



Rubber – a fascinating material

The basic raw material

Rubber has several excellent qualities, e.g. the ability to resiliently withstand enormous loads. Rubber is thus used in products on which the highest demands are made, such as in car tyres, babies' dummies or special seals in industry. Rubber receives its resilient properties during processing. It remains resilient due to vulcanization and returns to its original form after deformation.

Highest performance

nora® floor coverings are extraordinarily durable and wear-resistant. Their extremely long life is considerably above the average of other resilient floor coverings. It is for this reason that rubber floor coverings are also used in highly frequented areas such as airports. A long life also means that resources are saved thanks to relatively less frequent modernisation and disposal.

Advantages in cleaning and care

The extremely dense and closed surface typical for **nora**® rubber floor coverings together with «**nora cleanguard**®» facilitates economic cleaning without the need for subsequent coatings. These advantages also have a very positive effect on the price/benefit ratio, especially when it comes to longer periods of use.

Comfort and safety

nora® floor coverings are slip-resistant, pleasantly warm under foot, permanently resilient, and combine

high walking comfort and good footfall sound absorption (top values of up to 20 dB). They are resistant to cigarette burns, classified as flame-retardant and do not contain any PVC, plasticizers (phthalates) or halogens (e.g. chlorine). In case of fire, no hydrochloric gas is released which can lead to caustic burns of the respiratory tract and which might form hydrochloric acid when combined with fire fighting water.

nora® floor coverings also do not emit substances in harmful concentrations; therefore, they are safe for children, whose breathing zones are closer to the floor.

Special technical specifications

- electrostatically dissipative (dissipative floor covering)
- electrostatically conductive (conductive floor covering)
- suitable for fork lift trucks
- extremely impact-resistant
- extremely fire-resistant
- fire-toxicologically safe (DIN 53 436)
- Resists most oils and greases

Exemplary environmental compatibility

The company's primary objectives include environmentally compatible solutions which have been implemented for years – from the selection of raw materials through to development, production and use up to recycling and disposal.



أرضيات لغرف المرضى والممرات

Supply and install harmonic three color rubber floor covering type "noraplan mega ", 2mm thick or equivalent for rooms and corridors . The price includes the installation of 10 cm rubber coved skirting #s1024

. The rubber flooring should be fixed using special rubber adhesive from UZIN COMPANY TYPE UZIN KR 2000 s or equivalent and complete seal of joints all in accordance to manufacturer instructions and MOH regulations standards. The Installations for rubber flooring, skirting, terminations with walls/outer& inner corners shall be strictly implemented by professional and manufacturer **authorized installer** in accordance to the manufacturer's recommendation.

أرضيات لغرف العمليات

Examination rooms and outpatient departments

Operating theatres

Intensive care units

X-ray rooms and computer tomography

Supply and install electrical Conductive ed rubber floor covering type "noraplan mega ed", 2mm thick or equivalent for surgery room and for sterile stores. The price includes the installation of coved skirting with 40*40 rubber corner base #107.4040 from arfen and acap #106.0028 as a cover for the upper end of the skirting

and UZIN copper mesh article NO. 10141 under tiles every 30cm using 1cm wide copper strip. This mesh should be connected with the earth system of the building. The rubber flooring should be fixed using conductive special adhesive from UZIN COMPANY TYPE UZIN KR 2000 SL OR equivalent and complete seal of joints all in accordance to manufacturer instructions and MOH regulations standards. The Installations for rubber flooring, skirting, terminations with walls/outer& inner corners shall be strictly implemented by professional and in accordance to the manufacturer's recommendation.

أرضيات لغرف العناية المكثفة

Ditto, for sterile area but without copper strips.

**noraplan[®] mega ed** Product Data SheetAll About Flooring. **All About You.****Description:**

A rubber floor covering manufactured by **nora systems, Inc.** that is approved by Lloyd's Register Quality Assurance to the Quality Assurance Management System Standard ISO 9001:2000. Also ISO 14001 Environmental Management Systems certified.

RESILIENT TILE FLOORING FOR ELECTROSTATIC DISSIPATIVE PROTECTION

1.	Product Name:	noraplan[®] mega ed, Article 200
2.	Material:	nora vulcanized rubber compound 948 with abundant natural fillers and environmentally compatible color pigments
3.	Surface:	Smooth
4.	Color:	As selected
5.	Tile Size:	0.08 inches (2mm) thickness, 24 inches by 24 inches (610mm by 610mm)
6.	Back of Tile:	Smooth, sanded back
7.	Heterogeneous:	Yes, mottled
8.	Limited Wear Warranty/ Conductivity Warranty:	5 year wear; 10 year conductivity
9.	Hardness:	ASTM D2240, Shore type A, required ≥ 75
10.	Static Load:	Per ASTM F970 Standard Test Method for Static Load Limit, residual compression, when tested with 800 lbs, ≤ 0.005 "
11.	Quality of Cut:	ASTM F511 ≤ 0.005 "
12.	Squareness:	ASTM F2055 ≤ 0.010 "
13.	ISO 14001:	Manufacturer shall be ISO 14001 Environmental Management Systems Certified
14.	PVC Free:	Product shall contain no polyvinyl chloride
15.	Abrasion Resistance:	Taber abrasion test, ASTM D3389, H-18 wheel, 500 gram load, 1000 cycles, gram weight loss ≤ 0.4
16.	Slip Resistance:	Static coefficient of friction (James Test): ASTM D2047, ≥ 0.8
17.	Oil & Grease Resistant:	Yes
18.	Bacteria Resistance:	Product shall be resistant to bacteria, fungi, and micro-organism activity, according to ASTM E2180 and ASTM G21
19.	Halogen Free:	Product shall contain no halogens
20.	Sound Absorption:	ISO 140-8 Footfall Sound Absorption, 6 dB
21.	Burn Resistance:	Cigarette and solder burn resistance
22.	Heat Resistance:	Avg. Delta E < 8.0 per ASTM F1514
23.	Flammability:	ASTM E648; NFPA 253; NBSIR 75 950, ≥ 0.45 watts per square centimeter, Class 1
24.	Smoke Density:	ASTM E662, NFPA 258, NBS smoke density, < 450
25.	Asbestos Free:	Product shall contain no asbestos
26.	Non Hazardous:	Flooring shall be made without any chemicals that may be hazardous or containing any teratogenic, mutagenic or any other ingredients known to be carcinogenic
27.	Cleaning:	Flooring surface shall have the ability to be cleaned and maintained without the use of any chemicals that may be hazardous or containing any teratogenic, mutagenic or any other ingredients known to be carcinogenic. Manufacturer shall make available a cleaning system that effectively cleans the flooring surface using water, cleaning pads and a suitable cleaning machine, without the use of factory and/or field-applied coatings.
28.	Shine:	Higher shine surfaces can be achieved by dry buffing without any artificial topical applied coatings
29.	Static Generation:	< 20 Kv at 20% RH as per AATCC 134
30.	Decay Time:	< 0.25 , FTM 101 C 4046 (sec)
31.	Conductivity:	ESD, ASTM F150, $10^5 < 10^9$

nora systems, Inc.9 Northeastern Blvd.
Salem, NH 03079Toll free: 800-332-NORA
Phone: (603) 894-1021
Fax: (603) 894-6615E-mail: info-us@nora.com
Internet: www.nora.com/us

nora® accessories

nora® accessories

Accessory range made of rubber matched to suit **norament®** and **noraplan®** floor coverings for convincing solutions both in visual and functional terms. Easy to clean, suitable for areas with stringent hygienic requirements. The materials are impact- and shock-resistant, do not contain any plasticizers and retain their functional reliability long term.

nora® skirtings



S 1023 U / S 1024 U

For areas with stringent requirements in terms of appearance and hygiene. The permanently resilient sealing lip of S 1023 U and S 1024 U reliably accommodates pastille heights of up to 1 mm. Also suitable as wall stringer with raised-access floors.

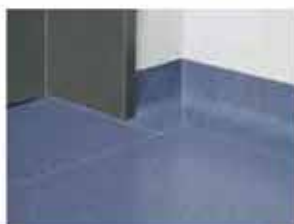
Delivery unit: in rolls of 10 r.m.

S 1008 U

Adjoining skirting for **nora®** stair angles "TW".

Delivery unit: in rolls of 10 r.m.

nora® profiles



nora® cushioned-edge profile H 9010

For optimum transition between the **noraplan®** floor coverings and the wall.

nora® margin and angle guard K 9022

Impact-resistant and shock-proof margin guard to protect persons, wall angles, and transport means.

Delivery unit: 2.5 m





company to complete the installation without disrupting its manufacturing schedule—so important to a facility that manufactures a high-demand product in regulated quantities. “We absolutely could not afford to shut down and short the market of our product.”

Even the challenges of low clearances and as many as 70 pedestals that support equipment in a single room did not impede the installation process. “The people at nora were very good at working with us,” the marketing manager recalled.

The end result is more than the company originally bargained for. The floor covering met their installation needs while offering the wear and stain resistance they required. Additionally, the floor delivered important environmental benefits.

“We try to be a green company,” said the project manager, “So, the fact that the nora floor is as durable as it is means we won’t have to replace it anytime soon, saving on a number of resources. Also, the safety issue of no off-gassing and no acrylic smells impacting our employees was an important benefit. And, the floor is definitely more comfortable to stand on, and has contributed to a quieter environment, benefits that our employees appreciate on a daily basis.”

Finally, the floor features a nonporous, dirt repellent, low-maintenance surface that ensures an attractive appearance, even with regular applications of the harsh disinfectants common to a clean room environment.

When asked if they are confident in their decision to use norament grano, the company representative responded, “Absolutely! I think this is the most documented floor in the history of floors, because we did so much research, testing and debating before making the selection that we made.

“Our industry is typically very set in our ways and a bit reluctant to step out of the box and break with tradition—like moving from an epoxy to a rubber floor covering,” he continued. “In this case, we did our due diligence and made an informed choice. We definitely ended up with the right product for our application and in the process, we found a company in nora that impressed us with their willingness to work with us, the quality of the solutions they offered and the high level of professionalism they demonstrated throughout the process.”

nora systems, Inc.

94 Glenn Street
Lawrence, MA 01843
Toll free: 800-332-NORA
Phone: 978-689-0530
Fax: 978-975-0110
E-mail: info-us@nora.com
Internet: www.nora.com/us

“nora flooring best suited our needs, both in terms of the testing we did and its installation.”

Project Manager



pharmaceutical GMP Flooring

project profile



Biopharmaceutical Manufacturing Facility

norament® grano Measures up to FDA GMP Regulations

Ten years after it was poured, the epoxy flooring in the manufacturing areas of a major pharmaceutical producer was showing signs of wear—cracks, chips and stains—on the floor's surface that were unacceptable in this U.S. Food and Drug Administration Good Manufacturing Practices (FDA GMP) facility.

"Ours is an environment in which we conduct environmental testing on a daily basis to maintain the highest levels of cleanliness and appearance," said the company's project manager. "That commitment comes with the work we do and the requirements of the FDA. So when the epoxy floor covering no longer met those standards, we searched for a replacement floor—something that we could install without impacting product and without impacting our environment."

Eager to avoid the cracking they had experienced with epoxy, the company turned to resilient floor coverings that would be more resistant to chipping and staining. Just as important, a resilient floor could be laid on top of the epoxy, eliminating the need to shut down production, cover equipment and shot blast the old floor—a disruptive, time-consuming and costly process that distributes particulates in the air as the subfloor is prepared for new epoxy. According to the project manager, the company tested as many as seven different products before choosing norament® grano from nora systems, Inc.

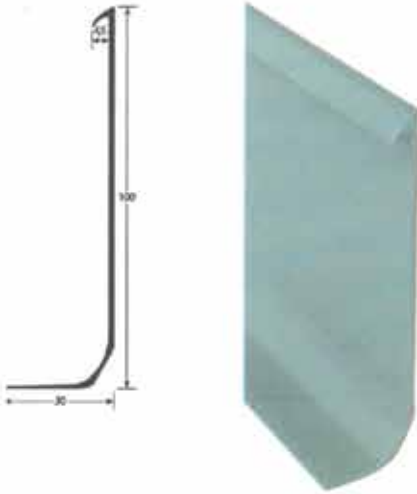
In fact, the decision took months and followed a series of tests and a pilot installation. "We hit the floor with hammers, tried gouging it with knives and dropped a variety of substances on it, including liquid nitrogen and a number of other chemicals typically used in our facility. The nora® flooring best suited our needs, both in terms of the testing we did and its installation," the project manager explained.

The installation of almost 50,000 square feet of 3.5 mm norament grano took place over 18 months, working room by room and around production schedules. In fact, the flexibility of the floor covering and the installation process enabled the

Additional Solutions

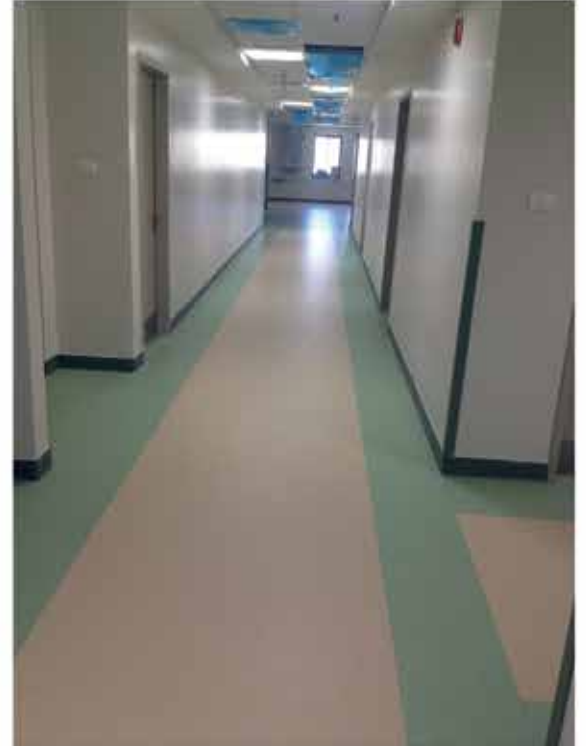
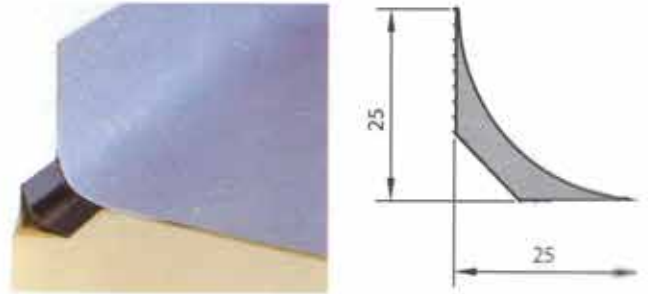
Skirting profile

At the same time cove formers and stopping in only one profile.



Cove former

An extruded PVC cove former with a 25mm internal radius for use with vinyl floor finishes.



- * أرضيات ممرات وغرف عمليات - مستشفى النجاح التعليمي
- * غرف عمليات - مستشفى أريحا الحكومي
- * عمليات مستشفى طولكرم الحكومي
- * عمليات مستشفى رفيديا الحكومي





8

Rubber flooring