

Healthcare

SOLUTION GUIDE

Designing
healing
environments

 **Tarkett**

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DESIGNING HEALING ENVIRONMENTS

21st century healthcare facilities must provide a high quality of patient care while reducing operating costs, lowering their impact on the environment and striving to humanise healthcare in a highly medicalised environment. They must adapt quickly to a rapidly changing world, characterised by an ageing population, evolutions in innovative technology, the rise of chronic diseases and an increased need for outpatient care. Indeed, as the population ages, healthcare facilities will need to support more people with age-related conditions and diseases, including dementia. When designing a healthcare facility, it is vital to take all these factors into account. Good design can be cost-effective and helps to both improve patients' experience and enhance hospital employees' quality of life. The aim of this guide is to help you in your choice of flooring for modern healthcare facilities, and to demonstrate that it is possible to design a people-friendly clinical environment without compromising on hygiene or efficiency.



Upward pressure on health spending comes from new technology in medical services, rising incomes driving higher expectations, and the growing needs of ageing populations¹

By 2050, 1/3 people will be over 65 years old²

Ageing population will change the pattern of demand for health and social services³

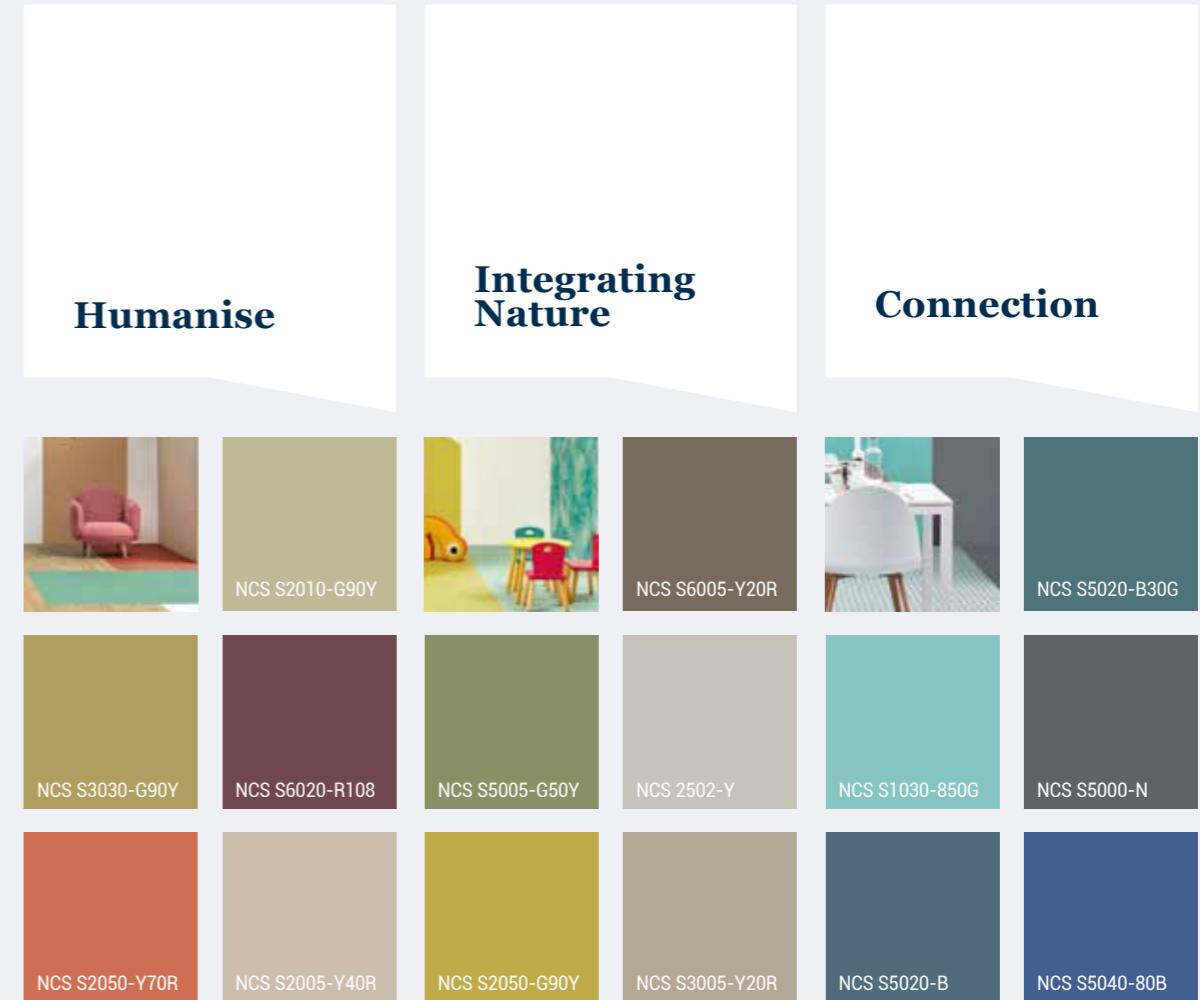
1. Source: OECD

2. Source: Health at a glance 2017

3. Health at a glance 2017

USING COLOUR TO CREATE HEALING ENVIRONMENTS

Colour plays a major role in creating effective healing environments. It can help to enhance patients' perception, spatial orientation and sense of surroundings. Colourful designs also make for attractive areas that provide a reassuring and welcoming atmosphere for patients, visitors and staff. Designing with a dedicated palette of colours can help to promote wellbeing and integrate elements of the natural world, and favours effective interaction between people.



Studies show that a hospital's environment can play a significant role in enhancing patients' experience, accelerating recovery and promoting wellbeing. A well designed environment also delivers economic benefits through cost savings related to improving patient outcomes and reducing their length of stay, boosting staff productivity and attracting and retaining talent. Healing design elements that help to strengthen patients' ability to cope and recover:

- Links with nature
- People-friendly spaces with a welcoming feel
- A calm environment free from excessive noise

Introducing a range of warm colours with reassuring, sensitive harmonies helps to put patients at ease. Soft, gentle tones can have a soothing effect in the case of long stays, helping to create a homely atmosphere. Additionally, colour can be used to identify different spaces, while patterns in high traffic areas also helps with orientation, improving safety by making it easier for people to find their way.

Environments that incorporate the principles of biophilia (humans' innate tendency to seek connections with nature) within their design offer substantial healing benefits. Integrating nature into healthcare design can take many forms, including large windows, nature-themes pictures and natural elements. The use of nature-inspired colour palettes (such as grey, brown, ochre and green) can also contribute to promoting a safe healing environment.

This design embodies a simple, refined and rational contemporary style that reflects the advanced nature of the care offered, while humanising the experience of being in a hospital. This is achieved by combining pure, soothing straight lines with the reassuring curves of organic forms. White is used undiluted and associated with more formal colours (including metallic grey, concrete grey and navy blue) to further strengthen the effect.

ENSURING PATIENT COMFORT

A healthy, people-friendly indoor environment can contribute to a positive patient experience and a more rapid recovery. Natural light, views of nature, art, quiet and clean patient rooms are all part of what the experts call the 'healing environment'.

The decibel level at a typical hospital during the day has risen from 57 in 1960 to 72 in 2005.¹

In the UK, 40% of hospital patients are bothered by noise at night, according to in-patient surveys.²

CREATING A QUIET ENVIRONMENT

Noise can be a highly negative environmental factor in hospitals. Studies show that it can increase patients' perception of pain and their consequent use of medication, and result in sleep deprivation and patient confusion. It may even increase the length of their hospital stay. From a design perspective, it is important to pay particular attention to corridors serving patient rooms and intensive care units.

OUR RECOMMENDATION

- Choose **flexible flooring over tiling**. Ceramic tiles reflect sound and add to the general noise, whereas flexible flooring absorbs sound, keeping it at a comfortable level.
- Identify optimal **acoustic solutions for rooms with high noise levels**, while ensuring easy movement of medical beds.

REDUCING THE INSTITUTIONAL FEELING

In patient rooms as well in large spaces and common areas, it is important to avoid the institutional feeling of the 'clinical environment', which can lead to stress and anxiety. Patients should not feel a sense of stigma linked to their stay in hospital.

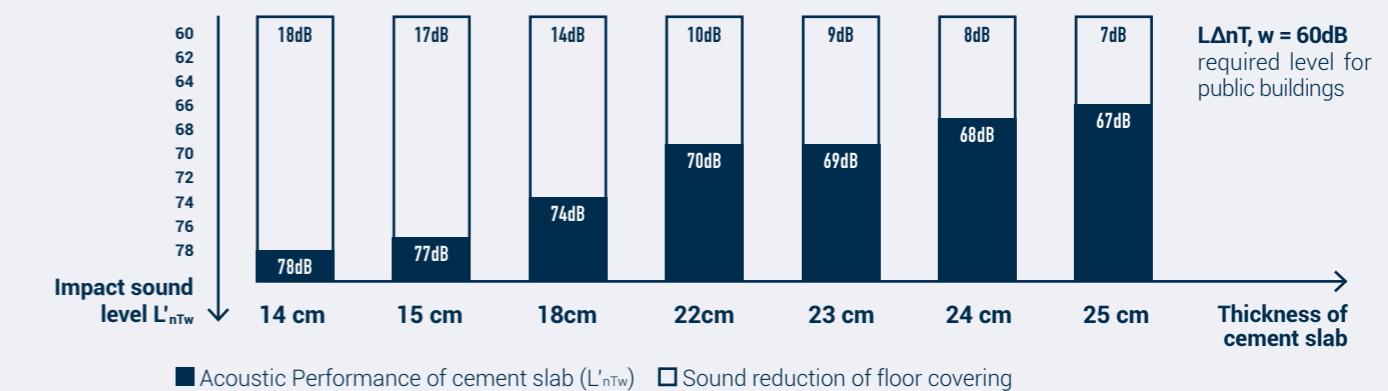
OUR RECOMMENDATION

- An appropriate use of colours, designs, textures will help to create a warm, **stimulating and reassuring environment**;
- Select durable, **easy-to-maintain flooring**, as cleanliness is important.



HOW FLOORING CONTRIBUTES TO IMPROVED ACOUSTIC COMFORT

Materials and finishes selected for ceilings, walls, and flooring all have an impact on the acoustic environment. As shown in the graph below, the thickness of the concrete slab has an effect on acoustic performance. It is important to consider this when assessing the level of sound-proofing required from the flooring.



INDICATIVE FOOTFALL NOISE FLOORING CATEGORY

TARKETT SOLUTIONS	ACOUSTICAL IMPROVEMENT (NFS31-074)
Vinyl on foam backing	Tapiflex / iQ Acoustic
Linoleum on foam backing	Linoleum xf ² Silencio
Linoleum compact	Linoleum xf ²
Vinyl compact	Accent / iQ
Ceramics	-
	Class D ≥ 85 dB

¹ The Center for Quality Improvements and Patient Safety of Johns Hopkins Hospital

² Source: King's college London

ENCOURAGING MOBILITY

Patient mobility in an ageing population is crucial to the recovery process. An early return to mobility can improve patient outcomes and decrease the length of their stay in hospital, studies reveal. Designing supportive environments that increase spatial perception and enhance cognitive function can play a vital part in helping patients to find their way and improving their overall experience. It will be increasingly important to address these issues in a considered and sensitive way, as healthcare facilities support a growing number of elderly people with sight loss or dementia.

Almost half of all hospital patients are over the age of 65,¹ and older patients can lose 5% of muscle strength per day in a hospital bed.²

ENHANCING VISUAL COMFORT

With elderly people forming a significant and growing group of the hospital population, it is vital to consider the experience of people with sight loss when designing a healthcare facility. Colour contrast is central to providing visual clues for doors, handles, controls and furniture, enabling people with diminished sight to better make sense of their surroundings.

OUR RECOMMENDATION

- Ensure at least a 30-point Light Reflectance Value (LRV) difference between adjacent critical surfaces such as flooring and walls, flooring and furniture, and wall and handrail.
- Do not exceed a 10-point LRV differential between two adjacent floor surfaces, in order to avoid the illusion of a step.
- Use flooring with a matt finish to prevent glare.

HELPING PATIENTS TO FIND THEIR WAY

Developing design strategies to help patients and their families find their way in complex healthcare settings can help to alleviate stress, both among patients and their families. In addition, it helps the hospital to function more effectively, and promotes visitor accessibility and safety.

OUR RECOMMENDATION

- Choose flooring colours to create colour coding to help identify and differentiate key spaces.
- Patient friendly signage is crucial. Effective signage should be recognisable, concise and clearly visible to all. Floor customisation can be used for signage.



“The larger a building, the more important the selection [of flooring solutions]. It is very important to use flooring for orientation and guidance, and also to find effective ways to support the hospital’s activities.”

Jens Hollerbach, Karlsbad, Germany

USING LIGHT REFLECTANCE VALUE AND COLOUR CONTRAST EFFECTIVELY IN DESIGN

Harnessing the Light Reflectance Value (LRV) efficiently helps to quantify the visible and usable light reflected by surfaces illuminated by a light source, on a scale from 0 to 100, where 0 absorbs light completely (black) and 100 reflects light perfectly (white). When designing for people with sight loss, it is important to take the LRV of large surfaces such as the floor, walls and ceiling into account, creating an optimum contrast that will help people to see their surroundings more clearly.

Light Reflectance Value in hospital spaces: Suggested levels of lighting and light redistribution for specific areas:



Corridors	300	
Patient room Ambient	250	
Patient room Reading area	300	
Bathroom	250	
Operating theatre Ambient	2,000	
Operating theatre Surgery field	>10,000	

¹ Federal Statistical Office, Older people in Germany and the EU, 2016

² National Audit Office – “Discharging older patients from hospital”

HELPING TO REDUCE THE RISK OF HEALTHCARE ASSOCIATED INFECTIONS

Managing and preventing the spread of infection is a major challenge for all healthcare facilities. In fact, infections associated with healthcare or developed within healthcare settings are rated as the most frequent adverse outcome in healthcare delivery worldwide. It is therefore vital to evaluate the level of risk posed by diverse areas of a healthcare facility, and reduce the risk of infection through optimal design choices.

Healthcare-Associated Infections (HAI), or infections acquired in healthcare settings are the most frequent adverse event in healthcare delivery worldwide.¹ They affect 4 million people annually in Europe, creating costs of €7 billion.²

CHOOSING "EASY TO CLEAN" MATERIALS

Infections are largely transmitted through the air, human contact and medical equipment. Even though the physical environment is not a primary source of contamination, a good choice of materials can help to control infection more efficiently.

OUR RECOMMENDATION

- Opt for sheets of vinyl flooring, joined by **hot welding rods**.
- To ensure **efficient cleaning and high hygienic standards** in areas where there is a **high risk of infection**, flooring and walls must be:
 - Sealed, smooth, with an impervious surface and minimal joints
 - Perfectly watertight
 - Compatible with cleaning chemicals and frequent disinfection procedures.

OPTING FOR LOW EMITTING PRODUCTS

Indoor air contains millions of pollutant particles, from fine dust to microbes, which can lead to the spreading of infection. HVAC plays an important role. Similarly, the choice of materials and surfaces in clean rooms also matters in terms of reducing the number of airborne particles.

OUR RECOMMENDATION

- Choose floors that release low levels of particles.
- For critical areas such as operating theatres, **seek floor and wall coverings certified by a third party**.



SELECTING THE APPROPRIATE MATERIALS ACCORDING TO THE RISK OF INFECTION

INFECTIOUS RISK LEVEL (NF S 90-351)	1 LOW RISK NO INVASIVE PRACTICE	2 MODERATE RISK INVASIVE PRACTICE NOT CONNECTED WITH THE ENVIRONMENT	3 SERIOUS RISK INVASIVE PRACTICE WITH RISK LINKED TO THE ENVIRONMENT	4 VERY HIGH RISK HIGH RISK INVASIVE PRACTICE
Area / room	Entrance corridor / stairs / laundry / waiting room / consulting room /bedroom / wetroom / psychiatry / medical aged care home / administration / offices / technical logistic services...	Maternity, nursery, endoscopy, hemodialysis, recovery room, intensive care, sterilization, sterilized material storage, autopsy room...	Emergency, operating theatre, childbirth rooms, laboratory, graft department, radiology with functional exploration...	High risk operating theatre (orthopedic implant, burn...), burns unit, hematology, pharmacy (sensitive preparation)
Material to use	Easy to clean Reduces soiling	Easy to clean Reduces soiling	Watertight / decontaminable / disinfectable / low particle emission	Watertight / decontaminable / disinfectable / low particle emission
Microbiological class (maximum concentration of alive particles – unit forming a colony – per cubic meter)	–	B100 (100 UFC/m ³)	B10 (10 UFC/m ³)	B10 (10 UFC/m ³)
Particle class	–	8	7	6 – 5
Cleaning frequency	Daily	Daily	After each operation	After each operation

¹ World Health Organization

² European Center for Disease Prevention and Control

CARING FOR CAREGIVERS

Working in healthcare facilities is both mentally and physically demanding. A positive working environment can help to reduce stress and fatigue. In particular, selecting appropriate flooring can help to perform physical tasks – such as rolling beds, trolleys and heavy rolling loads – more easily.

Manual handling and slips-trips-and-falls are the two main accident triggers in the healthcare sector.¹

Health care workers have rated moving hospital beds as one of the top physical tasks for complaints of musculoskeletal pains.²

FACILITATING THE MOVING OF ROLLING LOADS

In corridors and common areas, the floor should offer a low rolling resistance in order to allow an effortless movement of medical furniture and heavy rolling load.

OUR RECOMMENDATION

- Choose a floor with a good “indentation to acoustic ratio” especially for corridors serving patient rooms.

PREVENTING FALLS

Slips, trips and falls are one the most common cause of serious injuries at work. Some areas pose particularly high risks, such as those with frequent water spillages.

OUR RECOMMENDATION

- Choose **flooring with slip resistance**, suitable for the use and requirements of wet areas.



MEETING SLIP RESISTANCE STANDARDS REQUIREMENTS FOR FLOORING IN WET AREAS

	STANDARDS	STANDARD REQUIREMENT
Barefoot areas Showers rooms Lockers	DIN 51097	Class A (occasional water protection): angle > 12°
		Class B (shower room - changing room): angle > 18°
		Class C (constantly under water): angle > 24°
	EN 13845 Annex C	Esb: angle > 15°
	DIN 51130	R10: Occasional water spillages R11: Water and viscous spillages
Wearfoot area Kitchens Lavatories Workshops	BS7976 Part 2 = TRRL Pendulum 4S (wet)	> 36°
	Surface roughness rz	> 20 µm
	EN 13845 Annex C	Esb: angle > 20°

¹ HSA 2015

² Ando et al., 2000

OPTIMISING MAINTENANCE OPERATIONS

Since flooring has to withstand high traffic, spills, shocks and bumps, particular attention should be paid to the durability of materials and ease of cleaning. Product lifespan, maintenance requirements and costs are key considerations for any flooring decision.



Less than 10% of the total cost is represented by purchase and installation.



90% of the total cost is related to cleaning and maintenance.

ANALYSE LIFE-CYCLE COST

Maintenance plays a major role in the cost of ownership of flooring, with life-cycle cost analysis revealing that 90% of total costs relate to cleaning and maintenance. The purchase and installation represent less than 10% of these costs.

CHOOSE DURABLE SOLUTIONS

Flooring in healthcare facilities undergoes substantial use, through high footfall, heavy medical equipment (automated guided vehicles, imaging equipment) and frequent decontamination. The durability of the flooring materials used is crucial to avoid frequent renovations, which are disruptive and can be challenging to manage in busy, heavily used areas.

OUR RECOMMENDATION

- Choose flooring with **highly resistant surface treatment**, in order to reduce cleaning costs and the environmental impact with less use of chemicals, water and electricity.
- Tarkett LCC software can provide customers with an estimate of the **total cost for the cleaning and maintenance** of our products.

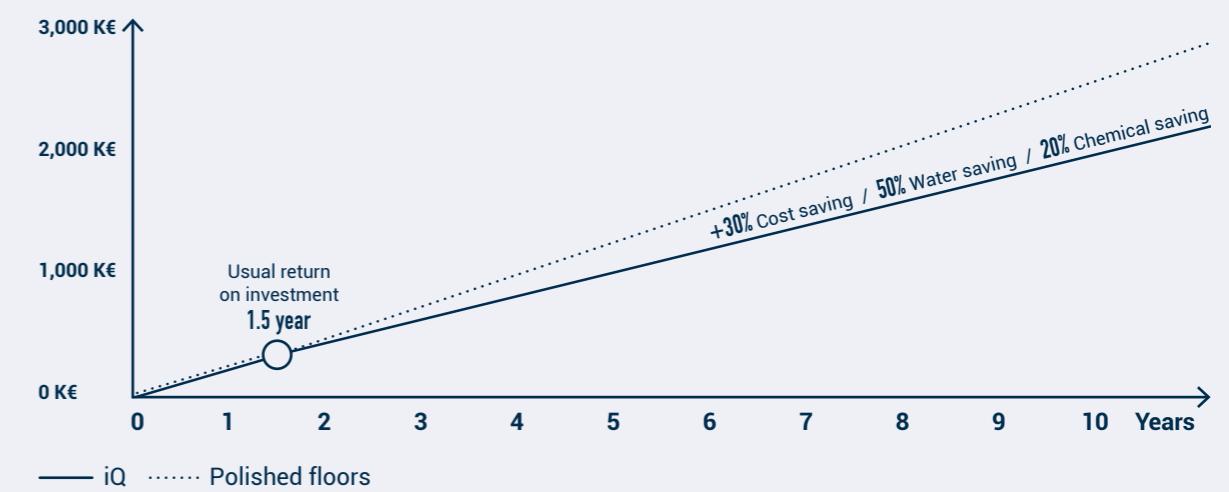
OUR RECOMMENDATION

- Select products that will endure for the long term, **provide consistent long-term performance, offering ease of installation, outstanding durability and low life-cycle costs**.



HOW TO ESTIMATE YOUR SAVINGS WITH OUR LCC SOFTWARE

1. Give us details about your project (number of bedrooms, total surface area...)
2. Cleaning protocols (cleaning equipment, daily cleaning...)
3. Choose one or several floorings for a comparison



CONTRIBUTING TO GOOD INDOOR AIR QUALITY

Many people may be at greater risk of developing health issues when exposed to indoor, rather than outdoor, air pollution. In particular, poor indoor air quality can be harmful to the most vulnerable patient groups, including children, the elderly, or those suffering from chronic respiratory and/or cardiovascular diseases. Healthcare workers have also been identified as a group at risk of developing work-related asthma.

"Indoor air can be up to five times more polluted than outdoor air."¹



GOOD INDOOR AIR QUALITY

VOCS (Volatile Organic Compound) are volatile substances used in materials that can be emitted to indoor air. They can have multiple origins: floor or wall coverings, paint, cleaning products, air fresheners, furniture and considerably degrade the quality of indoor air.

OUR COMMITMENT

- Tarkett's products have VOC emissions 10 to 100 below the levels required by European standards (<1000µg/m³ at 28 days).
- Our surface treatments allow low maintenance (without any stripping and polishing needed) that avoid occupants' exposure to harmful chemicals.



**100%
phthalate-free**

HEALTHY MATERIALS

Phthalates are mainly used as plasticisers (substances added to plastics to increase their flexibility, transparency, durability, and longevity). Nevertheless, phthalates have been the subject of scientific debate about their potential impact on human health.

OUR COMMITMENT

- Since 2010, Tarkett has proactively developed alternatives to phthalates, investing considerably in R&D.
- Today, all Tarkett vinyl products manufactured in EMEA are close to 100% phthalate-free



USING RIGHT MATERIALS FOR A GOOD INDOOR AIR QUALITY

TARKETT RANGES	IQ/PREMIUM/MULTISAFE (HOMOGENEOUS VINYL)	PLATINIUM & EXCELLENCE 80 (HETEROGENEOUS VINYL)	ID INSPIRATION 55/70, ID INSPIRATION CLICK (LVT)	ID CLICK ULTIMATE (LVT)	SAFETRED (SAFETY)
TVOC level (including formaldehyde) after 28 days (µg/m ³)	<10 *	<10	<10	<100	<100
Phthalate-free **	✓	✓	✓	✓	✓
REACH compliance (Registration, Evaluation, Authorization and restriction of Chemicals)	✓	✓	✓	✓	✓

* IQ One ≤ 100

** Close to 100% phthalate-free

1. Source: Environmental Protection Agency

DESIGNING A SUSTAINABLE BUILDING

Adopting a life cycle approach for the construction of a building is key to reducing environmental impacts while contributing to the well-being of the occupants. At Tarkett, we strive to support both our professional clients and consumers in creating healthy, beautiful and sustainable living spaces. Working with industry partners, we're bringing our best thinking and efforts toward making a positive impact on people and the planet.



DESIGNING FOR LIFE



In a healthcare environment, it is important to create spaces to promote patient wellbeing and staff productivity, and create a welcoming environment for patients and visitors. We help you to create healthier, safer, more people-friendly indoor spaces by designing high quality, sustainable products. In particular, by continuously improving the health and environment credentials of our products, we strive to select materials that can be recovered, recycled and transformed into new products. For instance, we have decided **to stop the use of biocides** in our products. This decision has been endorsed by Tarkett : - To avoid contributing to bacteria resistance - To prevent any harmful impact on people health & environment



CLOSING THE LOOP



With our ReStart takeback programme, we help you to manage your flooring waste effectively while contributing to safeguarding the world's natural resources and protecting the environment. We recycle your flooring offcuts and waste from our production, transforming it into new, high quality products. In this way, we can collectively close the loop and shift to a circular economy.



DRIVING COLLABORATION

The world's great sustainability challenges require co-operation and partnership across industries and supply chains. We encourage our customers and all our stakeholders to join us in working toward positive change. Importantly, we communicate our sustainability progress transparently, and provide you with clear information about our products and ambitions

A GOOD CHOICE OF FLOORING CAN HELP REACH THE HIGHEST LEVELS OF SUSTAINABLE REQUIREMENTS

Green building labels (such as BREEAM, DGNB, HQE, LEED, WELL...) set guidelines and standards for sustainable buildings regarding indoor air quality, water and energy consumption, and waste management. Find below an example of how flooring can help you address up to 8 issues and achieve 15 credits for the BREEAM label.

ISSUE	BREEAM CREDITS	IQ/PREMIUM/MULTISAFE (HOMOGENEOUS VINYL)	EXCELLENCE 80/PLATINUM (HETEROGENEOUS VINYL)	ID INSPIRATION 55/70 (LVT)	LINOLEUM	SAFETRED (SAFETY)
Health and Well-Being Hea02 – Indoor Air Quality	1	✓	✓	✓	✓	✓
Health and Well-Being Hea05 – Acoustic performance	MAX 4	✓	✓	✓	✓	✓
Materials Mat02 – Life-Cycle Impacts	1	✓	✓	✓	✓	✓
Materials Mat03 – Responsible Sourcing of Construction Costs	MAX 3	✓	✓	✓	✓	✓
Materials Mat05 – Designing for Durability and Resilience	1	✓	✓	✓	✓	✓
Materials Mat06 – Material Efficiency	1	✓	✓	✓	✓	✓
Waste Wst01 – Construction Waste Management	3	✓	✓	✓	✓	✓
Waste Wst06 – Functional Adaptability	1	✓	✓	✓	✓	✓

Let us know which green label certification you want to get and what you wish to achieve: our teams will be able to advise you on the best flooring solutions.

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iQ NATURAL & FLOORCRAFT
3009275 & 3009276

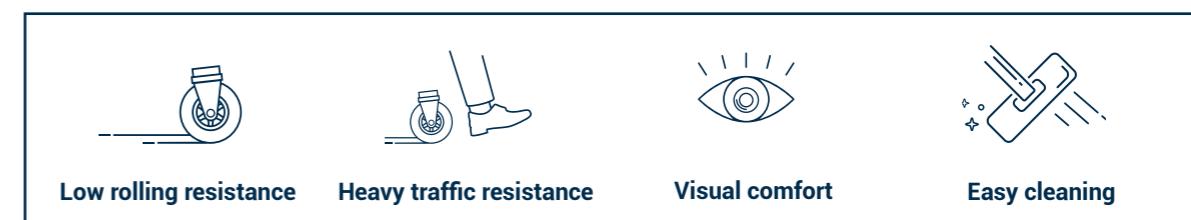
USE OUR FLOORCRAFT DESIGN SERVICE FOR INTEGRATING ART INTO HOSPITAL

Colourful motifs and themes can be a helpful and reassuring distraction, particularly in children's wards. Our FLOORCRAFT Design & Sonic Cutting Service offers scope for stunning effects and eye-catching concepts. From basic lettering to more complex designs, your ideas can be transformed into a unique feature for inclusion in the floor. Our experienced team is ready to apply their FLOORCRAFT skills to your project, building on your ideas and helping to bring them to life.



RECEPTION & COMMON AREAS

Entrances and common areas play an important role in providing patients and visitors with a positive impression, helping to reduce stress. These areas should inspire confidence, present a welcoming appearance, and facilitate accessibility and orientation.



TARKETT'S BEST RECOMMENDATION:

> YOUR NEED: CREATING YOUR OWN IDENTITY

iD Inspiration 70, *Luxury Vinyl Tile*

- Infinite combination of formats (planks and tiles), design and bevelling
- Large choice of material effects (wood, carpet, stone)
- High traffic resistance
- Easy maintenance.

> YOUR NEED: STYLISH AND RAPID RENOVATION

iD Click Ultimate, *Luxury Vinyl Tile*

- High traffic resistance
- Minimise downtime and use immediately
- Wood and stone designs
- High acoustic performance: 19dB.

Other suitable ranges: iQ, Platinium 100, Excellence 80



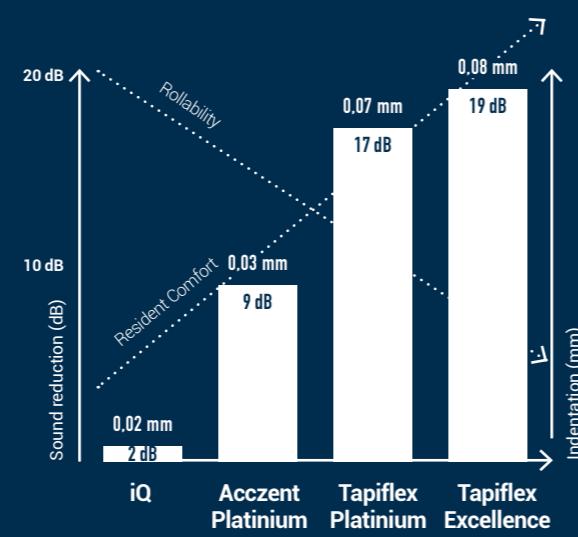
iQ OPTIMA - LIGHT GREY 0864

iQ OPTIMA - RED 0259

FLOORCRAFT BICYCLE - iQ OPTIMA WHITE 0862

FINDING THE RIGHT BALANCE BETWEEN ROLLABILITY AND ACOUSTIC PERFORMANCE FOR THE COMFORT OF BOTH PATIENTS AND STAFF

Acoustic floors can impact rolling resistance, presenting a challenge for staff in pushing medical beds. Conversely, lower indentation provides better rollability, but less sound absorption. When selecting flooring choices, it is important to consider how best to achieve the right balance between indentation, sound-proofing and comfort for both patients and staff.



CORRIDORS & CIRCULATION AREAS

Corridors in health care facilities serve two purposes: travelling from one location to another and as a means of helping people find their way. Designing corridors effectively helps to boost patients' confidence, so they can move easily from place to place. Light, designs and colour contrast are central to enhancing people's visual perception, and helping them to orient themselves more quickly. Staff comfort should also be considered, particularly when moving heavy loads.



TARKETT'S BEST RECOMMENDATION:

> YOUR NEED: MAINTAIN A GOOD BALANCE BETWEEN ROLLABILITY AND ACOUSTIC COMFORT

Accent Platinum 100

Compact heterogeneous vinyl

- Good acoustic performance, 9 dB.
- High rollability levels for beds, thanks to a 0,03mm indentation
- High traffic resistance
- Large palette of colours, allowing numerous creative possibilities
- Easy maintenance thanks to TopClean XP PUR surface treatment.

> YOUR NEED: LONG LASTING FLOORING

iQ ranges

Homogeneous vinyl

- Large choice of subtle patterns
- High rollability due to a 0.02mm indentation
- High traffic resistance
- High durability with surface properties restoration
- Cost effective maintenance.

Other suitable ranges:

Acoustic Homogeneous, Excellence 80

> WALL PROTECTION

ProtectWall 1.5

Heterogeneous vinyl

- Robust resistance to shocks and impacts
- Can be welded with the floor for a 'clean concept'
- Decorative design

- Numerous possibilities of harmonious combinations with our flooring ranges
- Easy to clean.



iQ GRANIT SD - BLUE 3096718

USE THIRDY PARTY-CERTIFIED PRODUCTS FOR CLEAN ROOMS AND FOLLOW A STRICT INSTALLATION METHOD

Cleanliness and hygiene are critical to hospital environments. We offer products certified as suitable for clean rooms by the internationally recognised Fraunhofer Institute, Europe's largest organisation for applied research.

In clean rooms, it is important to know how well flooring and wall coverings can resist chemicals (ISO 26987) and bacteria (ISO 846). Surface cleanliness (ISO 14644-9) also matters, as does the ease of radioactive decontamination in specific areas such as radiology, nuclear medicine, radiotherapy (ISO 8690).

Tarkett flooring and wall coverings provide superior performance and are particularly effective in the demanding clean room environment, discouraging bacterial development, simplifying cleaning and providing excellent stain- and chemical resistance. Coving and well sealed joints eliminate traps for dirt or dust while offering a watertight finish and enhanced seam strength.



OPERATING THEATRE & CONTROLLED ENVIRONMENTS

The operating theatre is a fundamental area within today's hospitals, playing a central role in creating and maintaining the hospital's reputation for technical excellence and efficient service, and contributing significantly to revenues. It is critical that operating theatres and other controlled environments should be optimised for patient safety.



TARKETT'S BEST RECOMMENDATION:

> YOUR NEED: TO MEET THE HIGHEST STANDARDS OF CLEANLINESS

iQ products

Homogeneous vinyl

- Perfectly smooth, impervious, flexible handling for optimum coving and watertight finish
- Exceptional welded joint resistance > 800 N / 50 mm
- High resistance to stain and chemicals
- Very low particle emissions, class ISO 4 - complies with ASTM F51/F24
- Conductive option: iQ Toro SC ($ER \leq 10^6 \Omega$)
- Dissipative option: iQ Granit SD ($ER : 10^8 \Omega$)

> YOUR NEED: WALL PROTECTION

ProtectWall 2CR

Heterogeneous vinyl

- High resistance to impacts and scratches: heavy duty EN259
- Smooth, impervious, easy to cove and weld with flooring
- PUR surface treatment for easy cleaning and maintenance
- Very low particle emissions, class ISO 1.



iD INSPIRATION 70 - BRUSHED PINE GREY 24201014

FOCUS: REDUCING THE SOURCE OF POLLUTANTS TO CREATE A PEOPLE-FRIENDLY LIVING SPACE

At Tarkett, we strive to support both our professional clients and consumers in creating healthy, people-friendly and sustainable living spaces.



Healthy spaces thanks to 100% phthalate-free product

We have been proactive in seeking alternatives to phthalates as they have been the subject of scientific debate about their potential impact on human health. Since 2010, we have developed the use of a phthalate-free plasticizer technology for our vinyl floors which is approved for food containers and toys intended to be placed in the mouth by children.



Good indoor air quality

Through low levels of total volatile organic compounds (TVOCs) - TVOCs $\leq 10 \mu\text{g}/\text{m}^3$, much lower than EU standard EN ISO 16000.

PATIENT ROOMS

Patients typically spend most of their hospital stay in their room, so it is important to help them feel positive and at home in their private space. Visual and acoustic comfort is essential when designing the room, and indoor air quality is also a vital consideration. Limiting sources of pollution such as volatile organic compounds (VOCs) and optimising ventilation contribute to promoting good indoor air quality.



Acoustic comfort



Visual comfort



Easy cleaning



Indoor air quality

TARKETT'S BEST RECOMMENDATION:

> YOUR NEED: COMBINING HYGIENE AND HOMELY DESIGN

Tapiflex Excellence 80 *Heterogeneous acoustic Vinyl*

- Large choice of wood designs and warm colours to create a homely feeling
- 100% matt finish to avoid glare
- Easy maintenance thanks to TopClean XP PUR surface treatment
- Contributes to good Indoor Air Quality (TVOC $<10\mu\text{g}/\text{m}^3$)
- 100% Phthalate free

> YOUR NEED: RAPID RENOVATION

Accent Unik

Loose lay heterogeneous vinyl

- Reduces operating losses caused by renovation:
- Installation 40% faster than glue down solution
- Easily removable and replaceable at end of life
- 15 colours available
- 100% matt finish to avoid glare
- Minimal maintenance due to TopClean XP PUR surface treatment
- Contributes to good indoor air quality (TVOC $<10\mu\text{g}/\text{m}^3$)
- 100% phthalate free.

Other suitable ranges: iQ, Platinum 100.



AQUARELLE WALL HFS - VOGUE WARM GREY 3942050
 AQUARELLE WALL HFS - VOGUE LIGHT WARM GREY 3942052
 GRANIT MULTISAFE - GRANIT GREY BROWN 3476746

FOCUS: MINIMISE RISKS WITH COLOUR CONTRASTS AND SLIP RESISTANCE

Colour contrasts

- Do not exceed a 10 degree LRV differential for the floorings between the bedroom and the bathroom to allow a continuous moving.
- Choose colours with a difference of 30 degrees between floors and walls LRV, and walls and sanitary equipments

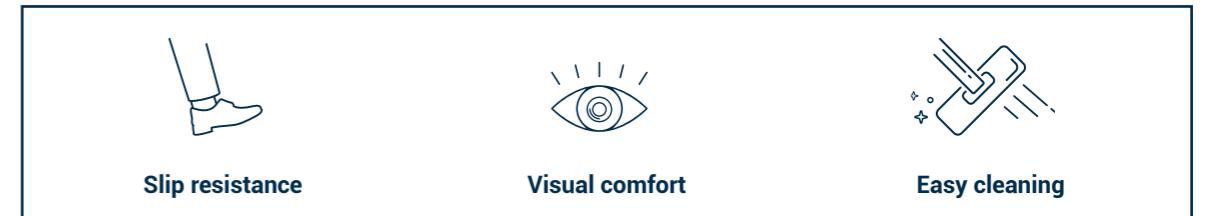
Slip resistance

Our wetroom flooring solutions provide confident grip for bare feet and reduce the risk of slipping, even when covered in soap and water.

BAREFOOT SLIP RESISTANCE (DIN 51097)		
	CLASS A (OCCASIONAL WATER PROTECTION), ANGLE > 12°	CLASS B (SHOWER ROOM, CHANGING ROOM), ANGLE > 18°
Granit Multisafe		X
Granit Safe.T		X
Optima Multisafe		X
Primo Safe.T		X
Multisafe Aqua	X (water rings)	X (stone & fibre wood designs)

SHOWERS & WET AREAS

In showers and wet areas, it is important to choose floorings with high slip resistance, in order to help prevent slips and falls. In private showers, particular attention should be paid to visual comfort and creating contrasts that promote patients' independence. Our complete wetroom solution, including walls, floors and accessories, provides easy access, safety and comfort, helping to reassure patients with reduced mobility that they can wash safely and without difficulty.



TARKETT'S RECOMMENDED SOLUTION:

FLOORS

> YOUR NEED: THE SAFEST SOLUTION

Granit Multisafe

Homogeneous vinyl

- Studded surface for optimum barefoot slip resistance: C
- Highly flexible to ease installation and coving
- Full watertight system with a limited number of joints, promoting improved hygiene
- Contributing to good Indoor Air Quality (TVOC<10µg/m³)
- 100% Phthalate free

Multisafe Aqua

Heterogeneous vinyl

- Choice of warm designs for a stylish shower
- Easy to clean embossing with TopClean Xp PUR reinforcement
- Full watertight system with limited number of joints
- Contributing to good indoor air quality (TVOC<10µg/m³)
- 100% phthalate-free.

WALLS

> YOUR NEED: THE SAFEST SOLUTION

Aquarelle Wall HFS

Heterogenous vinyl

- Numerous possibilities of harmonious combinations with our flooring ranges
- Hygienic installation with a limited number of joints
- Easy to clean.

Other suitable ranges:

Granit Safe T, Primo Safe T

ACCESSORIES

- Drains
- Cove formers
- Junction profile

	Homogeneous compact		Homogeneous compact		Heterogeneous Compact				Heterogeneous acoustic				Luxury Vinyl Tiles		Homogeneous		Heterogeneous	Homogeneous		Heterogeneous		Heterogeneous			
	IQ RANGES	PREMIUM RANGES	STATIC CONTROL		ACCZENT RANGES		LOOSE LAY		TAPIFLEX				GLUE DOWN LVT		CLICK	SAFETY SOLUTIONS			WETROOM CONCEPT			WALL PROTECTION			
	iQ Granit / Optima / Natural / Megalit / Eminent	Primo Premium/Eclipse Premium	iQ Toro SC	iQ Granit SD	Accent Excellence 80	Accent Platinum 100	Accent Unik		Tapiflex Essential 50	Tapiflex Excellence 80	Tapiflex Platinum 100	iD Inspiration 70	iD Click Ultimate	Granit Safe.T	Primo Safe.T	Safetred Design / Ion / Universal / Spectrum	Granit Multisafe	Multisafe Aqua	Aquarelle Wall HFS	ProtectWALL 1.5	ProtectWALL 2CR				
	CORRIDORS, STORAGE AREAS	CORRIDORS	BEDROOMS	BEDROOMS	BEDROOMS	DINING ROOM	DINING ROOM	CORRIDORS				COMMON AREAS	COMMON AREAS	ALL USES	ALL USES	ALL USES	WETROOMS	WETROOMS	WETROOMS	CORRIDORS	CORRIDORS				
Durability and resistance	Commercial class EN ISO 10874	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	31	33	-	-	-	No visible burst nor crack	No visible burst nor crack		
	Total thickness EN ISO 24346	2mm	2mm	2mm	2mm	2mm	2.45mm	2.10mm	3.3mm	3.25mm	3.10mm	2.5mm	6.5mm	2.00mm	2.00mm	2.00mm	2.00mm	2.00mm	0.92mm	1.50mm	2.00mm				
	Wear layer thickness EN ISO 24340 (EN 429)	2mm	2mm	2mm	2mm	0.80mm	1.02mm	0.80mm	0.50mm	0.80mm	1.02mm	0.70mm	0.70mm	2.00mm	2.00mm	-	2.00mm	0.55mm	0.12mm	0.35mm	0.55mm				
	Average indentation EN ISO 24343-1	0.02mm	0.03mm	£0.10mm	£0.10mm	0.03mm	0.04mm	0.03mm	0.13mm	0.10mm	0.09mm	0.05mm	0.05mm	0.02mm	0.03mm	<0.10mm	≤ 0.10mm	≤ 0.10mm	-	-	-				
	Resistance to impacts EN 259-2 (walls)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No visible burst nor crack	No visible burst nor crack			
	Scratch resistance (walls)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Sclerometre test: Excellent	No visible scratch with naked eye	Sclerometre test: Excellent	No visible scratch with naked eye	
	Thermal resistance / underfloor heating EN ISO 10456	Approx. 0.01 m² K/W Suitable - Max 27°C	Approx. 0.01 m² K/W Suitable - Max 27°C	Approx. 0.01 m² K/W Suitable - Max 27°C	Approx. 0.01 m² K/W Suitable - Max 27°C	0.02m² K/W Suitable	0.02 m² K/W Suitable	0.04 m² K/W Suitable	0.02 m² K/W Suitable	0.02 m² K/W Suitable	0.05m² K/W Suitable	0.01 m² K/W Suitable - Max 27°C	0.01 m² K/W Suitable - Max 27°C	0.01 m² K/W Suitable - Max 27°C	0.01 m² K/W Suitable - Max 27°C	0.01 m² K/W Suitable - Max 27°C	0.01 m² K/W Suitable - Max 27°C	0.02 m² K/W	0.02 m² K/W						
Easy cleaning	Surface Treatment	iQ™	PUR Reinforced	iQ PUR	iQ PUR	TopClean XP™	TopClean XP™	TopClean™	TopClean XP™	TopClean™	TopClean XP™	PUR Ultimate	Safety Clean™	Safety Clean™	-	TopClean XP™	-	TopClean XP™	-	TopClean XP™	TopClean XP™				
	Surface Treatment performance	***	**	***	***	***	***	***	**	***	***	***	**	**	**	**	-	***	-	***	***	***	***	***	
Acoustic comfort	Impact sound reduction EN ISO 717/2	-	-	-	-	3dB	9dB	4dB	20dB	19dB	17dB	2dB	19dB	-	-	6dB (Spectrum) 4dB (Ion, Design, Universal)	-	-	-	-	-	-	-	-	
	Acoustic Improvement NFSI-074	-	-	-	-	Class C	Class C	Class C	Class A	Class A	Class A	Class C	Class C	-	-	Class C	-	-	-	-	-	-	-	-	
Slip resistance	DIN51130	-	-	-	-	-	-	-	-	-	-	-	Esf / Esb	Esf / Esb	Esf	Esf / Esb	Esf / Esb	-	-	-	-	-	-	-	
	DIN51097	<2kV	<2kV	<2kV	<2kV	<2kV	<2kV	<2kV	<2kV	<2kV	<2kV	<2kV	<2kV	<2kV	<2kV	<2kV	<2kV	<2kV	<2kV	<2kV	<2kV	<2kV	<2kV		
	EN 13845 Annexe C	Excellent	Good resistance	Excellent	Excellent	High resistance	High resistance	High resistance	Good resistance	High resistance	High resistance	High resistance	Good resistance	Good resistance	Good resistance	Good resistance	Good resistance	Good resistance	Good resistance	Good resistance	Good resistance	Good resistance	Excellent	Excellent	
Indoor Air Quality & Environment	Total VOC emissions ISO 16000-9	< 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	< 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						
	Phthalate-free technology	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes		
	% Recyclable	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
	% Recycled content	26%	26%	-	-	33%	29%	28%	22%	21%	21%	32%	-	-	25.5%	-	-	-	-	-	-	11%	11%		
Reaction to fire	EN 13501-1					B-s1 glued over any A2fl or A1fl substrate (concrete)	B-s1 glued over any A2fl or A1fl substrate (concrete)	B-s1 glued over any A2fl or A1fl substrate (concrete)	B-s1 glued over any A2fl or A1fl substrate (concrete)	B-s1 glued over any A2fl or A1fl substrate (concrete)	B-s1 glued over any A2fl or A1fl substrate (concrete)	B-s1 glued on wood panel and concrete	B-s2	B-s1	B-s1	B-s1 on cement	B-s1	B-s2,d0 on gypsum plasterboard and on A1 or A2 substrate	B-s2,d0 on any non-metal A1 or A2-s1,d0 class substrate	B-s3,d0 glued on any non-metal A1 or A2-s1,d0 class substrate					
	Class B-s1	Class B-s2	Class B-s1	Class B-s1	wood substrate	wood substrate	wood substrate	wood substrate	wood substrate	wood substrate	wood substrate		-	-	-	-	≥ 8 kW/m²	≥ 8 kW/m²	-	≥ 8 kW/m²	-	-	-	-	
	EN ISO 9239-1	≥ 8 kW/m²	≥ 8 kW/m²	≥ 8 kW/m²	≥ 8 kW/m²	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	EN ISO 11925-2	Pass	Pass	Pass	Pass	-	-	-	-	-	-	-	-	Pass	Pass	-	Pass	-	-	Pass	-	-	-	-	

REFERENCES

TARKETT, A TRULY
GLOBAL COMPANY



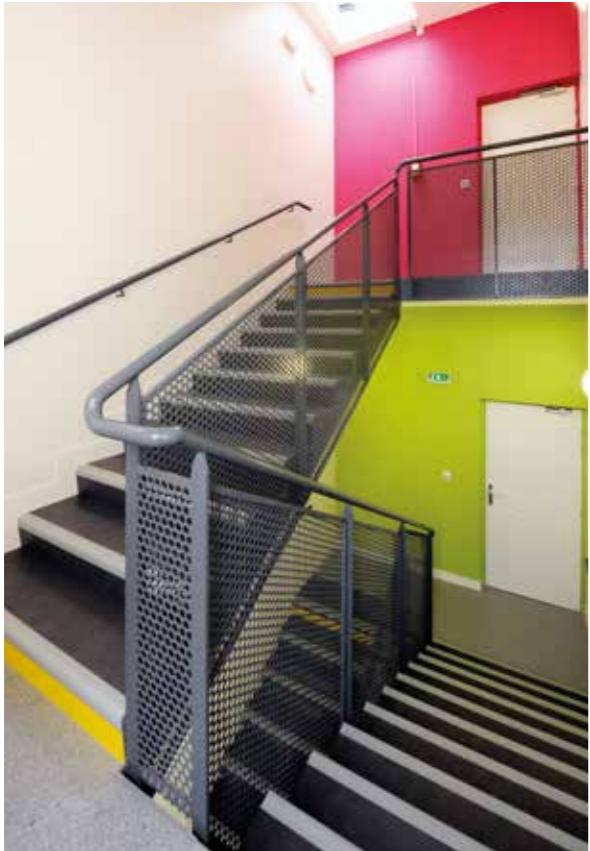
AZ Alma Eeklo Hospital
Architect: AA Prog
Belgium



Yperman Hospital, Ieper
Architect: Boeckx
Belgium



AKH Celle
Architect: Lohr Architektur
Germany



CHU University Hospital Thiers
Architect: Adquat
France



CHU University Hospital, Nantes
Architect: AIA
France



Laurens - Intermezzo Zuid, Rotterdam
HD Groep Architectuur
The Netherlands



Le Sermay psychiatric clinic
Architect: Agence Xanadu
France



UMCG Beatrixoord, Haren
Team 4/Buro Bulder
The Netherlands



€ 2.7 billion
net sales



21 acquisitions
in the last 10 years



34 manufacturing sites



100 countries
covered



1.3 million m²
flooring sold every day

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