



YOUR SPECIALIST FOR HEALTHCARE

Floor covering solutions fit for your world



Manchester Joint Hospitals, Manchester, England

Improving healthcare environments

Today, more than ever, nora is committed to meeting the unique functional and aesthetic demands of your healthcare facility, and we've found that nearly every area of this multifaceted industry shows a need for resilient floor coverings.

For almost 70 years, nora has developed resilient floor coverings, stairtreads and accessories that solve the daily challenges faced by our customers. We specialise in solutions for even the most demanding healthcare environments.

You require a broad range of flooring solutions that satisfy aesthetic and emotional needs as well as the special hygienic and technical requirements of a healthcare space.

nora systems allow you to implement an all-in-one solution to meet your most complex demands, offering electrostatically dissipative properties, resistance to stains and excellent wear resistance. Our floorings are slip-resistant, noise absorbing and free of PVC, plasticizers (phthalates) and halogens (e.g. chlorine) to promote a safe, peaceful environment. And for ease of maintenance, there is no need for costly coating processes that disrupt facility operations.



Hospital Clinic Siloah-Oststadt-Heidehaus, Hanover, Germany

Contents

Improving healthcare environments	3	Design solutions for the entire hospital	14
Comfort underfoot	4	Colour and design without limits	15
Acoustic control	5	Where others reach their limits, nora® is just getting started	16
Slip-resistant for increased safety	6	Entrance areas	18
Resistance to stains	7	Patient rooms	19
Hygiene and infection control	8	Children's wards, delivery rooms and maternity wards	19
With nora® nothing is forgotten	9	Operation rooms	20
Ease of maintenance	10	Intensive care units	21
Life cycle costs	11	Corridors and escape routes	22
Proven durability	12	High traffic areas	22
Sustainability for a healthy future	13	Recommended areas of application	23

Comfort underfoot

Footwear can only do so much to reduce back, leg and foot fatigue. Ergonomic nora® floorings provide excellent underfoot comfort to keep up with a workforce that's always on their feet.



BGU Berufsgenossenschaftliche-Unfall-Klinik, Frankfurt-Seckbach, Germany

Comfortable, durable flooring systems from nora help reduce strain on staff and patients alike. Ergonomics in the operating room promote high standing comfort when it is needed most. In physiotherapy, a highly resilient floor covering creates an environment to help patients stay on track. nora® flooring solutions offer the comfort and durability needed in heavy traffic areas such as corridors and stairwells.



Acoustic control

You can't mute your healthcare facility, but you can choose quieter floorings. With other surfaces, noise can echo and become disruptive. But nora® floorings reduce sound created at the floor level in your hospital for a more peaceful environment.



Because nora® floor coverings do not produce noise, the additional development of sound is reduced in high traffic areas like stairwells, entrance areas and hallways. Corridors stay quiet, ensuring that staff can direct their full attention to medical orders. Patients sleep soundly without the disruption of footfall, voices and loud equipment. So you can focus on healing, not volume control.

Centre for Mental Health Ravensburg, Germany



Asklepios Paulinen Clinic Wiesbaden, Germany

Slip-resistant for increased safety

Safety is all about being prepared. Whether it's spilled disinfectants or what the mop left behind, your facility floor is bound to get wet. nora® surfaces are slip-resistant to help prevent hazards.



Salem Hospital in Heidelberg, Germany

A safe, comfortable walking surface is needed in every area of your healthcare facility. The anti-slip properties of rubber material make nora® floorings the ideal solution for stairwells, physiotherapy rooms and other areas where even a small trip could cause a big fall.

Offering slip resistance and rolling traffic capability, nora® floor coverings meet the anti-slip property class R9 according to the directive BGR 181 or GUV-R 181. For areas with specifically high demands on slip resistance, we also offer grades of the classes R10 and even R11.

Resistance to stains

Now, the occasional spill doesn't have to mean permanent damage. Stain-resistant materials from nora® floorings make removing chemical stains less of a challenge. Because in your busy professional environment, you really can't afford the distraction.



Research Centre for Pharmacology, Pharmacy and Experimental Therapy, Greifswald

In laboratory areas, nora® floor coverings play an important role. Even a short-time exposure to diluted solvents, acids or alkalis may not damage the nora® floor coverings.

nora® floor coverings are resistant to even the toughest stains found in healthcare facilities: blood, urine, antiseptic solutions. Spilled liquids such as coffee, tea or juice can be easily mopped.



Marienhospital, OP, Marl, Germany

Hygiene and infection control

Many floor coverings cannot hold up against the highly concentrated disinfectants used intensively in areas where infection control and hygiene are capitalized. For these applications, nora® floor coverings are the right choice.

Particularly hygienic because of joint-less installation

nora® floor coverings do not contain any plasticizers. Thus after installation they remain dimensionally stable and do not shrink unlike other floor covering materials. This eliminates the need for time- and cost intensive joint-sealing.

An advantage of installation without joint-sealing is the uniform impression of the installed area. The appearance of the floor covering is also not impaired by joints becoming dirty over time. The complete disinfectability of nora® floor coverings, which are not joint-sealed, was confirmed by a test conducted by the Hygiene Institute of the University of Heidelberg.

Optimally suited for hospital routines

noraplan® floor coverings are bacteriostatic and fungistatic. In controlled tests, they did not present any nutrient to the pathogens *Staphylococcus aureus*, *Pseudomonas aeruginosa* and *Candida albicans*. nora® floor coverings are also suitable for laboratory areas because the short-time exposure to solvents, diluted acids or alkalis does not leave behind any traces.

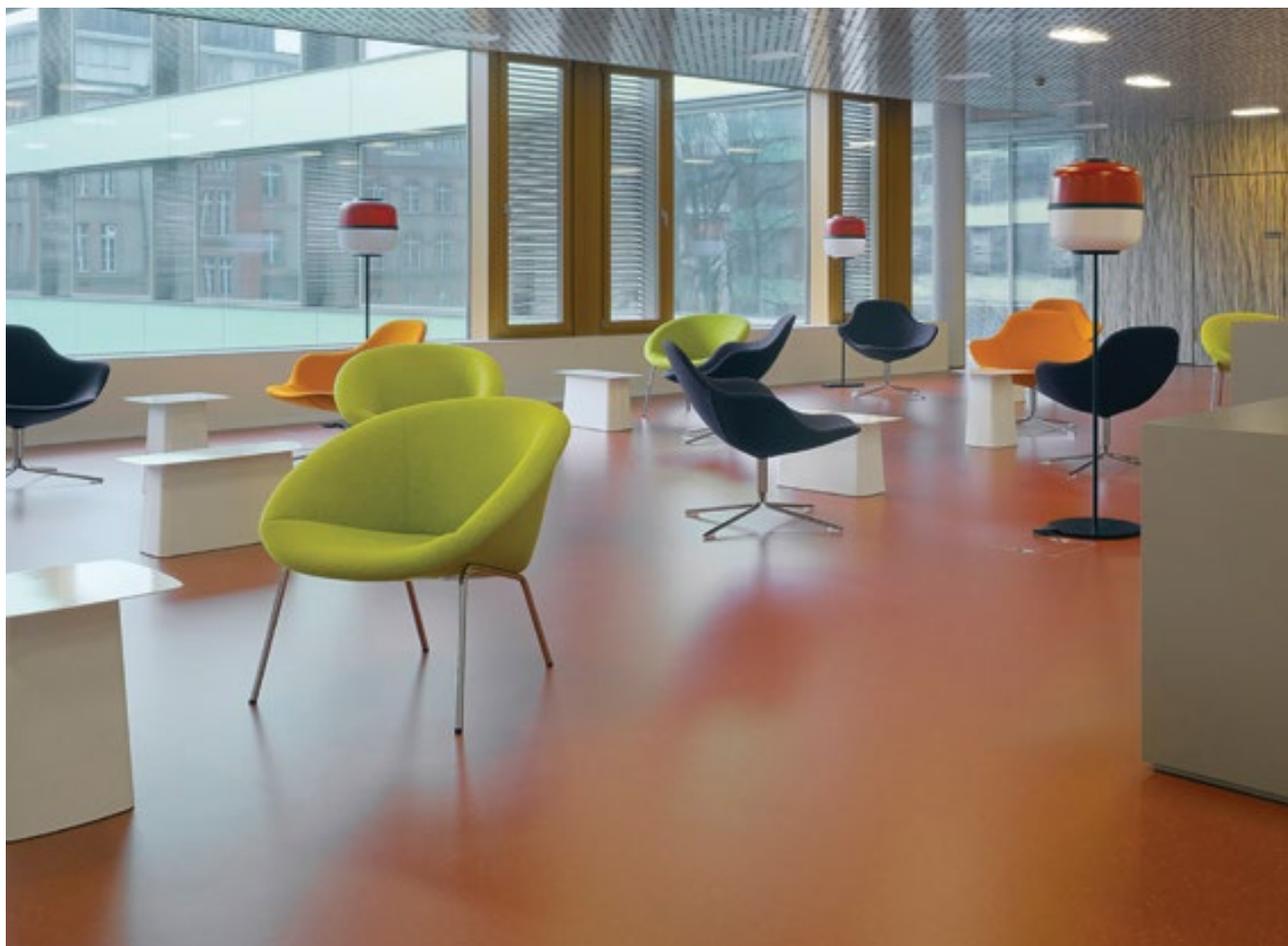
Note: Joint-less installation exceptions include noraplan® acoustic and noraplan® ed floor coverings, areas with humidity-sensitive subfloors, rooms with permanent intensive wet cleaning and areas with special demands on hygiene.



Bronovo Ziekenhuis, Moeder-kindercentrum, The Hague, Holland

With nora® nothing is forgotten

Often patients have a limited mobility and cannot use escape facilities as intended in cases of emergency. Healthcare facilities thus attach high importance to a high level of fire safety and fire-toxicological safety when choosing the fixtures.



University Children's Hospital Basel (UKBB), Basel, Switzerland

Protection against health damaging gases

nora® rubber floor coverings do not contain any PVC and halogens (e.g. chlorine). In case of fire, no hydrochloric gas is released which might lead to caustic burns of the respiratory tract. Hydrochloric gas and fire fighting water combine to produce hydrochloric acid which damages buildings, medical devices and electrical contacts even beyond the immediate seat of the fire. Such secondary damages of the combustion of PVC are often more serious than the direct damage caused by the fire.

The absence of halogens also means that no toxic, halogenated dioxins and furans are released by nora® floor coverings in case of fire. For nora® floorings in healthcare applications, the gasses released in a fire are classified as fire-toxicologically safe according to DIN 53 436. Special fire-protection grades can be used in areas where non-inflammable materials are required, with the approval of the local fire safety authorities.

No burn marks

The resistance to cigarette burns of nora® floor coverings is an asset, specifically in day rooms and psychiatric hospitals.



PVC

Linoleum

nora®

Ease of maintenance

nora® rubber floor coverings have a dense, closed surface from the start, which is provided by nora cleanguard®, a factory post-curing of the rubber surface on the basis of innovative formulations and state-of-the-art production technology. This combination ensures that nora® floor coverings are easy to clean - in fact, they can be cleaned with little more than tap water, which keeps your workplace free of chemical contaminants that affect patients and staff.

Routine cleaning made easy with nora® pads

nora® pads can be used with your existing cleaning machines to simplify your regular routine cleaning. Exclusively developed for nora® rubber floor coverings, these cleaning disks are permeated with countless, microscopically small diamonds. With nora® pads, your flooring can be mechanically cleaned and polished with water. You do not have to coat, polish or wax to achieve a noticeable level of shine.

nora® pads are suitable for day-to-day care as well as for repairing extremely soiled or damaged floorings. They can be used with most standard types of machine and are available in various sizes.

Leave costly cleaners and air pollutants at the door

With many floor coverings, maintenance seems to hurt more than it helps. But nora® flooring reduces the need for expensive cleaning agents, labour-intensive stripping and waxing processes and disruptive drying times. Imagine an environment free of harsh chemical odors and chemical contaminants. nora® floor coverings simplify your hospital maintenance routine to help promote a healthy, healing environment.



University Hospital Eppendorf, newly built: "Klinikum West", Hamburg, Germany

Life cycle costs

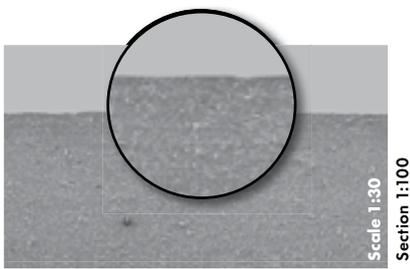
When selecting a floor covering, long-term costs become increasingly more important. The acquisition costs for a floor covering only account for approximately 10% of the entire costs. 90% of the costs are paid for care and maintenance during the entire lifetime.

No coating during the entire period of use

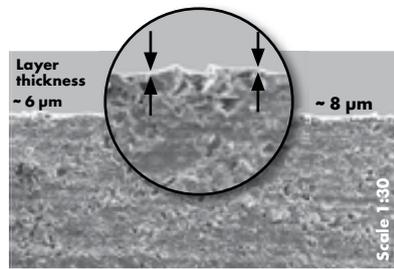
Unlike other types of floor coverings, nora® floorings do not require any additional coatings or paints. This eliminates time, labour and cost intensive strip wax and buff processes, as well as organizational interruptions due to long drying periods (8 to 12 hours). Additionally, this eliminates unsightly contamination, chipping, scratches or discolourations that can result when coating floors.

The scanning electron microscope (SEM) shows the difference

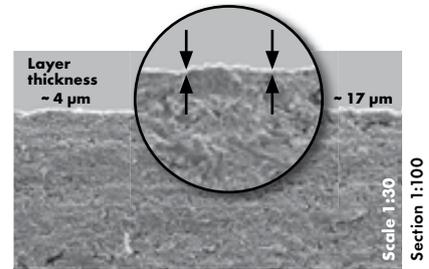
Factory-coated surfaces only have a thickness of a few micrometres ($1 \mu\text{m} = \frac{1}{1000} \text{mm}$) and a limited life.



Cross-section noraplan® (without coating)



Cross-section PVC with factory-coated surface

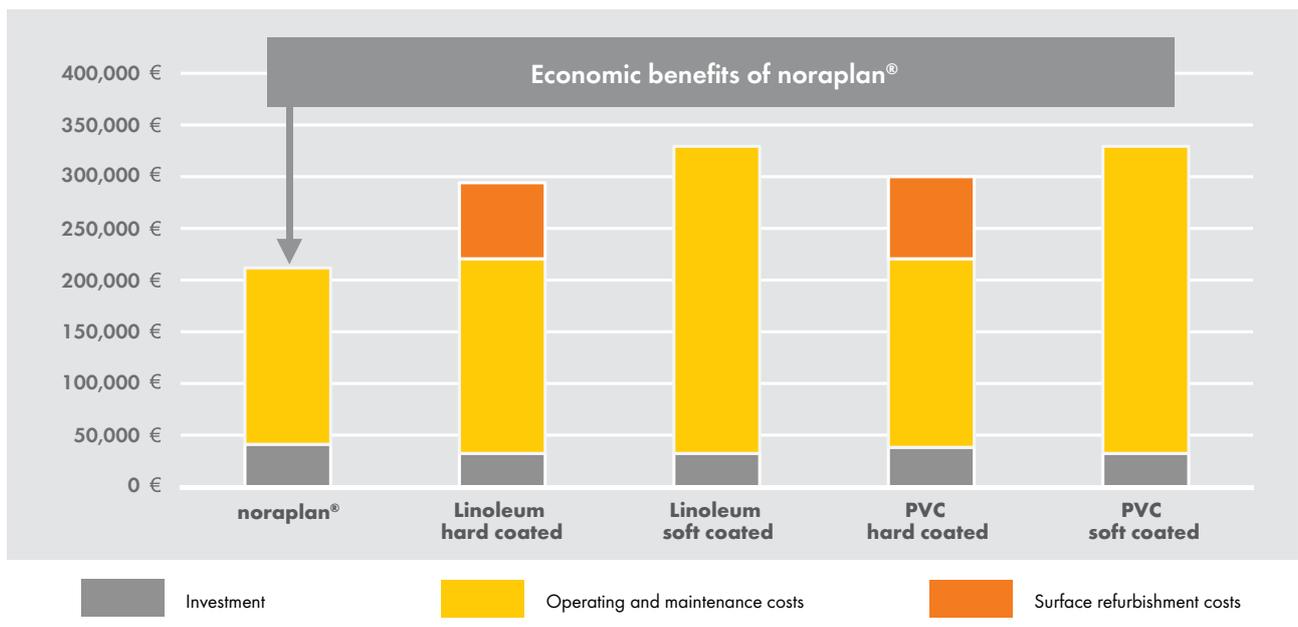


Cross-section linoleum with factory-coated surface

Significant saving potential

Independent expert opinions confirm the economy and the significant saving potential when nora® floor coverings are used.

Economic efficiency comparison: Life Cycle Costs



Typical scenario for areas with moderate strain. Details and source: nora systems GmbH

Source:
Company information

Parameters:
Calculation based on 1,000 m², analysis period 15 years; Lifecycle Lino hard coating 4 years, PVC hard coating 5 years (both UV hardened permanent coating); Maintenance costs for Lino and PVC soft coating contains re-coating 1 time per year (non-permanent coating); Maintenance costs for noraplan® are lower given no use of detergents while use of nora® pads.

Disclaimer:
This model calculation was drawn up based on data from various sources. A binding statement concerning cost savings for an actual property cannot be derived from this model.

Proven durability

The last thing you want in your facility is unsightly chipping and travel path wear. Durable materials from nora® floorings resist the damage caused by footfall, heavy equipment and abrasive cleaning chemicals in your healthcare facility.

You can count on a long period of floor use thanks to excellent wear resistance inherent to rubber materials utilized by nora systems. In fact, our systems easily outlast the average span of facility renovation cycles. Despite the permanent stress, they look good even after many years.

Our nora® flooring systems meet stringent requirements and are exceptionally hard wearing. They have been proving themselves in everyday use in all different kinds of buildings, often for more than 30 years.



Carl-Thiem Hospital, Cottbus, Germany



CHAL Centre Hospitalier Alpes, Contamine sur Arvre, Frankreich

Sustainability for a healthy future

We advocate sustainability and a future worth living for. Our decade-long commitment to environmental protection is reflected in all phases of our daily work.

Preserving or even improving the present living and environmental conditions - this means sustainability. For nora systems, sustainability is an important aspect of corporate culture and corporate values. It is our declared goal to meet this responsibility in as many areas of our corporate activities as possible. Sustainable housekeeping, environmental protection and societal-social commitment thus are decisive factors of our daily decision-making.

nora® floor coverings

- do not contain any PVC, plasticizers (phthalates) or halogens (e.g. chlorine)
- are tested for their safety in use
- are regularly monitored by independent institutes
- are installed with eco-compatible accessories such as solvent-free dispersion adhesives
- are low in emissions
- received awards by recognised institutes and associations for their environmental compatibility

Actively committed to environmentally compatible living

The Blue Angel, the LEED certification, the ecolabel of the US Green Building Council, the Greenguard ecolabel for "Indoor Air Quality" and numerous other ecolabels and awards, which we received in many countries, are proof that we take our responsibility for the environment and society very seriously.

Additionally, nora system blue® combines low-emission rubber floor coverings with low-emission installation materials to offer the only floor covering system in the world that offers the floor covering, installation materials and processing companies as a total concept. This is the most advanced certification that a floor covering system has ever obtained.



Design solutions for the entire hospital

Your hospital needs a system that satisfies the hygienic and technical demands of a healthcare space. The unique feature of the nora® system is that it offers all these solutions and even another important feature: You can use the different qualities with identical colours and designs in the entire hospital, and you can benefit from the broad colour range, individual combination options and the possibility to implement your own patterns or inlays. With the NCS colour system, wall and furniture colours can also be exactly matched to the nora® floor covering colours.

Hygienic stringers

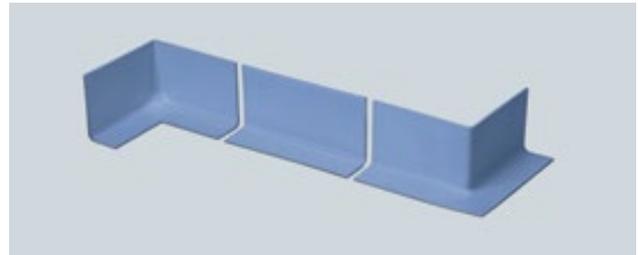
This system idea is supplemented by a range of high-quality accessories. Skirtings and skirting angles guarantee smooth and clean edges. With a special cushion-edged profile, the floor-layer can easily create wall coverings. Margin and angle guards protect wall corners and transport means against damage. Hygienic stringers can be easily implemented using the comprehensive nora® system of prefabricated interior and exterior corners.



Systems for corridors and stairwells

Our system solutions for corridors and staircases represent the optimal combination of design, safety and comfort for heavily frequented traffic areas.

- Identical designs and colours on stairs and in corridors for a uniform integrated design
- Complete range of accessories consisting of stair nosings, skirtings and landing profiles
- Reduced slipping risks thanks to excellent anti-slip properties
- Safety strips (also phosphorescent) integrated in stair nosings and stairtreads
- High footfall sound absorption for noise-reduced stairwells
- Installation on the stair without blocking the stairwell possible with nora® stepfix 240 special dry adhesive



Colour and design without limits

nora systems offer a broad product range for creative designs with almost no limits. With a multifaceted colour and design range and functional materials, the special atmosphere of well-being can be created to promote a healing environment.

nora systems speaks NCS - the international language of colour communication

The Natural Colour System (NCS) is a precise colour language. As a user-friendly colour system, it describes the colours as seen by human vision. It facilitates the colour communication for designers and architects.

With this system, integral colour and room concepts can be coordinated across industries and independent of materials.

To meet the highest professional demands, nora systems colour-metrically identified all standard colours according to NCS. These colour codes always refer to the closest colour code of the NCS index.

For the NCS colour codes of nora® rubber floor coverings, please visit our website www.nora.com

nora® - the system for superior design

- Broad colour range with more than 300 standard colours
- Numerous designs and surfaces
- Excellently combinable colours and surfaces for the implementation of routing systems, inlay and combination installations



Where others reach their limits, nora[®] is just getting started

nora[®] floor coverings with their many properties meet the complex demands on projects in healthcare: various thicknesses which offer the required pressure load-bearing capability, electrostatically dissipative floor coverings for areas where sensitive, life-sustaining electronic devices are used, resistance to stains and solvents in laboratories, floor coverings backed with shock-absorbing foam for physiotherapy and sports areas and, last but not least, sophisticated solutions for corridors and stairwells.

Intensive care units

- Resistant to surface disinfectants
- Electrostatically dissipative floor coverings
- Easy to clean

Visitor, day rooms and cafeterias

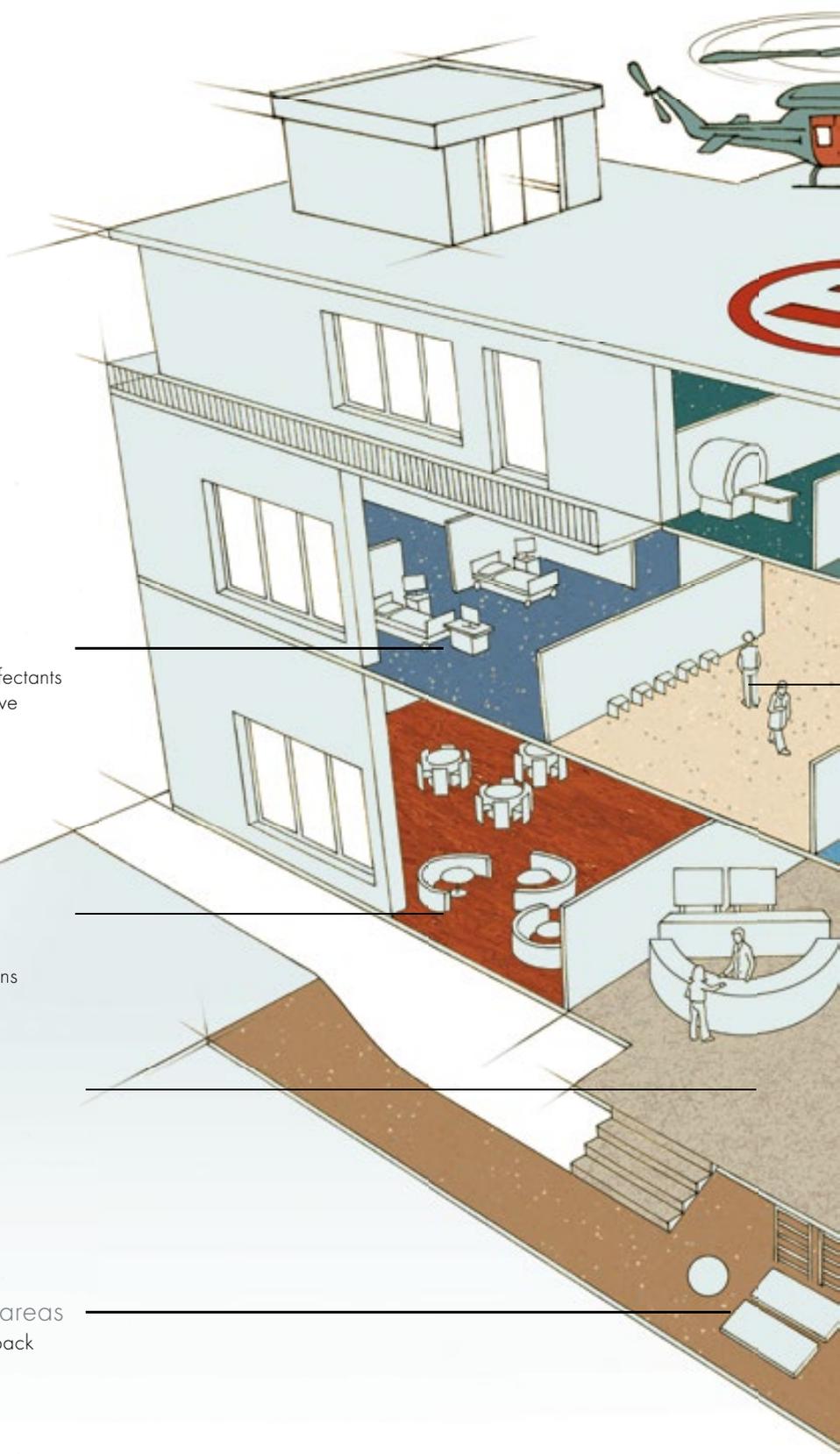
- Resistant to cigarette burns

Entrance areas

- Representative design
- High wear resistance
- Individual inlays
- Custom logos

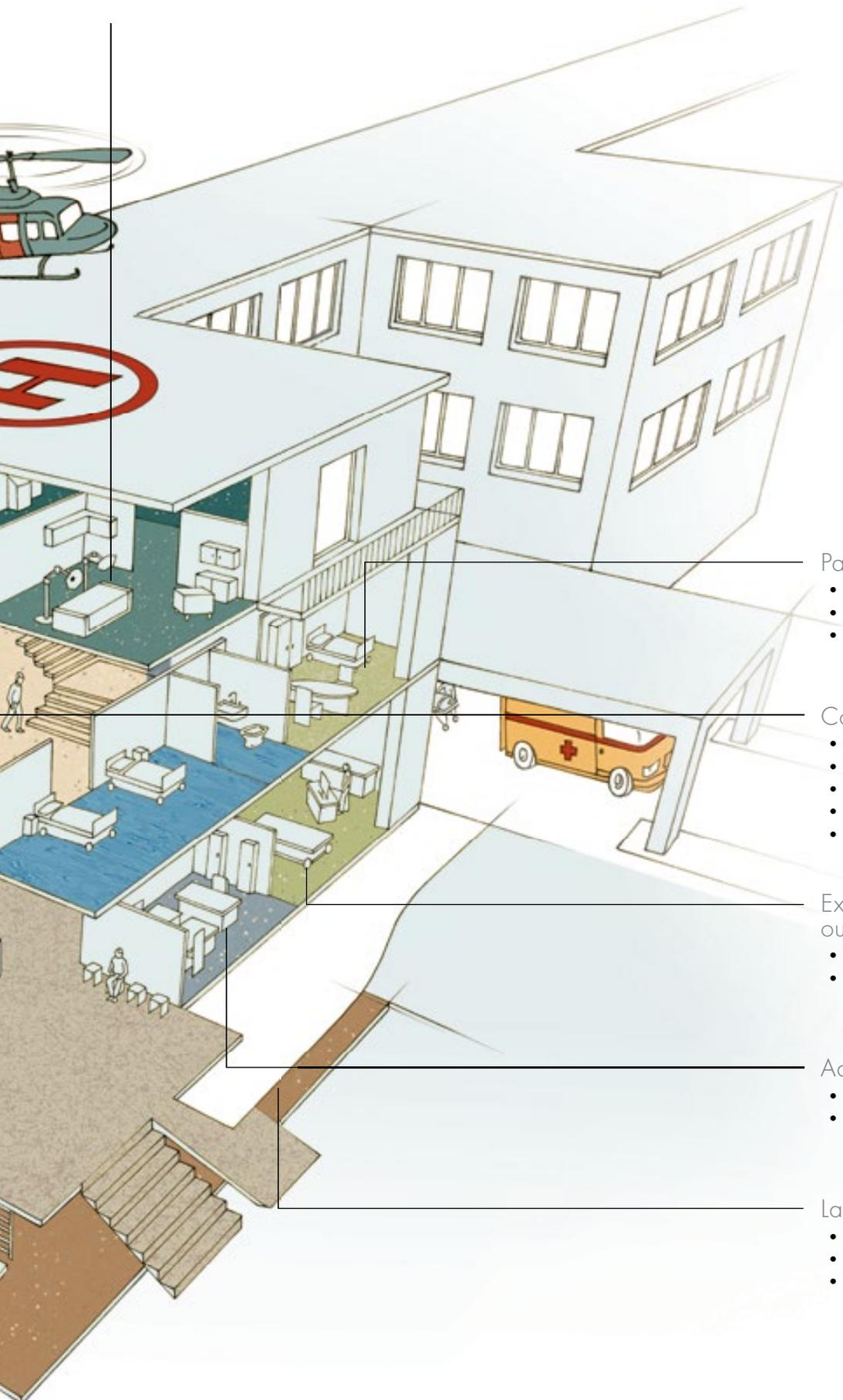
Therapy and sports areas

- Shock-absorbing foam back for good force relief
- Slip-resistant



Operating theatres

- Resistant to surface disinfectants
- Electrostatically dissipative grades
- High standing comfort
- Easy to clean



Patient rooms

- Colours/homelike atmosphere
- Resistant to surface disinfectants
- Easy to clean

Corridors/stairwells

- High level of slip resistance
- Footfall sound absorption
- Easy to clean
- Fire safety
- Underfoot comfort

Examination rooms/ outpatient department

- Good resistance to stains
- Electrostatically dissipative floor coverings

Administration

- Comprehensive design options
- Raised access floors possible

Laboratories

- Good resistance to chemicals
- Easy to clean
- Electrostatically dissipative floor coverings

Entrance areas

For a healthy first impression

Entrance areas convey an initial impression that reflects your facility's competence and professionalism. Extraordinarily wear-resistant floor coverings are of particular value to the heavily frequented entrance areas of hospitals, outpatient departments and doctors' surgeries. Despite permanent stress and high volume use, nora® floor coverings look good even after many years.

With our broad range of surface designs and colour combinations, nora systems offer a wealth of representative design possibilities for your healthcare facility entrances. We also manufacture individual logos as requested by you, delivering them cut to size and ready for installation.



Havering & Rebridge Acute Hospital, Romford Essex, USA

Patient rooms

Architecture oriented for healing

An emphasis on a healing atmosphere is particular to patient rooms and base rooms. nora® floor coverings offer colour and design options to help influence patient well-being and support the recovery process. It has even been scientifically confirmed that the interior design of hospitals and clinics has an immediate effect on patients' mental state.*

**From "Wie die Klinikarchitektur die Heilung der Patienten beeinflusst" or "How hospital architecture influences the patients' healing process" published in "Die Gesundheits- Wirtschaft" 5th year, 4/11.*



Crailheim Hospital, Cottbus, Germany

Children's wards, delivery rooms and maternity wards

Create a cosy environment for babies, children and parents



Clinique Dr. Bohler, Hospital du Kirchberg, Kirchberg, Luxembourg

The varied scope of nora® floor coverings and individual inlays allows for the realisation of a visionary, cosy environment suitable for children's wards, delivery rooms and maternity wards. Focus your design on the floor or match its colour to a creative wall design for an atmosphere conducive to health and healing.

Operation rooms

As a specialist in sensitive application areas, nora systems offer electrostatically dissipative floor coverings of various grades and designs to accommodate operating theatres. Issues concerning hygiene, the use of disinfectants and discolouration caused by medical substances are extremely significant here as well.

nora® floor coverings protect sensitive, life-sustaining electronic instruments against malfunctions or damage by electrostatic discharges. They also protect against explosions if flammable gas/air mixtures are created.

Dissipative floor coverings are not only a matter of protecting equipment, but of the safety of individuals in the operating room. When using HF surgery, stray currents may be created. Electrostatically dissipative floor coverings with a minimum insulation resistance protect both the surgeon and the patient.

In operation areas, the floor coverings must also withstand the high dynamic pressure loads exerted by heavy operating tables and appliances. Very high demands are made on the mechanical load-carrying capacity of the floor coverings in the operating area. A thick floor covering transmits these concentrated loads to the subfloor evenly distributed across a larger surface, avoiding damages to the subfloor.



Fraunhofer InHaus Centre, Duisburg, Germany

Intensive care units

Solutions for sensitive areas of application

Highly sensitive electronic instruments of vital importance for patients are also used in intensive care units. Electrostatically dissipative floor coverings offer the required safety needed to protect against electrostatic discharges. The conductivity requirements are typically defined by the manufacturer of electronic equipment being used.

The aspect of hygiene, the use of disinfectants and the exposure to discolouring medical substances are of extreme significance in intensive care units. With our extensive, comprehensive experience and proven and tested product solutions, we will assist you in finding the ideal nora® system.



Charité CVK Station 81 IST, Berlin, Germany

Corridors and escape routes

Coverings to keep you on the right track

Permanently resilient nora® floor coverings offer high walking comfort, slip resistance and noise abatement desired in hospital corridors. In escape areas, where non-ignitable floor coverings can be used, nora® coverings can be used in accordance with the local fire authority.

Attractive all-in-one solutions are available for both corridors and staircases to implement design concepts throughout your entire healthcare facility.



Centre for Mental Health, Schwäbisch Hall, Germany

High traffic areas

Quality put to the test

Technical areas such as workshops, laundries, storage rooms or power rooms are often separated from the hospital's medical operations. Decisive factors for the selection of floor coverings for these areas are, above all, wear resistance and a high dynamic load-bearing capability if fork lift trucks are used. Even for those applications, our extremely resistant rubber floor coverings are the ideal solution. Resistance to oil and grease is another quality to be considered.



Shanxi Great Hospital, Shanxi, China

Recommended areas of application

noraplan® stone smooth	noraplan®: eco · sentica · signa	noraplan® sentica ed · signa ed: 2 mm	noraplan® sentica ed · signa ed: 3 mm	noraplan® acoustic: sentica acoustic · signa acoustic	noraplan® valua · noraplan® lona	norament® 926 grano · norament® 926 satura	norament® 926 arago R10	norament® 926 grano with cubic structure · R10	norament® 928 grano ed	
■	■					■	■			Entrance areas
■	■			■	■	■				Corridors
■	■				■	■				Patient rooms/Base rooms
■	■	■	■		■	■			■	Examination rooms/Outpatient departments
			■						■	Operating theatres
		■	■						■	Intensive care units
■	■	■	■						■	X-ray rooms/Computer tomography
■	■			■						Physiotherapy/Sports areas
■	■				■	■				Psychiatric department
■	■				■	■				Visitor rooms/Day rooms
■	■				■	■	■			Cafeterias
■	■	■				■			■	Laboratories
						■		■	■	Technical areas
■	■				■	■	■			Administration
	■		■			■			■	Emergency room

■ fully suitable

■ conditionally suitable, function-related limitations; please contact your sales representative.

nora systems Shanghai Co. Ltd.

10 A/B, Long Life Building | 1566 Yan'an Road West | 200052 Shanghai, PR China

Tel.: +86 21 - 3226 0077 | Fax: +86 21 - 5258 1958

E-Mail: info-cn@nora.com

www.nora.com/cn

nora systems GmbH (DMCC Branch)

2008 HDS Business Centre | Jumeirah Lakes Towers | PO Box 478392 | Dubai, UAE

Tel.: +971 (4) 450 8175 | Fax: +971 (4) 450 8374

E-Mail: info@nora.com

www.nora.com/corp

nora flooring systems UK Ltd.

4-5 Allerton Road | Rugby CV23 0PA, Great Britain

Direct Dial Numbers: (01788) 513 160 - 513 169

Fax: (01788) 55 28 12

E-Mail: info-uk@nora.com

www.nora.com/uk

nora systems GmbH

Höhnerweg 2-4 | 69469 Weinheim, Germany

Tel.: +49 (0) 6201 - 80 66 33

E-Mail: info@nora.com

www.nora.com