



Big solutions for wide surfaces

According to the requirements of the Technical Building Code



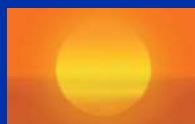
Waterproofing



Acoustic Insulation



Drainages - Geotextiles



Solar Energy



www.danosa.com

WATERPROOFING AND THERMAL INSULATION ROOF

Proper sealing of wide areas plays a key role in their efficient functioning. The most common roof type in those cases uses lightweight steel panels, known as steel **DECK** type. The system consists of a resistant corrugated sheet, with a panel of thermal insulation and with waterproofing membranes, which in self-protected applications also serves as a finish.

The solutions offered by **danosa** comply with the framework established in the domestic market (CTE, 104/402-96 and 104/416-06 UNE). Such documents provide in turn the suitability of our new systems, which obtained the **DIT** certification. These mentioned systems also have the European labels required by ETA (European Technical Approval) and meet the requirements of the Guide 6 of **ETA**, "Waterproofing roofing systems with flexible membranes mechanically fastened" and more over comply with French legislation **DTU**, with various **AVIS TECHNIQUE**.

Bituminous deck cover bilayer FM

1. Corrugated metal sheet support
2. Thermal insulation, fixed to the support:

Option 1:

ROCDAN SA

(rockwool high density)

Option 2:

ROCDAN PIR VV (Polisocianurato PIR)

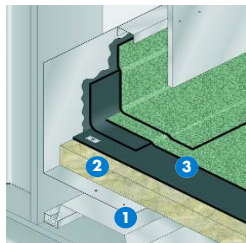
3. Waterproofing membrane bilayer (*):

- ESTERDAN FM 30 P ELAST

(mechanically fastened to the support)

- GLASDAN 40/GP ERF ELAST

(self-protected)



Solution with **ETA** mechanical fixing n° 06/0062 **ESTERDAN FM BILAYER**
Solution with **ETA** mechanical fixing n° 06/0058 **POLYDAN PLUS FM**

(*): If single layer, the **POLYDAN PLUS FM 50/GP ELAST** (Self-protected).

Single layer PVC deck FM

1. Corrugated sheet metal support
2. Thermal insulation, fixed to the support:

Option 1:

ROCDAN SA

(rockwool high density)

Option 2:

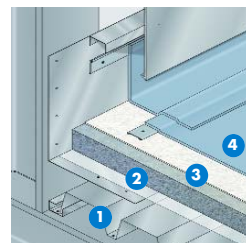
ROCDAN PIR VV (Polisocianurato PIR)

3. **DANOFELT PP 125** (*)

(geotextile layer of 125 g/m²)

4. **DANOPOL HS 1,2:**

(waterproofing membrane single layer, and weather resistant, mechanically fastened to the support)

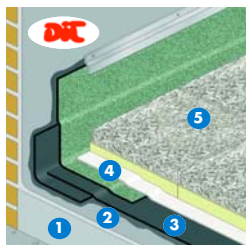


Solution **ETA** mechanical fixing n° 10/0054 **DANOPOL HS FM**

(*): Only required if used with incompatible thermal insulation waterproof membrane.

Bituminous bilayer walking deck for private use with DANOLOSA

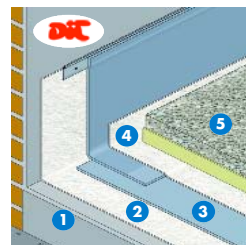
1. Support
2. **CURIDAN**
(asphalt primer, minimum 0,3 Kg/m²)
3. Waterproofing membrane bilayer:
- **GLASDAN 30 P ELAST**
- **ESTERDAN 30 P ELAST**
4. **DANOFELT PY 200**
(geotextile layer of 200 g/m²)
5. **DANOLOSA** (Filtering slave *danosa*)



Solution with **DIT** n° 550/10 **ESTERDAN PENDIENTE CERO** 

Single layer PVC walking deck for private use with DANOLOSA

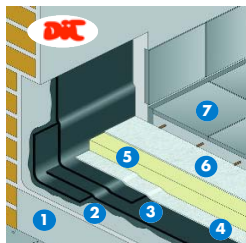
1. Support
2. **DANOFELT PY 300**
(geotextile layer of 300 g/m²)
3. **DANOPOL FV 1,2**
(waterproofing membrane single layer)
4. **DANOFELT PY 300**
(geotextile layer of 300 g/m²)
5. **DANOLOSA** (Filtering slave *danosa*)



Solution with **DIT** n° 551/10 **DANOPOL PENDIENTE CERO** 

Bituminous bilayer walking asphalt deck for private/public use

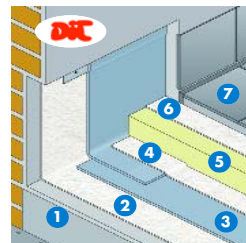
1. Support
2. **CURIDAN**
(asphalt primer, minimum 0,3 Kg/m²)
3. Waterproofing membrane bilayer:
- **GLASDAN 30 P ELAST**
- **ESTERDAN 40 P ELAST**
4. **DANOFELT PY 150**
(geotextile layer of 150 g/m²)
5. **DANOPREN** (thermal insulation extruded polystyrene, resistance compression > 300 kPa)
6. **DANOFELT PY 200**
(geotextile layer of 200 g/m²)
7. Protective layer of mortar and tiles



Solution with **DIT** n° 550/10 **ESTERDAN PENDIENTE CERO** 

Monolayer PVC cover private and public trafficable

1. Support
2. **DANOFELT PY 300**
(geotextile layer of 300 g/m²)
3. **DANOPOL FV 1,2**
(waterproofing membrane single layer)
4. **DANOFELT PY 300**
(geotextile layer of 300 g/m²)
5. **DANOPREN** (thermal insulation extruded polystyrene, resistance compression > 300 kPa)
6. **DANOFELT PY 200**
(geotextile layer of 200 g/m²)
7. Protective layer of mortar and tiles



Solution with **DIT** n° 551/10 **DANOPOL PENDIENTE CERO** 

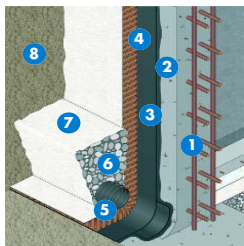
WATERPROOFING OF UNDERGROUND STRUCTURES

These commercial buildings usually have large parking lots below the access level, which implies earth movements and treatment of the underground walls, paving and foundations, as well as waterproofing the roofs of these mentioned car parks, depending on their planned use: walking roof for pedestrians, accessible to vehicles, green roofs, ...

In addition to waterproofing, **danosa** offers wide range of protection and drainage systems, offering also barriers to prevent moisture rising by capillarity into these surfaces in direct contact with the ground.

Waterproofing and drainage of two-sided wall

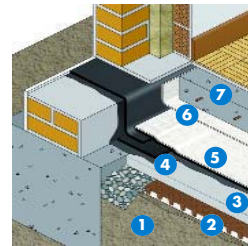
1. Concrete wall
2. **IMPRIDAN 100**
(asphalt primer, minimum 0,5 Kg/m²)
3. **ESTERDAN 30 P ELAST** (*)
(waterproofing layer)
4. **DANODREN H PLUS**
(Drainage with geotextile filter)
5. **TUBODAN** (drainage tube)
6. Fill with gravel filter
7. **DANOFELT PY 200**
(geotextile layer of 200 g/m²)
8. Compacted Fill



(*) Can be replaced by the self-adhesive bituminous membrane foil **SELF DAN BTM**

Waterproofing and foundation sill drainage

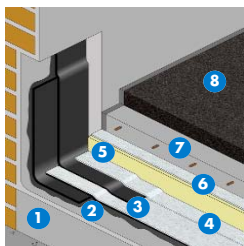
1. Compacted natural soil
2. **DANODREN H PLUS** (film drainage, as drainage and filter layer)
3. Regularization mortar layer (*)
4. **CURIDAN** (*)
(asphalt primer, minimum 0,3 Kg/m²)
5. **POLYDAN 48 P PARKING** (*)
(waterproofing membrane single layer)
6. **DANOFELT PY 200**
(geotextile layer of 200 g/m²) (*)
7. Concrete slab



(*) Only necessary based on the degree of impermeability of the ground, according to the HSDB1. If the foundation is with slabs and if necessary, 2 layers of it will be used.

Bituminous bilayer deck accessible to vehicles, with asphalt protection

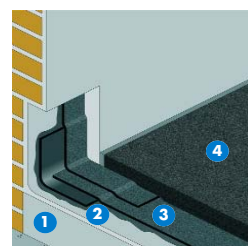
1. Support
2. **CURIDAN**
(asphalt primer, minimum 0,3 Kg/m²)
3. Waterproofing membrane bilayer:
- **GLASDAN 30 P ELAST**
- **POLYDAN 48 P PARKING**
4. **DANOFELT PY 150** (*)
(geotextile layer of 150 g/m²)
5. **DANOPREN 500** (*)
(extruded polystyrene insulation, compressive strength > 500 kPa)
6. **DANOFELT PY 200** (geotextile layer of 200 g/m²)
7. Reinforced concrete slab
8. Rolled asphalt paving



(*) Only if the thermal insulation is needed according to DBHE

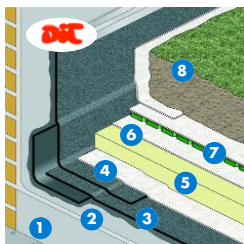
Bituminous bilayer deck accessible to vehicles, without protection

1. Support
2. **CURIDAN**
(asphalt primer, minimum 0,3 Kg/m²)
3. Waterproofing membrane bicapa:
- **GLASDAN 30 P ELAST**
- **POLYDAN 180-60/GP ELAST**
(autoprotected) or
POLYDAN 60 TF ELAST (selfprotected)
4. Rolled asphalt paving



Bituminous bilayer deck with green roof

1. Support
2. **CURIDAN**
(asphalt primer, minimum 0,3 Kg/m²)
3. Waterproofing membrane bilayer:
- **GLASDAN 30 P ELAST**
- **ESTERDAN PLUS 50/GP ELAST VERDE JARDÍN** (autoprotected)
4. **DANOFELT PY 200** (*)
(geotextile layer of 200 g/m²)
5. **DANOPREN** (*) (extruded polystyrene insulation, compressive strength > 300 kPa)
6. **DANOFELT PY 200** (geotextile layer of 200 g/m²)
7. **DANODREN JARDÍN** (drainage with geotextile filter)
8. Topsoil layer

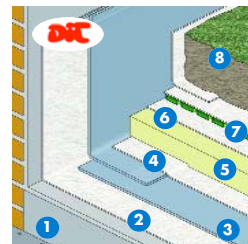


Solution with **DIT n° 550/10 ESTERDAN PENDIENTE CERO** 

(*) Only if the thermal insulation is needed according to DBHE

PVC deck waterproofing with indoor Garden

1. Support
2. **DANOFELT PY 300**
(geotextile layer of 300 g/m²)
3. **DANOPOL FV 1,2**
(Waterproofing membrane single layer)
4. **DANOFELT PY 300**
(geotextile layer of 300 g/m²)
5. **DANOPREN** (*) (Extruded polystyrene thermal insulation, resistance to compression > 300 kPa)
6. **DANOFELT PY 200** (*)
(geotextile layer of 200 g/m²)
7. **DANODREN JARDÍN** (drainage with geotextile filter)
8. Topsoil layer



Solution with **DIT n° 550/10 DANOPOL PENDIENTE CERO** 

(*) Only if the thermal insulation is needed according to DBHE

ACOUSTIC INSULATION

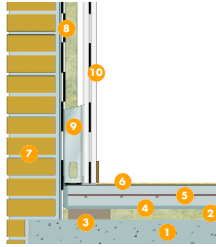
Increasingly, in malls there are places of leisure and entertainment in need of special sound proofing treatments, such as the case of cinemas, discos, bars with music, bowling alleys, etc...

Furthermore, sometimes these malls are located near zones with very loud external noise, close to airports, high ways, factories, so it maybe necessary to increase the values of sound insulation of the external structures of the se buildings.

danosa addresses not only waterproof, but also these new requirements, advising and following the installation of its products.

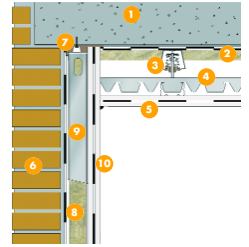
Soundproofing of bowling alleys and discos, wall-floor junction

1. Resistant wrought
2. **ROCDAN 233/30**
(rockwool panel, density 100 Kg/m³)
3. **AS-200** (rubber damper)
4. **IMPACTODAN 10**
(Impact noise insulation)
5. Layer of mortar reinforced
6. Pavement
7. Plaster Partition
8. **SONODAN PLUS**
(multi-panel sound insulation)
9. Profile rising 40 mm
10. Acoustic Sandwich:
M.A.D.4 + 2 c N13



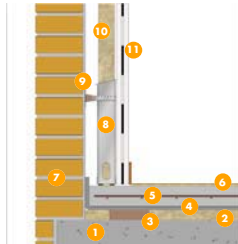
Soundproofing of bowling alleys and discos, wall-ceiling junction

1. Wrought
2. **SONODAN PLUS**
(multi-panel sound insulation panel)
3. **ATM-50** (steel damper)
4. Roof profiles (Primary-Secondary)
5. Sound insulation "sandwich":
M.A.D.4 + 2 plasterboard laminate N13
6. Plaster Partition
7. **SEB-40** (elastic foundation)
8. **SONODAN PLUS**
(multi-layer sound insulation panel)
9. Profile rising 40 mm
10. Acoustic Sandwich:
M.A.D.4 + 2 plasterboard laminate N13



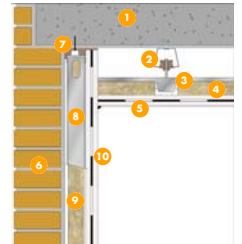
Soundproofing Cinema: Wall-floor junction

1. Resistant wrought
2. **ROCDAN 233/30**
(rockwool panel, density 100 Kg/m³)
3. **AS-200** (rubber damper)
4. **IMPACTODAN 10**
(Impact noise insulation)
5. Layer of mortar reinforced
6. Termination floor
7. Plaster partition
8. Profile rising 40 mm
9. **SEP-15** (lateral support)
10. **ROCDAN 231/40**
(rockwool panel, density 70 kg/m³)
11. Acoustic insulation:
M.A.D.4 ERF + 2 plasterboard laminate N13



Soundproofing Cinema: Wall-ceiling junction

1. Wrought
2. **ATC-25** (rubber damper)
3. Roof profiles (Primary-Secondary)
4. **ROCDAN 231/40**
(rockwool panel, density 70 kg/m³)
5. Acoustic insulation "sandwich":
M.A.D.4 ERF + 2 plasterboard laminate N13
6. Plaster partition
7. **SEB-40** (elastic foundation)
8. Profile rising 40 mm
9. **ROCDAN 231/40**
(rockwool panel, density 70 kg/m³)
10. Acoustic insulation "sandwich":
M.A.D.4 ERF + 2 plasterboard laminate N13



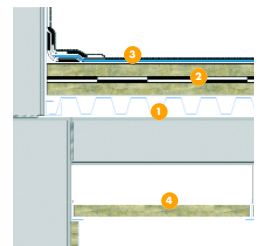
Separation cinemas

1. Profile rising 90 mm
2. **SEP-15** (side support)
3. **ROCDAN 231/40**
(rockwool panel, density 70 kg/m³)
4. Acoustic insulation "sandwich":
M.A.D.4 ERF + 2 plasterboard laminate N13



Sound insulation of light cover

1. Corrugated metal support
2. **SONODAN CUBIERTAS**
(multi-layer sound insulation panel mechanically fixed to support)
3. Waterproofing membrane bilayer:
- **ESTERDAN 30 P ELAST**
- **ESTERDAN PLUS 40/GP ELAST**
(self-protected)
4. **ROCDAN 231/652**
(absorbent rockwool panel, density 70 Kg/m³)

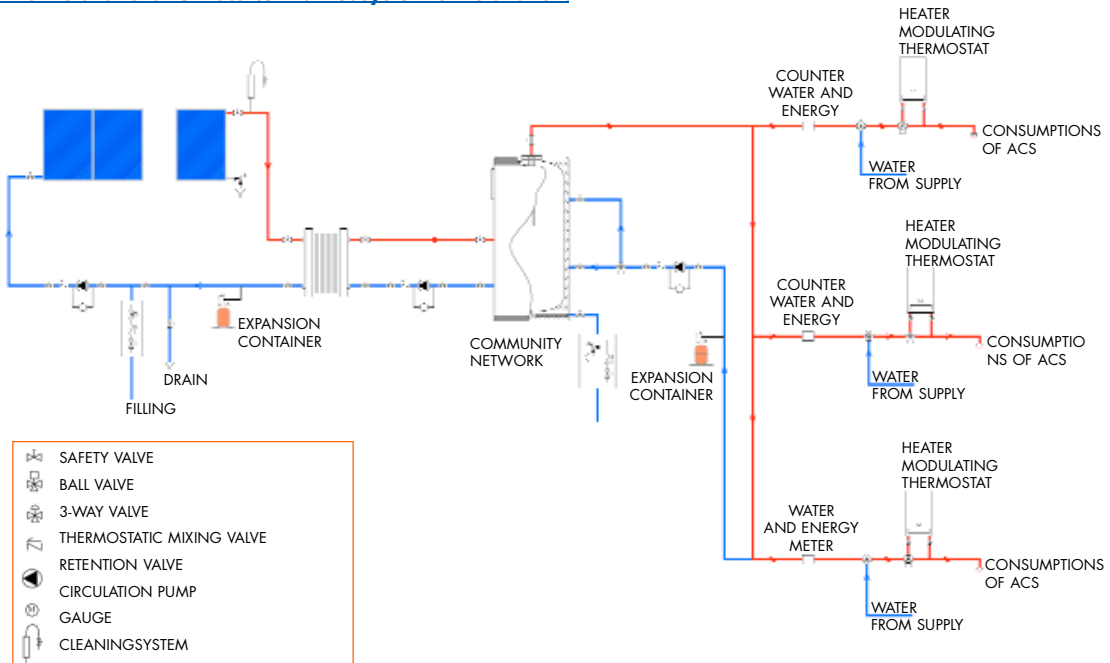


SOLAR ENERGY

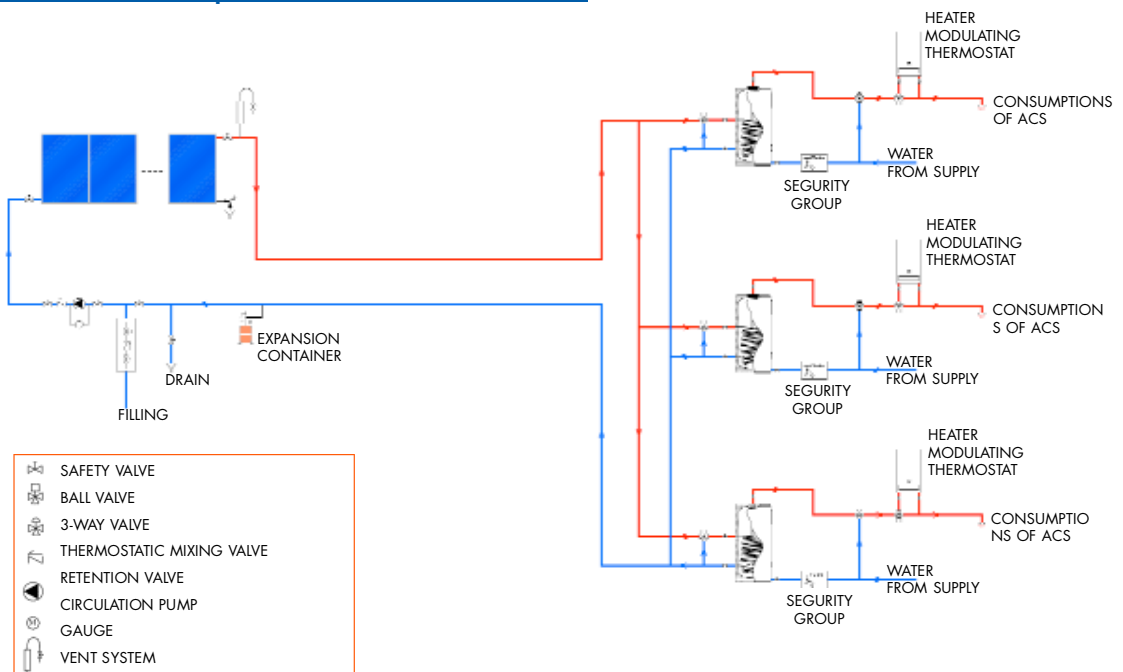
For new buildings and renovations, the **CTE** in paragraph **HE 4** (Contribution Solar Hot Water Low) makes it compulsory to use a percent age of domestic hot water needs through solar thermal systems. In the case of shopping centers, where many activities include: changingrooms, workshops, laundries, restaurants, etc, is necessary to consider the partial requirements of each of the activities in order to obtain a general estimation of total needs.

danosa, from its solar division, is able to offer products, advice and management response for the most appropriate solution to the needs of each installation, complying with the requirements of the **CTE**.

SolarThermal Installation. Multilocal centralized system for installation.



SolarThermal Installation with partitioned accumulation for multilocal.





LEROY MERLIN (Alcalá de Guadaíra - Sevilla)



IFEMA Pabellones 12 y 14 (Madrid)



CENTRO LOGISTICO (Cuenca)



LOGISTIC CENTER (Alava)



C.C. Príncipe Pío (Madrid)



C.C. La Salera (Castellón)



FIRA de Barcelona (Barcelona)



El Corte Inglés Sanchinarro (Madrid)



IKEA (S. S. de los Reyes - Madrid)



C.C. Plenilunio (Madrid)



C.C. Tres Aguas (Alcorcón - Madrid)



Pabellón Araba (Vitoria)

wide surfaces made with materials from *danosa*



Hospital SANITAS Moraleja (Madrid)



Ampliación AEROPUERTO BARAJAS (Madrid)



CUATRO TORRES (Madrid)



PUERTA DE EUROPA (Madrid)



Museo REINA SOFÍA (Madrid)



Hotel SILKEN (Madrid)

BIG SURFACES:

- Ampliación IFEMA Pabellones 12 y 14 (Madrid)
- Ampliación FIRA Barcelona (Barcelona)
- IKEA (L'Hospitalet de Llobregat - Barcelona)
- Autocity Centro comercial Pla -Za (Zaragoza)
- C.C. Laxe (Vigo - Pontevedra)
- C.C. Albacenter (Albacete)
- C.C. Alcalá Magna (Alcalá de Henares - Madrid)
- C.C. Alcalá Parque (Alcalá de Guadaíra - Sevilla)
- C.C. Alegria (S.S. de los Reyes - Madrid)
- C.C. Area Sur (Jerez de la Frontera - Sevilla)
- C.C. Berceo (Logroño - La Rioja)
- C.C. Caudalia (Mieres - Asturias)
- C.C. El Golf (Talavera de la reina - Toledo)
- C.C. El Rosal (Ponferrada - León)
- C.C. Espacio Gironés (Salt - Girona)
- C.C. Espacio Mediterráneo (Cartagena - Murcia)
- C.C. Espacio Torrelodones (Torrelodones - Madrid)
- C.C. Gran Plaza (Roquetas - Almería)
- C.C. Heron City (Paterna - Valencia)
- C.C. Islazul (Madrid)
- C.C. Itaroa (Pamplona - Navarra)
- C.C. L'Anec Blau (Casteldefells - Barcelona)
- C.C. La Dehesa (Torrejón de Ardoz - Madrid)
- C.C. La Gavia (Madrid)
- C.C. La Salera (Valencia)
- C.C. Las Canteras (Colmenar - Madrid)
- C.C. Las Cañas (Viana - Navarra)
- C.C. Las Dunas (Sanlúcar de Barrameda - Cádiz)
- C.C. Las Terrazas de Jínamar (Telde - Las Palmas)
- C.C. Los Capuchinos (Salamanca)
- C.C. Parc Central (Tarragona)
- C.C. Parque Almenara (Lorca - Murcia)
- C.C. Parquesur (Leganes - Madrid)
- C.C. Plaza Norte (S.S. de los Reyes - Madrid)
- C.C. Plaza Nova (Leganes - Madrid)

- C.C. Portal de la Marina (Ondara - Alicante)
- C.C. Príncipe Pio (Madrid)
- C.C. Puerto de Venecia (Zaragoza)
- C.C. Sector 3 (Getafe - Madrid)
- C.C. Thader - Juan de Borbón (Murcia)
- C.C. Tres Aguas (Alcorcón - Madrid)
- Parque Comercial Oleiros (Oleiros - A Coruña)
- Parque de ocio Dinopolis (Teruel)
- Alcampo la Salera (Castellón de la Plana)
- Alcampo Bon Hivern (Alicante)
- Alcampo Alcalá de Henares - Madrid
- Boulanger Parque Oeste (Alcorcón - Madrid)
- Carrefour (Baena - Córdoba)
- Carrefour (Santa Cruz de Tenerife)
- Carrefour (Viana - Navarra)
- Carrefour (Tudela - Navarra)
- Carrefour Oleiros - A Coruña)
- Carrefour (El Ejido - Almería)
- Decathlon (Alcalá de Guadaíra - Sevilla)
- Decathlon (Santander - Cantabria)
- Decathlon Ciudad del transporte (Pamplona - Navarra)
- Decathlon (Onda - Castellón)
- Decathlon (Águilas - Murcia)
- Decathlon Xanadu (Arroyomolinos - Madrid)
- E-Leclerc (Alcantarilla - Murcia)
- E-Leclerc (Trujillo - Cáceres)
- El Corte Inglés de San Chinarro (Madrid)
- El Corte Inglés de Xanadu (Arroyomolinos - Madrid)
- El Corte Inglés (Albacete)
- Factory (San Sebastián de los Reyes - Madrid)
- Hipercor El Bercial (Getafe - Madrid)
- IKEA (L' Hospitalet de Llobregat - Barcelona)
- IKEA (Oviedo - Asturias)
- IKEA (San Sebastián de los Reyes - Madrid)
- KIABI (San Sebastián de los Reyes - Madrid)

- Leroy Merlin Nassica (Getafe - Madrid)
- Leroy Merlin (Alcalá de Guadaíra - Sevilla)
- Leroy Merlin (Maliñón - Cantabria)
- Leroy Merlin (Gijón - Asturias)
- Porcelanosa (Mérida - Badajoz)
- Porcelanosa (La negrilla - Sevilla)
- C.C. Carré Senant (Paris - Francia)
- C.C. Les Frais Fonds (Arques - Nord - Francia)
- Aldi (Rochechouart - Gironde - Francia)
- Aldi (Seynod - Bouches-du-Rhone - Francia)
- Bricoman (Arques - Nord - Francia)
- Bricomarche (Chanteheux - Vosges - Francia)
- Champion (Bandol - Var - Francia)
- Decathlon (Marmande - Gironde - Francia)
- Intermarche (Caunelle - Pyrenees Atlantiques - Francia)
- Cascaishopping (Cascais Portugal)
- C.C. Retail Park (Albufeira - Algarve - Portugal)
- C.C. Retail Park (Aveiro - Oporto - Portugal)
- C.C. Retail Park (Evora - Portugal)
- C.C. Retail Park (Viseu - Portugal)
- C.C. Guimaraes (Guimaraes - Portugal)
- C.C. Paços da Ferreira (Paços da Ferreira - Portugal)
- C.C. Portimao (Portimao - Portugal)
- E-Leclerc (Lousada - Portugal)
- E-Leclerc (Loures - Portugal)
- E-Leclerc (Lagoa - Portugal)
- E-Leclerc (Barcelos - Portugal)
- Leroy Merlin (Amadora - Lisboa - Portugal)
- Lidl (Alcantara - Lisboa - Portugal)

EDIFICIOS INDUSTRIALES:

- C. logístico (Constantí - Tarragona)
- C. logístico (Telde - Las Palmas)
- C. logístico (Tarancón - Cuenca)
- C. logístico (Azuqueca de Henares - Guadalajara)
- C. logístico (Aranjuez - Madrid)
- C. logístico (Ribavellosa - Alava)
- C. logístico (Villadangos - León)
- C. logístico (Alcalá de Henares - Madrid)
- C. logístico (Zierbena - Vizcaya)
- C. logístico Puerta de Madrid (San Fernando de Henares - Madrid)
- Concesionario BMW (Salamanca)
- Fábrica Perfumerías Gal (Alcala de Henares - Madrid)
- Fábrica Zardoya - Otis (Madrid)

- Nave EADS - AIRBUS (Getafe - Madrid)
- Nave Farma León (Villaquimbre - León)
- Nave Ofiprix (Sant Boi de Llobregat - Barcelona)
- Nave SEAT - Skoda (Girona)
- Nave Suntechnics (Zaragoza)
- Nave Toyota (Sagunto - Valencia)
- Nave logística (Cheste - Valencia)
- Nave logística (Mejorada del Campo - Madrid)
- Nave logística (Ontigola - Toledo)
- Nave Logística Imaginarium (Zaragoza)
- Nave Logística Logista (Leganes - Madrid)
- Nave Logística Transjunior Logistics (Barajas - Madrid)
- Nave Logística TNT (Porte les Valence - Drome - Francia)

- Nave Peugeot (Saint Florentin - Aube - Francia)
- Fábrica Polipropilal (Viana do Castelo - Portugal)
- Nave Logística (Bugalhos - Portugal)
- Nave Logística E - Leclerc (Santarem - Portugal)
- Nave Eneconpor (Viana - Portugal)
- Stapples Office Center (Santa Maria de Feira - Portugal)

wide surfaces made with materials from danosa

DANOSA ESPAÑA

Factoría, Oficinas Centrales y Centro Logístico

Polígono Industrial Sector 9

Tel.: +34 949 888 210

Fax: +34 949 888 223

19290 FONTANAR - GUADALAJARA
ESPAÑA

DANOSA FRANCE, S.A.

23, Route de la Darse - Bât XIII A

Tel.: +33 (0) 141 941 890

Fax: +33 (0) 141 941 899

94380 BONNEUIL - SUR - MARNE
FRANCE

DANOSA PORTUGAL

Rua C, Edifício 125 - Piso 2 - Gabinete 15

Tel.: +351 218 402 411

Fax: +351 218 402 413

1700-800 LISBOA (Aeroporto Lisboa)
PORTUGAL

info: export@danosa.com

www.  .com



UNE-EN ISO 9001: 2000