for users ranging from pupils just starting school to university-age adults. The demands placed on the flooring by an 11-year-old weighing 35kg won't be the same as those of a 25-year-old weighing around 100kg. As well as being sports areas, gyms sometimes have to double as examination halls, party or performance venues requiring a multi-use floor.

Sports Hall Essentials

- **Comfort for athletes**
- **Indoor air quality**
- **Easy cleaning**

TARKETT- RECOMMENDED SOLUTIONS

Omnisports Reference Multi-Use

VINYL FLOORING

- Ideal flooring for multi-sports practice and non-sporting events
- P1 level shock absorption > 25%
- Exceptional resistance to static loads (chairs, tables, bleechers,...)
- Good indoor air quality: phthalate-free and very low TVOC emissions
- Easy cleaning thanks to TopClean XP PUR surface treatment
- Allergy UK approved
- GreenLay installation method: 98% glue free – Shorter installation downtime (-20% vs a fully glued one)
- FIBA and IHF certified

Added value: Multi-sports and multi-use performances

Multiflex M

WOOD FLOORING

- Comfortable solution for multi-sports up to competition level and leisure facilities
- Perfect shock absorption and vertical deformation balance (A4 level)
- Loose lay installation system
- Ideal for renovation projects: 38mm thickness
- FIBA certified

Added value: Multi-sport wood system fast and easy to install

Lumaflex Extreme Linosport xf²

COMBINED FLOORING

- Ideal for competition, roller sports and handisport
- The unique multi-sports and extreme multi-use solution with exceptional resistance to heavy rolling and point loads
- Stable and reliable system with high sports performances up to 50% shock absorption level
- FIBA certified
- Extreme resistance to multi-use with exceptional resistance to heavy rolling loads (up to 2000kg) and point loads (up to 1200kg)

Added value: Combined flooring for high sport performance and easy to maintain surface

Find all technical data on pages 40-44

PREVENT SLIPPING IN WETROOMS

A floor's degree of slip-resistance must be selected depending on:
• Whether students wear shoes or not, and then the respective standards (barefoot or wearfoot standard)
• Type of liquid spillage: water and/or viscous material (oil, grease...)

	AREAS WHERE SHOES ARE WORN		SHOWERS
Tarkett solutions	**DIN 51130**	**BS 796-2 TRRL Pendulum 4S (wet)**	**DIN 51097 Bare foot test**
Safetred solutions	**R10**	**>36**	**-**
Safetred Universal plus	**R11**	**>50**	**-**
Granit Safe T./Granit Multisafe	**R10**	**>36**	**Class C**

SPORTS AREAS:
CHANGING ROOMS, SHOWERS & TOILETS

Water spillage is the main consideration in these areas, with bare feet increasing the chances of slipping and falling. Flooring that can handle damp conditions will minimise the injury risk for users, and ease of cleaning matters too for preventing the fungal growth that can occur in moist environments.

Shower & Toilet Essentials

Slip resistance | **Watertight construction** | **Easy cleaning**

TARKETT- RECOMMENDED SOLUTIONS

Safetred
COMPACT HETEROGENEOUS VINYL

- Slip-resistant R10 grip
- Sustainable slip resistance throughout product life
- Safety Clean XP PUR reinforced surface for easy maintenance

Added value: Durable slip resistance properties

Granit Multisafe
HOMOGENEOUS VINYL

- Studded surface offers high slip-resistance for bare feet (Class C)
- Fully watertight system with a limited number of hot-welded, sealed joints with Aquarelle Wall HFS
- Pendulum test 4S (wet) ≥ 36
- Flexible for easier coving
- HFS wall covering

Added value: Safest solution for bare foot areas

OTHER SUITABLE RANGE: **Granit Safe.T**

WALL PROTECTION

Aquarelle HFS

- Waterproof solution featuring hot-welded joints for increased hygiene
- Easy cleaning and maintenance: fewer joints minimising moisture traps
- Bs2-d0 fire-rated
- Available in 27 bright, distinctive designs for harmonious combinations with our flooring ranges

OTHER ACCESSORIES: **drains, cove formers, junction profile**

Find all technical data on pages 40-43

TECHNICAL DATA

		Homogeneous compact vinyl	*Acoustic Homogeneous vinyl*	*Heterogeneous compact vinyl*			*Acoustic heterogeneous vinyl*				*Compact Linoleum*	*Acoustic Linoleum*	*Compact Linoleum*
		. iQ Eminent . iQ Granit . iQ Megalit . iQ Natural . iQ Optima . iQ Surface	**iQ Granit Acoustic**	**Acczent Platinium 100**	**Acczent Excellence 80**	**Acczent Excellence Genius 70**	**Tapiflex Platinum 100**	**Tapiflex Excellence 80**	**Tapiflex Excellence Genius 70**	**Tapiflex stairs (fully glued or adhesive version)**	**Lino xf² 2.5mm Veneto / Etrusco / Style Elle / Style Emme / Trentino / Originale**	**Lino xf² Silencio**	**Lino Originale Essenza+**
Location	Transition space	•	•	•	•	•	•	•	•		•	•	•
	Corridor	•	•	•	•	•	•	•	•		•	•	•
	Classroom	•	•	•	•	•	•	•	•		•	•	•
	Cafeteria	•	•	•	•	•	•	•	•		•	•	•
	Staircase	•	•	•	•	•	•	•		•	•	•	•
	Lecture room	•	•	•	•	•	•	•	•		•	•	•
	Library	•	•	•	•	•	•	•	•		•	•	•
Technical characteristics	Total thickness *EN ISO 24346*	2.0mm	3.5mm	2.45mm	2.00mm	2.45mm	3.10mm	3.25mm	3.50mm	3.50mm	2.50mm	3.80mm	2.50mm
	Total weight *EN ISO 23997*	2700 -2800 g/m²	3810 g/m²	3200 g/m²	3100 g/m²	3400 g/m²	3250 g/m²	3250 g/m²	3680 g/m²	3670 g/m²	2900 g/m²	3350 g/m²	2900 g/m²
	Commercial classification *EN ISO 10874*	34	34	34	34	34	34	34	34	34	34	33	34
	Wear layer thickness *ISO 24340*	2.0mm	2.0mm	1.02mm	0.80mm	0.70mm	1.02mm	0.80mm	0.70mm	1.00mm	2.50mm	2.50mm	2.50mm
	Average indentation *EN ISO 24343-1* *(Best measured value)*	0.02mm	0.09mm	0.03mm	0.01mm	0.01mm	0.07mm	0.08mm	0.01 mm	0.10mm	0.08 mm	0.20 mm	0.08 mm
	Wall protection Resistance to impacts *EN 259-2*	-	-	-	-	-	-	-	-	-	-	-	-
	Wall protection Scratch resistance Scelerometer test	-	-	-	-	-	-	-	-	-	-	-	-
Easy cleaning	Top treatment	New iQ PUR	New iQ PUR	TopClean XP™	TopClean XP™	TopClean XP™	TopClean XP™	TopClean XP™	TopClean XP™	TopClean XP™	xf²™	xf²™	Essenza+
Public building characteristics	Slip resistance (shoes on) *DIN51130*	R9	R9	R9	R9 / R10 (Woods)	R9 / R10 (Woods)	R9	R9 / R10 (Woods)	R9 / R10 (Woods)	R10	R9	R9	R9
	Slip resistance *BS 7926-2*	Low risk of slip	Low risk of slip	-	-	-	-	-	-	-	-	-	-
	Slip resistance *(bare foot)* *DIN51097*	-	-	-	-	-	-	-	-	-	-	-	-
	Reaction to fire *EN 13501-1* *(on concrete)*	Bfl-s1	Bfl-s1	Bfl-s1	Bfl-s1	Bfl-s1	Bfl-s1	Bfl-s1	Bfl-s1	Bfl-s1	Cfl-s1	Cfl-s1	Cfl-s1
Comfort & well-being (acoustic properties and indoor air quality)	Impact sound reduction *EN ISO 717/2*	-	15dB	9dB	3dB	4dB	17dB	19dB	19dB	18dB	6dB	19dB	6dB
	Acoustic Improvement *NF S31-074*	-	Class A (≤ 65 dB)	Class B (<85 dB)	Class C (< 85 dB)	Class C (< 85 dB)	Class A (≤ 65 dB)	Class A (≤ 65 dB)	Class A (≤ 65 dB)	Class A (≤ 65 dB)	Class C (< 85 dB)	Class A (≤ 65 dB)	Class C (< 85 dB)
	Measurement of sound absorption *ISO 354*	-	-	-	-	-	-	-	-	-	-	-	-
	TVOC emissions *ISO 16000-6* *(After 28 days)*	≤ 10 µg/m³	≤ 10 µg/m³	≤ 10 µg/m³	≤ 10 µg/m³	≤ 10 µg/m³	≤ 10 µg/m³	≤ 10 µg/m³	≤ 10 µg/m³	≤ 10 µg/m³ ≤ 100 µg/m³ (for adhesive version)	≤ 10 µg/m³	≤ 10 µg/m³	≤ 10 µg/m³
	Phthalate-free	yes	yes	yes	yes	yes	yes	yes	yes	yes	_	_	_
	Allergy UK seal of approval	-	-	-	-	-	-	-	-	-	Approved	Approved	Approved
Environmental credentials	Specific EPD	yes	yes	yes	yes	yes	yes	yes	yes	_	yes	yes	yes
	MHS	yes	yes	yes	yes	yes	yes	yes	yes	_	yes	yes	yes
	C2C	-	-	-	-	-	-	-	-	-	Silver	Silver	Gold
	Biobased product % *Estimate in kg/sqm*	-	-	-	-	-	-	-	-	-	76% 2.20 kg/m²	65% (calculated) 2.20 kg/m²	76% 2.20 kg/m²
	Take back programme	ReStart®	ReStart®	ReStart®	ReStart®	ReStart®	ReStart®	ReStart®	ReStart®	ReStart®	ReStart®	ReStart®	ReStart®
	Recyclable *ISO 14021*	Post installation & Post use	Post installation & Post use	Post installation	Post installation	Post installation & Post use	Post installation	Post installation	Post installation & Post use	Post installation	Post installation & Post use	Post installation & Post use	Post installation & Post use
	Recycled content	25.5%	25.5%	29%	33%	24%	21%	21%	23%	23%	36%	40%	30%

* depending on range chosen

TECHNICAL DATA

		Luxury Vinyl Tile glue down	*Luxury Vinyl Tile Loose Lay*		*Luxury Vinyl Tile Click*	*Carpet tiles*	*Compact heterogeneous safety solution*	*Wetroom concept*			*Wall protection*	
		iD Inspiration 70 High traffic	**iD Square**	**iD Inspiration Loose Lay**	**iD Click Ultimate 70**	**Air Master® EcoBase ™ Econyl yarn®**	**Safetred Design / Ion / Universal / Spectrum collections**	**Granit Safe.T**	**Granit Multisafe**	**Aquarelle Wall HFS**	**ProtectWALL 1.5**	**LinoWall**
Location	Transition space	•	•	•	•	•					•	•
	Corridor	•	•	•	•	•					•	•
	Classroom	•	•	•	•	•					•	•
	Cafeteria	•									•	•
	Staircase	•									•	•
	Lecture room	•	•	•	•	•					•	•
	Library	•	•	•	•	•					•	•
	Changing room / Shower & toilets						•	•	•	•		
Technical characteristics	Total thickness *EN ISO 24346*	2.5mm	4.5mm	4.5mm	6.50mm	6.00mm	2.00mm	2.00mm	2.50mm	0.92mm	1.50mm	2.00mm
	Total weight *EN ISO 23997*	3950 g/m²	5195 g/m²	7500 g/m²	11400 g/m²	4150 g/m²	3340 g/m² (Design & Ion) 3230 g/m² (Spectrum & universal)	2950 g/m²	3010 g/m²	1500 g/m²	2400 g/m²	2900 g/m²
	Commercial classification *EN ISO 10874*	34	34	33	33	33	34	34	31	-	-	-
	Wear layer thickness *ISO 24340*	0.70mm	0.80mm	0.55mm	0.70mm	-	-	2.00mm	2.00mm	0.12mm	0.35mm	-
	Average indentation *EN ISO 24343-1 (Best measured value)*	≤ 0.05mm	≤ 0.10mm	≤ 0.10mm	≤ 0.02mm	-	≤ 0.10mm	0.02 mm	0.02 mm	-	-	-
	Wall protection Resistance to impacts *EN 259-2*	-	-	-	-	-	-	-	-	-	No visible bursts or cracks	No visible bursts or cracks
	Wall protection Scratch resistance Scelerometer test	-	-	-	-	-	-	-	-	-	Excellent No visible scratch with naked eye	-
Easy cleaning	Top treatment	Tektanium™	TopClean XP™	TopClean XP™	PUR Ultimate	-	Safety Clean XP™	Safety Clean XP™	-	-	TopClean XP™	xf²™
Public building characteristics	Slip resistance (shoes on) *DIN51130*	R9 / R10	R10 / R11	R9	R9 / R10	-	R10	R10	R10	-	-	-
	Slip resistance *BS 7926-2*	-	-	-	-	-	Low risk of slip	Low risk of slip	Low risk of slip	-	-	-
	Slip resistance *(bare foot) DIN51097*	-	-	-	-	-	-	Class B (≥18°)	Class B (18°)	-	-	-
	Reaction to fire *EN 13501-1 (on concrete)*	Bfl-s1	Bfl-s1	Bfl-s1	Bfl-s1	Bfl-s1 (loose laid tested)	Bfl-s1	Bfl-s1	Bfl-s1	B-s2,D0 (on any non-metal A1) or A2-s1,d0 (class substrate)	B-s3,D0 (on any non-metal A1) or A2-s1,d0 (class substrate)	B-s2,D0
Comfort & well-being (acoustic properties and indoor air quality)	Impact sound reduction *EN ISO 717/2*	3dB	15dB	8dB	19dB	25dB	4dB	-	-	-	-	-
	Acoustic Improvement *NF S31-074*	Class C (< 85 dB)	Class B (≤ 75 dB)	-	Class C (< 85 dB)	-	-	-	-	-	-	-
	Measurement of sound absorption *ISO 354*	-	-	-	-	$0.15\alpha_w$	-	-	-	-	-	-
	TVOC emissions *ISO 16000-6 (After 28 days)*	≤ 10 µg/m³	≤ 10 µg/m³	≤ 100 µg/m³	≤ 10 µg/m³ ≤ 100 µg/m³	-	≤ 10 µg/m³	≤ 10 µg/m³	≤ 10 µg/m³	≤ 10 µg/m³	≤ 10 µg/m³	≤ 10 µg/m³
	Phthalate-free	yes	yes	yes	yes	-	yes	yes	yes	yes	yes	_
	Allergy UK seal of approval	-	-	-	-	-	-	-	-	-	-	Approved
Environmental credentials	Specific EPD	yes	yes	-	-	yes	yes	yes	yes	yes	yes	-
	MHS	yes	yes	-	yes	yes	yes	yes	yes	-	-	-
	C2C	-	-	-	-	Silver	-	-	-	-	-	Silver
	Biobased product % *Estimate in kg/sqm*	-	-	-	-	-	-	-	-	-	-	-
	Take back programme	ReStart®	ReStart®	ReStart®	ReStart®	ReStart®	ReStart®	ReStart®	ReStart®	ReStart®	ReStart®	ReStart®
	Recyclable *ISO 14021*	Post installation	Post installation & Post use	Post installation	Post installation & Post use	Post installation & Post use	Post installation	Post installation	Post installation	Post installation	Post installation	Post installation & Post use
	Recycled content	35%	3%	-	17%	EcoBase backing at least 75% , Econyl yarn varies depending on colours	42% (Spectrum & Universal) 40% (Design) /27% (Ion)	25.5%	25.5%	4.5%	11%	-

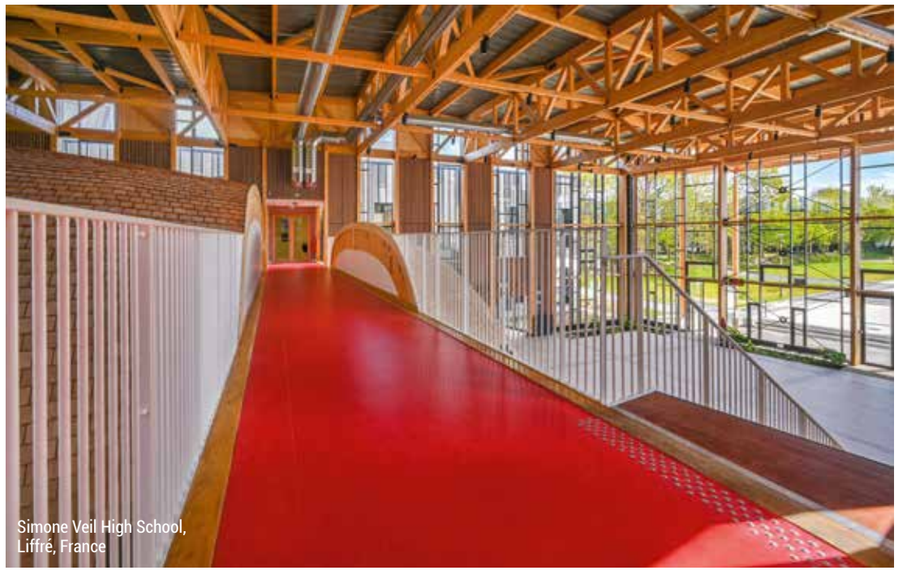
TECHNICAL DATA
SPORTS AREAS

		Heterogeneous vinyl			*Wooden system*		*Combined sports system*	
		Omnisports Reference Multi-Use	**Omnisports Active +**	**Omnisports PurePlay**	**Multiflex M**	**Flexlock**	**Lumaflex Energy Omnisports Reference Multi-Use**	**Lumaflex Extreme Linosport xf²**
Location	Sports Hall	•	•	•	•	•	•	•
Technical characteristics	Total thickness *EN ISO 24346*	6.20mm	8.10mm	9.40mm	38mm	67mm	36.30mm	36.20mm
	Total weight *EN ISO 23997*	3950 g/m²	4760 g/m²	6200 g/m²	16000 g/m²	19100 g/m²	14600 g/m²	15300 g/m²
	Commercial classification *EN ISO 10874*	-	-	-	-	-	-	-
	Wear layer thickness *ISO 24340*	-	-	-	3.50mm (EN ISO 13547)	3.50mm (EN ISO 13547)	-	-
	Average indentation *EN ISO 24343-1* *(Best measured value)*	-	-	-	-	-	-	-
	Wall protection Resistance to impacts *EN 259-2*	-	-	-	-	-	-	-
	Wall protection Scratch resistance Scelerometer test	-	-	-	-	-	-	-
Easy cleaning	Top treatment	TopClean XP™	TopClean XP™	TopClean XP™	Sports Lacquer	Sports Lacquer	TopClean XP™	xf²™
Public building characteristics	Slip resistance (shoes on) *DIN51130*	-	-	-	-	-	-	-
	Slip resistance *BS 7926-2*	-	-	-	-	-	-	-
	Slip resistance *(bare foot)* *DIN51097*	-	-	-	-	-	-	-
	Reaction to fire *EN 13501-1* *(on concrete)*	Cfl-s1	Cfl-s1	Cfl-s1	Cfl-s1	Cfl-s1	Cfl-s1	Cfl-s1
Comfort & well-being (acoustic properties and indoor air quality)	Impact sound reduction *EN ISO 717/2*	21dB	21dB	21dB	-	-	-	-
	Acoustic Improvement *NF S31-074*	Class A (≤ 65 dB)	Class A (≤ 65 dB)	Class A (≤ 65 dB)	-	-	-	-
	Measurement of sound absorption *ISO 354*	-	-	-	-	-	-	-
	TVOC emissions *ISO 16000-6* *(After 28 days)*	≤ 10 µg/m³	≤ 10 µg/m³	≤ 10 µg/m³	≤ 100 µg/m³	≤ 100 µg/m³	≤ 10 µg/m³ (Omnisports Reference Multi-use)	≤ 10 µg/m³ (Linosport xf²)
	Phthalate-free	yes	yes	yes	-	-	yes	_
	Allergy UK seal of approval	Approved	Approved	Approved	-	-	Approved (Omnisports Reference Multi-use)	Approved (Linosport xf²)
Sport performances	Usage	Multi-sports & Multi-use	Multi-sports	Multi-sports	Multi-sports	Multi-sports	Multi-sports	Multi-sports & Multi-use
	Shock Absorption *EN14808*	P1 ≥ 25%	P2 ≥ 35%	P2 ≥ 35%	A4 ≥ 55% < 75%	A4 ≥ 55% < 75%	C4 ≥ 55% < 75%	A3 ≥ 40% < 55%
	Vertical Deformation *EN14809*	P1	P2	P2	A4	A4	C4	A3
	Slip resistance *EN13036-4*	80 - 110	80 - 110	80 - 110	80 - 110	80 - 110	80 - 110	80 - 110
	Vertical ball reaction *EN12235*	≥ 90%	≥ 90%	≥ 90%	≥ 90%	≥ 90%	≥ 90%	≥ 90%
Environmental credentials	Specific EPD	yes	yes	yes	-	-	yes (Omnisports Reference Multi-use)	yes (Linosport xf²)
	MHS	yes	yes	yes	-	-	yes (Omnisports Reference Multi-use)	yes (Linosport xf²)
	C2C	-	-	-	-	-	-	Silver
	Biobased product % *Estimate in kg/sqm*	-	-	-	-	-	-	76% 2.96 kg/m²
	Take back programme	ReStart®	ReStart®	ReStart®	-	-	ReStart® (Omnisports Reference Multi-use)	ReStart® (Linosport xf²)
	Recyclable *ISO 14021*	Post installation & Post use when installed with GreenLay method	Post installation & Post use when installed with GreenLay method	Post installation & Post use when installed with GreenLay method	-		Post installation & Post use when installed with GreenLay method (Omnisports Reference Multi-use)	Post installation & Post use (Linosport xf²)
	Recycled content	14%	16%	5%	-	-	14% (Omnisports Reference Multi-use)	39% (Linosport xf²)

REFERENCES


MBO-College-Airport
Amsterdam, The Netherlands


University
Ordu, Turkey


Simone Veil High School,
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The University of Copenhagen
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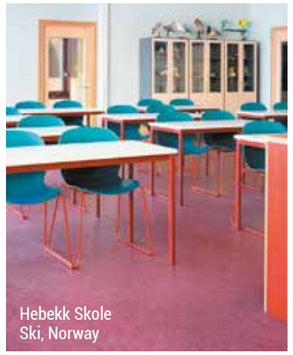
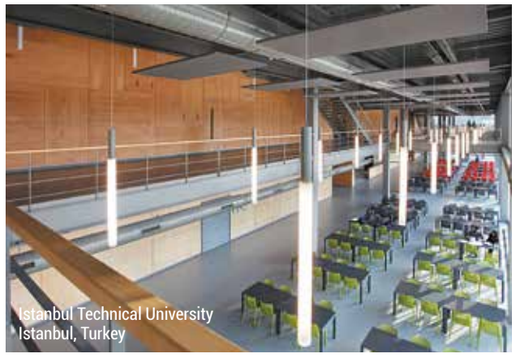

Hebekk Skole
Ski, Norway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