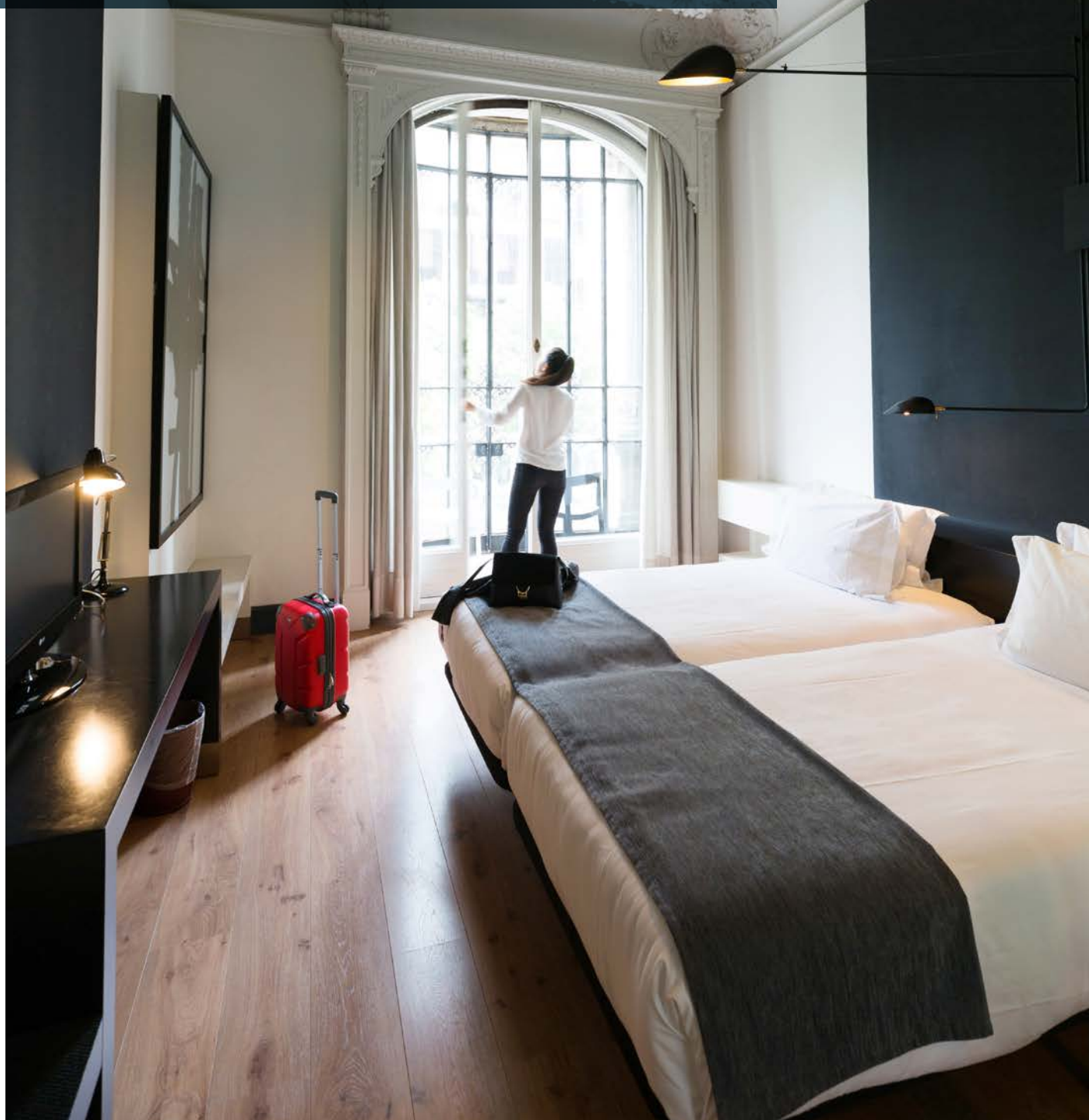
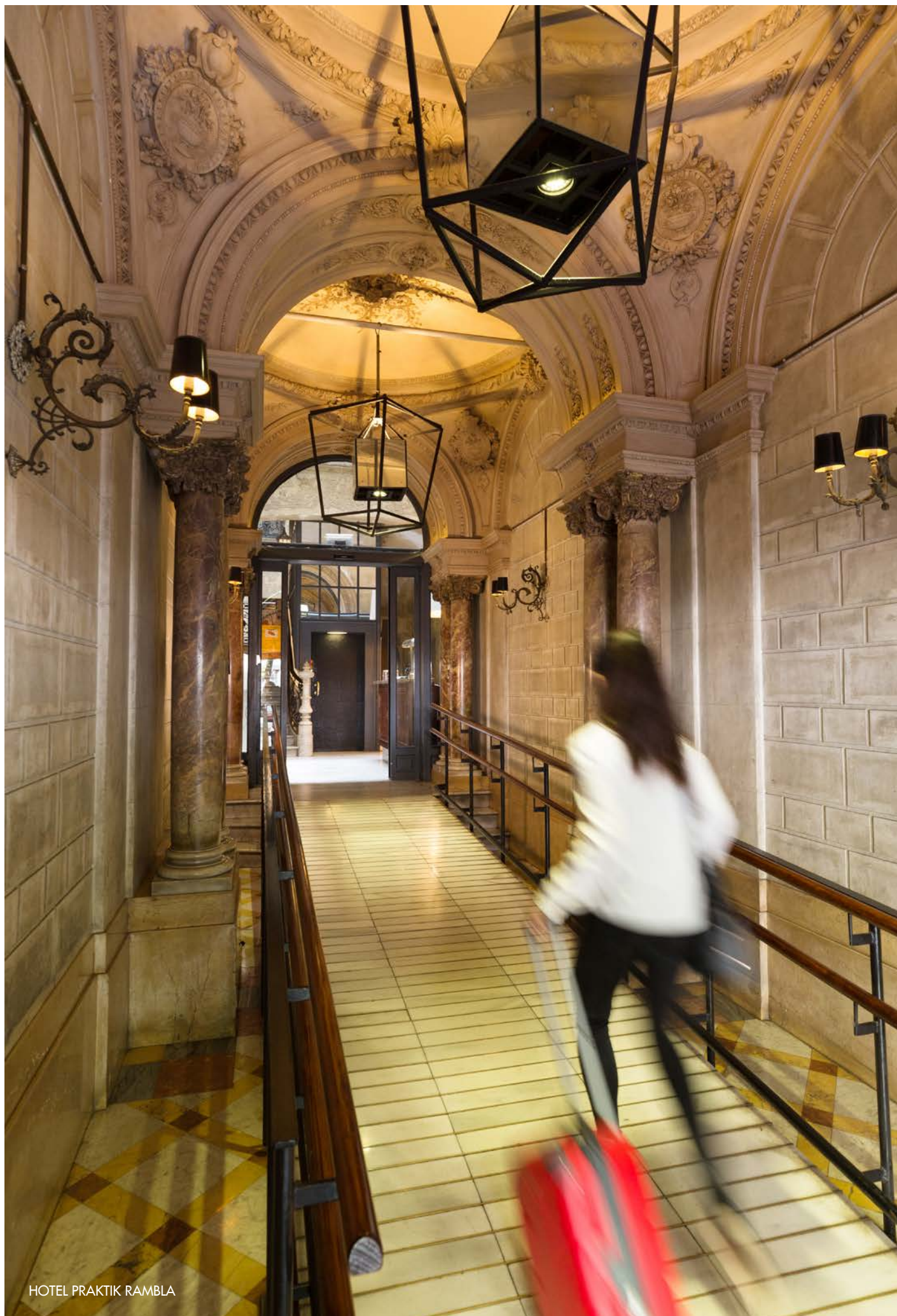


WATERPROOFING, INSULATION & MORTARS



NEW IDEAS TO INCREASE PROFITABILITY AND COMFORT IN **HOTELS**





HABITABILITY



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INSULATION AND WATER-PROOFING SOLUTIONS FOR HOTELS

The tourism industry in Spain has done spectacularly well in recent years. The hotel market has expanded considerably, while growing increasingly competitive, which forces hotel businesses to constantly reinvent themselves.

For this reason, DANOSA, a leading manufacturer and marketer of waterproofing, thermal and acoustic insulation products, has designed a set of comprehensive solutions to improve hotel establishments, with special emphasis on increasing profitability and competitiveness.

Energy efficiency is an increasingly important factor in the hotel sector. Investing in insulation systems leads to improved profitability by

reducing expenditure on energy consumption, which will inevitably become more expensive in the coming years. On the other hand, reducing CO₂ emissions will help not only in terms of image, but also by translating to certificates and favourable classifications of our buildings, generating medium and long-term profitability.

In this catalogue you will find solutions to remedy the most common issues and pathologies in hotel establishments, in addition to new construction proposals that will allow you to expand your range of services or stand out from your competitors.





ENERGY SAVINGS

THERMAL INSULATION

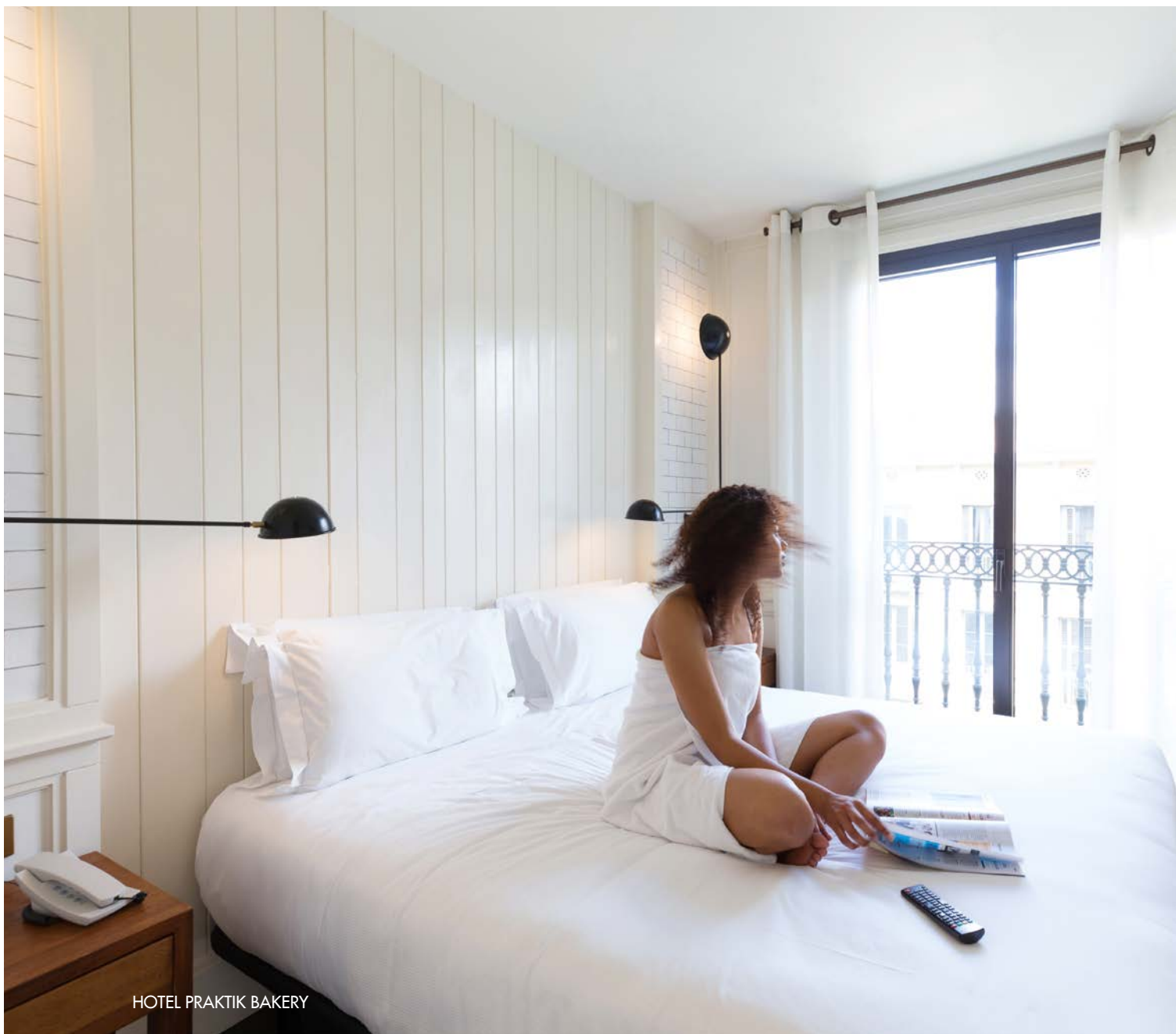
DANOSA would like to play a part in saving and the rational use of energy in hotels by reducing consumption to sustainable limits in new and renovated buildings. Thus, the right habitability conditions can be achieved for a comfortable, healthy stay with the same energy consumption.

DANOSA's insulation products and solutions equip hotels with a thermal enclosure that can appropriately limit energy demand to ensure thermal comfort, while also reducing the risk of damp caused by condensation appearing.



HOTEL OHLA EIXAMPLE





ENERGY SAVINGS THERMAL INSULATION

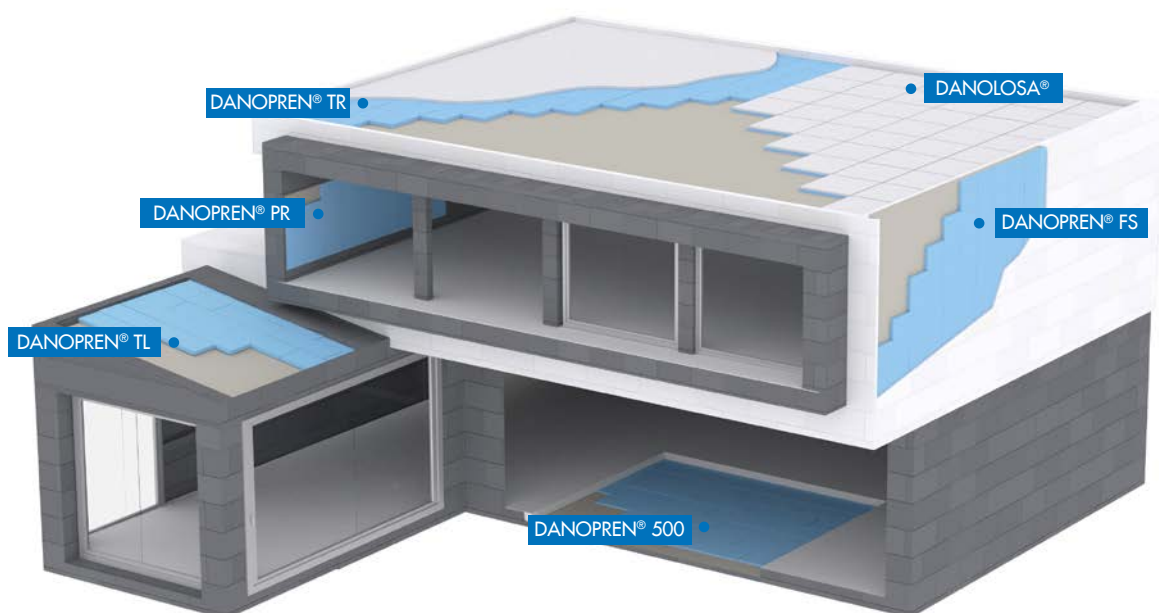
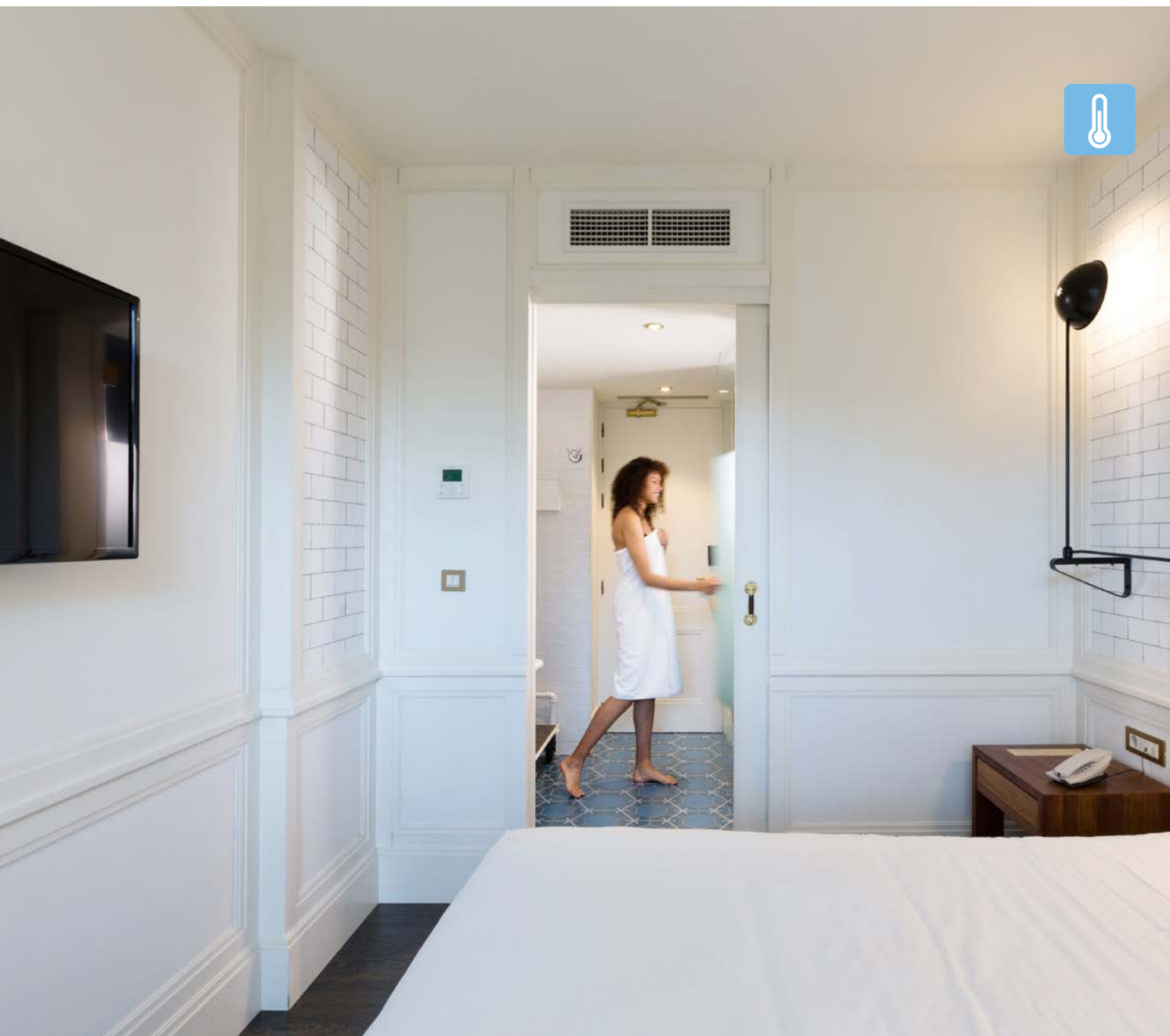
Investing in thermal insulation systems with quality, highly durable thermal characteristics will lead to a significant reduction in your energy bill for hotel air conditioning, which has a direct impact on your profit and loss accounts.

According to the German Passivhaus Building Platform (PEP), energy savings of up to 90% can be achieved by designing the right thermal enclosure, with no thermal bridges and for all manner of climate conditions, thus bringing about better equipment efficiency.

Similarly, the European Union has presented the concept of the Nearly Zero-Emission Building (NZEB) where not only does energy excellence stem from construction, as advised by the PEP, but it also considers the active facilities and equipment that contribute to the thermal comfort of the building as a whole.

Bearing in mind that Spanish buildings consume around ten times the energy for air conditioning that is considered acceptable within the scales defined in European directives and the current Technical Building Code, these kinds of systems are crucial in a context of change in the construction industry and in society in general.

The aim is that all buildings – regardless of their nature – will demand little energy as they will have that “jacket” built into their structure, preventing unnecessary heat losses and the emission of polluting gases into the atmosphere.



NOISE PROTECTION ACOUSTIC INSULATION

However, hotels need to be protected against more than just the heat and the cold. Noise is another "evil" that has a huge impact on the stays of guests: if the building isn't properly insulated against noise, their relaxation and comfort will suffer. Such is the case that 30% of customer complaints are related to noise issues, according

to the website www.hotel.info.

The aim of DANOSA acoustic insulation systems is to guarantee the guest can rest and feel at home since that is the essence of the hotel business, at the end of the day.





HOTEL PRAKTIK RAMBLA

NOISE PROTECTION ACOUSTIC INSULATION

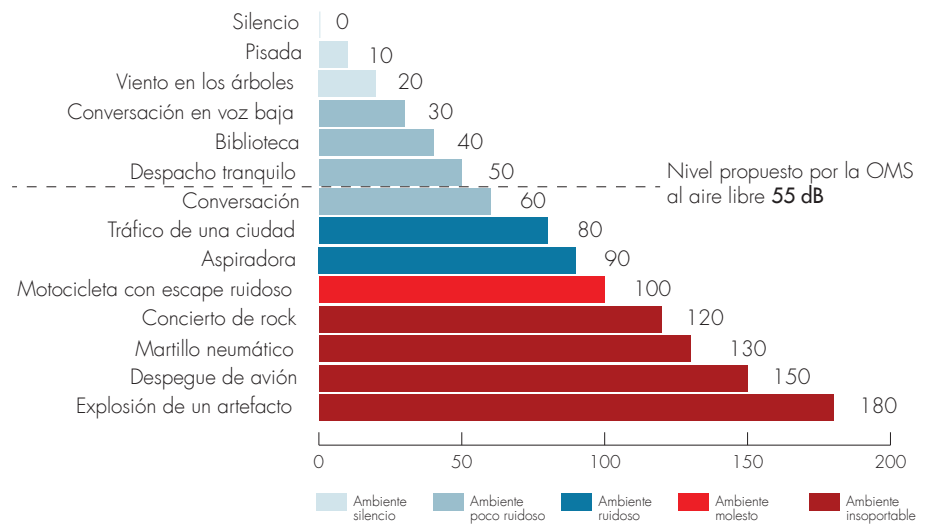
DANOSA's soundproofing solutions help the construction elements comprising the internal enclosures of buildings to have the right acoustic characteristics to reduce airborne noise transmission and impact sound.

Apart from that, noise pollution is a substantial environmental issue that is increasingly present in modern society. It has arisen from the development of industrial activities, transport, construction and recreational activities. The presence of this form of pollution affects daily life, interfering with spoken communication and

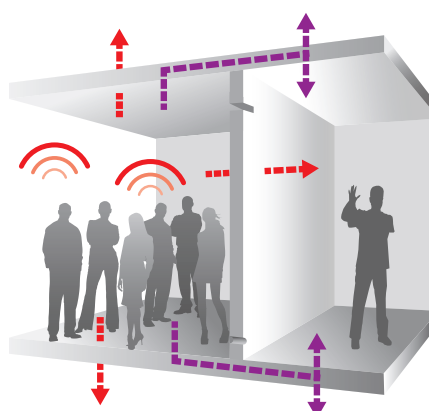
altering sleep, rest and relaxation. This impedes concentration and generates states that could lead to nervous or cardiovascular hearing diseases.

Acoustic insulation systems try to block sound transmission highways. These can occur directly through the dividing wall (red) where it is called airborne noise; or through the building's structure (purple), where it is called structural noise, as shown in the infographic.

As a result, the best way to close these paths is to insulate the walls, floors and



ceilings. If there are also high emissions at bass frequencies, the ceiling must be suspended from dampers via the box-in-box system, meaning, by creating a "floating box" inside the "structural box", with multi-layer products in ceiling and wall chambers.



NOISE TRANSMISSION
 Direct
 Indirect or lateral



HOTEL OHLA EIXAMPLE

WATERTIGHTNESS WATERPROOFING

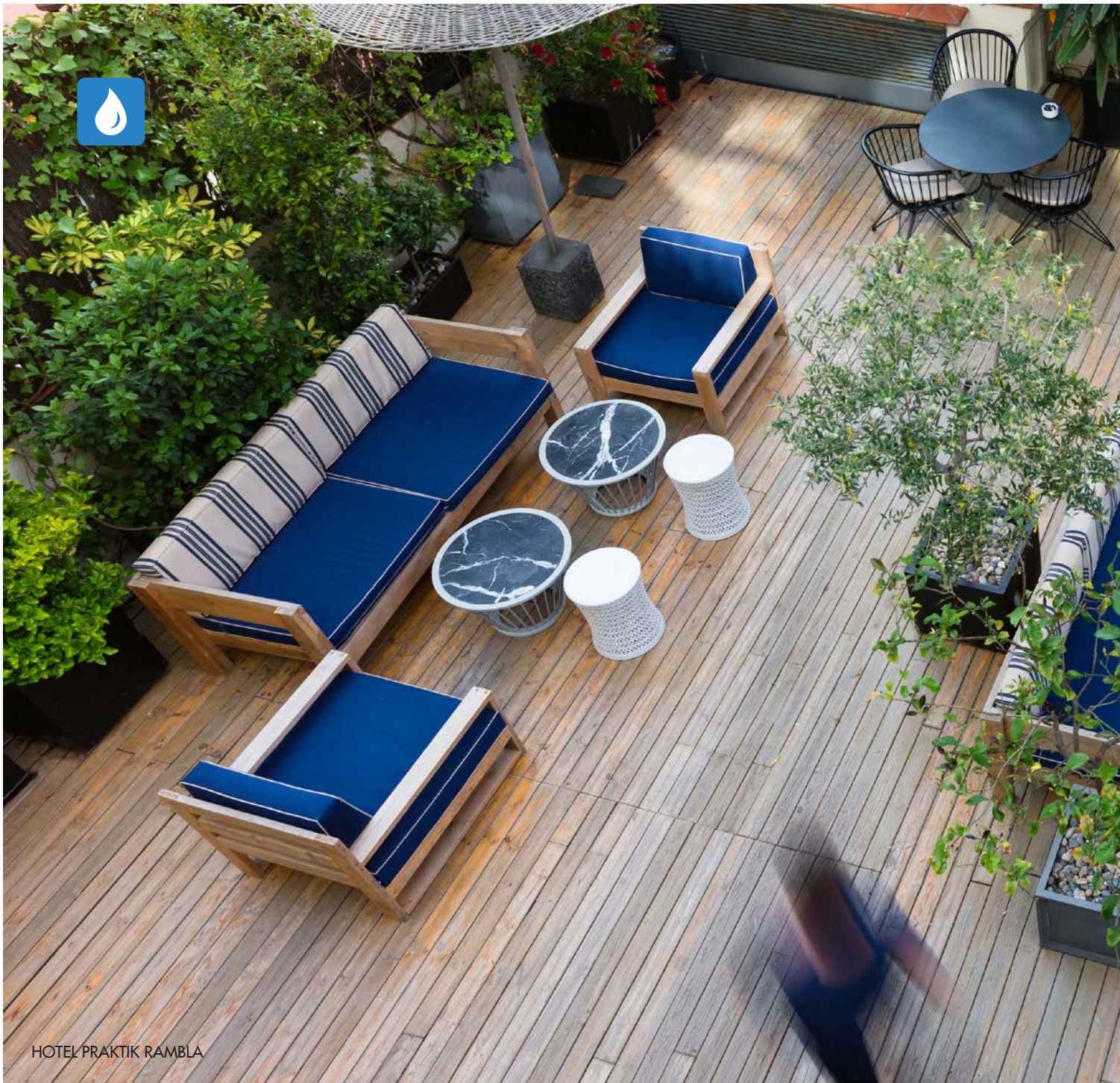
The rain and snow can become the enemies of hoteliers if you don't act with foresight as these weather phenomena relentlessly attack buildings, which are continually exposed. In this type of establishment it can be a problem, since the appearance of damp and leaks in walls and rooms generally has a direct impact on business.

Aesthetics are among the most important aspects of a hotel, and an establishment with damp is not the most desirable among the public. Furthermore, if not

addressed in time, these external agents can affect the building's entire structure, which will require a more complex refurbishment at a later date.

Investing in quality waterproofing systems will minimise building renovation and maintenance costs as well as safeguard its structural safety and habitability conditions.





WATERTIGHTNESS WATERPROOFING

DANOSA's waterproofing solutions seek to play a part in hotel guests' well-being and health, avoiding the risk of buildings deteriorating structurally while also minimising the environmental impact.

How? By using systems known for their efficacy, durability and sustainability, as well as their innovation. Because it's not merely about insulating hotels from water, but also managing water resources in areas with scant rainfall. With these systems, unnecessary losses are reduced and natural resources are not wasted.

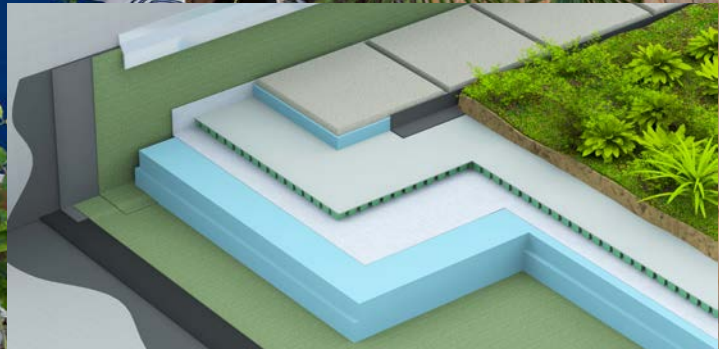
How? For example, by collecting and channelling rainwater to waterproof tanks where it is stored, such that it can be reused for the hotel's own system, allowing the establishment and the environment to save water since the natural resources in these areas with less rain are not squandered.

These systems fulfil the function of protecting against damp, limiting the foreseeable risk of the inappropriate presence of water or damp inside buildings and in their enclosures caused by precipitation, run-off or condensation, with means that prevent their penetration.

DANOSA offers the hotel sector a full

range for waterproofing a building, using different material technologies like modified bitumen sheets, synthetic PVC, TPO and EPDM sheets, acrylic- or polyurethane-based liquid waterproofing, waterproofing mortars and polyurea membrane spraying.

To decide which waterproofing system is right for each project, the areas to be waterproofed and their potential uses must be considered, along with the type of support beneath the waterproofing, its relationship with the waterproofing membrane, its installation and the climatic and technical constraints, whether it's for a new build or a renovation project.





RENOVATION AND MAINTENANCE

Renovating a building the size of a hotel can evidently be a complicated task and it can pose a problem for companies in the sector. However, DANOSA's renovation proposal provides comprehensive habitability systems to ensure hoteliers need only worry about the hotel's location, design and interior décor. DANOSA takes

care of the rest and turns it into a space that is thermally protected against damp and noise, while also ensuring it is environmentally friendly and follows aesthetic innovations and the latest architectural trends.

HOTEL PRAKTIK RAMBLA

DAMP

Guaranteeing a hotel is watertight via a good waterproofing system is one of the investments with the greatest return when considering a renovation, since it allows the building's structure to be protected while also having a positive impact on guest comfort. At least 1% of the total construction budget for a building is usually set aside for waterproofing.

In buildings, damp can have very different causes:

- **Filtration:** when water penetrates the enclosures through fissures, cracks, joins, meeting points or surface porosity due to a break in the waterproofing system, seals or degradation of the construction components over time.
- **Condensation:** when steam inside or outside buildings condenses superficially on its enclosures, including with the formation of mould. This is caused by incorrect thermal insulation or the presence of thermal bridges.

- **Capillarity:** this occurs when water moves through a porous enclosure in an upward vertical motion. Above all, these pathologies appear in the basements of a building and are usually permanent when the groundwater level is high, as is the case with hotels near beaches.

To prevent these issues, waterproofing systems that guarantee roof terraces, balconies, basements and wet areas are completely watertight. Similarly, it is essential that the hotel is equipped with the thermal insulation necessary to prevent damp caused by surface condensation.



BUILDINGS' ENERGY DEMAND

When it comes to assessing Spanish hotels' concern for energy efficiency, the data from the latest PwC hotel industry survey are particularly telling. According to this report, the hotels that have undertaken energy efficiency measures have mainly implemented low-consumption lighting and efficient water use solutions that require little investment. The less successful solutions in hotels include cogeneration, changes to the building's enclosure and renewable energy production equipment; all of these are clearly more complex and require greater investment.

As is evident, a short-term investment (payback) continues to outweigh a

long-term investment (VAN), wasting the opportunity to refurbish the hotel's façade and image. However, the most important aspect is that, although this renovation has achieved energy savings thanks to better lighting efficiency, sanitary hot water efficiency, or the regulation of machines and equipment, this is a job half-done as the building will still need to be wrapped up in a good thermal enclosure. What's more, in light of the improvement in efficiency and regulation of equipment, losses due to the thermal enclosure will amount to, on average, 40% in hotels (50% in homes). If the energy consumed by equipment is reduced but the construction remains untouched, with the building's new consumption limit that 40% will be easily 70-75%.

At present, the energy consumed in Spain by buildings stands at almost 30% of total consumption. By improving a building's thermal insulation it is easy to achieve savings on energy, costs and CO₂ emissions of up to 60% on heating and air conditioning consumption, due to a reduction in thermal transmission through the thermal enclosure.

Significant renovations of existing buildings are a good opportunity to implement effective measures and passively increase the thermal comfort of the enclosure, as well as reduce buildings' energy demand in terms of heating and cooling.

SUSTAINABILITY AND ENVIRONMENT

DANOSA is fully committed to sustainability and the environment when promoting sustainable tourism with a view to answering guests' economic, social and environmental demands, caring for the surrounding area, and enhancing the wealth of the hotel industry.

The growing demand among consumers for thorough environmental information on the design, construction and maintenance of construction systems in building has resulted in the introduction of the so-called Environmental Product Declarations (EPDs) in European environmental regulations.



HOTEL PRAKTIK RAMBLA

ENVIRONMENTAL PRODUCT DECLARATION

An Environmental Product Declaration (EPD) is a document verified by an independent agent that provides quantified, proven information on a product's environmental performance. These tools are used to assess a product's environmental impact throughout its lifespan, in accordance with international standard ISO 14025. In this regard, EPDs provide objective, transparent, comparable and standardised information

on the environmental performance of DANOSA products thanks to a life cycle assessment (LCA), from the extraction of raw materials for their manufacture to the end of their useful life in buildings.

This information allows all actors involved in building to obtain environmental information for products (that was previously non-existent) to facilitate their decision-making processes. Furthermore, it enables construction material manufacturers to introduce new eco-design criteria.



GREEN CERTIFICATIONS FOR BUILDINGS

Green certifications for buildings aim to encourage more sustainable construction that leads to economic, environmental and social benefits for all construction stakeholders. According to different scoring criteria, buildings obtain a certain classification that reports their environmental performance.

These certificates, which are widespread internationally, require information on the environmental performance of the products comprising the building throughout its life cycle. This information is contained in Environmental Product Declarations (EPDs).



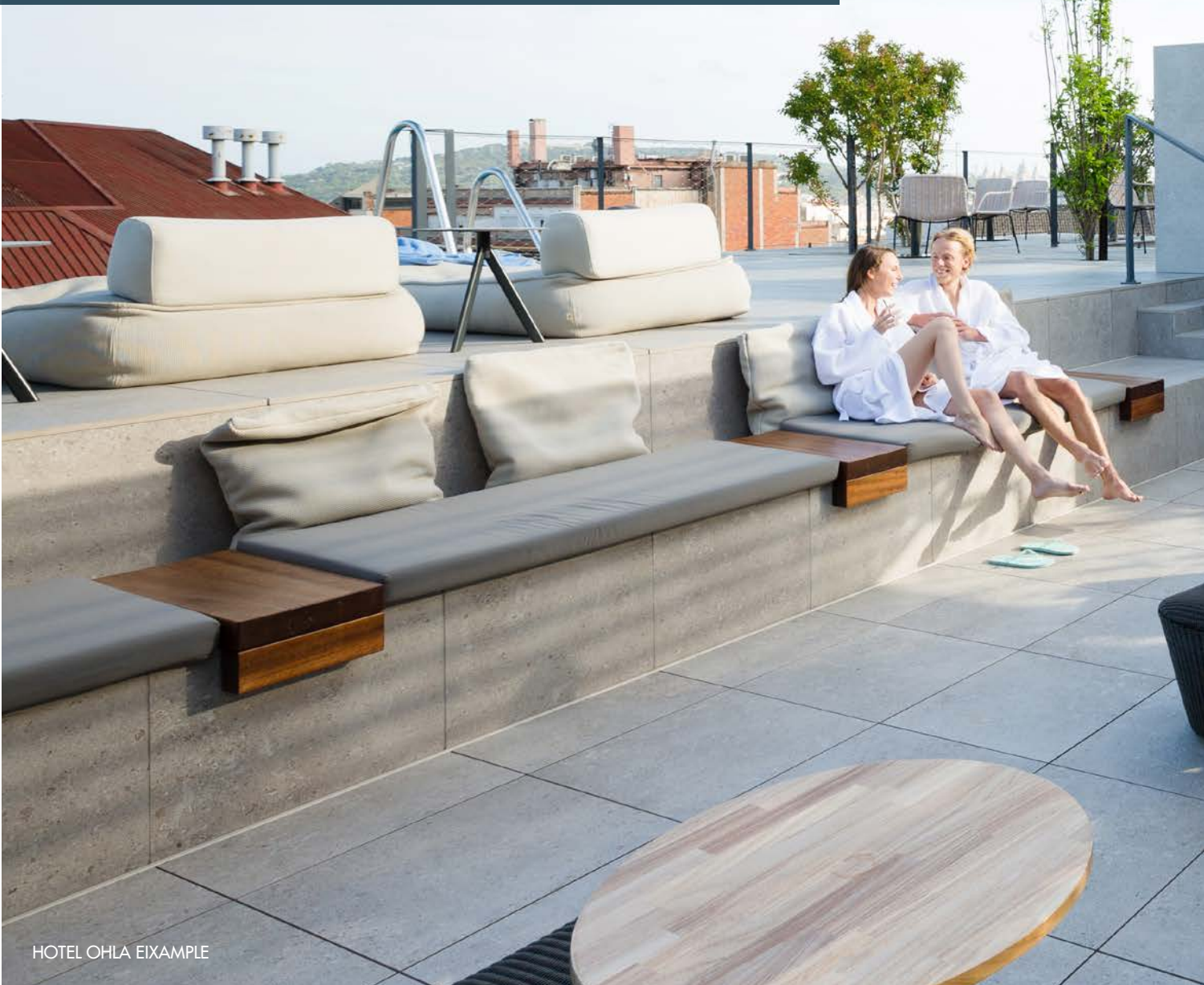
ROOF TERRACES

Hotels are buildings that offer services to third parties, so any issues with damp or soundproofing has a direct impact on both your prestige and your business.

Waterproofing requirements for hotels are similar to those for homes, although the continued movement of travellers requires an increase in safety in construction solutions. The hotel industry's interest in making full use of low areas requires a detailed study of construction solutions that include

high-performance waterproofing systems.

In this type of building, extremely diverse activities are developed, for which reason it is advisable to make a distinction between the different uses, such as garages, lounges, terraces, awnings, interior courtyards, wet rooms, machine rooms, sun terraces, urban vegetable patches, gardens, swimming pools, etc. and adapt the waterproofing solution to each one.



HOTEL OHLA EIXAMPLE



ROOFS

Generally speaking, and given the complexity in floor layouts, tertiary-sector buildings do not usually have sloping roofs, as is the case with hotels as they are even used as yet another service floor.

However, for certain hotel establishments dedicated to maintaining the rural environment, DANOSA recommends a roof on

battens with extruded polystyrene thermal insulation and tile insulation reinforced with modified bitumen sheets.

All different kinds of roofs can be found in buildings used for tourism, regardless of their usage, although flat trafficable and non-trafficable roofs dominate. Within these possibilities, the best option is the trafficable roof

for two main reasons: firstly, given the trend of allocating these roofs to leisure space, as is the case with roofs used for parking in resorts; and secondly, in the event large machines are installed, as machine maintenance involves the use of heavy, sharp material, as well as the movement of people on the roof.

ROOFING SOLUTIONS



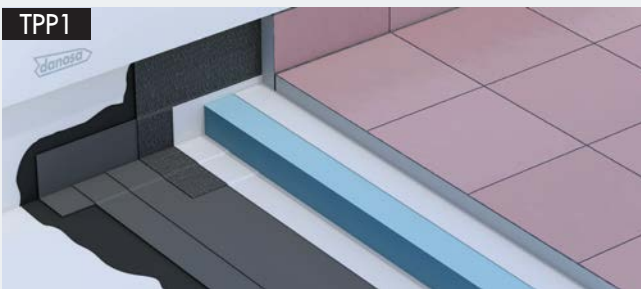
If the roof is inverted (insulation installed on the waterproof membrane, the opposite of the “conventional” solution), this is in response to the need to have the necessary thermal insulation with a certain level of resistance to compression which allows for different finishes, while also protecting the sheet from inclement weather, extending its useful life.

Fixed paving provides continued, long-lasting protection while paving elevated on supports includes a ventilation chamber that helps to

regulate temperature flow and allows the roof to be accessed. A slab finish with insulation simplifies the inverted roof system by having insulation built-in, facilitating access to the waterproofing system.

The liquid, continuous polyurea sheet allows us to waterproof the numerous joints between the construction components, providing the waterproofing with continuity. It behaves well when faced with plant roots, meaning the sheet will not need to be changed on site.

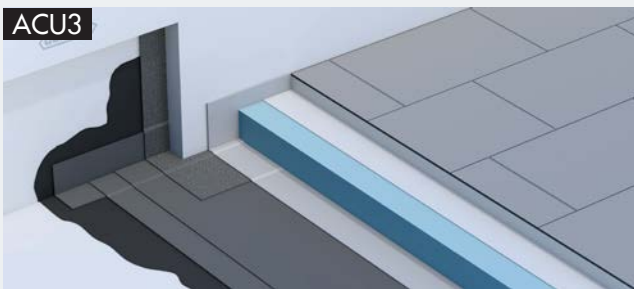
Moreover, using strongly reinforced, reformed sheets offers the same peace of mind as polyester felt armour with premium performance when faced with mechanical strain and stress, which are particularly frequent in this type of roof.

TPP1

Application: Trafficable roof for public use, such as communal areas in a resort, etc.

Products: CURIDAN, ESTERDAN, GLASDAN, DANOFEEL and DANOPREN

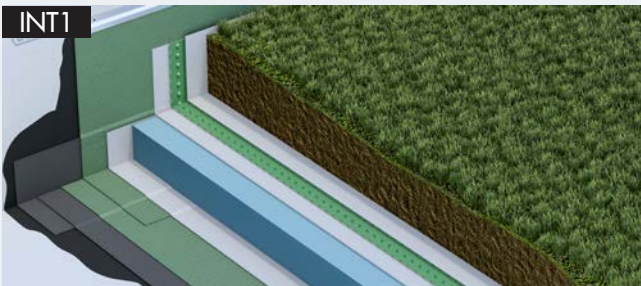
Advantages: High elasticity and durability, self-healing waterproof membranes, the inverted roof system avoids condensation between layers.

ACU3

Application: Roof terraces with activities.

Products: CURIDAN, ESTERDAN, GLASDAN, DANOFEEL, DANOPREN and IMPACTODAN

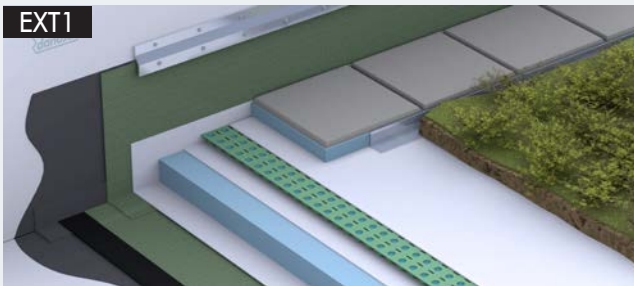
Advantages: High resistance to mechanical stress, minimises noise caused by the movement of people, provides thermal insulation while extending the waterproofing's lifespan.

INT1

Application: Garden areas on roof terraces and roofs

Products: CURIDAN, ESTERDAN JARDÍN, GLASDAN, DANOFEEL, DANOPREN and DANODREN

Advantages: Beautifies roof terraces, contributing to the green roof concept, high thermal insulation, facilitates excess water drainage.

EXT1

Application: Garden areas on roof terraces and roofs

Products: CURIDAN, ESTERDAN JARDÍN, GLASDAN, DANOFEEL, DANOPREN and DANODREN

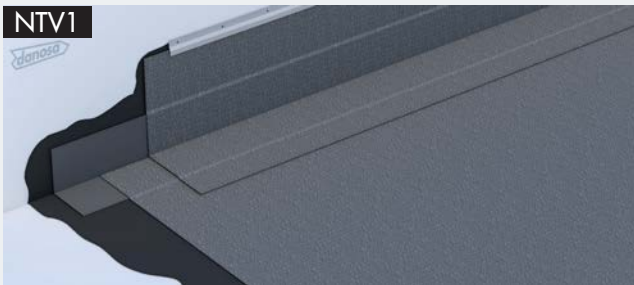
Advantages: Beautifies roof terraces, contributing to the green roof concept, high thermal insulation, low water consumption and maintenance.

TVH1

Application: Areas of road traffic.

Products: CURIDAN, GLASDAN and POLYDAN

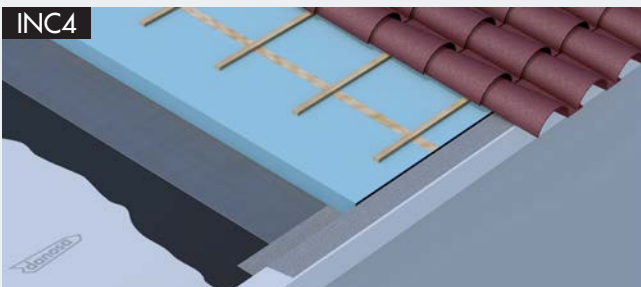
Advantages: High mechanical stress, direct discharge of the concrete driving layer, easy to detect damp.

NTV1

Application: : Awnings, facility towers.

Products: CURIDAN and ESTERDAN

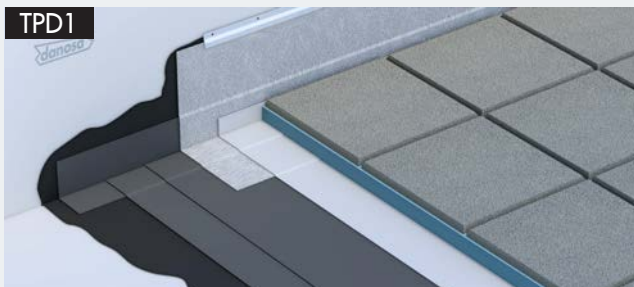
Advantages: Resistant to ultraviolet radiation, capacity for bridging fissures, resistant to oxidation.

INC4

Application: Sloping roof with tiles

Products: CURIDAN, SELF-DAN and DANOPREN

Advantages: Maintains the traditional image of the hotel while providing thermal insulation, high durability, avoids condensation between layers, minimal water absorption.

TPD1

Application: Refurbishment, roof with machinery, technical corridors

Products: CURIDAN, ESTERDAN, GLASDAN, DANOFEEL and DANOLOSA

Advantages: Facilitates roof maintenance, extends the waterproofing's lifespan, allows occasional transit to check machinery.

FAÇADES

The façade is a hotel's cover letter that it presents to clients. It is an initial aesthetic approach to the building from the outside; the first impression that can determine one's sense of choice, since it posits the establishment's characteristics. Once inside, when the client explores the interior and reaches their room, they will be able to directly perceive the quality of the finishes and assess the building's habitability, particularly the habitability offered by the façade's construction.

It is at this point when the windows come in. Along with their conditions of offering natural light, views of the outdoors, allowing sunlight into the room in winter, or controlling it in summer, guests will notice if the windows also ensure watertightness and airtightness. In other words, if they protect against noise and offer thermal comfort.

Similarly, the walls of a façade (its "solid" part) are just as important, if not more so. It would be wrong to neglect their huge contribution to a hotel's habitability and comfort, and indeed those of any other building. At DANOSA, as we are industrial manufacturers dedicated to construction, we take great care to improve the habitability of buildings whose façades feature our construction products and solutions.

DANOSA's façade construction systems with waterproof, acoustic and thermal solutions will allow hotel guests to enjoy their stay free from damp, noise and extreme temperatures.







HOTEL OHLA EIXAMPLE

FAÇADES

With regard to temperature, it is essential the client realises that the thermal sensation comes not only from the indoor air temperature, but also the radiant temperature of the surfaces comprising the room. For this reason, if the façades are not insulated, the rooms will be cold, regardless of how much the heating in them is increased. The imbalance between air temperature and façade wall temperature is noted as a clear lack of comfort that can be resolved by insulating. Otherwise, the client is forced to increase the temperature on the thermostat, with the subsequent higher energy cost, as for every degree the thermostat is increased, your electricity bill becomes 7% more expensive. And even then, the

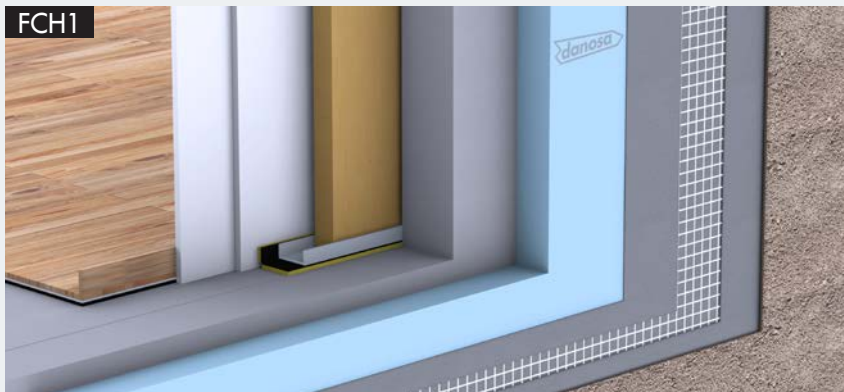
right level of comfort won't be attained as the thermal imbalance will persist.

In the case of DANOSA's extruded polystyrene solutions, their function as thermal insulation presents notable advantages:

- Their high resistance to steam diffusion provides certainty that there will be no risk of condensation. And that's without any need for a steam barrier, which requires careful installation.
- Harnessing the raw material, recycling the product and reusing it in their manufacture, along with their extremely high durability, make these systems sustainable products, as proven by the EPD.

- In the steam diffusion process between the interior and exterior of the building, it is very common for moisture to reach the chambers via simple air convection. With DANOSA's XPS plates, this will never occur due to their high resistance to diffusion and invaluable water absorption, which ensure their features are maintained throughout the building's entire life cycle.

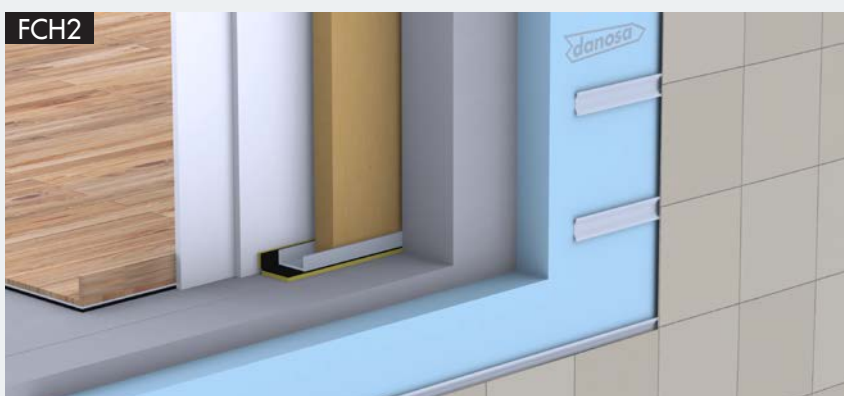
THERMAL AND ACOUSTIC INSULATION SOLUTIONS FOR FAÇADES



Application: Façade renovation, EIFS façade system

Products: DANOPREN, FONODAN and ROCDAN

Advantages: Classic image of the hotel, avoids thermal bridges, does not reduce space in refurbishment



Application: Façade renovation, ventilated façade system

Products: DANOPREN, FONODAN and ROCDAN

Advantages: Modernises the hotel's image, avoids thermal bridges, does not reduce space in refurbishment



Application: Interior façade system

Products: FONODAN and ROCDAN

Advantages: The structure improves and reduces the fall of insulation at the critical frequency (check), good planimetry, quick to install.



HOTEL PRAKTIK RAMBLA

A photograph of a modern hotel bedroom. A woman is sitting on a bed with white linens. The room features a dark blue headboard, a white bedside table with a telephone, and a dark blue wall. The ceiling has ornate white moldings and a modern black lamp fixture. The text 'BEDROOMS' is overlaid on the right side of the image.

BEDROOMS

Today, hotels are less soundproofed than homes, which becomes an issue when guaranteeing guests the hidden comfort that isn't seen, but is experienced. Furthermore, in this type of building, soundproofing requirements are more complex and varied, which means we need to present solutions that adapt to each kind. In any case, these solutions are based on standard building structures and can be subsequently adapted

based on the specific nature of each building.

For example, we often come across old buildings with a wooden structure and frame. For these cases, there are also guarantee solutions that allow the hotel to meet the requirements necessary to ensure the guest enjoys the rest and relaxation they require and deserve.



HOTEL OHLA EIXAMPLE

BEDROOMS

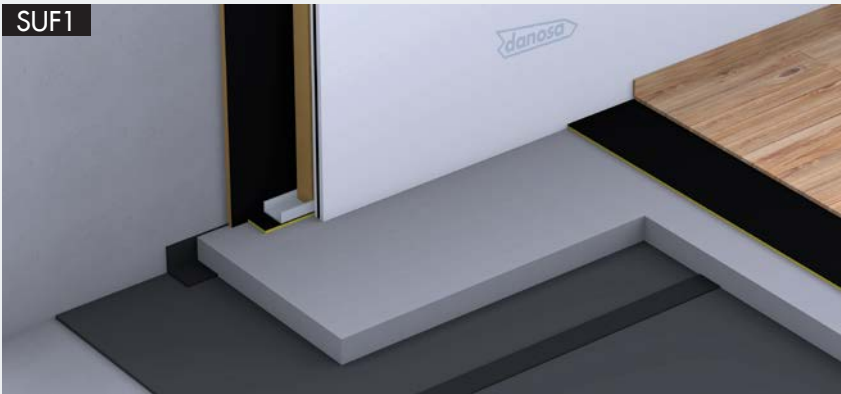
To develop construction solutions for acoustic insulation, the following factors were taken into account:

- People's needs for intimacy and relaxation.
- The needs of event venues to develop their activity correctly.
- The exterior insulation according to the area of acoustic affect, as being in a residential area isn't the same as being in the much noisier city centre.
- The interrelationship between the building's different construction components to correct noise through the structure.
- The noises caused in each area described, in terms of both level and frequency. Insulating bedrooms isn't the same as insulating nightclubs or restaurants.
- The compatibility of systems with air conditioning, heating, plumbing, telecommunications, ventilation and electrical equipment, etc.

The systems and solutions detailed next have been duly tested in a laboratory as well as on projects that have already been completed, complying with the aforementioned factors.

ACOUSTIC INSULATION SOLUTIONS

SUF1

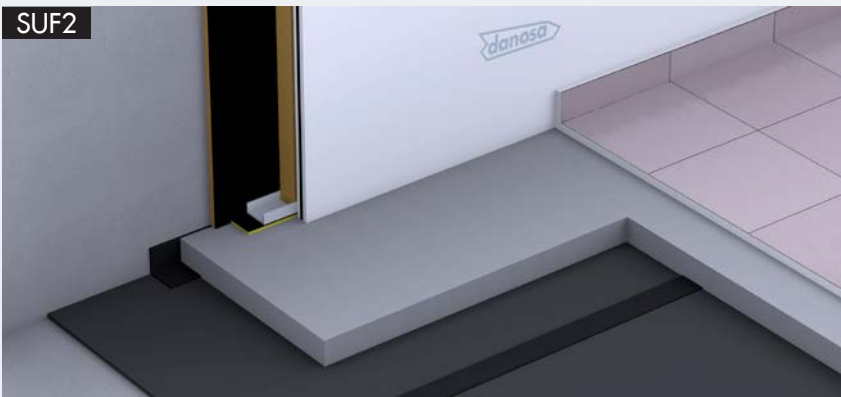


Application: Parquet bedroom floor finish

Products: FONODAN 900 and IMPACTODAN

Advantages: High durability and compatible with floor installations, minimal thickness, the system improves the sonority of the parquet in the room.

SUF2

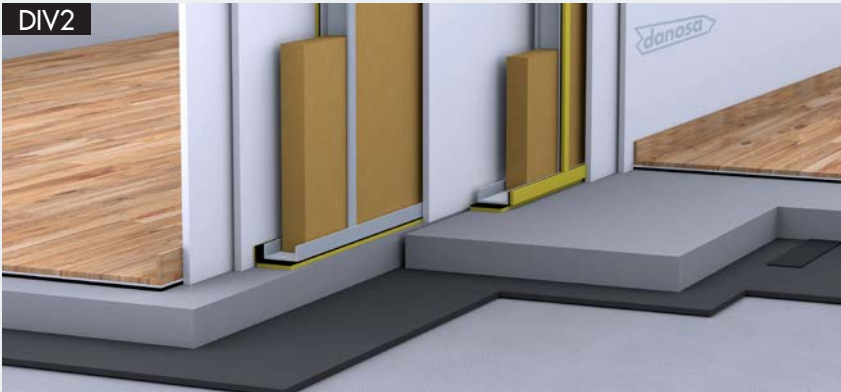


Application: Ceramic bedroom floor finish

Products: IMPACTODAN

Advantages: High durability and compatible with floor installations, minimal thickness, the ceramic finish better withstands the aggressive nature of beach sand.

DIV2



Application: Division between bedrooms

Products: FONODAN and ROC DAN

Advantages: The structure improves and reduces the fall of insulation at the critical frequency, it ensures the watertight nature of mortised components and recessed mechanisms, light and quick to install.

FOR1



Application: Renovation of wooden frames

Products: CONFORDAN, IMPACTODAN and ROC DAN

Advantages: Maintains the building's structure, the false ceiling allows the passage of installations without impairing the insulation, minimal thickness system compatible with facilities.

FACILITIES

WET AREAS, KITCHENS, TECHNICAL ROOMS, LIFTS

Like in other types of buildings, in hotels it's important not to forget the components that can cause damp if not shown the correct attention, such as planters, exposed façades, lift shafts and retaining walls in the foundations.

In addition to the bathrooms, there are other rooms and components that can cause damp given their high level of hygrometry, such as industrial kitchens, changing rooms, spas and indoor swimming pools, etc.

Similarly, certain facilities' exposure to noise tends to be neglected. These include downspouts and rooms for machinery, which need to be addressed on an individual basis. In these kinds of premises, the machinery and pipe damping needs to be studied carefully to prevent vibrations being transmitted to the construction components.



HOTEL PRAKTIK RAMBLA

FACILITY SOLUTIONS



Application: Lining downspouts

Products: FONODAN BJ

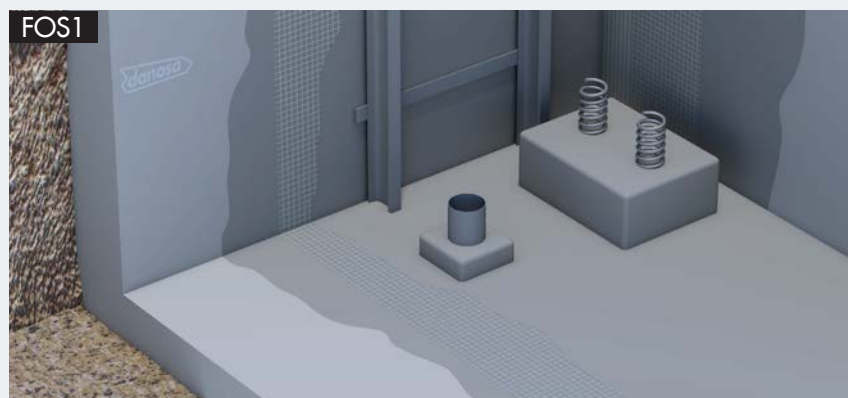
Advantages: Minimises the unpleasant noise from downspouts, strengthens joints between pipes, very easy to install.



Application: Waterproofing water tanks

Products: DANOFELT and DANOPO

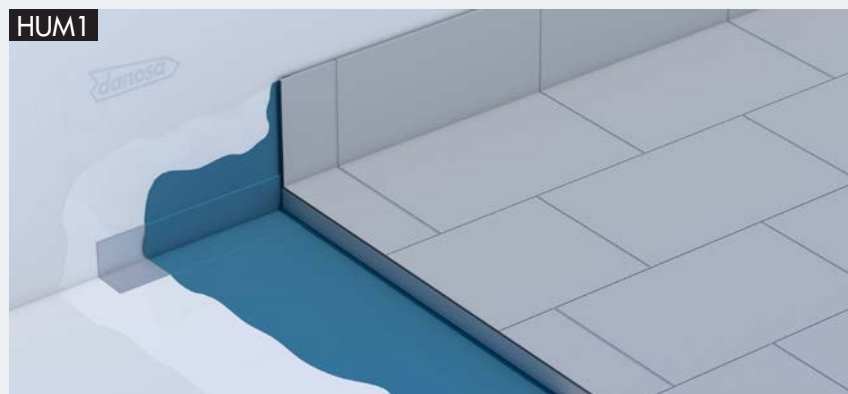
Advantages: System suitable for water tanks, compatible with water for human use, allows dilations in the support bracket.



Application: Waterproofing lift shafts

Products: DANOCRET

Advantages: Prevents fissures, damp caused by condensation and the appearance of fluorescence. High level of protection against saltpetre and seawater.



Application: Protection against damp in kitchens, bathrooms, etc.

Products: REVESTIDAN

Advantages: Excellent, effective elasticity in bridging dynamic fissures in the support bracket. Easy to apply to vertical and horizontal facings. Good adherence, even to wet support brackets.

BASEMENTS

The obvious lack of space in cities means that hotels are expanding downwards, creating spaces not only dedicated to vehicle parking and machine rooms, but also housing administrative or service rooms, such as meeting or event rooms, offices, spas, nightclubs, and more.

This means waterproofing and

thermal insulation systems with full guarantees in the roofs, walls and floor slabs of these constructions must be developed as, once work is complete, these are areas that can be difficult to access if any repair work needs to be carried out later.



HOTEL OHLA EIXAMPLE

PARKING SOLUTIONS, WALLS, ETC.



Application: Protection against damp in spas, indoor swimming pools, foundation slabs.

Products: DANOFEELT and DANOPOLE

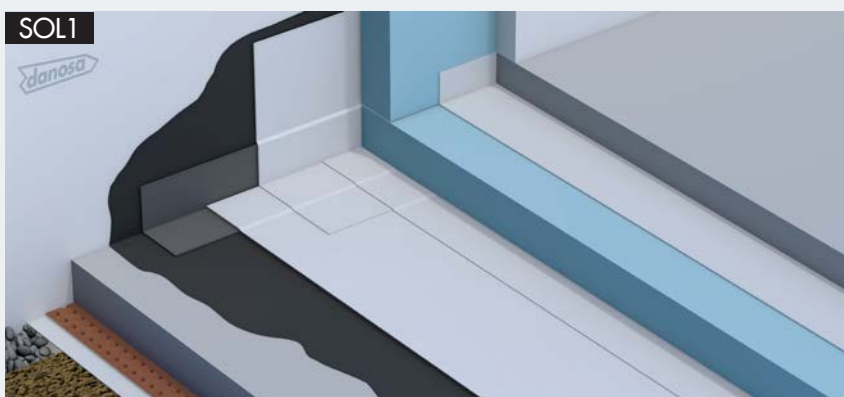
Advantages: Resistant to microorganisms and oxidation, allows dilations in the support bracket, highly resistant to mechanical stress.



Application: Protection against damp in kitchens, bathrooms, etc.

Products: IMPRIDAN, ESTERDAN, DANOPREN, DANODREN, DANOFEELT and TUBODAN

Advantages: Self-healing adhering waterproof membrane, thermal insulation highly resistant to compression and minimal water absorption, drainage system highly resistant to compression.



Application: Protection against damp in floor slabs of habitable basements

Products: CURIDAN, POLYDAN, DANOPREN and DANOFEELT

Advantages: Highly resistant to compression and minimal water absorption of the thermal insulation, high mechanical resistance of the waterproofing, drainage system highly resistant to compression.

SERVICES

RESTAURANTS, MEETING ROOMS, GYMNASIUMS, NIGHTCLUBS, BANQUET ROOMS

These days, it's more common to see how hotel businesses try to draw in clients by offering them more services, changing from places of rest and relaxation to leisure and even business centres.

For this reason, they devise services that can host social and corporate events. They either include a restaurant with famed cuisine, or try to offer guests leisure options with live events

and performances, as well as panoramic views of the city while they enjoy a drink from the roof terrace. Similarly, they host weddings with a private nightclub. All of these activities are associated with noise emissions, which can interfere with the hotel's main activity – providing guests with a fully relaxing experience – if steps are not taken.



HOTEL PRAKTIK BAKERY





HOTEL PRAKTIK BAKERY

SERVICES

To respond to these new needs, DANOSA offers all kinds of solutions, addressing activities according to the prevalence of the noise generated. As such, we propose a solution for noise preferably caused by conversation and human activity, such as restaurants, bars, etc., and another system when the fundamental noise is caused by music, as is the case in areas with live performances, nightclubs, function rooms, etc.

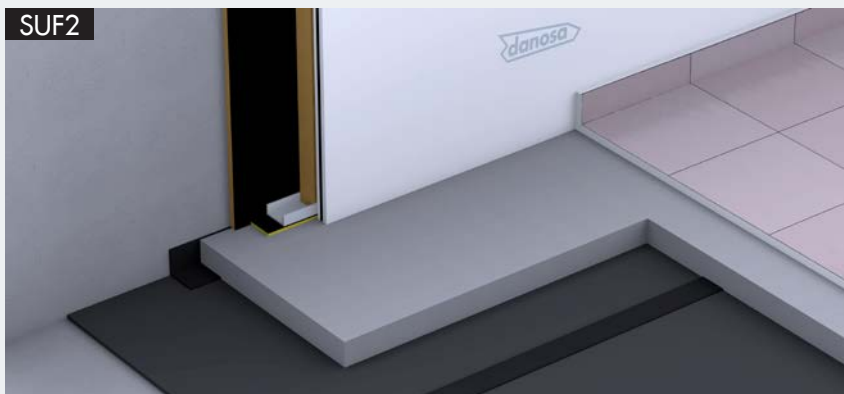
Lastly, we have another range for rooms where the noise is caused by blows or impacts against the building's structure, such as gymnasiums.

If there is a multi-purpose room, naturally the noisiest activity will always prevail when choosing the acoustic insulation solution.

Only the acoustic aspect of sound-proofing is addressed in the DANOSA manual. Treating reverberation, which is necessary in these kinds of premises, depends on many factors, including

the type of use (for conversation, music, study, etc.), the volume of the room (large, medium, small), and the design (decorative elements, construction components, shape of the space, etc.). Therefore, a study of the optimal reverberation time must be carried out individually for each project. In general terms, the more acoustic absorption a room has, the shorter the reverberation time.

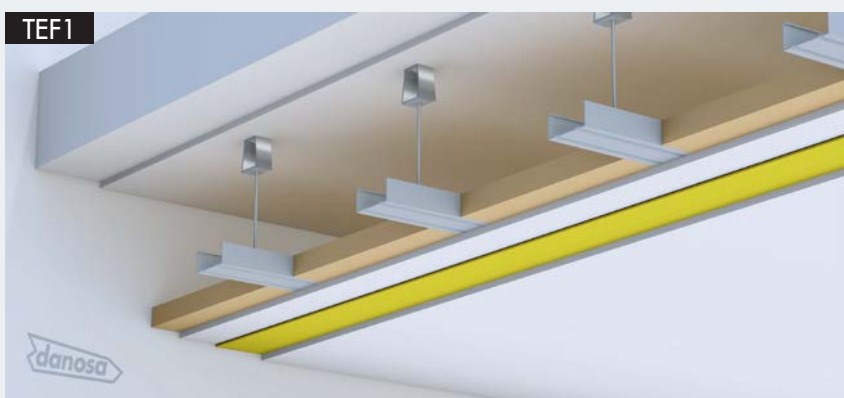
PREMISES WITH PREDOMINANTLY HUMAN NOISE



Application: Restaurants, conference rooms, cafés, etc.

Products: IMPACTODAN

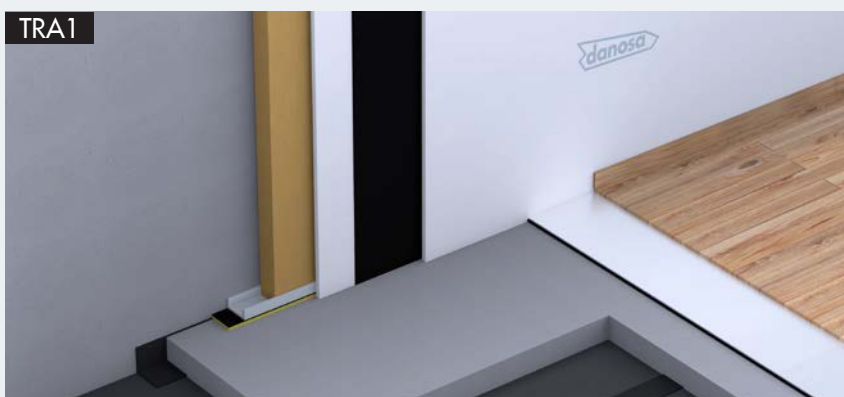
Advantages: Floating floor of the box-in-box system suitable for medium and high-frequency noise, minimises impact noises towards the upper floor.



Application: Restaurants, conference rooms, cafés, etc.

Products: ROC DAN and FONODAN

Advantages: Floating ceiling of the box-in-box system suitable for airborne medium and high-frequency noise.

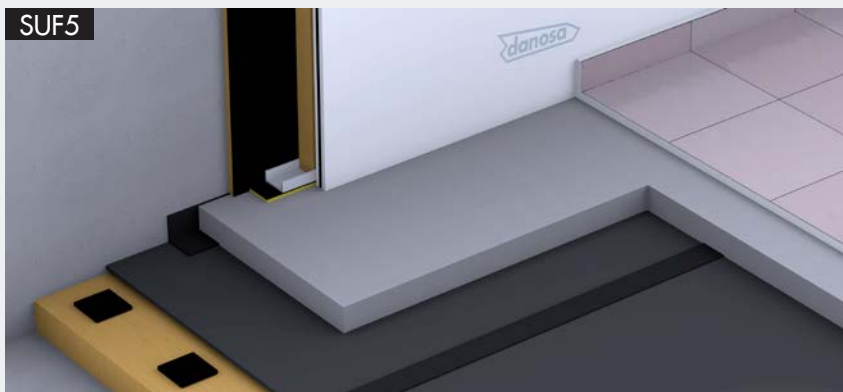


Application: Restaurants, conference rooms, cafés, etc.

Products: ROC DAN and DANOSA ACOUSTIC MEMBRANE

Advantages: Cladding of the box-in-box system suitable for airborne medium and high-frequency noise.

PREMISES WITH PREDOMINANTLY MUSIC NOISE



Application: Live performance venues, wedding venues, nightclubs, pubs.

Products: IMPACTODAN and ROC DAN

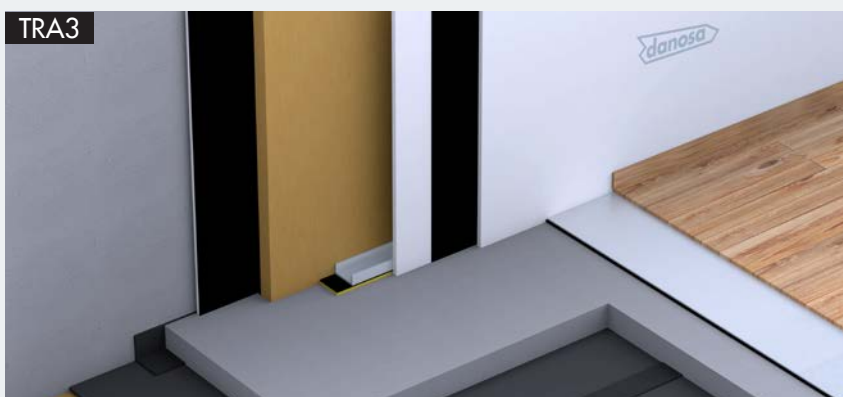
Advantages: Floating floor of the box-in-box system for impulse low-frequency noise like music, floor highly resistant to service overloads.



Application: Live performance premises, wedding venues, nightclubs, pubs.

Products: ROC DAN, DANOSA ACOUSTIC MEMBRANE and SONODAN

Advantages: Floating ceiling of the box-in-box system for impulse low-frequency noise like music.

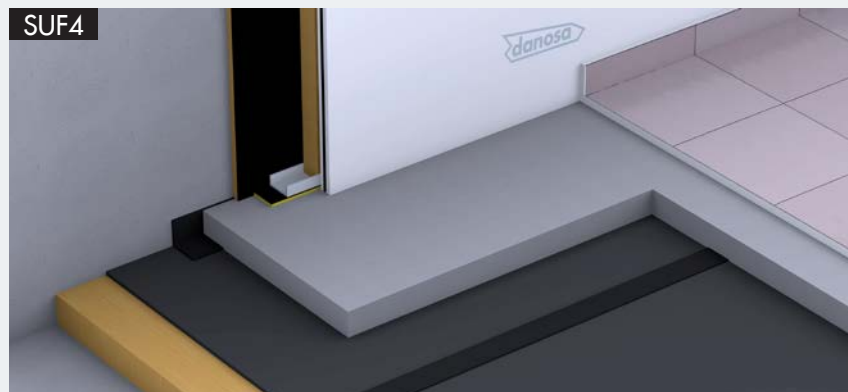


Application: Live performance venues, wedding venues, nightclubs, pubs.

Products: DANOSA ACOUSTIC MEMBRANE and SONODAN

Advantages: Cladding of the box-in-box system for impulse low-frequency noise like music.

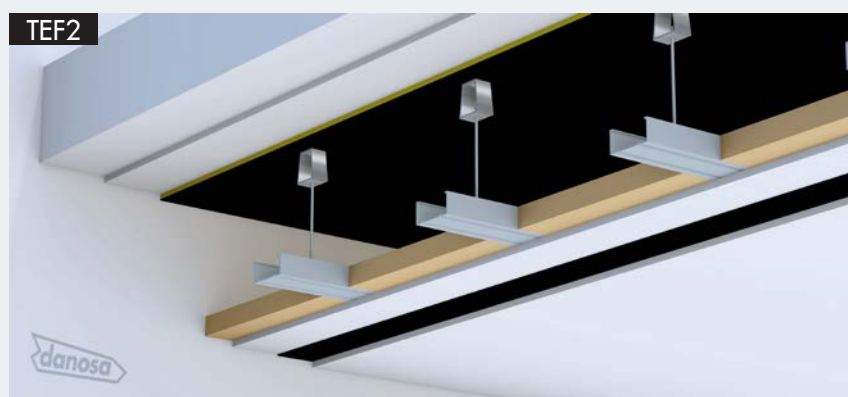
PREMISES WITH PREDOMINANTLY MACHINERY NOISE



Application: Machine rooms, gymnasiums, etc.

Products: IMPACTODAN and ROCDAN

Advantages: Floating floor of the box-in-box system suitable for low, medium and high-frequency machinery noise, minimises impact noises of a gymnasium towards the upper floor.



Application: Machine rooms, gymnasiums, etc.

Products: ROCDAN, DANOSA ACOUSTIC MEMBRANE and ACUSTIDAN

Advantages: Floating ceiling of the box-in-box system suitable for low, medium and high-frequency machinery noise.



Application: Machine rooms, gymnasiums, etc.

Products: ROCDAN and DANOSA ACOUSTIC MEMBRANE

Advantages: Cladding of the box-in-box system suitable for low, medium and high-frequency machinery noise.

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