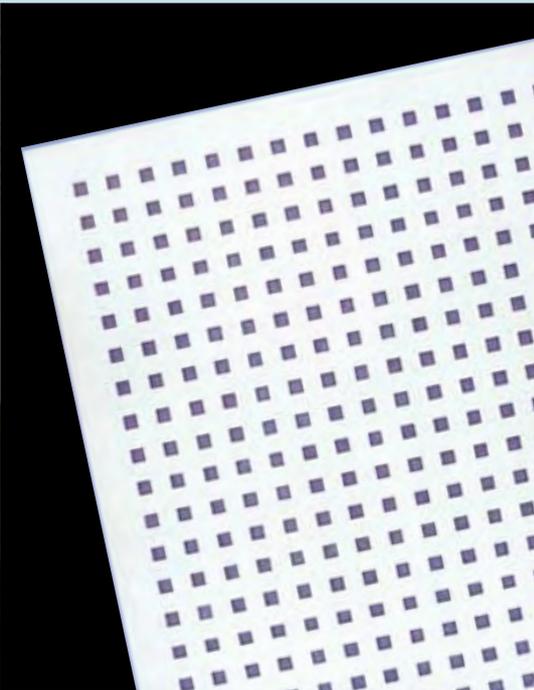


Expressive gypsum ceilings



danoline[®]
creating expressive ceilings
www.danoline.com

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How to use the index

All information in the index is general directions about the Danoline products. There may be project-specific details which have not been accounted for. It is a foregone conclusion that user's of Danoline data have technical building skills and that they have the usual project responsibility. Information on our website www.danoline.com is always up to date and applicable. Our technical service department is always at your disposal with further information and guidance.

Your ways of creating expressive ceilings made of plasterboard panels start here

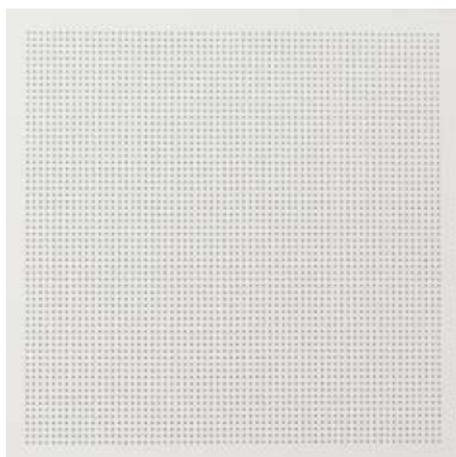
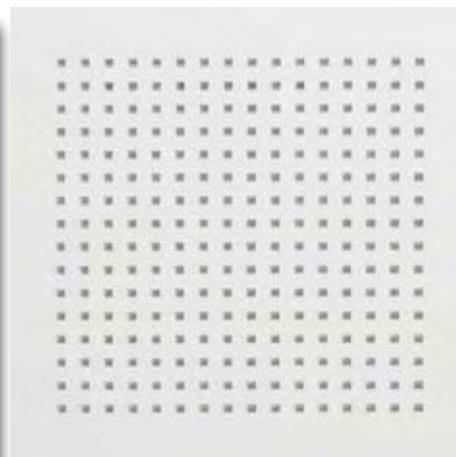
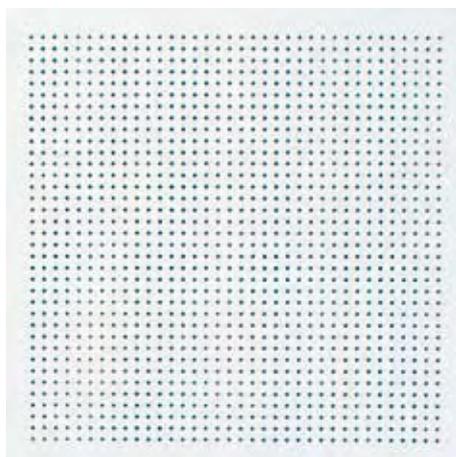
The difference between the ordinary and the unique may lie in the tiny details. The observer's feeling of harmony in a building, the surprise when his eye spots a solution that is slightly more beautiful than expected at first sight. Architecture is impressive when functionality blends with aesthetics and form a perfect whole.

All the elements of a building must form integral parts of the whole, allowing the expression of the architect's language of form and original intention. The ceiling must be characterised as a not quite inessential feature of the whole building. When dealing with plaster board ceilings Danoline's multiple resources are at your disposal any time. We are pleased to offer you a developing partnership any time to help you achieve your specifications and meet your wishes in terms of architectonic solutions. If you think Danoline as early as in the initial concept, you will benefit most from our experience and technical know-how. We are competent sparring partners who create individual products. Helping you turn your creative conceptions into implementible solutions would be a pleasure to us.

Plaster is a flexible material which can easily be moulded. In the Danoline ceilings we take advantage of the mouldable properties of the material by punching holes and patterns which add a different dimension of aesthetics to the plaster. At the same time this material offers a number of good properties which in their manner add to the building.

Plaster gives good opportunities for creating special/unique solutions that meet your specifications and wishes as to ceiling expression. At Danoline we stress continuous product development to ensure that we meet the continuous requirements of beautiful and persuasive solutions.

Plasterboards for the manufacture of Danoline ceilings have been developed by Knauf Danogips, the leading Scandinavian producer of plasterboards. Danoline's and Knauf Danogips' efforts within product development and production have secured our position as partners to any type of building project in Northern Europe.









*For good reasons plaster has been
the preferred material for
ceilings for centuries*

Plaster forms a natural part of modern building design, but as a material it dates back in history. For centuries plaster has been used to meet both functional and aesthetic requirements of buildings. Plaster has been used in different places as decorative ceilings in the beautiful Italian and French Renaissance palaces as for the pyramids in Pharaonic Egypt. Wherever it has been used, builders have had the ability to exploit its characteristic properties to create outstanding results.

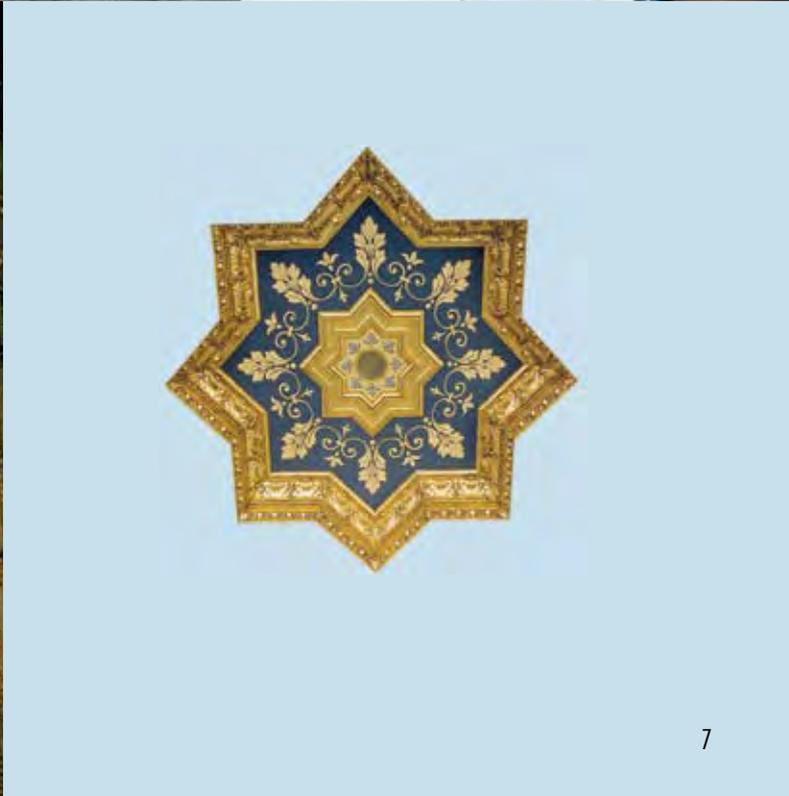
The method used to process gypsum is quite simple, and this is the most essential reason why it was known as a building material way back. The use of plaster found favour

in earnest in the antique Roman culture around the year 0 A.D. At that time many buildings were made in marble and then covered with a thin coat of plaster and painted in bright colours. At the same time the great flexibility and mouldability of the plaster meant that this material was widely used for stuccowork inside buildings. Plaster is suitable for detailing, and it was therefore used for the fine and artistic ornamentation and embellishments on walls and ceilings, which may be seen in Italian Baroque and Rococo architecture. This material allowed for the creation of reliefs and ornamentation which had an outstanding impact on the rooms, whereas their weight was unsubstantial.

In year 1775 French Lavoisier found the chemical formula for gypsum which paved the way for industrial processing of the material. Plaster is made from the gypsum stone mineral which is found naturally in Germany, France and Italy. Gypsum stone is converted into burnt gypsum via heating, crushing and mixing with water. The material then solidifies in the shape which it is in.



1165:
Architect: Semren Arkitektkontor, Göteborg
Project: Ungdoms bolig, Göteborg - Sweden
Product: Designpanel 1200





1276



1157



1290

Now our extensive assortment of plaster board panels affords endless design options

Smooth surfaces and clean lines are characteristics of contemporary beautiful, minimalist buildings and the simplistic expression of the plaster contributes to architectonic clarity. It is possible to create elements which recede into the background and do not distract attention from the architectonic expression of the room. With plaster the strict and minimalist expression is preserved and the extensive mouldability of the material also affords wide opportunities for creating individual solutions with a high degree of detailing.

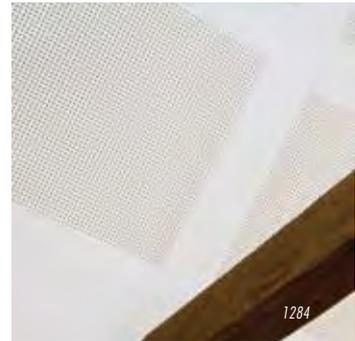
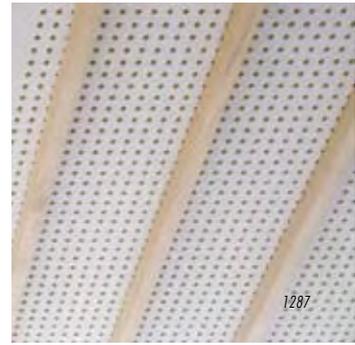
The great flexibility of the material, means that functionality and aesthetics can form a synthesis so the finish of the room becomes just as intended. With Danoline ceilings there are infinite combinations of expressions, as the surface of the plaster allows for the application of many types of paint, foils or punchings, so it may be

adapted fully to the expression of the room.

Beside the evident aesthetic advantages of using plaster, this material also offers a number of other properties which contribute favourably to the building. Gypsum is a natural material with a long life and it is environmentally friendly. Plaster can emit and adsorb vapour which makes it play an important part if the building is to have a good indoor climate.

Plaster also affords good acoustic properties. The different types of perforation offer varying properties in the form of sound absorption and reflection, in this way ceiling panels can tune the room and render fine acoustic conditions. The

reflection of light is also easily influenced by the use of plaster as the surface structure appears highly varied and with different reflective properties, depending on the type of paint applied.



1276:
Architect: Erik Eriksen, Gørlose
Project: Daginstitution, Maglekærvej, Gørlose - Denmark
Product: Danopanel - G1, R

1157:
Architect: MA Arkitekter, Borås
Project: Högskolan i Borås - Sweden
Product: Corridor Swing 600 - Q1

1290:
Architect: S og I arkitekter
Project: OBH Gruppen, Odense - Denmark
Product: Cantur 600 - M1, Designpanel 900 - M1F

1287:
Architect: Hune & Elkjær
Project: Korsvang, Assens - Denmark
Product: Tectopanel - G1

1284:
Architect: Rudolf Lolk A/S
Project: Arkitektfirmaet Rudolf Lolk A/S, Esbjerg - Denmark
Product: Designpanel 1200 - M1F

1137:
Architect: Wingård Arkitekt kontor
Project: Astra Zeneca tingshuset, Göteborg - Sweden
Product: Mitex - R

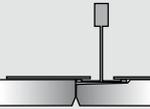




A photograph of a modern building's interior atrium. The space is characterized by a large, multi-level glass skylight that allows natural light to filter in. The walls are white, and the floors are made of light-colored wood. A prominent feature is a blue glass elevator on the left side. The building has multiple levels with large windows and glass railings. The overall atmosphere is bright and airy.

Products

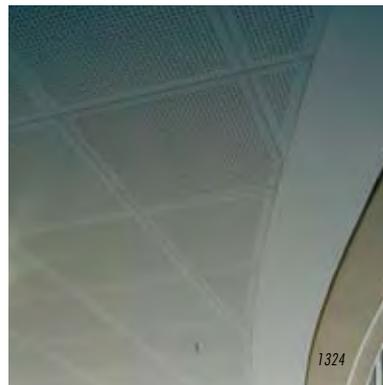




Expression and acoustics enhanced by the subtle perforation on Contur

Contur gives the appearance of a monolithic surface finished with fine line markings. The perforations on Contur appear more distinctly than on other types of ceilings and aesthetically, therefore, will accentuate the acoustic solution selected.

Choosing fixed dados, arches or folded plaster achieves an elegant framework to the ceiling. Contur produces a concealed grid appearance, and is similar to Danopanel and Tectopanel.



1149:
 Architect: Lijewall Arkitekter, Göteborg
 Project: Biotechhuset, Göteborg - Sweden
 Product: Designpanel 900 - M2F

1324:
 Architect: Dall & Lindhardtsen
 Project: Nærum Gymnasium - Denmark
 Product: Contur 600 - G1

1278:
 Architect: Dall & Lindhardtsen
 Project: Halbæk Sygehus - Denmark
 Product: Contur 600 - G1

1223:
 Architect: Sisustusarkkitehdit Gullstén-Inkinen Oy
 Project: Teknos Oy, Rajamäki, paint factory - Finland
 Product: Contur 600 - G1



Product

Perforation

Globe: G1

Quadril: Q1

Micro: M1

Regula: R

Other perforation patterns are manufactured to order. Please see section Perforations.

Sizes

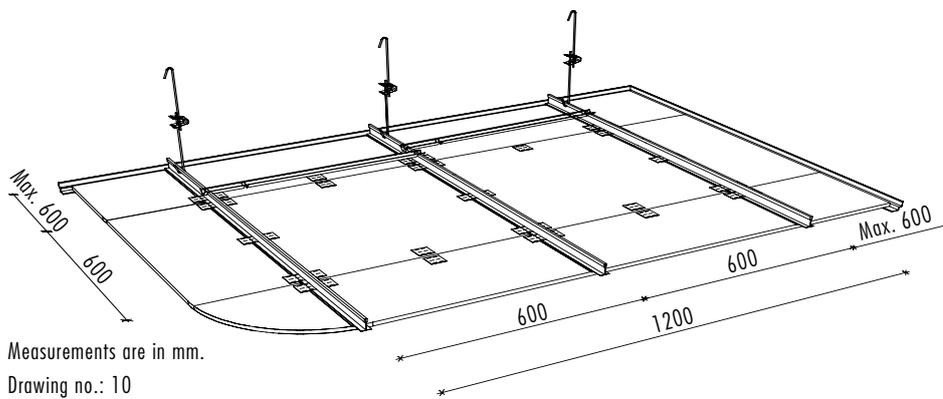
600 x 600 x 12.5 mm

625 x 625 x 12.5 mm

Other sizes on request.

Draft specification

Danoline Contur 600, M1, 600 x 600 x 12.5 mm, White painted as standard, for concealed 24 mm suspension systems.



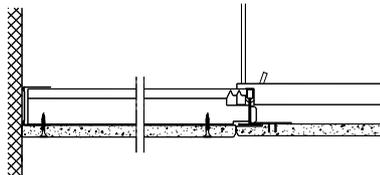
Measurements are in mm.

Drawing no.: 10

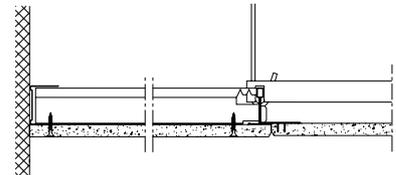
Suspension system

The spacer bars shall be fixed max. 100 mm from the hangers. At joints of main T-runners, hangers shall be fixed. The suspension hanger must be fixed to the main runner at 1500 mm centres and not less than 100 mm from the wall angle.

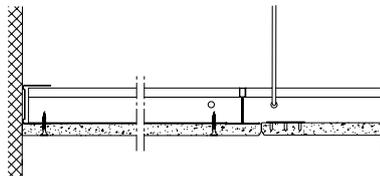
Detail



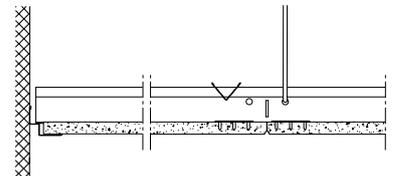
Cross section 1,
Contur 600 with painted fix frieze of gypsum board
screw-fixed on 35 mm T-profile.
Drawing no.: 10.2.001



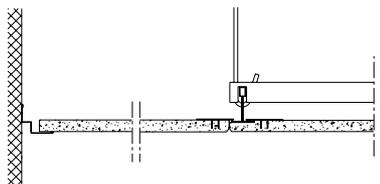
Cross section 2,
Contur 600 with painted fix frieze of gypsum board
screw-fixed on 35 mm T-profile.
Drawing no.: 10.2.002



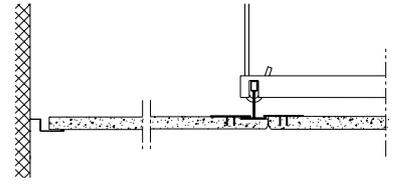
Longitudinal section,
Contur 600 with painted fix frieze of gypsum board
screw-fixed on 35 mm T-profile.
Drawing no.: 10.2.003



Longitudinal section,
Contur 600, with shadow edge trim.
Drawing no.: 10.2.004



Cross section 3,
Contur 600, with shadow edge trim.
Drawing no.: 10.2.005



Cross section 4,
Contur 600, with shadow edge trim.
Drawing no.: 10.2.006



Components

Components

Suspension grid, hangers etc. are made from galvanised steel. The exposed sections are painted in CMC 001 Global white (equivalent to NCS 0902 G48Y).

MAIN RUNNER

Part no.	W x L x H
85030	24 x 3600 x 38



SPACER BAR

Part no.	L
8260013	600
8269913	300



SHADOW LINE

Part no.	W x L x H
1459	12 + 19 x 3050 x 10 + 24



WALL ANGLE

Part no.	W x L x H
1438	19 x 3050 x 32



ADJUSTABLE HANGERS

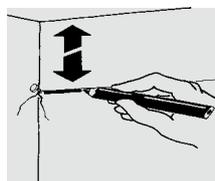
Part no.	Length
11022	120-200
11030-99	200-270
11030	250-320
11040	250-440
11070	380-690
11090	500-940
11120	750-1210
11150	750-1440
11200	1000-1940



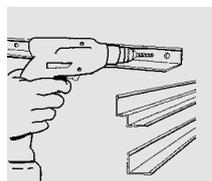
Installation

Storage & Installation

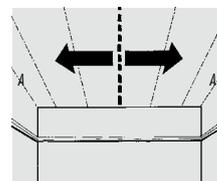
Storage and installation should not be carried out in rooms with a relative humidity greater than 70%, unless otherwise stated, see section Moisture. It is equally important to take account of other work such as technical installations before installation of the ceiling is carried out. It is important for the end result that the ceiling tiles are installed at right angles, this makes installation quicker and easier. It will facilitate inspections to installations above the ceiling as removal of the tiles will be easier. It is not recommended that ceilings are installed at a temperature consistently over 50°C.



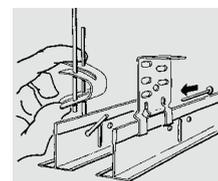
Setting out
The position of the wall trim should be marked on the walls and columns. The bottom flange of the perimeter trim is the level of the proposed ceiling.



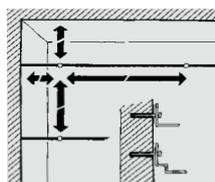
Wall Trim
The wall angle should be fixed at max. 300 mm centres. At corners the trim should be mitred accurately.



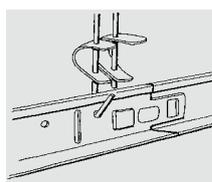
Layout
Generally start setting out from the centre of the room ensuring that perimeter edge cuts are of equal size on both sides of the room. The positioning of light fittings, ventilation units and sprinkler heads should be considered at this stage.



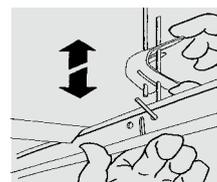
Suspension Hangers
The adjustable hangers should be fixed with eye screws, angle brackets or similar. If direct hangers are used they should be screwed to the soffit. It is important that the suspension is plumb. The main runners are fixed parallel at 300 mm or 600 mm centres.



Main runner
The suspension hanger must be fixed to the main runner at 1500 mm centres and not less than 100 mm from the wall angle.



Joining the Main Runners
The main runners have interlocking tongues at both ends enabling them to be joined together, an additional hanger must be used at this point.



Checking the suspension system and spacer bar
When the suspension system is installed, the levels and angles should be checked and if necessary the hangers adjusted. The spacer bar should be installed at a maximum of 100 mm from the hangers and with a distance of max. 1500 mm c/c.



Tiles
The level of the tiles should be checked when the installation is completed. Gloves should be worn at all times when handling the tiles and a saw or knife used to cut the tiles to size.

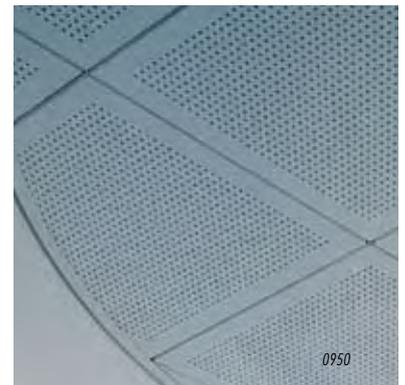




Geometrical characteristics emphasized by the sharp edges of the individual Linear board

Linear is perceived as floating, self-contained panels, defined by sharp, almost navigationally continuous alignments. Diagonal to the alignments, the ceiling gives the appearance of large interconnected surfaces. The ceiling is well-suited to renovating existing ceilings and on account of its styling is very simple to mount and demount. Linear almost covers the grid system. This has the advantage of concealing old grid.

The option of having an installation height of just 63 mm ensures greater floor-to-ceiling height, thus providing improved space for engineering installations. In addition, the ceiling can be painted while actually in the rail system. The design and assembly clips prevent the board from being pushed up out of the rail system during cleaning and painting.



1124:
Architect: KHR Arkitekter
Project: Arlanda Pir F/S:an - Arlandaflygplats - Sweden
Product: Linear 600 - M1

0950:
Architect: CF Møller
Project: Vejle Sygehus - Denmark
Product: Linear 600 - G1

Product

Perforation

Globe: G1

Quadril: Q1

Micro: M1

Regula: R

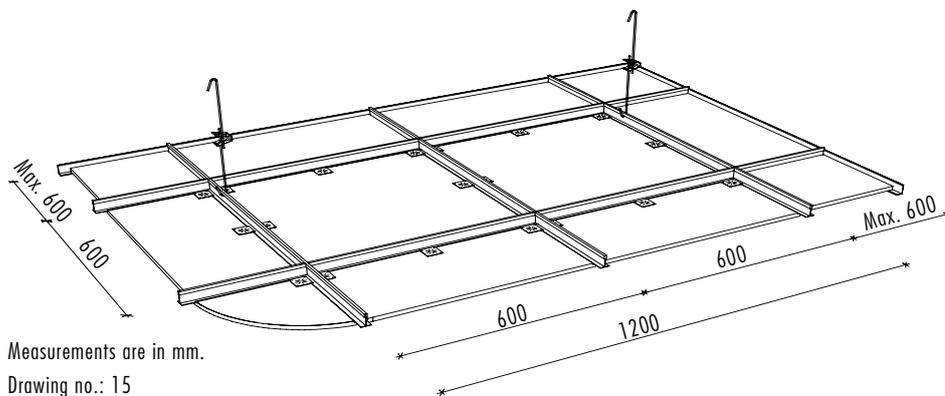
Other perforation patterns are manufactured to order. Please see section Perforations.

Sizes

600 x 600 x 12.5 mm

Draft specification,

Danoline Linear 600, M1, 600 x 600 x 12.5 mm, White painted as standard, for exposed 24 mm suspension systems.



Measurements are in mm.

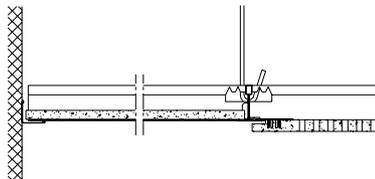
Drawing no.: 15

Suspension system

Cut cross-Tees may not exceed 600 mm, and shall be made from 1200 mm cross-Tee. The suspension hanger must be fixed to the main runner at 1200 mm centres and not less than 400 mm from the wall angle.

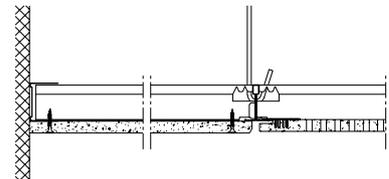
Danoline recommends the use of suspension systems with straight connections between main runners and cross tees, so any differences in levels are avoided, i.e. the suspension system's components are all at the same level.

Detail



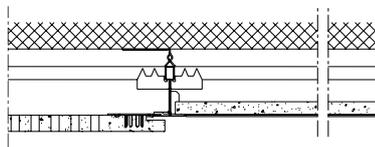
Linear 600, with frieze of Plaza 600 Regula, plain.

Drawing no.: 15.2.004



Linear 600 with painted fix frieze of gypsum board screw-fixed on 35 mm T-profile.

Drawing no.: 15.2.005



Linear 600, with intermediate frieze of Plaza 600 Regula.

Drawing no.: 15.2.008



Components

Components

Suspension grid, hangers etc. are made from galvanised steel. The exposed sections are painted in CMC 001 Global white (equivalent to NCS 0902 G48Y).

MAIN RUNNER

Part no.	W x L x H
85030	24 x 3600 x 38

CROSS TEE

Part no.	W x L x H
85130	24 x 300 x 38
85230	24 x 600 x 38
85430	24 x 1200 x 38

SHADOW LINE

Part no.	W x L x H
1459	12 + 19 x 3050 x 10 + 24

WALL ANGLE

Part no.	W x L x H
1420	24 x 3050 x 24



ADJUSTABLE HANGERS

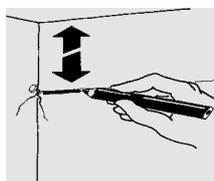
Part no.	Length
11022	120-200
11030-99	200-270
11030	250-320
11040	250-440
11070	380-690
11090	500-940
11120	750-1210
11150	750-1440
11200	1000-1940



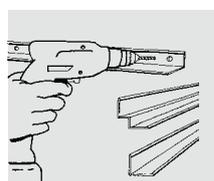
Installation

Storage & Installation

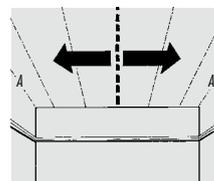
Storage and installation should not be carried out in rooms with a relative humidity greater than 70%, unless otherwise stated, see section Moisture. It is equally important to take account of other work such as technical installations before installation of the ceiling is carried out. It is important for the end result that the ceiling tiles are installed at right angles, this makes installation quicker and easier. It will facilitate inspections to installations above the ceiling as removal of the tiles will be easier. It is not recommended that ceilings are installed at a temperature consistently over 50°C.



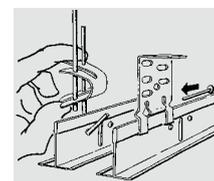
Setting out
The position of the wall trim should be marked on the walls and columns. The bottom flange of the perimeter trim is the level of the proposed ceiling.
Note: The underside of the finished ceiling will be 11 mm lower than the underside of the wall trim.



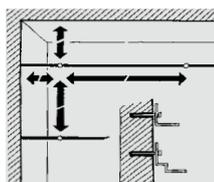
Wall Trim
The wall angle should be fixed at max. 300 mm centres. At corners the trim should be mitred accurately.



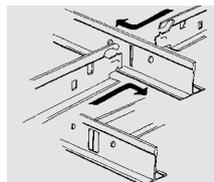
Layout
Generally start setting out from the centre of the room ensuring that perimeter edge cuts are of equal size on both sides of the room.
The positioning of light fittings, ventilation units and sprinkler heads should be considered at this stage.



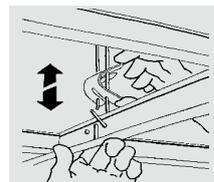
Suspension Hangers
The adjustable hangers should be fixed with eye screws, brackets or similar. If direct hangers are used they should be screwed to the soffit. Start with the first hanger not more than 400 mm from the wall in the longitudinal direction of the main runner, and then at a maximum of 1200 mm centres. If additional fixtures are fixed to the suspension system, extra hangers should be used.



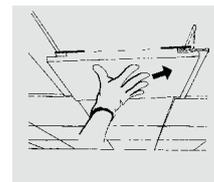
Main runner
The profiles are fixed in parallel with centres of 1200 mm, or 600 mm. The main runners have interlocking tongues in both ends and can therefore be locked together.



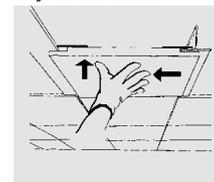
Cross-Tees
The cross-tees are installed by inserting snap-in tongues into the correct slot on the stalk of the main runner and are locked into position by a slight downward pressure. If the cross-tee is not continued into the adjoining module, the tongue has to be split and bent flat.



Checking the Suspension System
When the suspension system is installed, the levels and angles should be checked and if necessary the hangers adjusted.

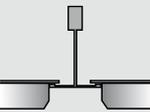


Tiles
The tiles are fitted into the system from below, with an upward movement.
Slide in one side of the tile until it is supported by the grid, bring the tile level and then slide in the opposite side.
To demount tiles apply upward pressure. Slide the tile out, move it forward, to the side and then let the tile drop below.
Gloves should be worn at all times when handling the tiles and a saw or knife used to cut the tiles to size.





Markant 500 and Markant 600



Classical ceiling solution achieved with Markant, 600 modules allow upgrading to swing function

Markant is the classic ceiling solution, featuring strong shaded markings between ceiling panels.

The ceiling will often be seen fitted into a pattern adapted to the shape of the room, thus achieving a lightness and dynamic of design.

The bevelled edges of the ceiling panels ensure easy, straightforward assembly, and combined with recessing into the suspension system this provides a directionally stable ceiling.



1269:
Architect: Dissing og Weiting
Project: Rådhusparken, Glostrup - Denmark
Product: Markant 600 - M1

9999:
Architect: Interoc, Stockholm
Project: Konferensrum Interoc, Stockholm - Sweden
Product: Markant 600, Swing

0990:
Architect: Fich og Bengaard
Project: Knud Engsig A/S, Aalborg - Denmark
Product: Markant 500 - G1

Product

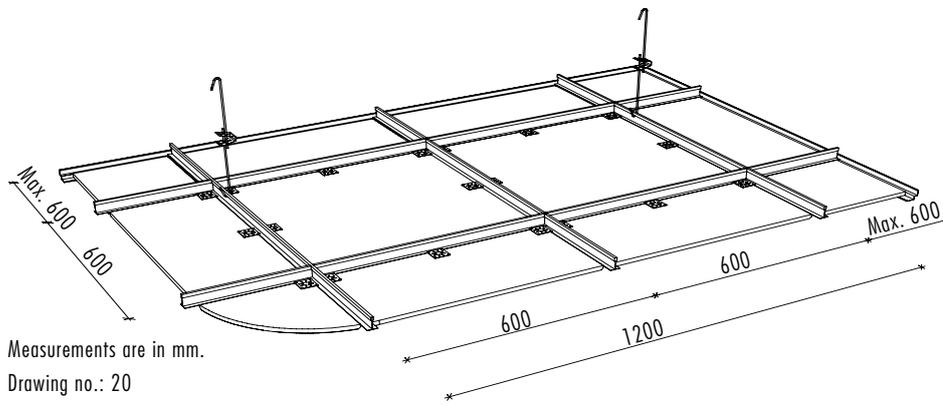
Perforation

Globe: G1
 Quadril: Q1
 Micro: M1
 Regula: R
 Other perforation patterns are manufactured to order. Please see section Perforations..

Sizes
 600 x 600 x 12.5 mm
 600 x 1200 x 12.5 mm
 625 x 625 x 12.5 mm
 625 x 1250 x 12.5 mm
 Other sizes on request.
 600 x 600 x 12.5 with swing function, S24

Draft specification,

Danoline Markant 600, G1, 600 x 600 x 12.5 mm, (12.5 x 610 x 610 mm) White painted as standard, for exposed suspension systems 15/24 mm for module 600 (24 mm for module 610).

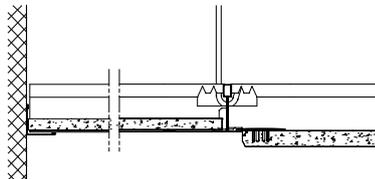


Measurements are in mm.
 Drawing no.: 20

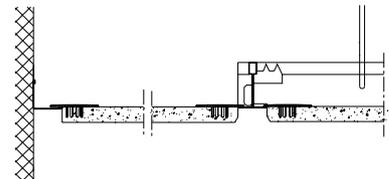
Suspension system

Cut cross-Tees may not exceed 600 mm, and shall be made from 1200 mm cross-Tees. The suspension hanger must be fixed to the main runner at 1200 mm centres and not less than 400 mm from the wall angle.

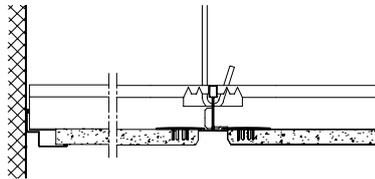
Detail



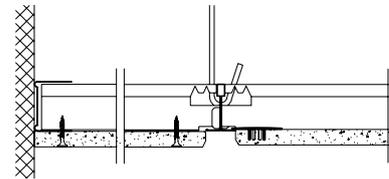
Markant 600, with frieze of Plaza 600 Regula.
 Drawing no.: 20.2.003



Markant 600, with wall trim.
 Drawing no.: 20.2.011



Markant 600, with shadow edge trim.
 Drawing no.: 20.2.004



Markant 600 with painted fix frieze of gypsum board screw-fixed on 35 mm T-profile.
 Drawing no.: 20.2.002



Components

Components

Suspension grid, hangers etc. are made from galvanised steel. The exposed sections are painted in CMC 001 Global white (equivalent to NCS 0902 G48Y).

MAIN RUNNER

Part no. W x L x H
85030 24 x 3600 x 38



CROSS TEE

Part no. W x L x H
85130 24 x 300 x 38
85230 24 x 600 x 38
85430 24 x 1200 x 38



WALL ANGLE

Part no. W x L x H
1420 24 x 3050 x 24



SHADOW LINE

EDGE TRIM
Part no. W x L x H
1459 10 + 24 x 3050 x 12 + 19



MAIN RUNNER

Part no. W x L x H
750030 15 x 3000 x 38



CROSS TEE

Part no. W x L x H
751130 15 x 300 x 38
751230 15 x 600 x 38
751430 15 x 1200 x 38



WALL ANGLE

Part no. W x L x H
1438 19 x 3050 x 32



ADJUSTABLE HANGERS

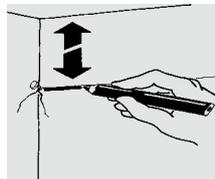
Part no.	Length
11022	120-200
11030-99	200-270
11030	250-320
11040	250-440
11070	380-690
11090	500-940
11120	750-1210
11150	750-1440
11200	1000-1940



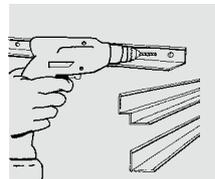
Installation

Storage & Installation

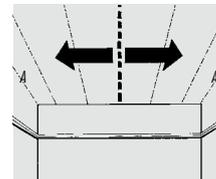
Storage and installation should not be carried out in rooms with a relative humidity greater than 70%, unless otherwise stated, see section Moisture. It is equally important to take account of other work such as technical installations before installation of the ceiling is carried out. It is important for the end result that the ceiling tiles are installed at right angles, this makes installation quicker and easier. It will facilitate inspections to installations above the ceiling as removal of the tiles will be easier. It is not recommended that ceilings are installed at a temperature consistently over 50°C.



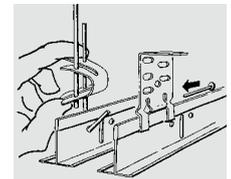
Setting out
The position of the wall trim should be marked on the walls and columns. The bottom flange of the perimeter trim is the level of the proposed ceiling.



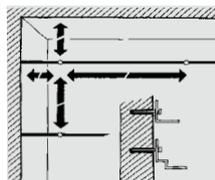
Wall Trim
The perimeter trim is fixed to the wall at maximum 300 mm centres. At corners the angle should be mitred accurately.



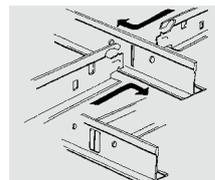
Layout
Generally start setting out from the centre of the room ensuring that perimeter edge cuts are of equal size on both sides of the room. The positioning of light fittings, ventilation units and sprinkler heads should be considered at this stage.



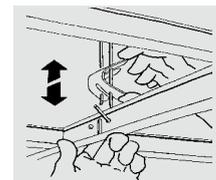
Suspension Hangers
The adjustable hangers should be fixed with eye screws, angle brackets or similar. If direct hangers are used they should be screwed to the soffit. Start with the first hanger not more than 400 mm from the wall in the longitudinal direction of the main runner, and then at a maximum of 1200 mm centres. If additional fixtures are fixed to the suspension system, extra hangers should be used.



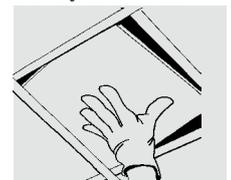
Main runner
The main runners are installed parallel to each other at distances 1200 mm, or 600 mm, c/c depending on system module. The main runners have interlocking tongues in both ends, and can be locked together.



Cross-Tees
The cross-tees are installed by inserting snap-in tongues into the correct slot on the stalk of the main runner and are locked into position by a slight downward pressure. If the cross-tee is not continued into the adjoining module, the tongue has to be split and bent flat.



Checking the Suspension System
When the suspension system is installed, the levels and angles should be checked and if necessary the hangers adjusted.



Tiles
The level of the tiles should be checked when the installation is completed. Gloves should be worn at all times when handling the tiles and a saw or knife used to cut the tiles to size.

Product

Perforation

Globe: G1

Quadril: Q1

Micro: M1

Regula: R

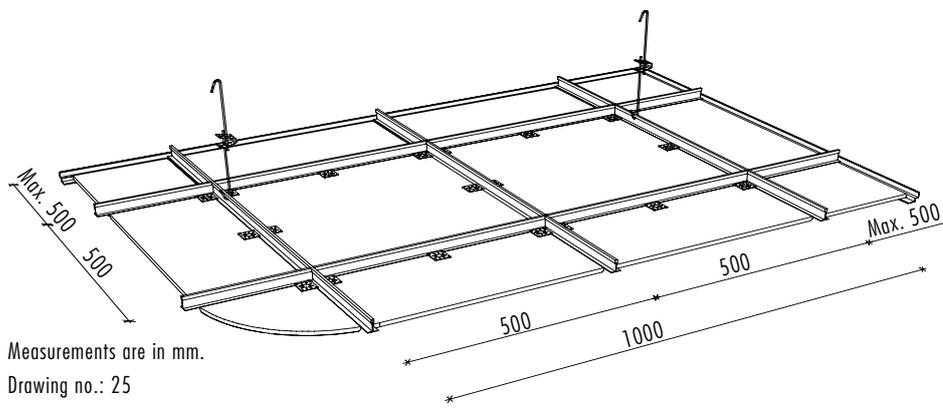
Other perforation patterns are manufactured to order. Please see section Perforations.

Sizes

500 x 500 x 9.5 mm

Draft specification,

Danoline Markant 500, G1, 500 x 500 x 9.5 mm, White painted as standard, for exposed 15 mm suspension systems.



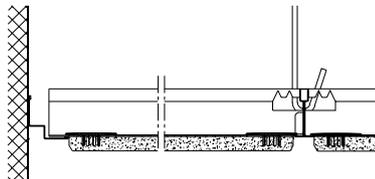
Measurements are in mm.

Drawing no.: 25

Suspension system

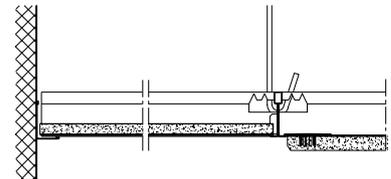
Cut cross-Tees may not exceed 500 mm, and shall be made from 1000 mm cross-Tees. The suspension hanger must be fixed to the main runner at 1000 mm centres and not less than 400 mm from the wall angle.

Detail



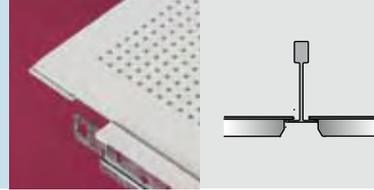
Markant 500 with perimeter of cut Markant Regula.

Drawing no.: 25.2.001



Markant 500 with perimeter of Plaza Regula.

Drawing no.: 25.2.002



Components

Components

Suspension grid, hangers etc. are made from galvanised steel. The exposed sections are painted in CMC 001 Global white (equivalent to NCS 0902 G48Y).

MAIN RUNNER

Part no.	W x L x H
750010	15 x 3000 x 38



CROSS TEE

Part no.	W x L x H
751210	15 x 500 x 38
751410	15 x 1000 x 38



WALL ANGLE

Part no.	W x L x H
1438	19 x 3050 x 32



SHADOW LINE

EDGE TRIM	W x L x H
Part no.	12 + 19 x 3050 x 10 + 24
1459	



ADJUSTABLE HANGERS

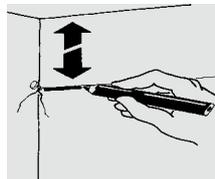
Part no.	Length
11022	120-200
11030-99	200-270
11030	250-320
11040	250-440
11070	380-690
11090	500-940
11120	750-1210
11150	750-1440
11200	1000-1940



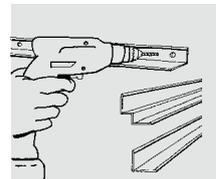
Installation

Storage & Installation

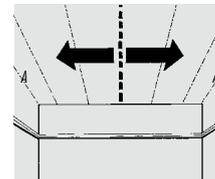
Storage and installation should not be carried out in rooms with a relative humidity greater than 70%, unless otherwise stated, see section Moisture. It is equally important to take account of other work such as technical installations before installation of the ceiling is carried out. It is important for the end result that the ceiling tiles are installed at right angles, this makes installation quicker and easier. It will facilitate inspections to installations above the ceiling as removal of the tiles will be easier. It is not recommended that ceilings are installed at a temperature consistently over 50°C.



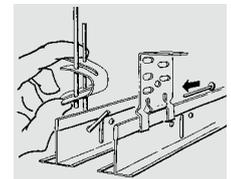
Setting out
The position of the wall trim should be marked on the walls and columns. The bottom flange of the perimeter trim is the level of the proposed ceiling.



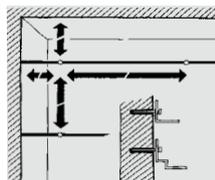
Wall Trim
The perimeter trim is fixed to the wall at maximum 300mm centres. At corners the angle should be mitred accurately.



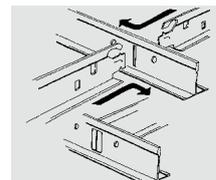
Layout
Generally start setting out from the centre of the room ensuring that perimeter edge cuts are of equal size on both sides of the room. The positioning of light fittings, ventilation units and sprinkler heads should be considered at this stage.



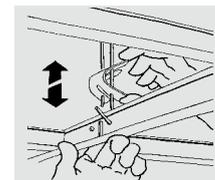
Suspension Hangers
The adjustable hangers should be fixed with eye screws, angle brackets or similar. If direct hangers are used they should be screwed to the soffit. Start with the first hanger not more than 400 mm from the wall in the longitudinal direction of the main runner, and then at a maximum of 1000mm centres. If additional fixtures are fixed to the suspension system, extra hangers should be used.



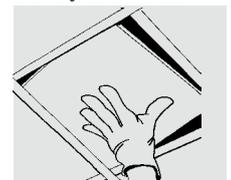
Main runner
The main runners are installed parallel to each other at distances 1000 mm, or 500 mm c/c depending on system module. The main runners have interlocking tongues in both ends, and can be locked together.



Cross-Tees
The cross-tees are installed by inserting snap-in tongues into the correct slot on the stalk of the main runner and are locked into position by a slight downward pressure. If the cross-tee is not continued into the adjoining module, the tongue has to be split and bent flat.

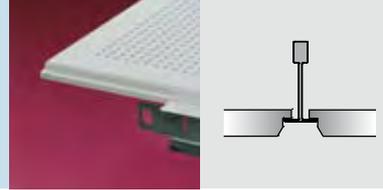


Checking the Suspension System
When the suspension system is installed, the levels and angles should be checked and if necessary the hangers adjusted.



Tiles
The level of the tiles should be checked when the installation is completed. Gloves should be worn at all times when handling the tiles and a saw or knife used to cut the tiles to size.

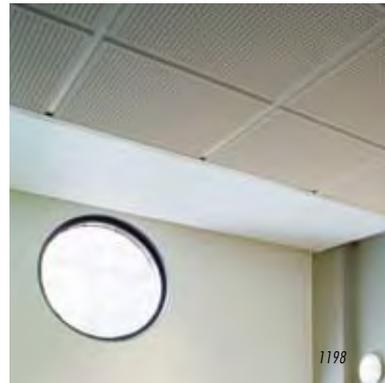




Easy and effortless performance secured by the geometrical characteristics of Belgravia

Belgravia is the ceiling with a grid system that is semi-recessed. Supplied with tegular and bevelled edges, the tiles guarantee a very directionally stable ceiling and are less sensitive to damaging the edges.

As they are being installed, they fall into place in the suspension system with distinct ease and simplicity.



1201:
Architect: Arkkitehtitoimisto Larkas & Laine Oy
Project: Kontori bygning, Oulokumpu - Finland
Product: Belgravia 600 - Stardust

1198:
Architect: Suunnittelukeskus Oy
Project: Sygehus, Kerava - Finland
Product: Belgravia 600

1131:
Architect: MA Arkitekter Barås
Project: Ählenshuset, Barås - Sweden
Product: Belgravia 600 - M1



Product

Perforation

Globe: G1

Quadril: Q1

Micro: M1

Regula: R

Other perforation patterns are manufactured to order. Please see section Perforations.

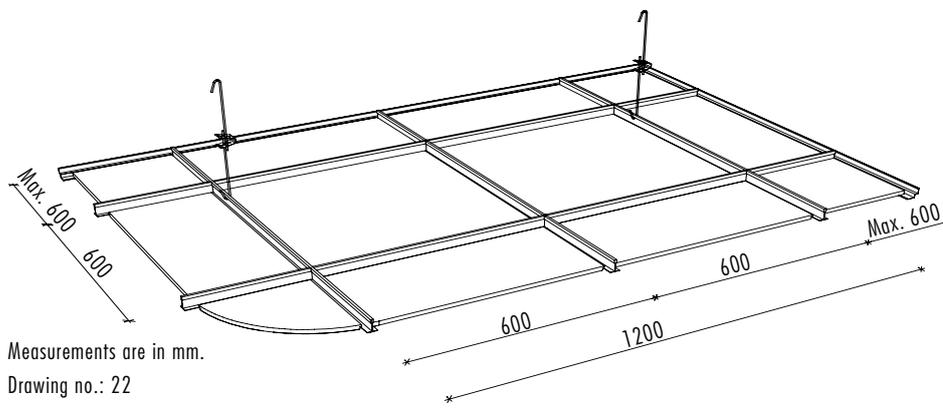
Sizes

600 x 600 x 12.5 mm

625 x 625 x 12.5 mm

Draft specification

Danoline Belgravia 600, M1, 600 x 600 x 12.5 mm, (610 x 610 x 12.5 mm) white painted as standard, for exposed suspension systems 15 mm system for module 600 (24 mm system for module 610).



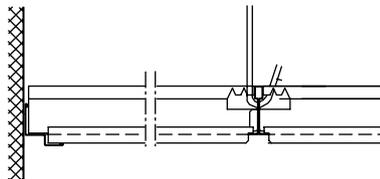
Measurements are in mm.

Drawing no.: 22

Suspension system

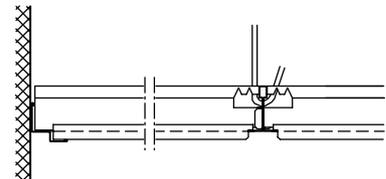
Cut cross-Tees may not exceed 600 mm, and shall be made from 1200 mm cross-Tees. The suspension hanger must be fixed to the main runner at 1200 mm centres and not less than 400 mm from the wall angle.

Detail



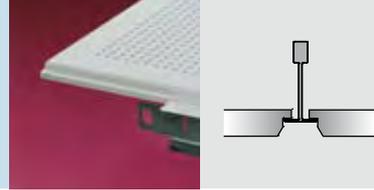
Belgravia 600, with shadow line edge trim - S15

Drawing no.: 22.2.004



Belgravia 600, with shadow line edge trim - S24

Drawing no.: 22.2.005



Components

Components

Suspension grid, hangers etc. are made from galvanised steel. The exposed sections are painted in CMC 001 Global white (equivalent to NCS 0902 G48Y). Suspension grid available in ultraline, contact technical department.

MAIN RUNNER

Part no. 750030
W x L x H 15 x 3000 x 38



CROSS TEE

Part no. 751130 15 x 300 x 38
751230 15 x 600 x 38
751430 15 x 1200 x 38



WALL ANGLE

Part no. 1438
B x L x H 19 x 3050 x 32



SHADOW LINE

EDGE TRIM
Part no. 1466
W x L x H 15 + 15 x 3050 x 8 + 25



MAIN RUNNER

Part no. 85030
W x L x H 24 x 3600 x 38



CROSS TEE

Part no. 85130 24 x 300 x 38
85230 24 x 600 x 38
85430 24 x 1200 x 38



WALL ANGLE

Part no. 1420
B x L x H 24 x 3050 x 24



ADJUSTABLE HANGERS

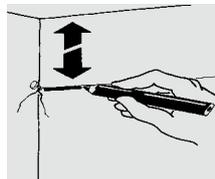
Part no.	Length
11022	120-200
11030-99	200-270
11030	250-320
11040	250-440
11070	380-690
11090	500-940
11120	750-1210
11150	750-1440
11200	1000-1940



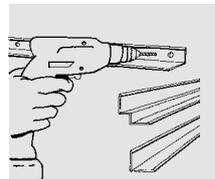
Installation

Storage & Installation

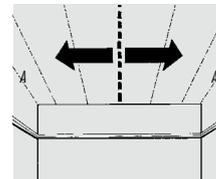
Storage and installation should not be carried out in rooms with a relative humidity greater than 70%, unless otherwise stated, see section Moisture. It is equally important to take account of other work such as technical installations before installation of the ceiling is carried out. It is important for the end result that the ceiling tiles are installed at right angles, this also makes installation quicker and easier. It will also be easier to carry out inspections to installations above the ceiling as removal of the tiles will be easier. It is not recommended that ceilings are installed at a temperature consistently over 50°C.



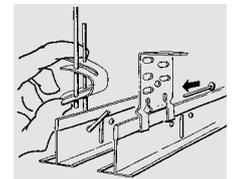
Setting out
The position of the wall trim should be marked on the walls and columns. The bottom flange of the perimeter trim is the level of the proposed ceiling.



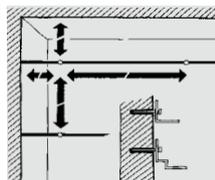
Wall Trim
The perimeter trim is fixed to the wall at maximum 300 mm centres. At corners the angle should be mitred accurately.



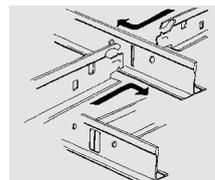
Layout
Generally start setting out from the centre of the room ensuring that perimeter edge cuts are of equal size on both sides of the room. The positioning of light fittings, ventilation units and sprinkler heads should be considered at this stage.



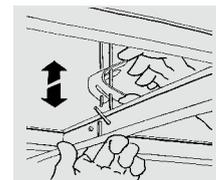
Suspension Hangers
The adjustable hangers should be fixed with eye screws, angle brackets or similar. If direct hangers are used they should be screwed to the soffit. Start with the first hanger not more than 400 mm from the wall in the longitudinal direction of the main runner, and then at a maximum of 1200 mm centres. If additional fixtures are fixed to the suspension system, extra hangers should be used.



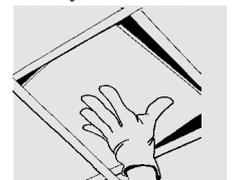
Main runner
The main runners are installed parallel to each others at distances 1200 mm, or 600 mm, c/c depending on system module. The main runners have interlocking tongues in both ends, and can be locked together.



Cross-Tees
The cross-tees are installed by inserting snap-in tongues into the correct slot on the stalk of the main runner and are locked into position by a slight downward pressure. If the cross-tee is not continued into the adjoining module, the tongue has to be split and bent flat.

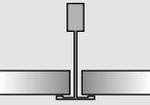


Checking the Suspension System
When the suspension system is installed, the levels and angles should be checked and if necessary the hangers adjusted.



Tiles
The level of the tiles should be checked when the installation is completed. Gloves should be worn at all times when handling the tiles and a saw or knife used to cut the tiles to size.





Plaza is the simple design which can be combined with consistent perforations

The setting of a Plaza ceiling is maybe best highlighted by using a narrow grid system.

Plaza 600 is fast and easy to mount and adapt, as all edges remain hidden above the grid system.

Plaza 600 is often used as a frieze/margin panel for Markant and Linear. Plaza 600 combines the qualities of gypsum with favourable pricing.



1211



1210

1317:
Architect: Initiative in Design
Project: Sir Williams Perkins School - UK
Product: Plaza 600 - M1

1210, 1211, 1212:
Architect: H & M Arkkitehdit Oy
Project: School Veikkola - Finland
Product: Plaza 600 - M1



1212

Product

Perforation

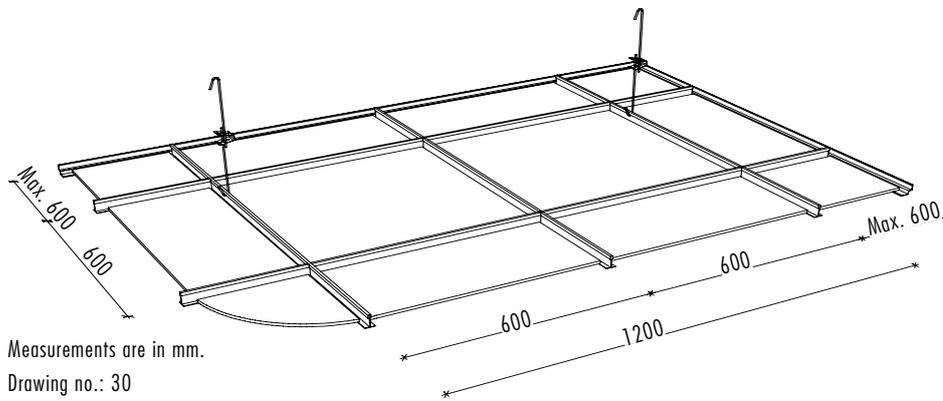
Globe: G1
 Quadril: Q1
 Micro: M1
 Regula: R
 Other perforation patterns are manufactured to order. Please see section Perforations.

Sizes

600 x 600 x 9.5 mm
 600 x 1200 x 9.5 mm
 600 x 600 x 12.5 mm
 600 x 1200 x 12.5 mm
 625 x 625 x 12.5 mm
 625 x 1250 x 12.5 mm Other sizes on request.

Draft specification,

Danoline Plaza 600, M1, 600 x 600 x 9.5 mm, (610 x 610 x 9.5 mm) White painted as standard, for exposed suspension systems 15/24 mm system for module 600 (15/24 mm system for module 610)

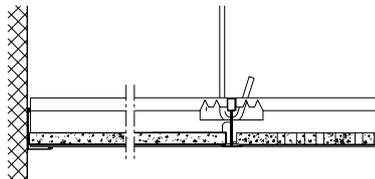


Suspension system

Cut cross-Tees may not exceed 600 mm, and shall be made from 1200 mm cross-Tees. The suspension hanger must be fixed to the main runner at 1200 mm centres and not less than 400 mm from the wall angle.

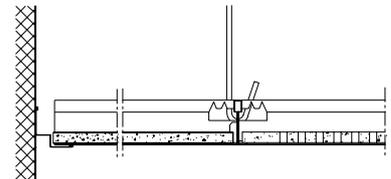
Danoline recommends the use of suspension systems with straight connections between main runners and cross tees, so any differences in levels are avoided, i.e. the suspension system's components are all in the same level.

Detail



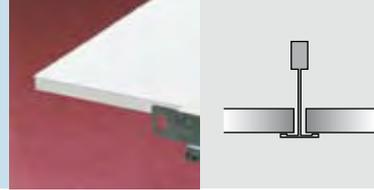
Plaza 600 with wall trim.

Drawing no.: 30.2.001



Plaza 600 with shadow line edge trim.

Drawing no.: 30.2.002



Components

Components

Suspension grid, hangers etc. are made from galvanised steel. The exposed sections are painted in CMC 001 Global white (equivalent to NCS 0902 G48Y).

MAIN RUNNER

Part no.	W x L x H
750030	15 x 3000 x 38

CROSS TEE

Part no.	W x L x H
751130	15 x 300 x 38
751230	15 x 600 x 38
751430	15 x 1200 x 38

WALL ANGLE

Part no.	B x L x H
1438	19 x 3050 x 32

SHADOW LINE

EDGE TRIM	W x L x H
Part no.	12 + 19 x 3050 x 10 + 24
1459	



ADJUSTABLE HANGERS

Part no.	Length
11022	120-200
11030-99	200-270
11030	250-320
11040	250-440
11070	380-690
11090	500-940
11120	750-1210
11150	750-1440
11200	1000-1940

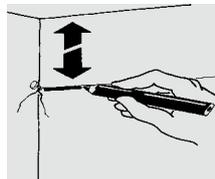


Alternative suspension S24 see Markant 600.

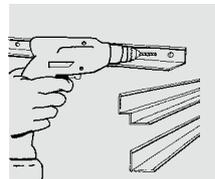
Installation

Storage & Installation

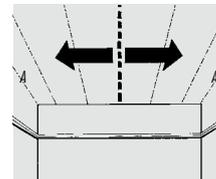
Storage and installation should not be carried out in rooms with a relative humidity greater than 70%, unless otherwise stated, see section Moisture. It is equally important to take account of other work such as technical installations before installation of the ceiling is carried out. It is important for the end result that the ceiling tiles are installed at right angles, this makes installation quicker and easier. It will facilitate inspections to installations above the ceiling as removal of the tiles will be easier. It is not recommended that ceilings are installed at a temperature consistently over 50°C.



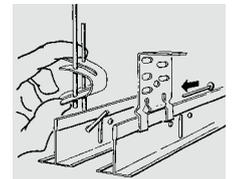
Setting out
The position of the wall trim should be marked on the walls and columns. The bottom flange of the perimeter trim is the level of the proposed ceiling.



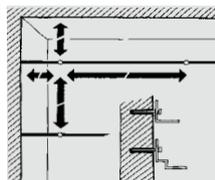
Wall Trim
The perimeter trim is fixed to the wall at maximum 300 mm centres. At corners the angle should be mitred accurately.



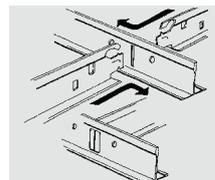
Layout
Generally start setting out from the centre of the room ensuring that perimeter edge cuts are of equal size on both sides of the room. The positioning of light fittings, ventilation units and sprinkler heads should be considered at this stage.



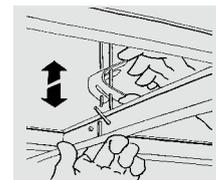
Suspension Hangers
The adjustable hangers should be fixed with eye screws, angle brackets or similar. If direct hangers are used they should be screwed to the soffit. Start with the first hanger not more than 400 mm from the wall in the longitudinal direction of the main runner, and then at a maximum of 1200 mm centres. If additional fixtures are fixed to the suspension system, extra hangers should be used.



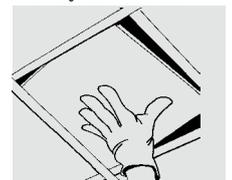
Main runner
The main runners are installed parallel to each others at distances 1200 mm, or 600 mm, c/c depending on system module. The main runners have interlocking tongues in both ends, and can be locked together.



Cross-Tees
The Cross-Tees are installed by inserting snap-in tongues into the correct slot on the stalk of the main runner and are locked into position by a slight downward pressure. If the Cross-Tee is not continued into the adjoining module, the tongue has to be split and bent flat.



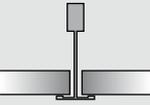
Checking the Suspension System
When the suspension system is installed, the levels and angles should be checked and if necessary the hangers adjusted.



Tiles
The level of the tiles should be checked when the installation is completed. Gloves should be worn at all times when handling the tiles and a saw or knife used to cut the tiles to size.



Danoline Tiles 600, White and Metallic

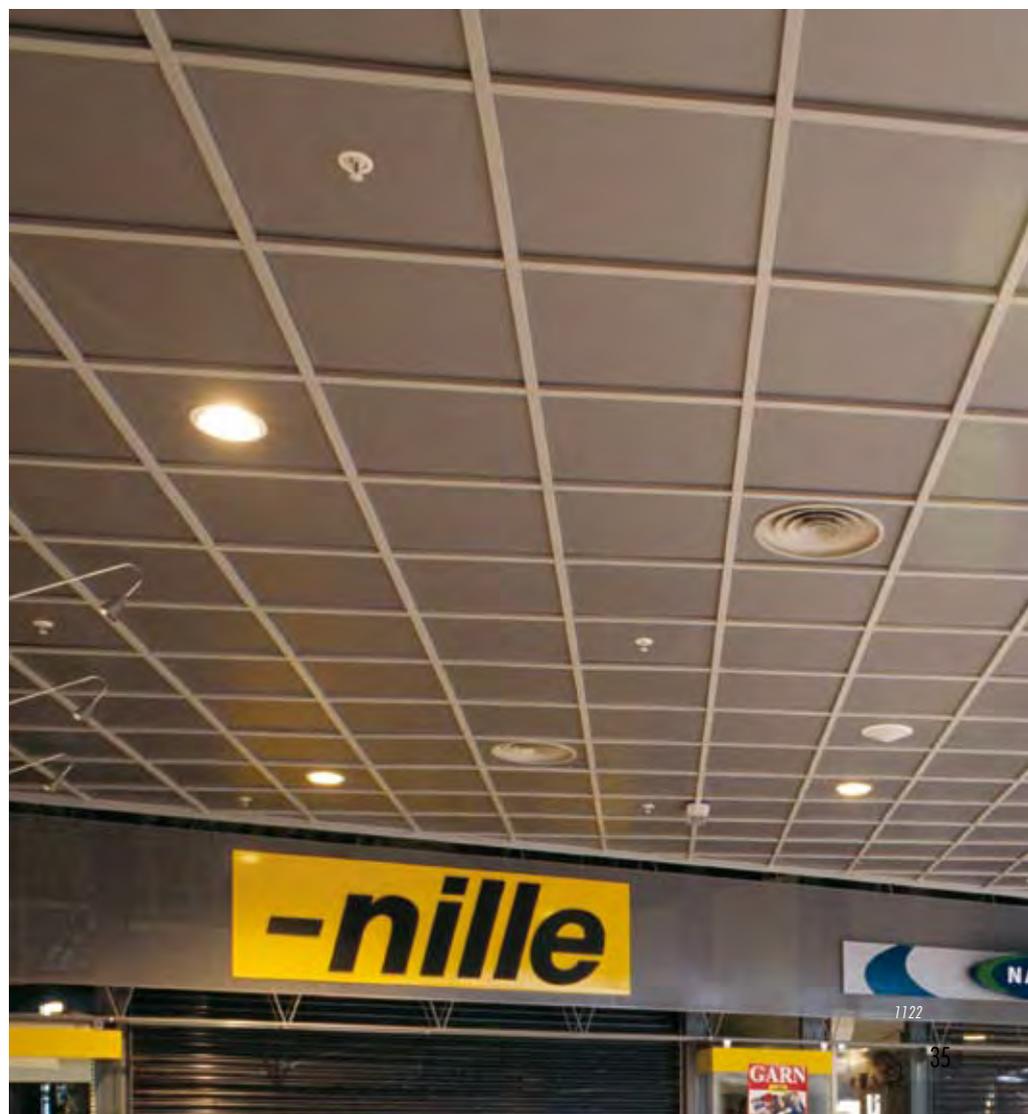


Durable surfaces and good economy accomplished with the simple product Danoline Tiles

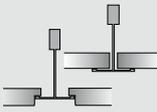
Danoline Tiles are mounted with a visible Lay-in grid system. The ceiling panels look like a smooth, white faced surface, which is environmentally friendly and ensures great usability in rooms with relatively high humidity. The surface is easy to maintain and will therefore withstand rough washing, as it has a good mechanical resistance. Apart from Danoline Tile's fine qualities, it is also an economically advantageous solution.



- 1306:
Architect: Aukett Ltd, London
Project: SAS Radisson, Stansted, - UK
Product: Danoline Tiles 600 - White
- 1321:
Architect: Bluestone
Project: ABL - Factory/ warehouse - UK
Product: Danoline Tiles 600 - White
- 1300:
Architect: Kinnersley Kent Design, London
Project: House of Fraser, Croydon, Surrey - UK
Product: Danoline Tiles 600 - White
- 1119:
Project: Close up
Product: Danoline Tiles 600, White
- 1120:
Project: Close up
Product: Danoline Tiles 600, Metallic
- 1122:
Architect: Arkitektkontoret Waage as, Bergen
Project: Anticenter Voss, Bergen - Norway
Product: Danoline Tiles 600, Metallic





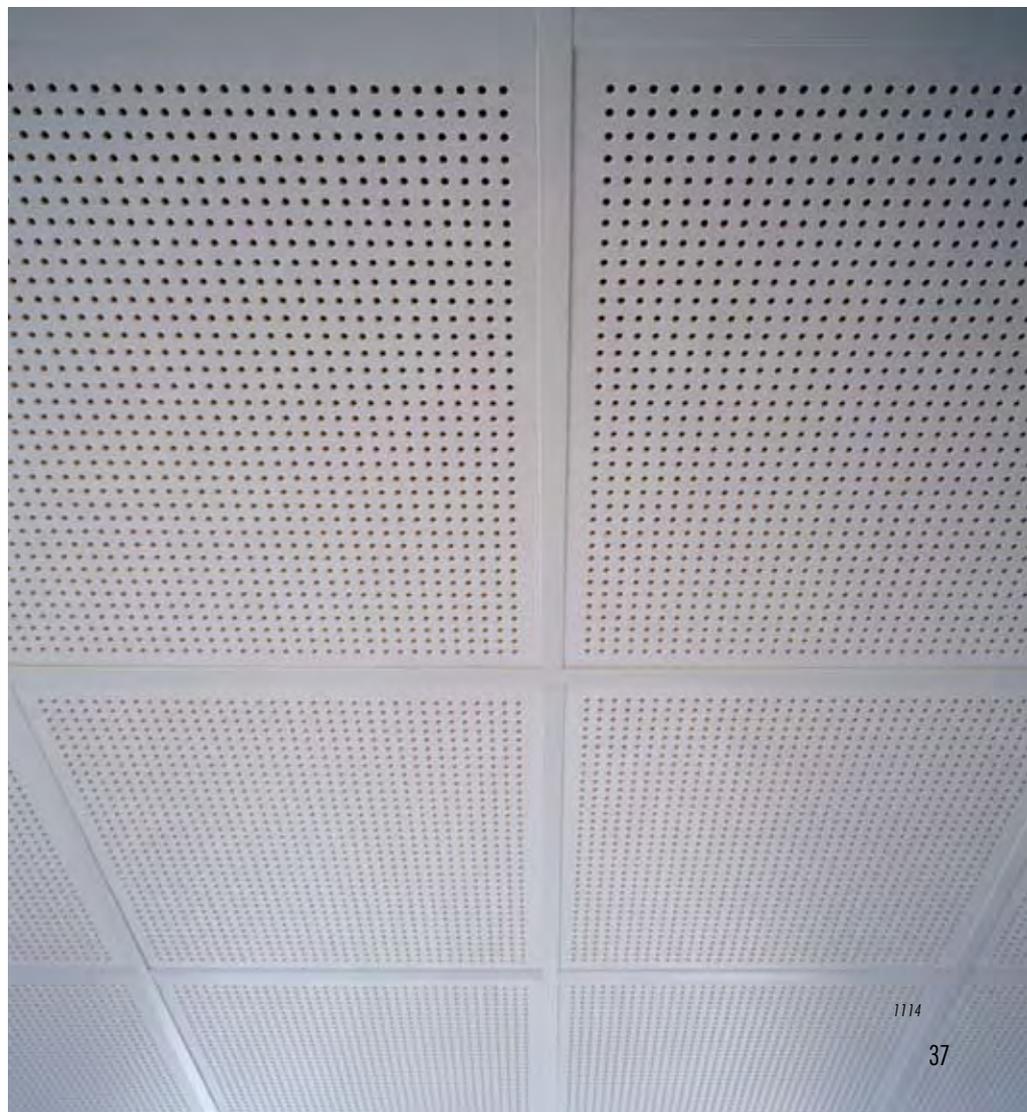


Perforated Danoline Tiles Medley complete with edge details and foil surface

Danoline Tiles Medley is mounted in a visible Lay-in grid system. The tiles are available with squared or rebated edges.

The ceiling tiles appear like a smooth tinted laminated surface. It is environmentally friendly and ensures great usability in rooms with relatively high humidity.

The surface is easy to maintain as it can withstand rough washing, because of the good mechanical resistance in the surface. Danoline Tiles Medley offers good inherent properties and it is also an economically advantageous solution.



Product

Surface

Regula R, Laminated white, metallic and medley foil. Medley is also available with Globe G1 perforation.

Sizes

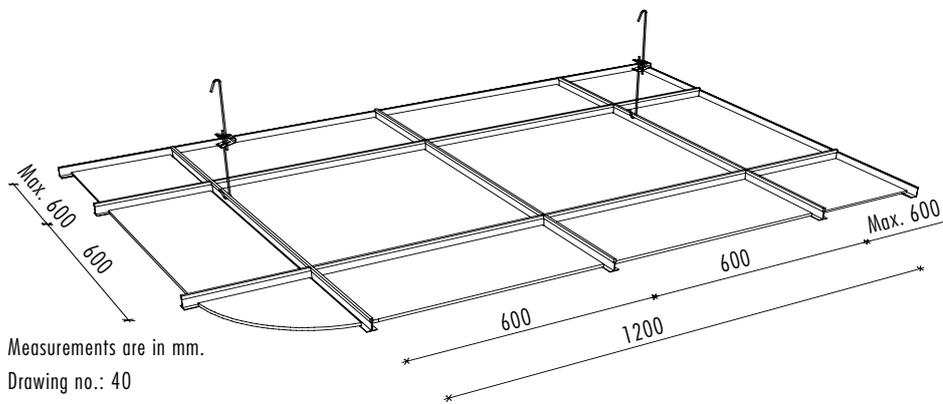
600 x 600 x 6.5 mm
 600 x 1200 x 6.5 mm
 600 x 600 x 9.5 mm
 600 x 1200 9.5 mm
 625 x 625 x 9.5 mm
 Other sizes on request.

Edge

A
 A
 A / E - Medley G1 and R
 A
 A

Draft specification,

Danoline Danoline Tiles 600, R, 600 x 600 x 6.5 mm, Laminated type white 600 x 600 x 6.5 mm for exposed 15/24 mm suspension systems

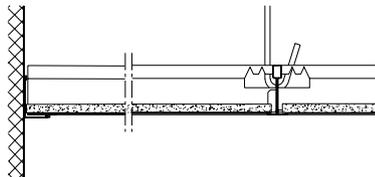


Suspension system

Cut cross-Tees may not exceed 600 mm, and shall be made from 1200 mm cross-Tees. The suspension hanger must be fixed to the main runner at 1200 mm centres and not less than 400 mm from the wall angle.

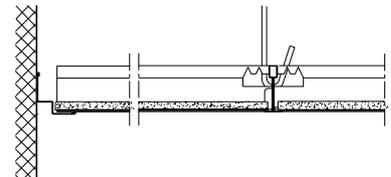
Danoline recommends the use of suspension systems with straight connections between main runners and cross tees, so any differences in levels are avoided, i.e. the suspension system's components are all in the same level.

Detail



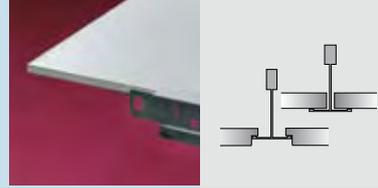
Danoline Tiles 600 with wall trim.

Drawing no.: 40.2.001



Danoline Tiles 600 with shadow line edge trim.

Drawing no.: 40.2.002



Components

Components

Suspension grid, hangers etc. are made from galvanised steel. The exposed sections are painted in CMC 001 Global white (equivalent to NCS 0902 G48Y).

MAIN RUNNER

Part no.	W x L x H
750030	15 x 3000 x 38

CROSS TEE

Part no.	W x L x H
751130	15 x 300 x 38
751230	15 x 600 x 38
751430	15 x 1200 x 38

WALL ANGLE

Part no.	B x L x H
1438	19 x 3050 x 32

SHADOW LINE

EDGE TRIM	W x L x H
Part no.	12 + 19 x 3050 x 10 + 24
1459	



ADJUSTABLE HANGERS

Part no.	Length
11022	120-200
11030-99	200-270
11030	250-320
11040	250-440
11070	380-690
11090	500-940
11120	750-1210
11150	750-1440
11200	1000-1940

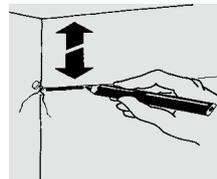


Alternative suspension S24 see Markant 600.

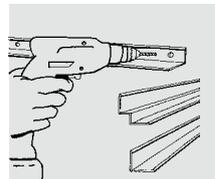
Installation

Storage & Installation

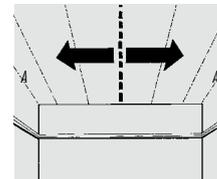
Storage and installation should not be carried out in rooms with a relative humidity greater than 70%, unless otherwise stated, see section Moisture. It is equally important to take account of other work such as technical installations before installation of the ceiling is carried out. It is important for the end result that the ceiling tiles are installed at right angles, this makes installation quicker and easier. It will facilitate inspections to installations above the ceiling as removal of the tiles will be easier. It is not recommended that ceilings are installed at a temperature consistently over 50°C.



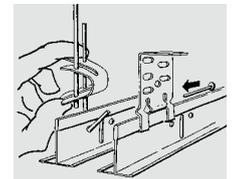
Setting out
The position of the wall trim should be marked on the walls and columns. The bottom flange of the perimeter trim is the level of the proposed ceiling.



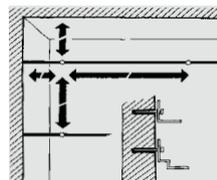
Wall Trim
The perimeter trim is fixed to the wall at maximum 300 mm centres. At corners the angle should be mitred accurately.



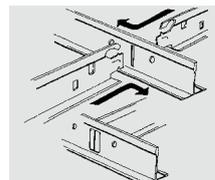
Layout
Generally start setting out from the centre of the room ensuring that perimeter edge cuts are of equal size on both sides of the room. The positioning of light fittings, ventilation units and sprinkler heads should be considered at this stage.



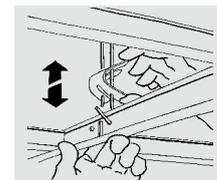
Suspension Hangers
The adjustable hangers should be fixed with eye screws, angle brackets or similar. If direct hangers are used they should be screwed to the soffit. Start with the first hanger not more than 400 mm from the wall in the longitudinal direction of the main runner, and then at a maximum of 1200 mm centres. If additional fixtures are fixed to the suspension system, extra hangers should be used.



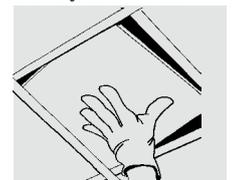
Main runner
The main runners are installed parallel to each others at distances 1200 mm, or 600 mm, c/c depending of system module. The main runners have interlocking tongues in both ends, and can be locked together.



Cross-Tees
The cross-tees are installed by inserting snap-in tongues into the correct slot on the stalk of the main runner and are locked into position by a slight downward pressure. If the cross-tee is not continued into the adjoining module, the tongue has to be split and bent flat.



Checking the Suspension System
When the suspension system is installed, the levels and angles should be checked and if necessary the hangers adjusted.



Tiles
The level of the tiles should be checked when the installation is completed. Gloves should be worn at all times when handling the tiles and a saw or knife used to cut the tiles to size.

Systems

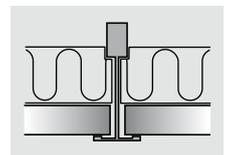
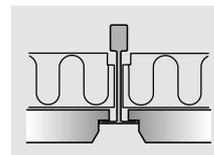
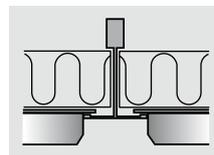
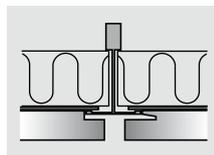
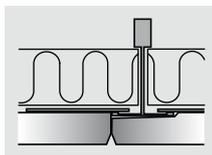
Danopor is available for ceiling products with edge D, C, E, and A.

Sizes

600 x 600 x 25 mm
 600 x 600 x 50 mm
 Other sizes on request.

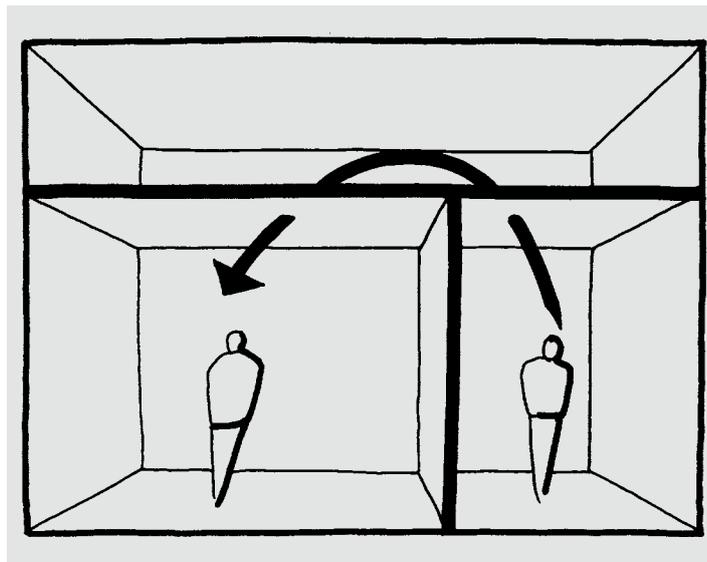
Draft specification

Danoline Danopor is installed on the back of Plaza 600, M1, 600 x 600 x 9.5 mm white painted as standard in 15/24 mm exposed suspension system.



Product:	Contur 600	Linear 600	Markant 600	Belgravia 600	Plaza 600
Edge:	D	C	E	E	A
Suspension:	S24	S24	S15/S24	S15/S24/Ultraline	S15/S24

A demand for a higher sound reduction (STC) can be required if the drywalls or partitions are not extended to the soffit of the deck, but to the suspended ceiling only. The construction therefore provides great freedom of choice with regard to creating or moving walls.





Increased sound reduction and absorption reached with Danopor without affecting design and expression

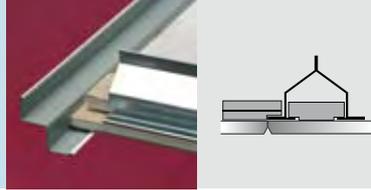
The natural properties of gypsum ensure that the Danoline products have a good sound reduction in low frequencies. In combination with Danopor – a low density insulation pad placed inside sealed PE-faced bags and positioned on the back of the Danoline products – a good result with sound reduction of both low, medium and high frequencies from room to room can be achieved.

Sound-reducing characteristics can be varied further by selecting different thicknesses of Danopor. In addition to its sound-reducing properties, the construction also has good sound-absorbent properties throughout the frequency range. In particular the bass frequency sound absorption is good.





Corridor 300



New architectural possibilities created by the unique yet simple design of Corridor

Corridor gives the appearance of fine line markings in a rectangular plank pattern. The ceiling is primarily used in corridors and is self-supporting for up to 2.4 m between walls.

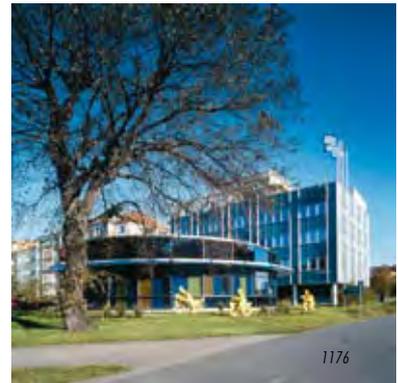
Corridor is often used in small utility and ancillary rooms for reasons of design and/or economy. Demounting reveals a completely free area without transverse suspension sections, optimal for work on technical installations.

The ceiling panels can either be delivered to the building site and adjusted in situ or supplied in fixed dimensions.

Fixed dimensions reduce wastage as well as building waste, making assembly faster and thus cheaper.



1177



1176



1195:
Architect: Suunnittelukeskus Oy, Helsinki
Project: Health care centre Kerava, Helsinki - Finland
Product: Corridor 300

1176, 1177, 1179:
Architect: White Arkitekter
Project: Halmstads Fastighetsbolag - Sweden
Product: Corridor 300 - M1

1195

Product

Perforation

Globe: G1

Quadril: Q1

Micro: M1

Regula: R

Other perforation patterns are manufactured to order. Please see section Perforations.

Sizes

300 x 1200 x 9.5 mm

300 x 1500 x 9.5 mm

300 x 1800 x 9.5 mm

300 x 2100 x 9.5 mm

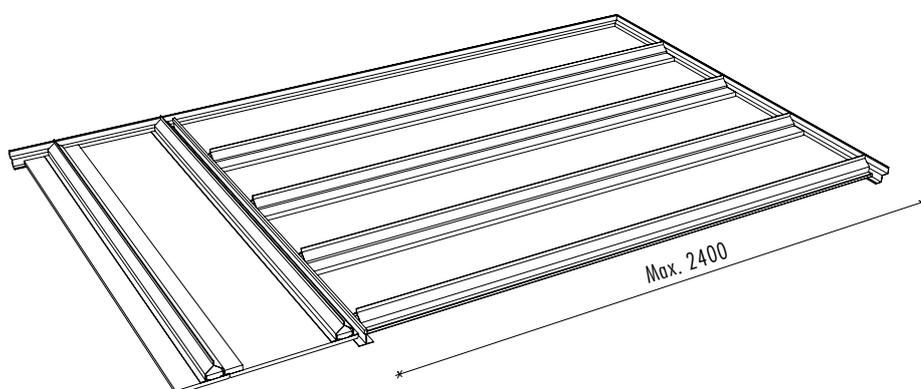
300 x 2400 x 9.5 mm

Can be manufactured to special length, max. 2400 mm.

Draft specification

Danoline Corridor 300, M1, 300 x 1200 x 9.5 mm, 300 x 2400 x 9.5 mm. White painted as standard.

Installed on reinforced shadowline trim 1469.



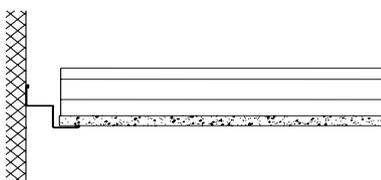
Measurements are in mm.

Drawing no.: 35

Suspension system

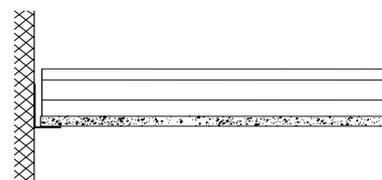
The flexprofile is an integrated part of the Corridor ceiling plank. Main Tee runner is used between sections and lines of Corridor planks, when the distance between the walls is greater than 2400 mm.

Detail



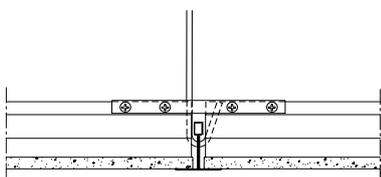
Corridor 300 with shadow line edge trim 1469.

Drawing no.: 35.2.005



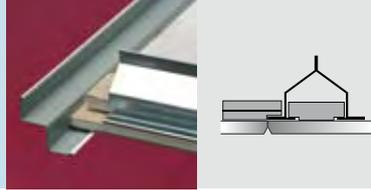
Corridor 300 with wall trim.

Drawing no.: 35.2.004



Corridor 300. Joining of 2 short-edges using main runner 65020.

Drawing no.: 35.2.003



Components

Components

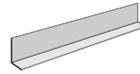
Suspension grid, hangers etc. are made from galvanised steel. The exposed sections are painted in CMC 001 Global white (equivalent to NCS 0902 G48Y).

FLEX RUNNER	W x L x H
Delivered in loose parts with the elements	65 x 1194 x 44 65 x 1494 x 44 65 x 1794 x 44 65 x 2094 x 44 65 x 2394 x 44

MAIN RUNNER	W x L x H
Part no. 65020	35 x 3600 x 38

SHADOWLINE TRIM	W x L x H
Part no. 1469	20 x 20 x 3050 x 20 + 20

WALL ANGLE	W x L x H
Part no. 1430	20 x 3050 x 40



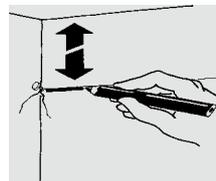
ADJUSTABLE HANGERS	
Part no.	Length
11022	120-200
11030-99	200-270
11030	250-320
11040	250-440
11070	380-690
11090	500-940
11120	750-1210
11150	750-1440
11200	1000-1940



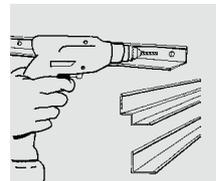
Installation

Storage & Installation

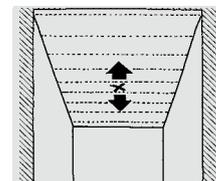
Storage and installation should not be carried out in rooms with a relative humidity greater than 70%, unless otherwise stated, see section Moisture. It is equally important to take account of other work such as technical installations before installation of the ceiling is carried out. It is important for the end result that the ceiling tiles are installed at right-angles, this makes installation quicker and easier. It will facilitate inspections to installations above the ceiling as removal of the tiles will be easier. It is not recommended that ceilings are installed at a temperature consistently over 50°C.



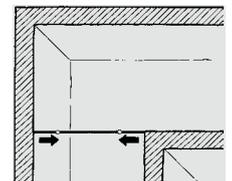
Setting out
The position of the wall trim should be marked on the walls and columns. The bottom flange of the perimeter trim is the level of the proposed ceiling.



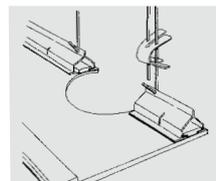
Wall Trim
The perimeter trim is fixed to the wall at max. 300 mm. At corners the trim should be mitred accurately.



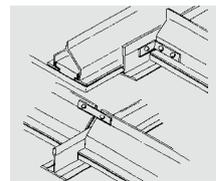
Layout
The ceiling is normally divided in the centre, in this way the adjustments are the same size. Please note that the placing of fixtures and ventilation units can affect the correct layout



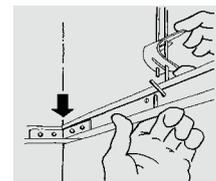
Suspension hangers
Where there is a change of direction in the corridor, a suspended main runner must be used to support the planks. The maximum distance between the suspension hangers is 750 mm, and a maximum 300 mm from the walls.



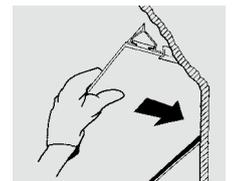
Adjusting the Flex profile
If the flex profile is broken because of fittings, installations or other implementations, the Flex profile has to be suspended.



Main Runner 65020
Main Runner 65020 can be used to support Corridor planks at maximum 2400 centres. It is necessary to secure the main runner at the perimeter, and to fix the Flex profile to the main runner at every sixth plank. Where the short edges of the Corridor plank abut the main runner, the Flex profiles on either side of the Tee are secured to each other.



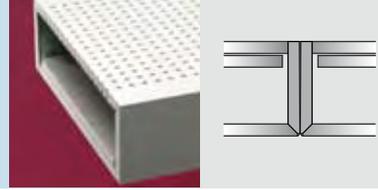
Levelling the Suspension System
If suspension hangers have been used, they must be adjusted to obtain an accurate level. Where there is a change in direction of planks, the main runner must be secured to the wall construction.



Planks
Where possible, Corridor planks should be installed after all major work in the ceiling void has been completed. The flex-profile must not be over 6 mm shorter than the planks. The level of the tiles should be checked when the installation is completed. Gloves should be worn at all times when handling the tiles and a saw or knife used to cut the tiles to size.



Corridor F30



*Excellent fire properties yet discreet joints
between the elements created with Corridor F30*

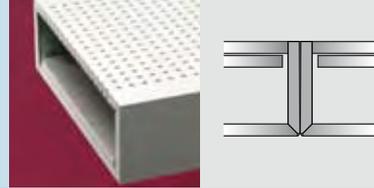
The panels consist of long-format panels with an effective span of up to 2.8 m. Corridor F30 has the appearance of fine stroke markings in a rectangular plank pattern. The product has been styled to cope with the tough fire requirements set out in DIN 4102 (see section on properties).

The unique quality about Corridor F30 is that it is the only ceiling without mineral wool to comply with this fire requirement.

As a result of its fire properties, the ceiling provides great safety and is an obvious choice for use in escape routes.



0563, 0564, 0560:
Architect: Hupach und Partner
Project: DESY, Hamburg - Germany
Product: Corridor F30

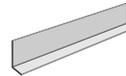


Components

Components

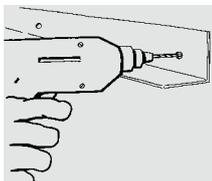
The wall profiles are made from aluzinc. Painted to RAL 9016

WALL ANGLE
Part no. F3000012
W x L x H
40 x 3000 x 60

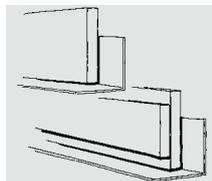


Installation Storage & Installation

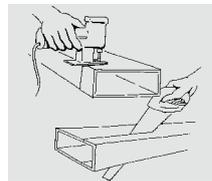
Storage and installation should not be carried out in rooms with a relative humidity greater than 70%, unless otherwise stated, see section Moisture . It is equally important to take account of other work such as technical installations before installation of the ceiling is carried out. It is important for the end result that the ceiling tiles are installed at right-angles, this makes installation quicker and easier. It will facilitate inspections to installations above the ceiling as removal of the tiles will be easier. It is not recommended that ceilings are installed at a temperature consistently over 50°C.



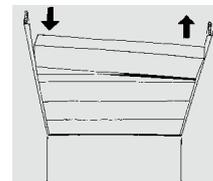
Setting out
The position of the wall angles should be marked on the walls and columns. The bottom flange of the wall angles is the level of Corridor planks. Fixation with screws at max 400 mm c/c.



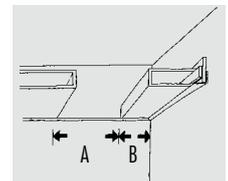
Wall trim
The wall angles shall be furred by Fireboard strips of 120 mm. At elements which are cut longitudinally an extra strip of Fireboard shall be fixed. Fixation by drywall screw.



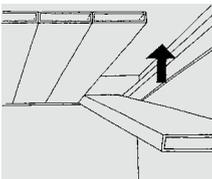
Adjustment
The Corridor panels are cross cut with a jigsaw for metal. Longitudinally cuts are made with a normal saw.



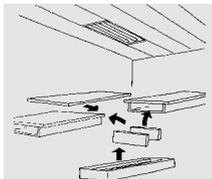
Lay-in
The Corridor panels are laid in directly on the wall angles. The panels are self-supporting to 2800 mm free span.



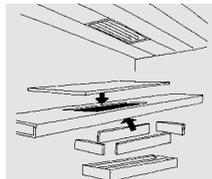
End-elements
Measurement A for the second last panels is set, and the measurement B is made for the last panel. The end panel is then cut to size and is laid in on the wall angle with the extra Fireboard strip.



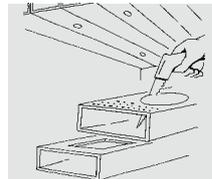
Closing
The second last panel can now be laid in between the end panel and the third last panel. Cotton gloves should be worn at all time when handling the Corridor panels.



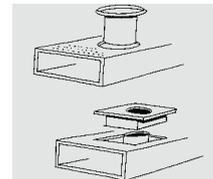
Ligh fixtures
Installation of 300 mm light fixture. This installation requires a special Corridor panel with an extra layer of gypsum board. The cut end adjacent to the luminarie shall be filled out by GKF gypsum board. On the back of the light fixture a GKF gypsum board shall be fixed, and the 3 elements are now installed between 2 standard panels. The light fixture also has to be screw fixed to the 2 adjacent panels.



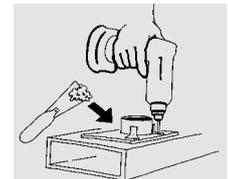
Ligh fixtures
Installation of light fixture less than 300 mm. Cut out for the size of the light fixture. All open end in the panels to be closed by GKF gypsum board, which shall be screw fixed to the metal profile in the panel. If necessary, additional metal profile is added to secure the gypsum fill-out. Fill-out gypsum strips to be screw fixed. The light fixture shall be screw fixed to the panel. On the back of the panel an additional layer of GKF board shall be fixed.



Air inlets and outlets
Cutting out for opening is done by a jigsaw, from the front side. Final adjustment by a fine tooth saw or a Stanley knife.



Fire cap
Into the back of the panel a square furring cap is inserted. This must close the openings into the Corridor panel.



Fire cap fixing
The fire protection cap shall be fixed with angle brackets, and the void between the cap and the air inlet/outlet shall be filled with gypsum mortar.



Product

Perforation

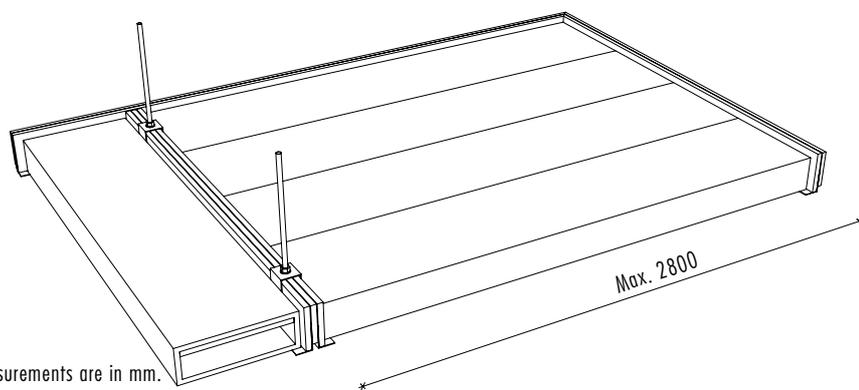
Globe: G1
 Quadril: Q1
 Micro: M1
 Regula: R

Sizes

300 x (length) x 12.5 x mm
 Max. Length 2800 mm.

Draft specification

Danoline Corridor F30, White laminated as standard, Installed on wall angle F3000012.



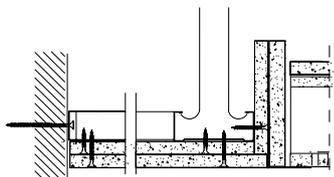
Measurements are in mm.

Drawing no.: 36

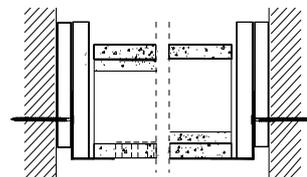
Suspension system

Corridor F30 is a selfsupporting ceiling system with integrated steel profiles, making a free span of max. 2800 mm

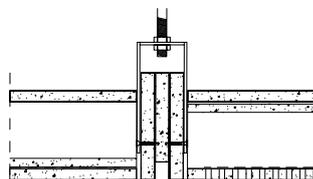
Detail



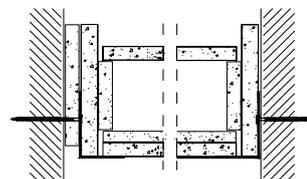
Corridor F30 fixed with wall angle at gypsum boards on steel structure.
 Drawing no.: 36.2.001



Corridor F30 panels with wall angle and gypsum board shadow trim.
 Drawing no.: 36.2.002

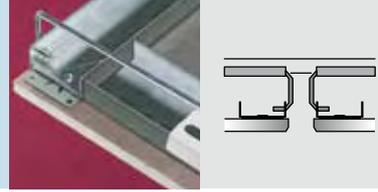


Corridor F30, jointing of long-edge against short edge.
 Drawing no.: 36.2.003



Corridor F30, adjustment panel at wall angle, and with gypsum shadow edge trim.
 Drawing no.: 36.2.004

Corridor Swing 600



Distinctive perforations favour the functional design of Corridor Swing 600

Corridor swing is a hinged ceiling construction whereby apertures on all four lateral edges achieve a rough yet floating, light design.

The panels are rectangular in appearance, with lengths of up to 1.8 m. Corridor Swing is fitted with a hinge and swivels down without the use of tools.

The panel remains suspended during inspection work, allowing simple and fast access to installations.



1266:
Architect: Arkitektgruppen Aarhus
Project: Greve Rådhus - Denmark
Product: Corridor Swing - M1

1156, 1158:
Architect: White Arkitekter Göteborg
Project: Medicinskt Kunskapshus, Göteborg - Sweden
Product: Corridor Swing - M1



Product

Perforation

Globe: G1

Quadril: Q1

Micro: M1

Regula: R

Other perforation patterns are manufactured to order. Please see section Perforations.

Sizes

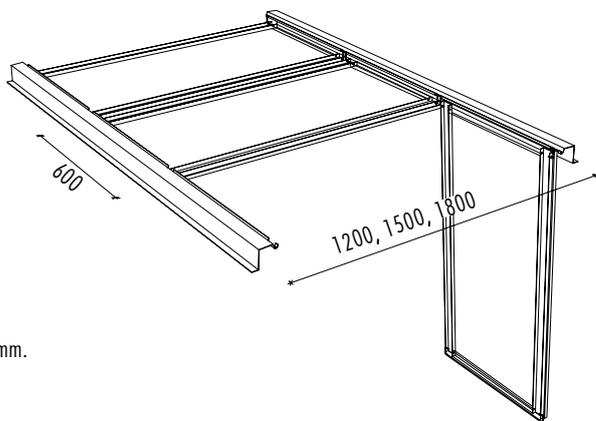
600 x 1200 x 12.5 mm

600 x 1500 x 12.5 mm

600 x 1800 x 12.5 mm

Draft specification

Danoline Corridor Swing 600, G1,
600 x 1200 x 12.5 mm, installed in suspension
system 721000.



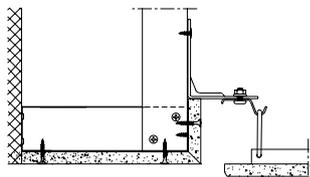
Measurements are in mm.

Drawing no.: 52

Suspension system

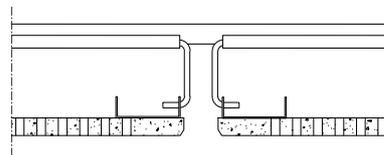
The Swing profiles on the walls and the suspended friezes
to be installed as per module of Corridor 600

Detail



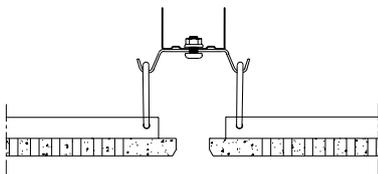
Corridor Swing 600 with fix frieze of painted Mitex panel.

Drawing no.: 52.2.001



Corridor Swing 600, longitudinal joint between 2 panels.

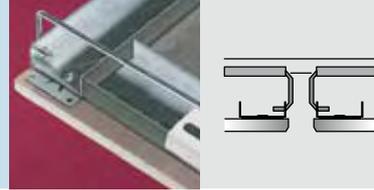
Drawing no.: 52.2.002



Corridor Swing 600, joint of 2 short-edges with profile
W-Swing 3.

Drawing no.: 52.2.003

Corridor Swing 600



Components

Components

Profiles and accessories are made from galvanised steel. The painted sections are painted in RAL 9010 (equivalent to NCS 0502 Y14R).

PROFILE W-SWING 1 / WHITE PAINTED

Part no. 729196 W x L x H 8/12 x 2400 x 55

PROFILE W-SWING 2 / WHITE PAINTED

Part no. 730162 W x L x H 40 x 2400 x 16

PROFILE W-SWING 3 / WHITE PAINTED

Part no. 729198 W x L x H 92 x 2400 x 16

PROFILE W-SWING 4A / WHITE PAINTED

Part no. 731618 (Combined with W-swing 2) W x L x H 85 x 2400 x 66

PROFILE W-SWING 5 / WHITE PAINTED

Part no. 729200 W x L x H 68 x 2400 x 53

METAL CLIP / GALVANIZED

Part no. 721175 W x L x H 70 x 58 x 80

SCREW/NUT W34 / GALVANIZED

Part no. 718473

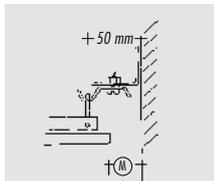
SWING HANGER / UNPAINTED

Part no. SW6MB Incl. element Ø4 x 582 x 53

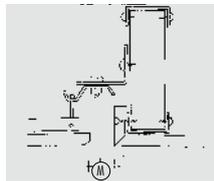


Installation Storage & Installation

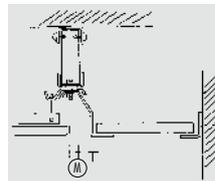
Storage and installation should not be carried out in rooms with a relative humidity greater than 70%, unless otherwise stated, see section Moisture . It is equally important to take account of other work such as technical installations before installation of the ceiling is carried out. It is important for the end result that the ceiling tiles are installed at right-angles, this makes installation quicker and easier. It will facilitate inspections to installations above the ceiling as removal of the tiles will be easier. It is not recommended that ceilings are installed at a temperature consistently over 50°C.



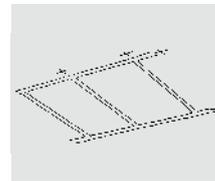
Dimensional outline, wall junction
M indicates the module line. There must be a 12 mm gap on each side of M. The metal clip, 721175 is fixed to the wall at 800 c/c mm and the W-swing 2 profile is fixed to the metal clip with the W34 bolt.



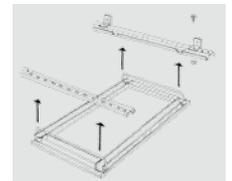
Dimensional outline, Fixed frieze
M indicates the module line. There must be a 12 mm gap on each side of M. The metal clip, 721175 is fixed to the vertical profiles and horizontal U-profiles are installed so the fixed frieze can be screwed onto them. The W-swing 2 profile is fixed to the metal clip with the W34 bolt.



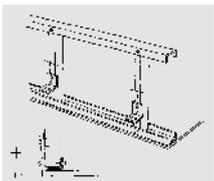
Dimensional outline, Dismantlable frieze
M indicate module line. There must be a 12 mm gap towards the Corridor swing element and a 18 mm gap to the frieze. Horizontal U-profiles and vertical C-profiles are installed in order to create a rigid frame for the swing profiles. W-swing 2 and 4A profiles are fixed at c/c 800 mm in the vertical steel profiles with the W34 bolt. The wall angle is fixed to the wall at c/c 400 mm.



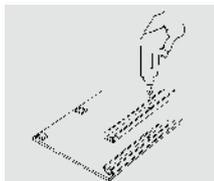
Planning the ceiling surface
The module measurement is 24 mm larger than the actual elements. When installed there will be 24 mm gap around all edges of the element.



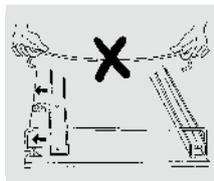
Profile distances
The W swing 2 profiles are installed under the metal clips with the W34 clip. Now the distance between the "suspension points" on the W swing 2 profiles must be adjusted, so the distance between them is the length of the element minus 50 mm. The two swing profiles must be installed, so the suspension points are directly opposite each other due to the following installation of the actual elements.



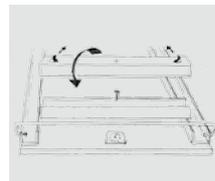
Fixing of the metal clip
The metal clip is fixed to the wall or vertical steel profiles at c/c 800 mm. The lowest edge of the metal clip should be 65 mm higher than the desired ceiling height. It is very important that the frame work is rigid so it cannot deform the elements when installed.



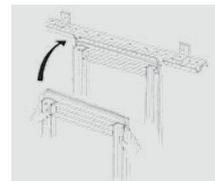
Assembly of the elements
The elements come with depressed fittings. The SW15 profiles are fixed with the supplied screws through the depressed fitting into the element. The distance between the end of the profile to the edge of the element must be 15 mm. Only one SW15 swing profile is fixed at this stage. The base for fixing the load bearing profiles must be plane and solid. There must be no deflection of the profile during the fixing of it.



Installation of swing hanger SW6MB
The swing hanger is fixed to the fastened SW15 profile, the other SW15 swing profile is pushed into its slot, so the hanger is fixed in the hole of the SW15 profile. Now the other SW15 profile can be fixed using previous described method. It is not recommend installing the hanger by tensioning as it will give an inappropriate sideways force on the SW15 profiles.



Installation of Swing cross profile
The cross profile is placed onto the metal clip so that the hole in the cross profile is directly above the centre hole in the metal clip. The foil cover is removed from the adhesive pads and the cross profile is pressed tightly against the element. The screw is fixed through the hole in the profile and the centre hole in the metal clip.

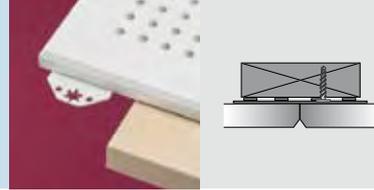


Installation of the elements
The ceiling elements are hung along one of the sides to begin with. The element is kept vertical with the hanger pointing up and the hanger is clasped on the W-swing 2 profile.



Finishing the installation
The element is swung up to horizontal level and the hangers are held in vertical position so it can be slid into the W-swing 2 profile.





Properties and materials united in harmony to create the simple and pure lining ceiling Danopanel

Danopanel, like Contur, features a monolithic, linedivided surface.

The panelling is supplied ready painted and fitted without visible screws. Since there is no handling by painters, installation time is short, achieving a good overall economy.

Direct screwing onto the metal furring system/timber battens ensures a low construction height.



1072:
Architect: Asger Bergo Friis
Project: Ruds Vedby Skole SFO - Denmark
Product: Danopanel - Q1

1276:
Architect: Arkitekt Erik Eriksen
Project: Daginstitution, Maglekærvej, Gørlose - Denmark
Product: Danopanel - G1, R

Product

Perforation

Globe: G1

Quadril: Q1

Micro: M1

Regula: R

Other perforation patterns are manufactured to order. Please see section Perforations.

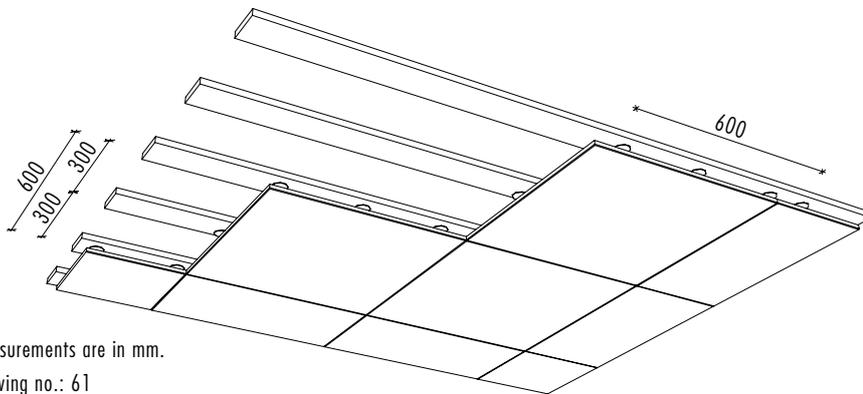
Sizes

600 x 600 x 12.5 mm

Draft specification

Danoline Danopanel, G1, 600 x 600 x 12.5 mm.

White painted as standard Installed on metal or wooden furring system.



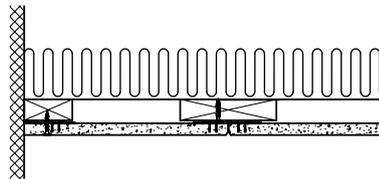
Measurements are in mm.

Drawing no.: 61

Furring system

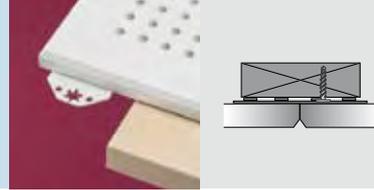
The Danopanel must be screw fixed to furring of 25 x 100 mm wood battens at 300 mm c/c.

Detail

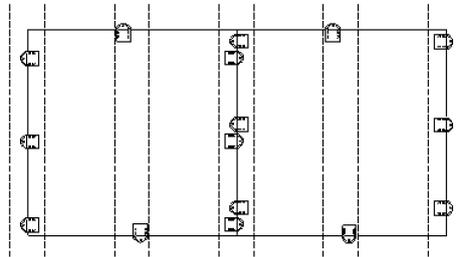


Danopanel, frieze connection.

Drawing no.: 61.2.001



Installation

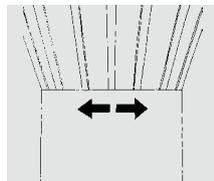


Installation

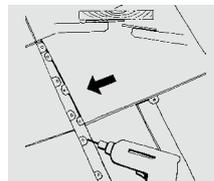
Danopanel is screwed to the furring system using a plain-end screw, wood furring no. TA35, steel furring MSB15SB. It should be noted that the panels must be turned around from row to row and this influences the position of the middle furring piece.

Storage & Installation

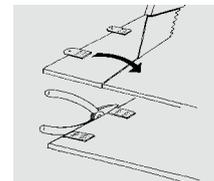
Storage and installation should not be carried out in rooms with a relative humidity greater than 70%, unless otherwise stated, see section Moisture. It is equally important to take account of other work such as technical installations before installation of the ceiling is carried out. It is important for the end result that the ceiling tiles are installed at right-angles, this also makes installation quicker & easier. It is not recommended that ceilings are installed at a temperature consistently over 50°C.



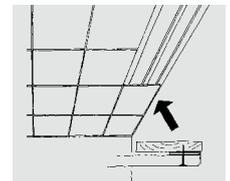
Layout
Generally start setting out from the centre of the room. The Danopanel tiles are installed on a furring of either wood or steel. The furring is spaced at 300 mm c/c.



Installation
Begin the installation of first row from the centre of the room using a chalk line. The Danopanel tiles are screw fixed through the holes in the factory mounted clips. On the next rows of panels the clips can slide in behind the adjacent panels thus only screw fixing the clips on the other side etc.

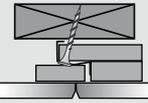


Adjustments
Cuttings and adjustments of the panels can be carried out by a fine tooth saw or a Stanley knife. If the last row is a full size panel, the clips should be cut. If the panels have to be cut to a smaller width the clips shall be removed and re-fixed onto the cut panel.



Frieze
The last row of tiles can also be screw fixed directly through the Danopanel. The position of the screws shall be max. 30 mm from the clips behind the panel.





Long and slim dimensions make Combipanel unique

Combipanel is a lining product that features fine markings in rectangular plank patterns.

Combipanel comes with the surfaces ready painted and can be fitted in free bond as a result of an integral furring system.

Combipanel only requires metal furring every 1000 mm and can be fitted straight onto rafter constructions.



1079:
Architect: Claus B. Hansen
Project: Brøndby Stadion - Denmark
Product: Combipanel - G1

0133:
Architect: Jørn Langvad A/S
Project: Q8 hovedkontor - Denmark
Product: Combipanel - G1

Product

Perforation

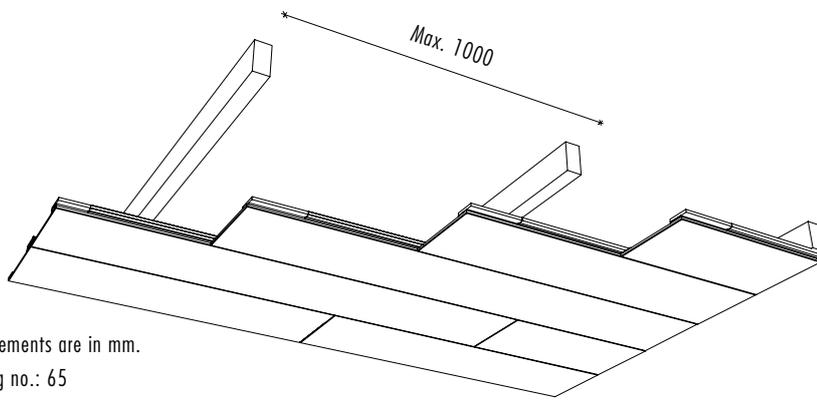
Globe: G1
Quadril: Q1
Micro: M1
Regula: R

Sizes

300 x 1200 x 9.5 mm
300 x 1800 x 9.5 mm
300 x 2400 x 9.5 mm

Draft specification

Danoline Combipanel, G1, 300 x 2400 x 9.5 mm
on metal or wooden furring system.

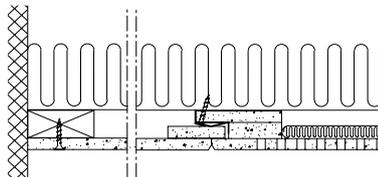


Measurements are in mm.
Drawing no.: 65

Substructure

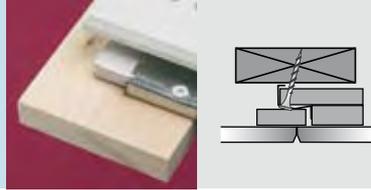
Combipanel shall be fixed to a levelled substructure, which can be directly to rafters or ceiling joists without furring. If furring is being used, it can be 25 x 100 mm wood battens at 300 mm c/c.
Combipanel only needs to be screw fixed at each 1000mm.

Detail



Combipanel, wall connection.

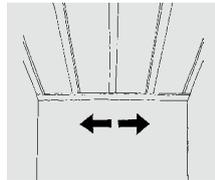
Drawing no.: 65.2.001



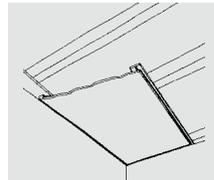
Installation

Storage & Installation

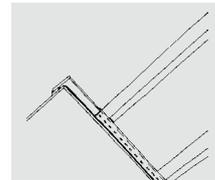
Storage and installation should not be carried out in rooms with a relative humidity greater than 70%, unless otherwise stated, see section Moisture . It is equally important to take account of other work such as technical installations before installation of the ceiling is carried out. It is important for the end result that the ceiling tiles are installed at right-angles, this also makes installation quicker and easier. It is not recommended that ceilings are installed at a temperature consistently over 50°C.



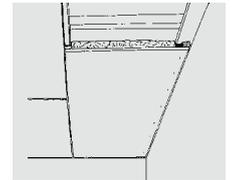
Layout
Generally start setting out from the centre of the room. The Combipanel is installed directly on a levelled substructure max. 1000 mm c/c.



Installation
Begin the first row of Combipanel in a corner of the room with the groove of the panels facing the room. Along the wall screw fixing shall be through the panel. Along the wall a 22 mm distance furring shall be added. The enclosed metal S-profile shall be placed into the groove, and screw fixing take place through the holes in the profile only.



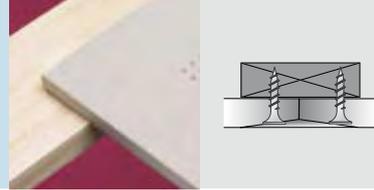
The S-profile
The enclosed s-shaped metal profile shall be placed staggered to the end joints of the panels. Screw fixing at max 1000 mm c/c.



End row
For the last row of Combipanel a 22 mm furring along the wall shall be fixed. The last row of panels are screw fixed direct through the panels into the furring.

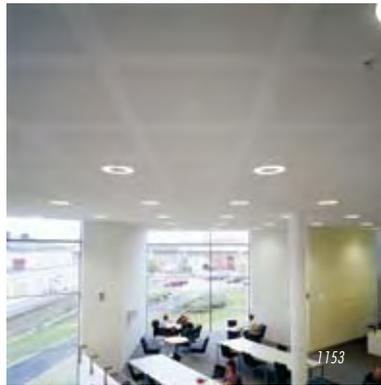


Designpanel 900 and 1200



Optimum method for large ceilings means using Designpanel with four tapered edges

The Designpanel products offer scope for a ceiling design with large, continuous surfaces. Combined with acoustic control, perforations are used, taking the shape of patterns embossed almost plastically into the surface. Designpanel are fitted with tapered edges along the long edges, on request it can be made with tapered edges on all four edges, giving an even and smooth intermediate joint filling between panels and reducing cracking.



1246:
Architect: Link Arkitekt, Oslo
Project: Nannestad skole - Norway
Product: Designpanel 1200 - Q2F

1153, 1154, 1155:
Architect: Semren Arkitektkontor Göteborg
Project: Borås Högskole - Sweden
Product: Designpanel 900 - M1F

Product

Perforation

Globe:	(900) G1F, G2F ; (1200) G2F, G4F	900 x 2700 x 12.5 mm
Quadril:	(900) Q1F, Q2F ; (1200) Q2F, Q4F	1200 x 2400 x 12.5 mm
Micro:	(900) M1F, M2F ; (1200) M2F	
Regula:	R	

Other perforation patterns are manufactured to order.

Please see section Perforations.

Sizes

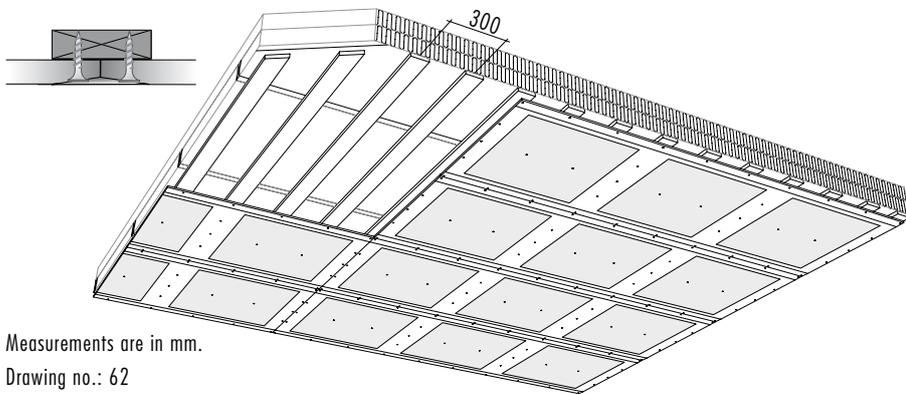
Draft specification

Danoline Designpanel 900/1200, G1F,

900 x 2700 x 12.5 mm

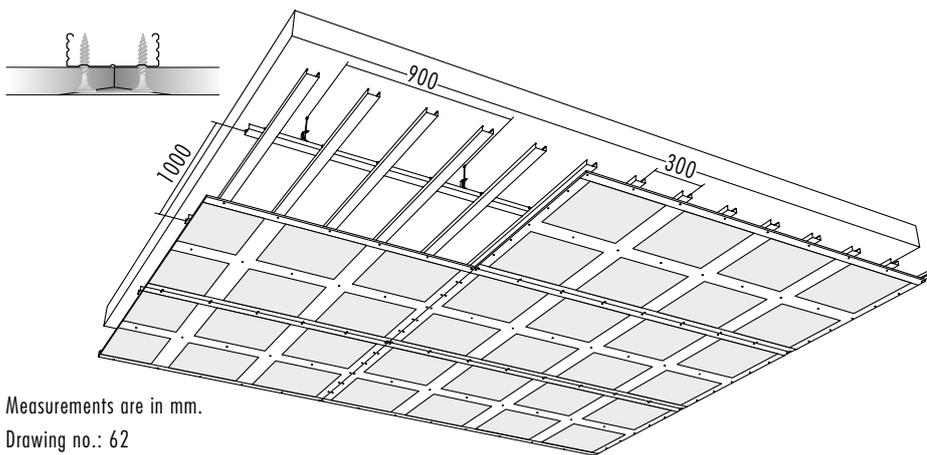
1200 x 2400 x 12.5 mm

installed in metal or wooden furring system.



Measurements are in mm.

Drawing no.: 62



Measurements are in mm.

Drawing no.: 62

Furring, BD-30 (E130) construction

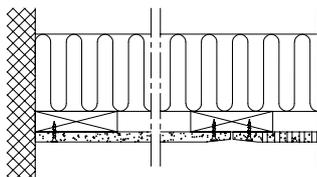
The ceiling is fitted onto a plane wooden furring 25 x 100 mm. The furring is fitted perpendicularly lengthwise to the Designpanel. The maximum distance for the furring is 300 mm. All short edge joints must be supported.

Furring, suspended on steel

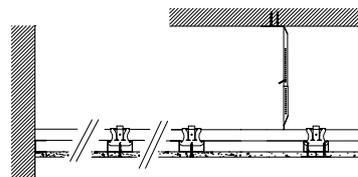
The ceiling is fitted onto a plane steel furring of the CD-type. The system consists of primary and secondary framework. The system is constructed with a central distance of 300 mm perpendicularly lengthwise to the Designpanel. All short edge joints must be supported. As an alternative framework type MF5 and primary MF7 can be used.

Detail

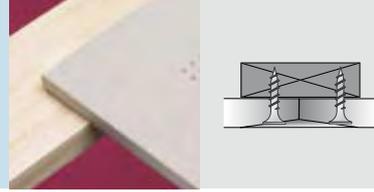
Designpanel on wood or steel furring respectively. Note that the short edge is available with tapered edge.



Designpanel on traditional furring, wall junction and board connection.
Drawing no.: 62.2.001



Designpanel on CD steel furring system, wall junction and board connection.
Drawing no.: 62.2.002

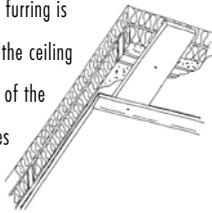


BD-30 (E130) construction

Damp proof barrier is placed over the furring. If the damp proof membrane is placed immediately over the perforations, but under the furring, the ability to absorb the sound is severely reduced. The present absorption data depends on a 150 my (μ) plastic foil. A foil with any other thickness will affect the acoustic capacities. In order to achieve a BD-30 construction, 250 mm rock wool insulation must be a part of the construction.

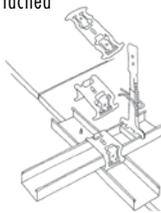
Furring, wood

The ceiling is fitted to a plane wooden furring 25 x 100 mm. The furring is fitted to the rafters or beams with a maximum central distance of 1000 mm. The furring is fitted perpendicular lengthwise to the ceiling panel. The maximum c/c distance of the furring is 300 mm. The short edges of the panel joints must be supported.



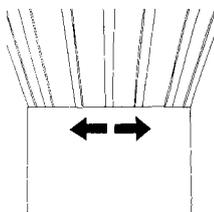
Furring, steel

The ceiling is fitted to a plane steel furring of the CD-2 type. The system consists of primary runners at max 900 mm c/c, and secondary runners at 300 mm c/c. Along all walls and edges the wall profiles UD 28 x 27 are fixed and secured to the furring at max 400 mm. The top part of the hangers, of the nonius model, are secured to the above construction at 900 and attached to the primary CD-60 runners with the lower part of the hanger. The cross connector is placed per 300 mm and the underlying secondary profiles are secured into them. The short edges of the panel must be supported along its entire length by fixing the panel to the furring system.



Grouping

The starting point for the fitting of the design panels is where a level line can be achieved through the whole fitting area. The first row is fitted along a string in order for the perforated sections to be in line. The fitting is started in the middle of the room, as far as possible, and the Designpanels are fitted from the middle towards each side in order for the friezes to be equally wide. The panels are delivered undersized and must be fitted with a distance of up to 4 mm.



The perforated sections must be in line with their own line and be perpendicular to the sections next to them.

Fitting

The Designpanel is screwed onto either wood or steel at every 200 mm along the short edges of the panel and in section sizes of 300 x 600 mm on the rest of the panels, see drawing 62.

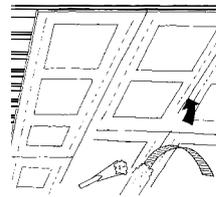
Expansion joints

Panel area more than 70 m², or in cases where one of the side lengths extend 15 m, must be divided by an expansion joint. Slip tape is fitted with an acrylic sealants. Mount the gypsum panels with an edge trim towards the connection, which will give an exact finish and secure attachment of the sealant.

Filling, in general

Filling of Designpanels deviates from the general filling instructions according to Danogips board constructions, as the perforation gives certain limits in connection with the filling. The following describes the best possible way of a satisfactory filling, which takes cracks and a ceiling surface without visible joints into account. The condition is, however, that the instructions are followed accurately and that there are no movements in the building and the construction of the ceiling.

Straight cut short edges and joints are filled with Uniflot filler. Ensure that straight and cut edges have been bevelled before the filling is started.



Danogips Grund and Finish is used for filling screw heads and tapered joints. Tapered joints must be stripped with paper filling tape. Cover the perforations with tape before filling the joints

Filling process A, straight edges

Sprinkle Uniflot filling powder into pure water and stir well by hand in order for it to reach a homogenous texture. Fill the joints well and pinch the filler up between the panels. Cut off any excess material after 45 minutes, Uniflot hardens quickly. It is important to remove any excess filler in order to obtain a clean transition to the ceiling surface. Grind off minor irregularities. Finish off with a filling as described under third filling.

Filling process B, tapered edges

– First filling

Use a 2-inch filling knife and apply the Grund filler, which is watery, so it spreads onto the filling tape and into the crack between the panels. The filling ought to be carried out in such a way that a final grinding is unnecessary once the filler has hardened completely.

– Second filling

Grund filler is also used for the second filling. By resting the hand against the Designpanel the filling knife is wielded along the middle of the first filling - first on one side then on the other. Use a 2-inch filling knife and apply the filler twice. The filling ought to be carried out in such a way that a final grinding is unnecessary once the filler has dried completely after 24 hours.

– Third filling

Use Finish pastös for the third filling, which has to be a very thin coat and use a 4-inch filling knife. Wield the filling knife with a uniform and gliding motion in order to minimise the final grinding. When the filler has dried, sandpaper the surface.

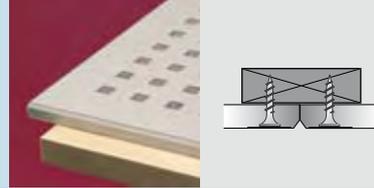
Paint

On account of the acoustic felt backing use a brush or roller in order for the primer and paint not to stick to the acoustic felt backing. Use a roller with fine mohair, which ensures a thin coat of paint at a time. Spray painting will affect the acoustic properties and is therefore not recommendable. Prime the whole ceiling surface with alkyd primer in order for the fillings and boards to absorb evenly. Subsequently, finish with 1 to 2 coats of plastic paint.

Cleaning and Maintenance

The treated ceiling can be vacuumed or wiped with a damp cloth, which has been dipped in a mild solution of synthetic detergent. After-treatment, as well as covering of major damages and severe smudges, can be carried out by painting with a roller, please refer to p. 119 for instructions on painting on acoustic panels. The treatment does not reduce the acoustic properties.



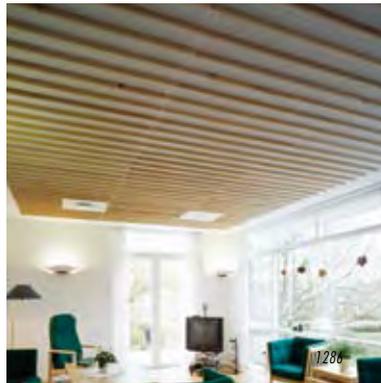


Infinite possibilities are achievable using the original gypsum lining, Tectopanel

Tectopanel is probably the cladding that provides greatest scope for variation.

It is available in a number of different sizes, with a choice of many perforations. Painting work can be done in situ, and the panels can be arched. In terms of design, Tectopanel is close to Contur and Danopanel, for which reason it can be integrated.

In addition to the potential applications mentioned, the products can be integrated into wall systems or fitted onto walls wherever wall absorbents are desired.



1190:
Architect: Arkkitehtitoimisto Lehto-Peltonen-Valkama Oy
Project: University Library of Jyväskylä - Finland
Product: Tectopanel, Alvar Aalto

1286, 1287:
Architect: Arkitektfirmaet Hune & Elkjær
Project: Korsvang, Assens - Denmark
Product: Tectopanel - G1

1205:
Architect: Arkkitehtitoimisto Larkas & Laine Oy
Project: Office building Outokumpu, Helsinki - Finland
Product: Tectopanel - Q1



Product

Perforation

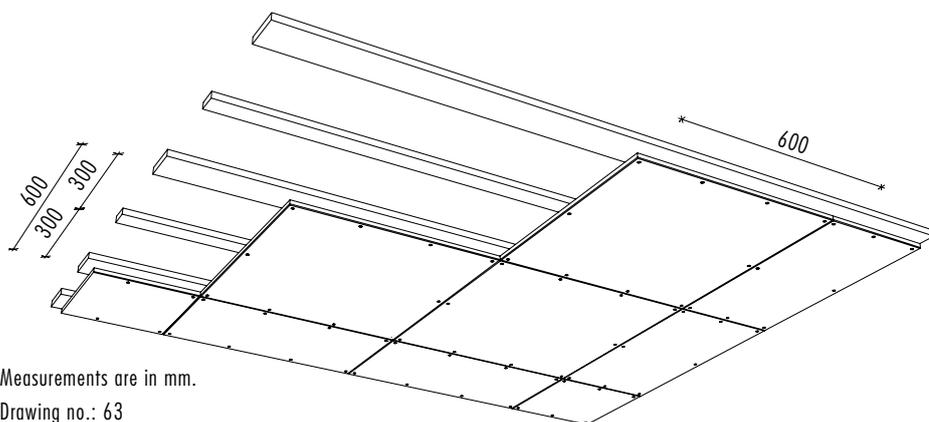
Globe: G1
Quadril: Q1
Micro: M1
Regula: R
Other perforation patterns are manufactured to order. Please see section Perforations.

Sizes

300 x 1200 x 12.5 mm
600 x 600 x 12.5 mm
600 x 1200 x 12.5 mm
600 x 2400 x 12.5 mm
625 x 625 x 12.5 mm
625 x 1250 x 12.5 mm
300 x 1200 x 9.5 mm
400 x 600 x 9.5 mm
Other sizes on request.

Draft specification

Danoline Tectopanel, G1 and R, plain
600 x 600 x 12.5 mm unpainted,
to be installed on metal or wooden
furring system.

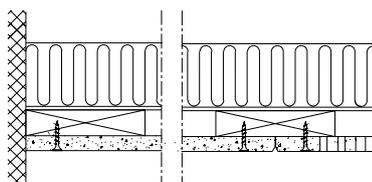


Measurements are in mm.
Drawing no.: 63

Furring system

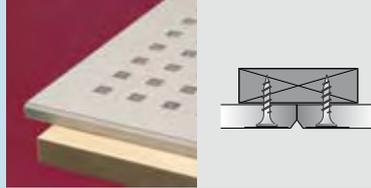
Tectopanel shall be screw fixed to furring of wooden
battens 25 x 100 mm, or metal furring system S25/85 at
300 mm c/c.

Detail



Tectopanel, wall connection.

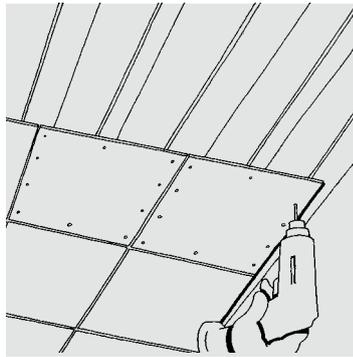
Drawing no.: 63.2.001



Installation

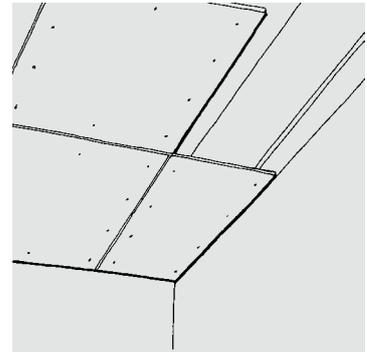
Storage & Installation

Storage and installation should not be carried out in rooms with a relative humidity greater than 70%, unless otherwise stated, see section Moisture . It is equally important to take account of other work such as technical installations before installation of the ceiling is carried out. It is important for the end result that the ceiling tiles are installed at right-angles, this also makes installation quicker and easier. It is not recommended that ceilings are installed at a temperature consistently over 50°C.



Layout

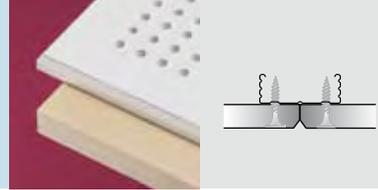
The Tectopanel shall be installed on a levelled wooden furring size 25 x 100 mm at max. 300 mm c/c. The installation should begin from the centre of the room, and the first row to be aligned by using a chalk line. The Tectopanel are hereafter installed from the centre row to the walls. The screws are fixed at the edges of the panels at 200 mm c/c and 300 mm in the centre line of the panels.



Adjustments

The Tectopanel are cut by a fine tooth saw or a Stanley knife. Cutting should always be done from the front side of the panels. Screw fixing of the Tectopanel is always directly through the panels and min. 10 mm from the edges. The cut perimeter of the finished ceiling can be covered by an edge profile.





Robust acoustic wall and ceiling lining means Contrapanel – also in places where ball games are played

Contrapanel is a high impact resistance lining. Contrapanel is very robust and very suitable for use in sporthalls, schools and institutions, where physical impact on walls and ceilings occur.

It is obvious to use acoustic Contrapanel as wall and ceiling linings, where ball games or other physical activity take place.

Contrapanel is tested to the German DIN 18032. The core material is gypsum so Contrapanel has all the familiar technical properties and the indoor climate certifications, which characterise Danoline ceilings products.



1218:
Architect: H & M Arkkitehdit Oy
Project: School Pohjoispuiso, Hyvinkää - Finland
Product: Contrapanel - G1F

1214:
Architect: H & M Arkkitehdit Oy
Project: School Veikkola - Finland
Product: Contrapanel - G1F

Product

Perforation

Globe: G1F

Regula: R

Sizes

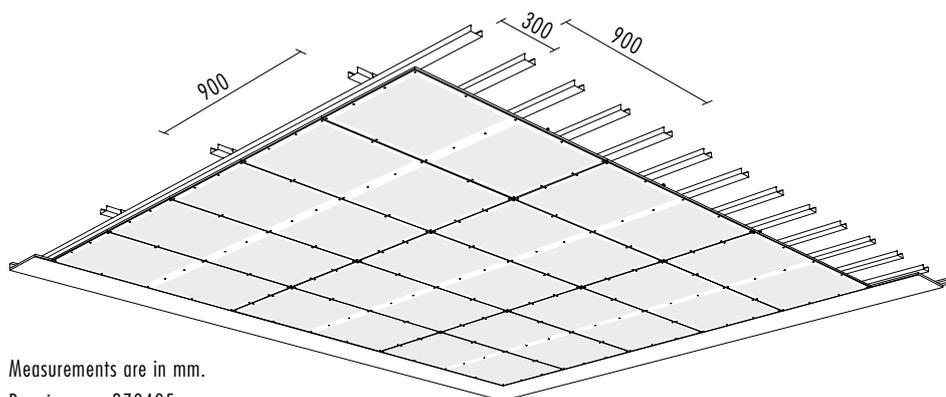
600 x 1200 x 12.5 mm

600 x 1800 x 12.5 mm

600 x 2400 x 12.5 mm

Draft specification

Danoline Contrapanel, perforation Globe, G1F, 600 x 2400 x 12.5mm, standard foil laminated, fixed with visible screws on steel furring system c/c max 300 mm.



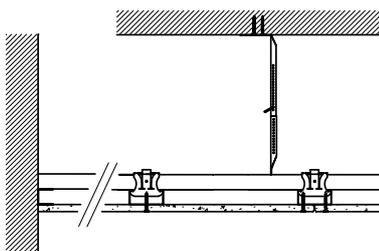
Measurements are in mm.

Drawing no.: 270405

Furring system

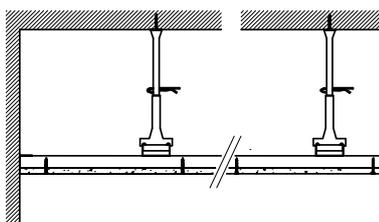
Contrapanel is fixed on a level steel furring with max c/c 300 mm. The short edges of the panel must be supported in its entire length by the furring system.

Detail



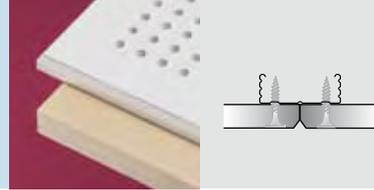
Cross section 1, Contrapanel fixed to CD-2 System.

Drawing no.: 68.2.001

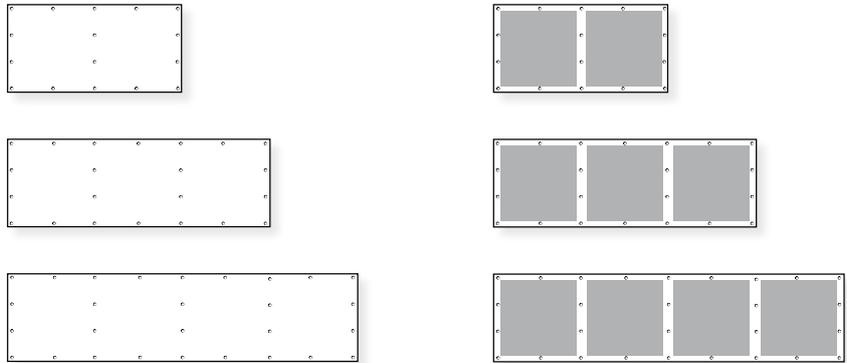


Cross section 2, Contrapanel fixed to CD-2 System.

Drawing no.: 68.2.002



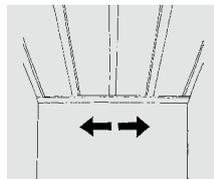
Fixing points



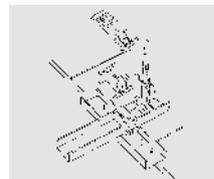
Installation

Storage & Installation

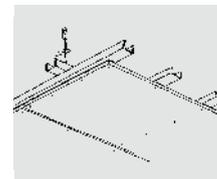
Storage and installation should not be carried out in rooms with a relative humidity greater than 70%, unless otherwise stated, see section Moisture . It is equally important to take account of other work such as technical installations before installation of the ceiling is carried out. It is important for the end result that the ceiling tiles are installed at right-angles, this also makes installation quicker and easier. It is not recommended that ceilings are installed at a temperature consistently over 50°C.



Layout
Contrapanel is fixed on a level steel furring system of the CD-2 kind. Normally, the ceiling surface is divided from the centre of the ceiling, so that any cut panels at the edges of the area get the same dimensions.



Furring system
The system consists of primary runners at max 900 mm c/c, and secondary runners at 300 mm c/c. Along the walls and edges the wall profile UD 28 x 27 is fixed, which is secured to the furring at max 400 mm. The top part of the hangers, of the nonius model, are secured to the above construction at 900 and attached to the primary CD-60 runners with the lower part of the hanger. The cross connector is placed pr 300 mm and the underlying secondary profiles are secured into them. The short edges of the panel must be supported in its entire length of the furring system.



Fixing
The Contrapanel is cut by a fine tooth saw or a Stanley knife. Cutting should always be done from the front side of the panels. Screw fixing of the Contrapanel is always directly through the panels and min. 10 mm from the edges. The cut perimeter of the finished ceiling can be covered by an edge profile.





*Excellent sound absorption equals Kinopanel,
devised for cinemas and auditoriums*

Kinopanel has been specially developed to satisfy the high demands of today's cinemas. In order to offer the cinema's visitors absolute and unique sound experiences specialist knowledge should be applied.

The special perforation combined with the framing system give excellent acoustic properties for absorption and the elimination of echoes.

Kinopanel is produced with a specially stained gypsum core and an exclusive matt surface.



1326



1326, 1330, 1332:

Architect: C F Møller

Project: Kennedy arkandens Kino, Aalborg - Denmark

Product: Kinopanel - Kinoslidser

1330

Product

Perforation

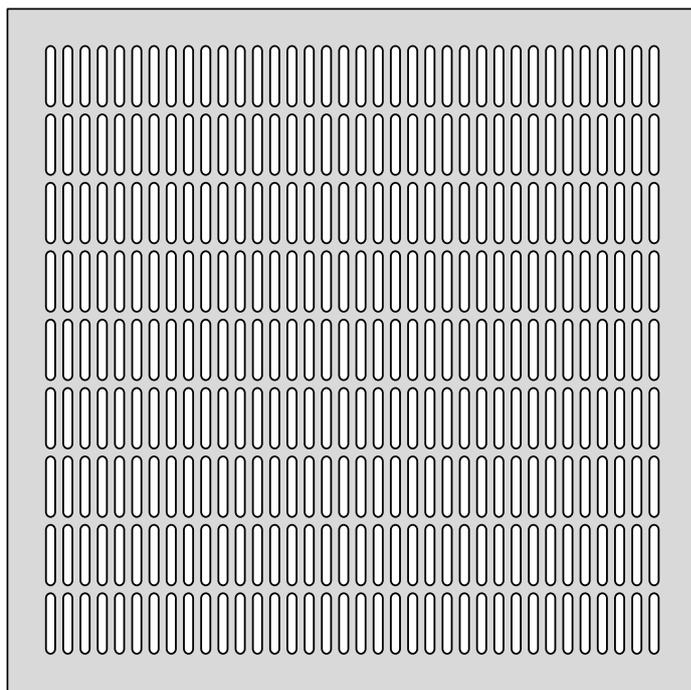
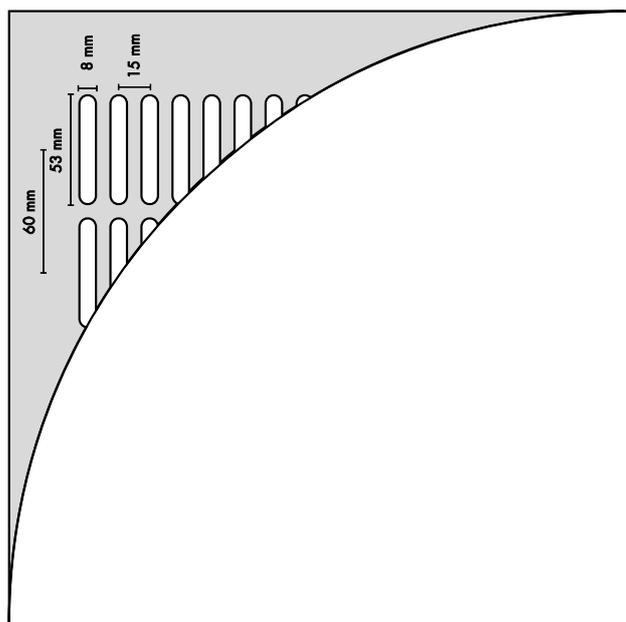
The Kino perforation has a perforation percentage of 37%. The pattern is made up of slots measuring 8 x 53 mm with a centre interval distance of 15 mm and 60 mm in each direction. The panel has a non-perforated 34 mm border. The colour of the panel surface and the gypsum core can be tailored to individual requirements.

Sizes

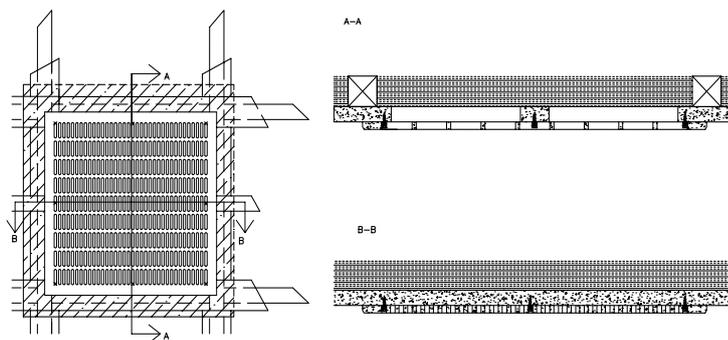
600 x 600 x 12.5 mm with bevelled edges.

Draft specification.

600 x 600 x 12.5 mm Kinopanel fixed to special support framework.

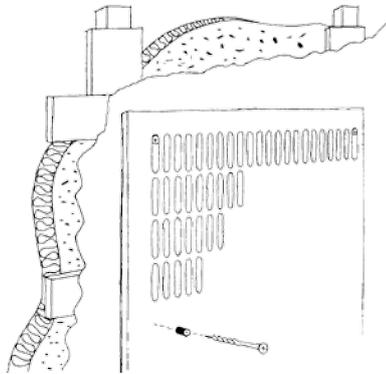
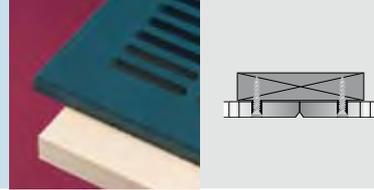


Detail



Kinopanel

Drawing no.: 80.2.001



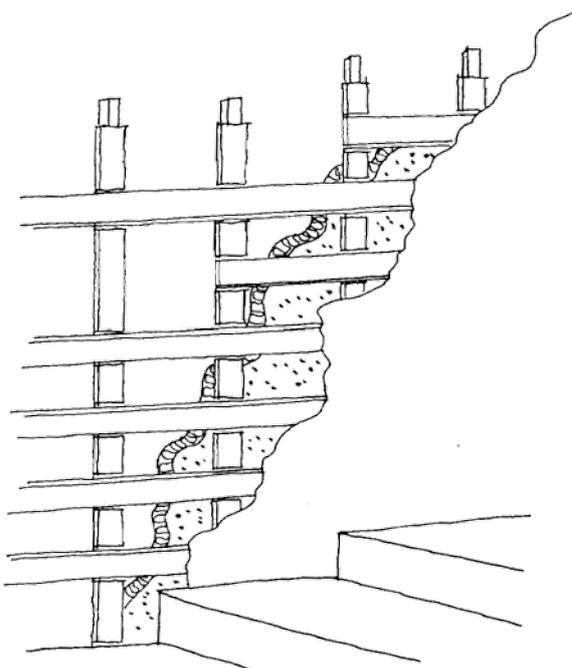
Assembly onto the wall

The Kinopanel is mounted using a minimum of 8 screws per 600 x 600 mm section. The screws can either be screwed directly through the panels or acoustic rubber plugs can be used. The acoustic plugs are mounted in the slots and the screws are screwed through the plugs leaving the Kinopanel securely fixed to the framework

Installation

Storage & Installation

Storage and installation should not be carried out in rooms with a relative humidity greater than 70%, unless otherwise stated, see section Moisture . It is equally important to take account of other work such as technical installations before installation of the ceiling is carried out. It is important for the end result that the ceiling tiles are installed at right-angles, this also makes installation quicker and easier. It is not recommended that ceilings are installed at a temperature consistently over 50°C.



Assembly of support framework

50 x 50 mm supports mounted vertically at 600 mm intervals.
 Insulation battens, 20 x 100 mm, rockwool approx. 30 - 40 kg/m³ or glass wool approx 20 - 30 kg/m³.
 Horizontal furring, to a height of 1800 mm above floor level 20 x 50 mm horizontal mid battens should be inserted; above 1800 mm only 20 x 100 mm horizontal furring are required.
 In respect to fire protection, Knauf Fireboard should be used to protect the vertical framework and also the horizontal furring. The framework should be covered in a black sound felt to conceal the Fireboard framework and the mineral wool.

Beautiful and exciting details created with Curvex, using the gypsum boards flexibility



Curvex is used where soft shading or special vaulted constructions are desired. Arches are supplied according to installation requirements in both small and large radii for use as ceilings and walls.

The mouldable and dimensionally stable arches offer scope for flexible feature solutions, bounded only by the limits of the imagination.

The arches come in different edge terminations and can be adapted to all existing edge types and thus used irrespective of the type of ceiling.



0147

0147, 0156:
Architect: PLH arkitekter A/S
Project: IBM, Allerød - Denmark
Product: Curvex



Product

Perforation

Customised perforation design on request.

Sizes

- Min. radius: 22.5mm
- Max size of arch: 180°
- Max. Length: 3000 mm
- Min. length: 1000 mm
- Min. thickness: 2 x 6.5 mm

Draft specification

Danoline Curvex shall be installed on a galvanised steel structure with furring channels.

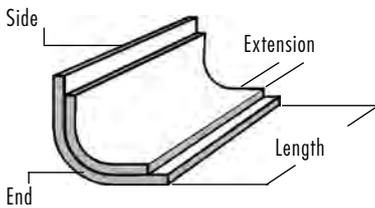
Product information

Factory produced Curvex panels are made from 6 mm gypsum boards, laminated in 2 or more layers. Minimum thickness is 13 mm.

The Curvex panels are curved circular in 90 and 180 degree, or elliptic. Danoline recommend a straight extension to the curve giving an easier installation. Curvex panels for column cladding is recommended to be carried out with 2 layers of shells made from 2 x 6 mm. Column claddings with 1 layer shells will need a comprehensive joint filling and plastering, and the column cladding will be a little oval shaped. S-shaped Curvex panels are tailor-made to order.

Curvex panels in radii less than 100 mm are produced as discontinuous arches that require plastering on site.

Curvex designation

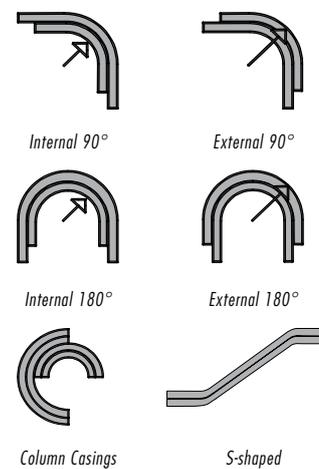


Variations

Curvex curved panels are produced in all radii as per the coloured section in shown length.

	Edge designation	End	Side
	Square edge	E1	S1
	Square edge 25 mm staggered	E2	S2
	Square edge 50 mm staggered	E4	
	Tapered edge	E5	
	Tapered edge 50 mm staggered	E6	
	Bevelled edge	E7	
	Bevelled edge 50 mm staggered	E8	

	Column 1			Column 2			Column 3		
Length in mm	1000 - 3000 mm			900 mm			1200 mm		
Degree	90°		180°	90°		180°	90°		180°
Thickness in mm	13	18	25	13	18	25	13	18	25
Radius in mm 100									
200									
300									
400									
500									
600									
700									
800									
900									
1000									
1100									
1200									
1300									
1400									
Edge detail	E1, E2, E4, E7, E8 and S1, S2			E1, E2, E4, E7, E8 and S1, S2			E1, E2, E4, E7, E8 and S1, S2		



*Individual details in almost all shapes
obtained with Mitex*



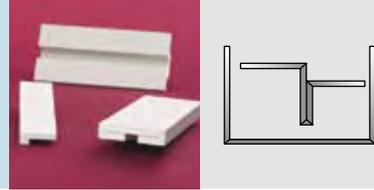
Mitex (folded panels) provide the option of working with sharp, welldefined contrasting differences in luminance. The folds, which comprise V notches, can be added from two sides as well as at several angles. It is simply a matter of defining the styling: Take a piece of paper, fold it, and you'll see the options.

Panels are manufactured to commission and have been seen used as dados, layered transitions and so on. The welldefined, knifesharp edging ensures a superb, fast, safe and economical result to the final paint job.



1314:
Architect: YRM, London
Project: Northwick Park, hospital - UK
Product: Mitex

1136, 1137:
Architect: Wingårdh Arkitekt kontor
Project: Astra Zeneca tinghuset, Göteborg - Sweden
Product: Mitex



Product

Perforation

Customised perforation design on request.

Sizes

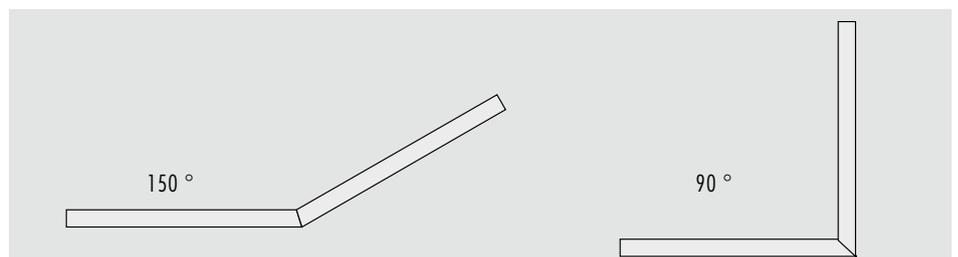
Max. width between 2 folds: 720 mm
 Max. length of panels: 3000 mm
 Min. width: 2 x thickness of panel
 Thickness: 9.5 or 12.5 mm

Draft specification

Danoline Mitex. Shall be installed on a galvanised steel structure. Mitex shall be screw fixed, joint filled, and painted.

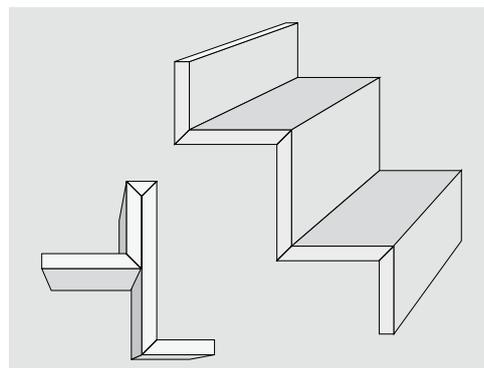
Panels

Mitex panels are manufactured from regular gypsum boards. The possibilities are many, the limitations few. Danoline manufacture the Mitex panels unfolded for folding on site, or the Mitex panels can be ready made at the factory.



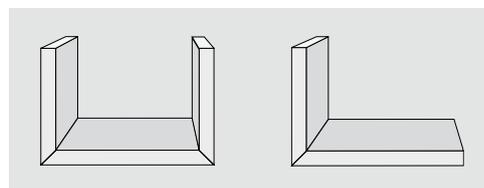
Special panels

Mitex can also be made with folds in different directions. Mitex can be supplied with reinforcement profiles on request.



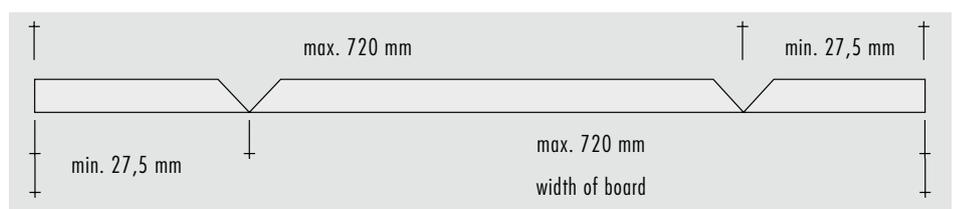
Simple panels

Types of elements which are cut and glued, ready made for installation.



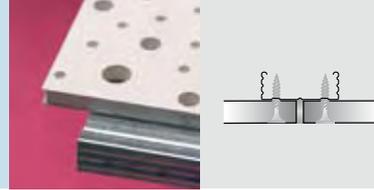
Sizes

Mitex panels are supplied in thickness 9.5, 12.5, and 25 mm. Max. length is 3000 mm and the max. total width is 1200 mm. The shown figures illustrates the area which can be grooved. Minimum distance from edge to a fold is 27.5 mm.





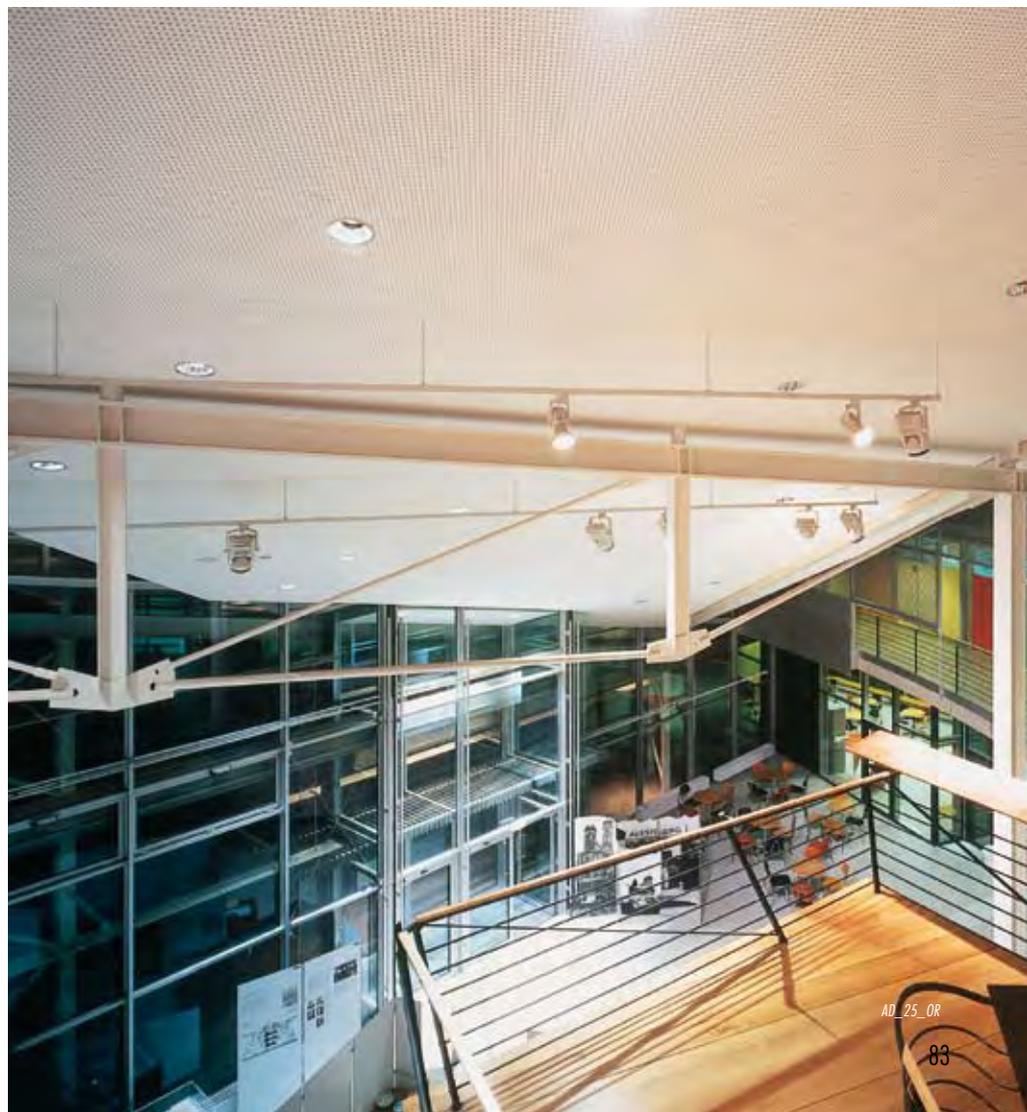
Solopanel and Stratopanel



Aesthetics and acoustics on full display achieved with Solo- and Stratopanel

Solo- and Stratopanel offer unique possibilities for creating large harmonious continuous surfaces. Many different perforation types and patterns combined with a special filling technique is the base for creating architectonic gems. Perforation percentages between 9 and up to 20 % provide the opportunity to obtain the right acoustic option. An individual acoustic assessment considering the use of the room should be made in the planning of each room. If the acoustic assessment is done professionally the user will benefit from it in the time to come.

Solo- and Stratopanel are sold mainly in Scandinavia. More information can be found in the individual brochure for these products and the local technical service is available with advice and guidance.



1347, 1351:
Architect: Arkitekterne
Project: Naturama, Svendborg - Denmark
Product: Stratopanel

AD_25_0, AD_25_OR:
Architect: Prof. Behnisch & Partner, Stuttgart
Project: Commercial school - Germany
Product: Solopanel 8/12/50 - G





Properties



1246



1248

86



1245



Even the best raw material can be enhanced for further value



Surfacing - gypsum as a natural palette

page 88



Acoustics - gypsum regulates sound

page 90



Fire - gypsum as nature's sprinkler

page 98



Indoor climate and environment - gypsum can breathe

page 100



Load-bearing capacity and weight - gypsum as a weightlifter

page 102



Moisture - gypsum as a natural skin

page 104



Luminous reflectance - gypsum mirrors light

page 106

1144:
Architect: Liljewall Arkitekter Göteborg
Project: Biotechuset, Göteborg - Sweden
Product: Designpanel 1200 - M2F

1245, 1246:
Architect: Link Arkitekter, Oslo
Project: Nannestad skole - Norway
Product: Designpanel 1200 - Q2F

1248:
Architect: Link Arkitekter, Oslo
Project: Nannestad skole - Norway
Product: Plaza 600 - M1

Surfacing – gypsum as a natural palette

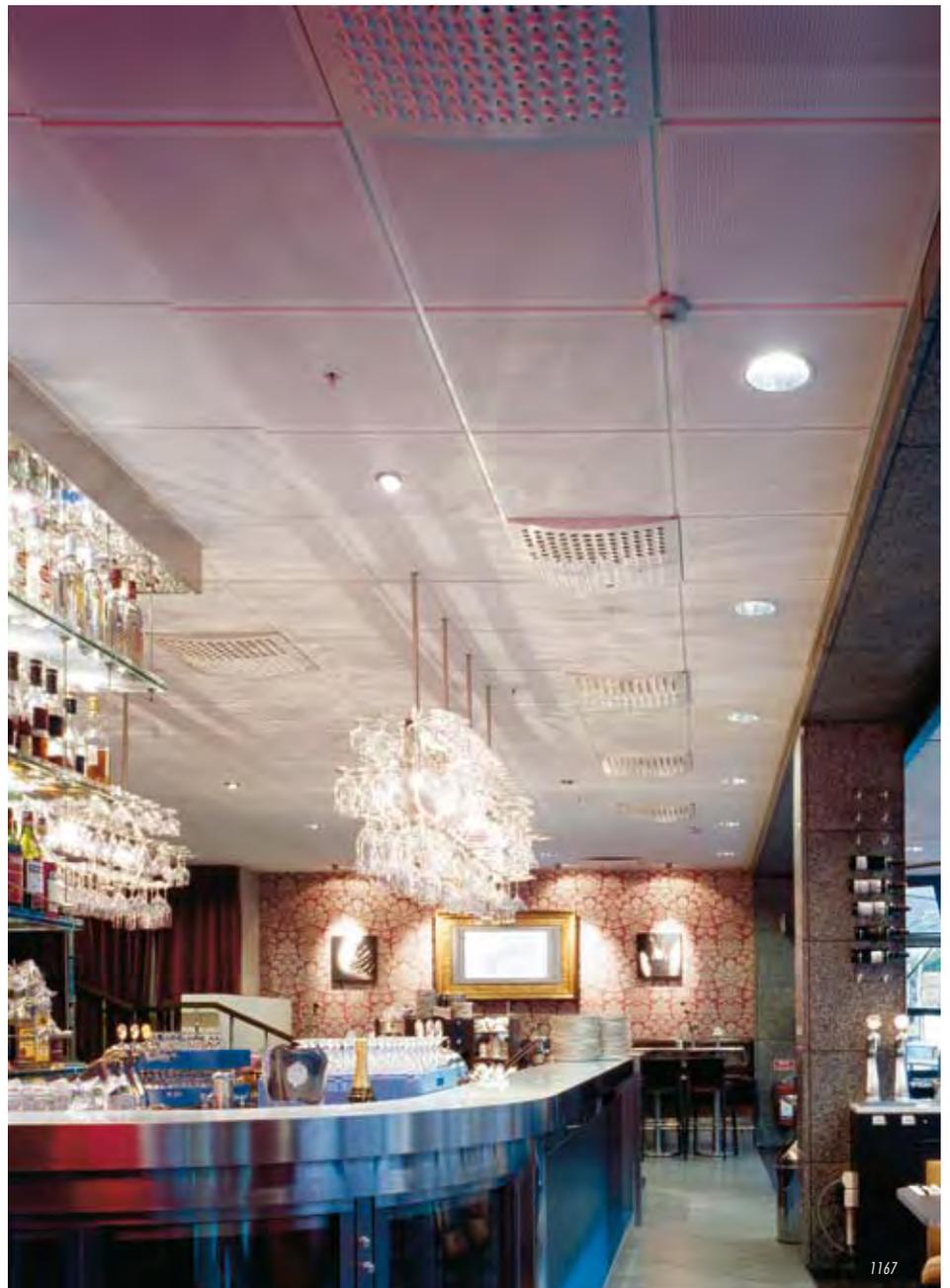
Danoline ceilings are manufactured from high grade gypsum boards. A gypsum board is manufactured as a gypsum core sandwiched between two layers of cardboard liner. In structure and texture the board is rather reminiscent of watercolour paper. It is precisely the surface of the cardboard liner that makes it ideal for coating with many types of paint, foils and similar applications. In addition to the fine technical properties of the surface, the flexibility of the board allows punching in the form of perforation holes, amongst other things. Danoline gypsum products can therefore take on a great variety of appearances, capable of supporting any design assignment. The structure of the surface of the board is reminiscent of a canvas, you yourself can choose the colours you wish to have on the palette.





A description is given below of some of the many possibilities offered by the gypsum board surface:

- Finished products can be flush mounted and special paint added, as an impregnating technique leaves edges, perforation holes and surfaces with the same colour.
- Low-gloss surfaces emphasize the terracotta finish, high-gloss surfaces emphasize the metallic appearance.
- Foil coatings can be used to create better resistance to humidity and facilitate easier maintenance.
- Untreated products can also be joined to avoid visible joints. This imparts to the ceiling a monolithic surface, which can be further refined by using perforated ceiling panels on parts of the ceiling.
- Products supplied in untreated form can be painted in situ. It is thus possible to apply glazing, stippling, marbling, graining and so on.



1183:
 Architect: BM Arkitekter AB, Åkarp
 Project: Dalslundsskolan, Åkarp - Sweden
 Product: Tectopanel - M1

1167:
 Architect: Styllt Trampoli AB, Göteborg
 Project: Hotel Scandic Rubinen, Göteborg - Sweden
 Product: Markant 600 - M1

A c o u s t i c s – g y p s u m r e g u l a t e s s o u n d

For several centuries the flexibility and mouldable properties of gypsum have provided the inspiration for beautiful decorative work. Today production of the material has been industrialised. But the flexibility and mouldability of gypsum are nevertheless exploited. This means being able to punch perforation holes and patterns, which as well as adding aesthetic qualities also makes for good acoustic properties.

The acoustic properties are achieved partly by vibrations in the panelling material and partly by generating resonance vibrations by means of air gaps in the perforation. The result is a loss of acoustic power: sound absorption.

Plain tiles exploit vibrations in the panelling material to achieve good absorption in the low bass frequencies (see section on perforation types). Plain tiles can therefore be used for smaller rooms, where absorption of high-frequency sounds is effected by furniture, carpets, curtains and shelving.

Plain tiles can also be used in conjunction with perforated tiles, e.g. in lecture halls where the fine reflective properties of the board ensure good dispersion of speech sound.

Perforated tiles, Globe and Quadril, provide good sound absorption in the intermediate frequency range.

This is where the consonants containing the most important signals in our comprehension and perception of the spoken language are located. Globe, and Quadril perforations provide good sound reflection and hence good dispersion of speech sound. It is recommended using these types of perforations in medium-sized rooms with hard materials or in larger rooms with a good spread of furniture, carpeting and suchlike.



1294

1294:
Architect: S og I Arkitekter
Projekt: OBH Gruppen, Odense - Danmark
Product: Designpanel - M1



The Danoline microperforation is used where good sound absorption is wished throughout the frequency range. Microperforated boards can be used where acoustic conditions are more critical, which is typically the case in large, high-ceilinged rooms, schools and institutions. Early in the planning of a room, it is possible to compute its acoustic qualities by extrapolation. All materials used in buildings have sound absorption. The important thing is simply to weight the sum of materials over the whole frequency range linearly.

Final regulation is usually done in the choice of ceiling and wall absorbents. It is important to choose a sound-absorbing product based on its absorption profile. The quality and balance of acoustic conditions can be compared with tuning a musical instrument: acoustic ceiling panels "tune" the room and give it the "right" sound. The surfaces of Danoline acoustic gypsum products have the important advantage of being able to be maintained without any deterioration to the acoustic properties (see section on cleaning and maintenance).

Sound absorption measurement is performed in a reverberation chamber in accordance with EN 20354. Classification and transcription to the practical absorption value are done in accordance with EN 11654.

Most of the Danoline products are Class C products. Being "hard" absorbents and by virtue of their moderate sound absorption and good sound reflection, Danoline products

offer ideal acoustic conditions in class rooms, for example. The sound is spread out to the audience without the interference of reverberations. The same combination of acoustic properties can be used with advantage in offices. When making a rough estimate, the absorption coefficients shown on the following pages can be used without taking account of the chosen product. Where special acoustic tasks call for fine tuning, information can be obtained on products' specific sound absorption by contacting the Danoline customer service centre.



1289

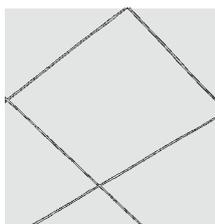


1290

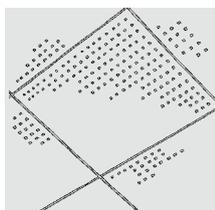
Acoustics – gypsum regulates sound

The positioning of absorbents has a great bearing on the effect of the acoustic properties. Incorrect placement can reveal and accentuate unwanted sounds. Examples of room shapes and optimal positions for sound absorbents are given below.

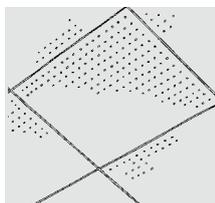
Small rooms with normal ceiling height and furniture density are fitted out with smooth, bass-absorbing tiles (Regula, plain).



In larger rooms perforated tiles should be used (Globe, Quadril, Micro).

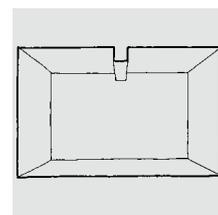


In rooms larger than 200 m², where it is wished to dampen the high frequencies in particular, panels perforated with small holes should be fitted (Micro).

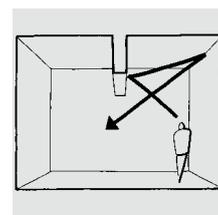


It is emphasized that the above division into room size and type of ceiling panel constitutes general guidelines. For instance, microperforated tiles can of course be used in both small and medium-size rooms etc. For specific tasks it may be advisable to consult an acoustician in order to achieve an optimal acoustic design for the room.

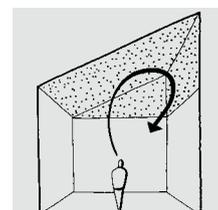
Large, low-ceilinged rooms may present problems with stray sound. Sound barriers should therefore be interpolated, e.g. in the form of beams or projections.



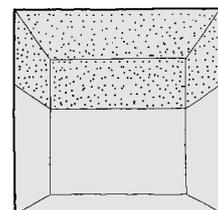
In lecture halls, possible projections in the ceiling surface should be clad with vertical absorbents in order to avoid a delayed echo.



Mutually acute angled surfaces should both be fitted with sound absorbents.

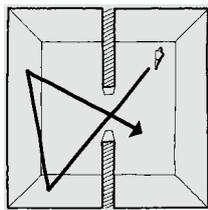


In rooms with large ceiling height, both ceiling and wall surfaces located above normal storey height must be sound regulated. In order to prevent an echo, absorbents should be used on whole wall surfaces in large rooms.

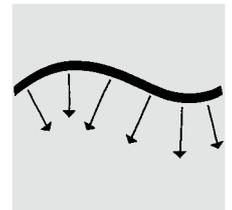




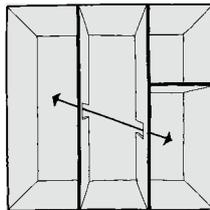
Adjoining rooms, i.e. two virtually equal sized rooms communicating openly, may act as sound amplifiers in relation to each other. Soundabsorbent materials therefore need to be fitted in both rooms.



Used in combination, concave or convex surfaces can provide varying acoustic conditions and should not be used for normal acoustic tasks. Therefore, if differing spatial effects are required, surfaces can be provided with panelling with different degrees of perforation.

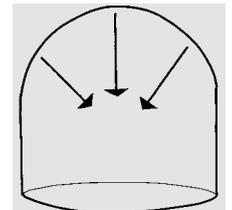


Reverberation periods must be adjusted so that transitions between rooms act as acoustic sluices. It is therefore suboptimal to position attenuated rooms and rooms with long reverberation times as adjoining rooms; a room with a medium-attenuated acoustic climate must be positioned between the rooms.

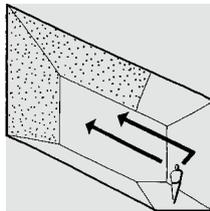


Domes, rotundas or cradle vaults collect sound at the constructional centre.

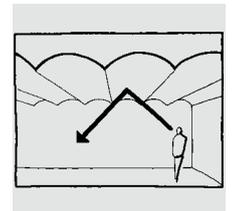
The sounds are therefore heard as powerful echoes. In order to limit this effect, the constructional centre is placed a good distance overhead.



Lecture halls or auditoria must not only emphasize the speaker's sound but also attenuate unwanted reflections. This is why reflective surfaces are used above the speaker, while absorbent surfaces are positioned opposite the speaker.



Along walls or longitudinally in cradle vaults, sound is amplified. Sound can thus be carried a long way before it eventually settles. In order to avoid this effect, barriers are inserted.

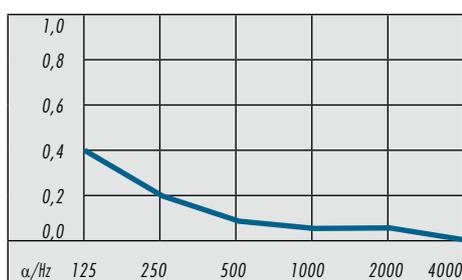


Suspended ceilings

Most of the Danoline products are Class C products. Being "hard" absorbers and by virtue of their moderate sound absorption and good sound reflection, Danoline products offer ideal acoustic conditions in class rooms, for example. The sound is spread out to the audience without the interference of reverberations. The same combination of acoustic properties can be used with advantage in offices.

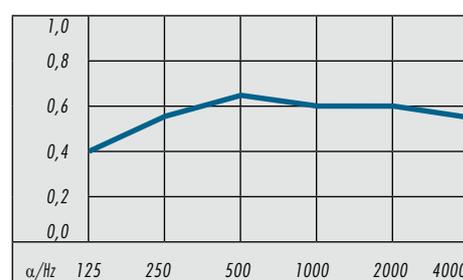
Sound absorption coefficients for suspended ceilings at 200 mm suspension.

Regula R, plain,
suspended 200 mm



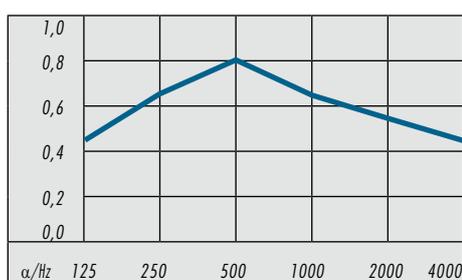
α	0,40	0,20	0,10	0,05	0,05	0,00
Hz	125	250	500	1000	2000	4000

Micro M1,
suspended 200 mm



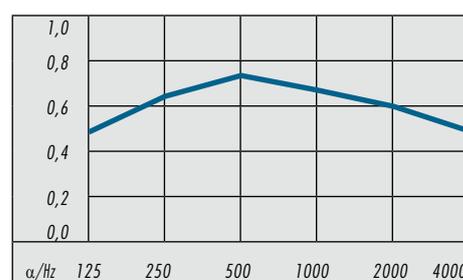
α	0,40	0,55	0,65	0,60	0,60	0,55
Hz	125	250	500	1000	2000	4000

Globe G1,
suspended 200 mm



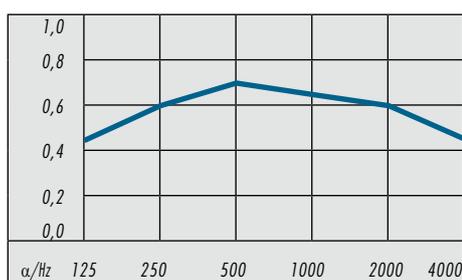
α	0,45	0,65	0,80	0,65	0,55	0,45
Hz	125	250	500	1000	2000	4000

Globe G1,
suspended 200 mm
with 25 mm Danopor



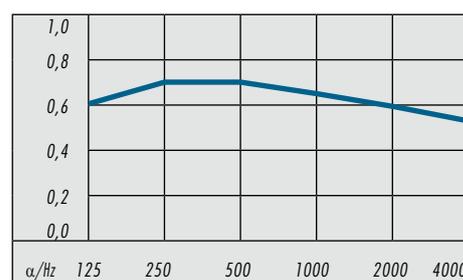
α	0,50	0,65	0,75	0,65	0,60	0,50
Hz	125	250	500	1000	2000	4000

Quadril Q1,
suspended 200 mm



α	0,45	0,60	0,70	0,65	0,60	0,45
Hz	125	250	500	1000	2000	4000

Globe G1,
suspended 200 mm
with 50 mm Danopor



α	0,60	0,70	0,70	0,65	0,60	0,55
Hz	125	250	500	1000	2000	4000

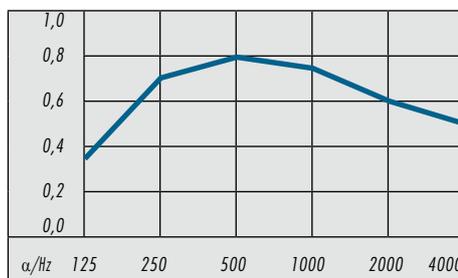


Panel ceilings

Most of the Danoline products are Class C products. Being "hard" absorbers and by virtue of their moderate sound absorption and good sound reflection, Danoline products offer ideal acoustic conditions in class rooms, for example. The sound is spread out to the audience without the interference of reverberations. The same combination of acoustic properties can be used with advantage in offices.

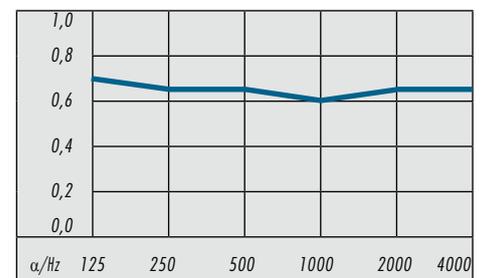
Sound absorption coefficients for panel ceilings.

Globe G1,
on 45 mm metal furring and
with 45 mm mineral wool



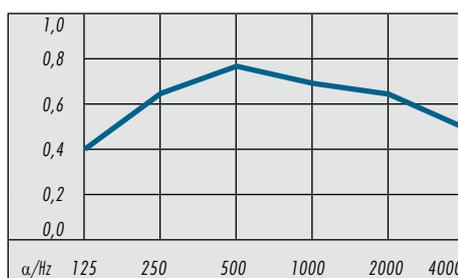
α	0,35	0,70	0,80	0,75	0,60	0,50
Hz	125	250	500	1000	2000	4000

Designpanel, 900 x 2700,
Globe G1F,
on metal furring and 200 mm
mineral wool



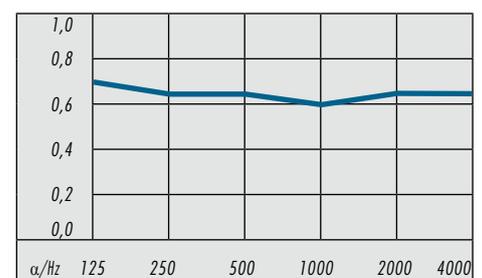
α	0,70	0,65	0,65	0,60	0,65	0,65
Hz	125	250	500	1000	2000	4000

Quadril Q1,
on 45 mm metal furring and
with 45 mm mineral wool



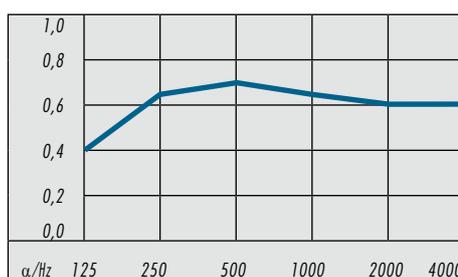
α	0,40	0,65	0,75	0,70	0,65	0,50
Hz	125	250	500	1000	2000	4000

Designpanel, 900 x 2700,
Quadril Q1F,
on metal furring and 200 mm
mineral wool



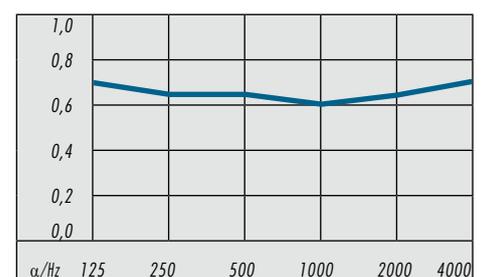
α	0,70	0,65	0,65	0,60	0,65	0,65
Hz	125	250	500	1000	2000	4000

Micro M1,
on 45 mm metal furring and
with 45 mm mineral wool



α	0,40	0,65	0,70	0,65	0,60	0,60
Hz	125	250	500	1000	2000	4000

Designpanel, 900 x 2700,
Micro M1F,
on metal furring and 200 mm
mineral wool



α	0,70	0,65	0,65	0,60	0,65	0,70
Hz	125	250	500	1000	2000	4000

Sound reduction – gypsum absorbs sound



The need for a ceiling to reduce sound occurs where the desire for a continuous ceiling construction is combined with honeycombing into smaller compartments. The design therefore provides great freedom of choice with regard to creating or moving walls.

Gypsum material naturally has a high bulk density. Therefore its weight gives naturally good sound reduction at low frequencies. Coupled with soft absorbent, Danopor, sealed in plastic bags and fitted to the rear of the ceiling panels; good sound reduction from room to room is achieved throughout the frequency range.

Sound-reducing characteristics can be varied further by selecting different thicknesses of Danopor.

In addition to its sound-reducing properties, the construction has good sound-absorbent properties throughout the frequency range. Particularly, in the bass frequencies sound absorption is good.

0889:

Architect: KSB Arkitekter A/S, Aalborg

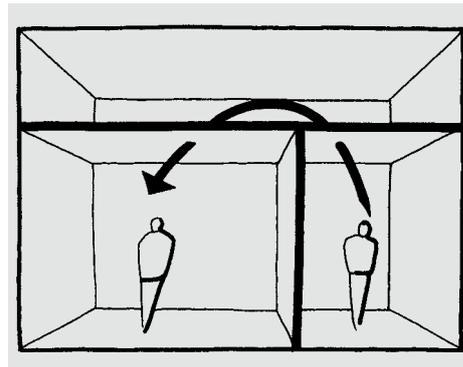
Project: Emborg Food, Aalborg - Denmark

Product: Contur 600 - Q1

0889

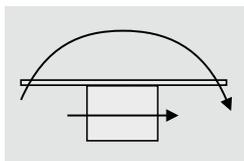


Reduction measurements on ceilings are performed in accordance with EN 20140-9 and in accordance with ASTM standard no. E 1414-97. In accordance with the standard a continuous ceiling connected to a wall is installed. Reverberation period, background noise and noise reduction are measured in the two demarcated rooms, and the results classified in accordance with ASTM standard no. E 413-87.



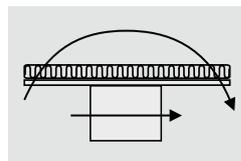
Reduction values:

Non-perforated ceiling: Regula R, plain, 200 mm suspended.



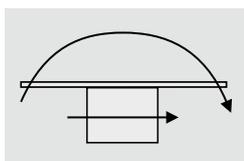
$D_{n,c,w} = 35$ dB

Perforated ceiling: 200 mm suspended with 25 mm Danopor.



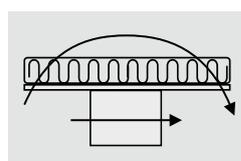
$D_{n,c,w} = 36$ dB

Perforated ceiling: 200 mm suspended.



$D_{n,c,w} = 23$ dB

Perforated ceiling: 200 mm suspended with 50 mm Danopor.



$D_{n,c,w} = 41$ dB

Fire – gypsum as nature's sprinkler

Gypsum is naturally contained in seawater. Over millions of years gypsum has been deposited naturally in seawater basins. Today gypsum is found in thick strata from which it is excavated. In terms of weight the gypsum crystal consists of 25% crystalline water, which is released in the form of steam on heating. In popular terms, gypsum contains a natural sprinkler, as the crystalline water makes gypsum products well suited for fire protection.

Gypsum is fire protective

When the gypsum is to be used for suspended ceilings, it is required to meet the stipulation of being fire protective. The requirement includes testing energy content, fire propagation and smoke formation. In certain countries the test is supplemented with a toxicity test. Danoline's products meet the most rigorous national fire requirements and score among the best fire ratings.

Cladding classes K₁10 and K₂10 (Scandinavian requirements)

When cladding is mounted directly onto a structure, the class K₁10 or K₂10 cladding requirement must be met. Claddings must be able to meet the temperature requirement within a space of 10 minutes, based on a given fire load. Class K₁10 claddings are used where intensified demands are made of the material's fireprotective properties. In Scandinavian countries, class designations are still covered by the national classification systems.

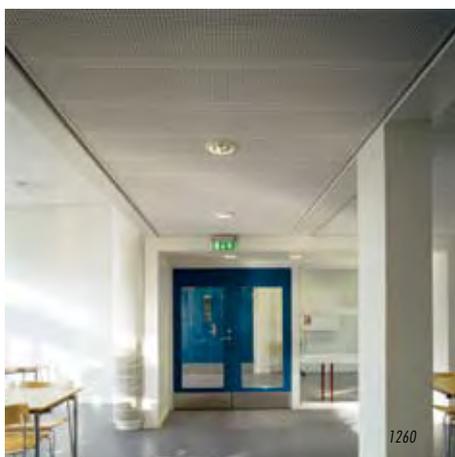
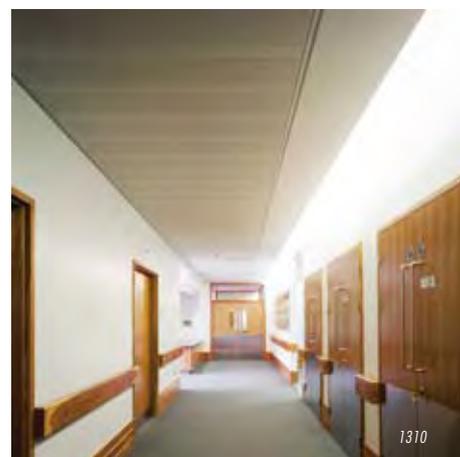
Fire protection structures

Danoline gypsum products are often incorporated in structural engineering designs that need to be fire resistant. Perforated ceilings, for example, can form an integral part of designs with fire resistance of up to 30 minutes. In addition, perforated ceilings can have structures added to meet tougher fire requirements.

In the UK, Danoline Tiles, mounted suspended in a T-rail system, can meet the requirement of protecting a steel structure for 30 minutes. The German F30 fire

class requirement is met by the product Corridor F30.

This requirement stems from the German DIN standard, which is known to be one of the world's most demanding classification systems for building and other materials.





Relevant classifications are reviewed below. (Please also refer to pages 122 - 127).

Europe

Material class A2-s1, d0 covers following products:

Contur, Markant, Linear, Plaza, Belgravia, Tectopanel, Danopanel, Designpanel.

Material class B-s1, d0 covers following products:

Corridor, Combipanel, Danoline tiles, Contrapanel, Kwik-up.

Germany

Baustoffklasse nichtbrennbar, DIN 4102-1,05/98. P-MPA-E-01-656. Includes all products 13 mm thick, e.g. Plaza, Markant, Belgravia, Contur, Linear.

Baustoffklasse schwer entflammbar B1, DIN 4102. Includes products 12.5 mm thick, e.g. Danotile and Combipanel. F-30 A. Unterdecke allein. Brandbeanspruchung von oben (Zwischendeckenbereich) und Unterdecke allein Brandbeanspruchung von unten (Deckenunterseite).

Feuerwiderstandsklasse F30 gem. DIN 4102 ,Teil 2, Ausgabe 09/1977. Includes Corridor F30.

Finland

Construction and ignitability class REI 30. Test report no. YM275/6221/2003. Covers Danopanel, Tectopanel, Designpanel

Sweden

Tändskyddande beklädnad: Tectopanel SITAC nr 2979/80, Combipanel SITAC nr 2981/80, Markant 600 (600 x 600 mm, min. 200 mm nedpendlat) och Plaza 600 (9,5 x 600 x 600 mm för perforering Globe, Micro och 12,5 x 600 x 600 mm för perforering Quadril, min. 200 mm nedpendlat) SITAC nr 0054/02. Byggnadsdel: Danoline undertak EI30 (Tecto-, Design- och Danopanel) SITAC nr 0612/01.

Norway

K1-A In 1. Sertificeringslicens nr. 544. covers following products: Tectopanel, Designpanel 900, Combipanel, Danopanel, Plaza, Markant, Contur and Corridor.

Denmark

Klasse 1 beklædning, MK 6.31/0426. covers following products: Tectopanel, Designpanel, Combipanel, Pind Op, Danopanel.

1305:

Architect: Aukett Ltd, SW11.

Project: SAS Radisson, Stansted - UK

Product: Designpanel - M1F

1310:

Architect: YRM, London, EC1.

Project: Northwick Park Hospital - UK

Product: Corridor 300 - M1

1260:

Architect: Tage Nielsens tegnestue

Project: RUC Bygn 02, Roskilde - Denmark

Product: Corridor 300 - G1

1266:

Architect: Arkitektgruppen Aarhus

Project: Greve Rådhus - Denmark

Product: Corridor Swing - M1

Indoor climate and environment – gypsum can breathe

The production of gypsum board, as mentioned, releases the gypsum crystal's water content on heating. This breaks down the gypsum stone structure to white gypsum powder. In the manufacture of gypsum board water is added, after which the fluid gypsum mass is poured between two layers of cardboard liner. In the subsequent "baking" the excess water is evaporated off and the gypsum board takes on its familiar form.

Gypsum board hardening is not based on the addition of reactive materials in the form of volatile liquids and suchlike. Nor, therefore, does the use of gypsum products cause health nuisances.

During gypsum board production, porosity is built into the board, allowing moisture to penetrate the material. This ability increases as the moisture load rises. Since the alkaline properties of the gypsum simultaneously increase in the process, this counters microfungus and similar fouling, which is normally widespread at high humidities.

Gypsum as a building material

The Danoline products are manufactured from high grade gypsum boards. Gypsum is a natural product that offers a large number of advantages when used as a building material. Gypsum is easily machined, cannot burn and contains no hazardous substances, and the manufacture of gypsum boards has only minimal impact on the environment. The residual waste from production can be recycled to produce new boards.

The Danoline products contain no asbestos and they do not release any hazardous substances, either during machining and fitting or in the service period. A good working environment and indoor climate are thus guaranteed. Other advantages include the fact that there are no allergenic nuisances when using gypsum. Gypsum ceilings are also conducive to an acoustically good environment, as well as being fire protective and simple to maintain.





Danoline is registered with the voluntary labelling scheme Dansk Indeklima Mærkning, DIM (Danish Indoor Climate Labelling). DIM is the first labelling scheme to deal with construction materials in the service phase. The purpose of indoor climate labelling is to improve the indoor climate in buildings. The areas covered by the indoor climate label are reviewed below.

Degasification

Declaration with a time value in days, termed the "declared indoor climate value". The time value is determined on the basis of the time it takes the most slowly degased individual substance to drop below the substance's smell and irritation threshold.

Particulate discharge

Classification of the product based on the release of particles determined from sedimentable dust consisting of particles (including fibres) in the first part of the product's lifetime.

According to the standard, Danoline's products rank in the best class:

Certificate no. DK-008, untreated products. The declared indoor climate value has been established as 10 days, and particulate discharge classified as low.

Certificate no. DK-007, finished products. The declared indoor climate value has been established as 10 days, and particulate discharge classified as low.

Transport and storage

One prerequisite for qualifying for Danish indoor climate labelling is also that products are transported, stored and installed in accordance with special instructions.

The labelling indicates that the article must be

- positioned on a level base
- stored indoors
- protected from direct moisture
- protected from impact and shock
- opened without the use of tools
- stored at humidities of less than 70% RH
- stored at temperatures of less than 50°C



Load-bearing capacity and weight – gypsum as a weightlifter

In its natural setting gypsum is deposited in thick, compressed layers and is thus highly adept at assimilating pressure. The cardboard facing endows the boards with great tensile strength (see section on surfaces above, p. 88). The combination of pressure resistant core and tension resistant cardboard liner therefore gives gypsum products great stability and flexibility.

Thanks to their good performance properties, even thin boards can span relatively large distances. Similarly, the good performance properties allow large parts of the surface to be drilled or sawn out for light fittings.



1298:
Architect: Kinnersley Kent Design, London, W1.
Project: House of Fraser, Croydon, Surrey - UK
Product: Danoline tiles - white, R



The deflection and the load capacity of the ceiling systems are tested in accordance with the principles set by the EN 13964 standard, 2004. The humidity and temperature conditions present during the tests are described in Appendix F of the standard. The load and deflection values in question can be found in the tables on page 105.

Loads exceeding those rated should be transferred to the suspension system or to an independent overlying structure. In case of lightweight fixtures suspended directly from the ceiling elements, a special fixture plug which expands on the back of the ceiling element should be used.

The deflection is categorised under 3 classes:

Class	Maximum deflection in mm
1	$L/500$ and not more than 4 mm
2	$L/300$
3	no limitations

L is the shortest distance between the furring battens.

The deflection is tested under the below mentioned conditions which are categorised under 4 classes:

Class	Conditions
A	Building structures exposed to a maximum relative humidity of 70% and a maximum temperature of 25°C.
B	Building structures exposed to a maximum relative humidity of 90% and a maximum temperature of 30°C.
C	Building structures exposed to a relative humidity degree higher than 90% and to the risk of condensation.
D	Load is heavier than in the above classes.

The load capacity is stated as a combination of the above-mentioned, the net weight and the built-in weight.

Deflection class	Humidity class	Type of load
1	A	No load (-)
2	B	Point load (N)
3	C	Linear load (N/m ¹)
-	D	Area load (N/m ²)



Moisture – gypsum as a natural skin



Gypsum feels at home wherever people feel at home.

Gypsum board acts like a skin, capable of absorbing and releasing moisture. At low humidities moisture is released, at high humidities moisture is absorbed. Gypsum products therefore play an active role in regulating and improving the indoor climate.

All Danoline's products are tested for resistance to moisture. Products tested with resistance up to 70% RH max. are designed for use under normal conditions, i.e. in offices, institutions and similar premises. Products tested with resistance up to 90% RH are designed for use under more extreme conditions and can thus be used in kitchens, laboratories and other rooms with frequent and major changes in the humidity of the air. In the latter case, it is also recommended using special purpose, anti-corrosion treated suspension systems.

1302:

Architect: Kinnersley Kent Design, London, W1.

Project: House of Fraser, Croydon, Surrey - UK

Product: Danoline tiles - R

1319:

Architect: Initiative in Design

Project: Sir Williams Perkins School, Chertsey, Surrey - UK

Product: Plaza 600 - M1



Testing deflection

Plasterboards, which form the basic material of Danoline products, are tested for flexural strength according to the European Standard EN 520. Subsequently, Danoline products are tested for deflection and load-bearing capacity under certain temperature, humidity and load conditions, all in accordance with the principles set by the European standard EN 13964, 2004, Appendix F.

The tests are carried out under humidity conditions classified as A, B, C or D, depending on the temperature and the relative humidity. The classifications of humidity, deflection and load values can be found on page 103.

We recommend that warehousing & storage conditions should not exceed 70% RH and 50°C. If Danopor is used as a lining on the back of suspended ceilings, Contur and Linear will fall within category 2/A/12N/m². Other 9,5 and 12,5 mm Danoline suspended ceilings lined with Danopor are categorised as 1/A/12N/m².



Suspended ceilings

Class B, 90% RH, 30°C

Products	Perforations	Formats	Deflection/Humidity/Weight
Markant 600	G, Q, M, R	600 x 600 x 12,5 – 625 x 625 x 12,5	2/B/no load
Markant 500	G, Q, M, R	500 x 500 x 9,5	2/B/no load
Belgravia 600	G, Q, M, R	600 x 600 x 12,5 – 625 x 625 x 12,5	2/B/no load
Markant 600, Belgravia 600	G1F, Q1F, M1F, R	600 x 1200 x 12,5 – 625 x 1250 x 12,5	3/B/no load
Plaza 600	G, Q, M, R	600 x 600 x 9,5 – 625 x 625 x 9,5	2/B/no load
Plaza 600	G1F, Q1F, M1F, R	600 x 1200 x 9,5 – 625 x 1250 x 9,5	3/B/no load
Danoline Tiles Medley	G, R	600 x 600 x 9,5	2/B/no load
Danoline Tiles	R	600 x 600 x 6,5 – 625 x 625 x 6,5	2/B/no load
Danoline Tiles	R	600 x 600 x 9,5 – 625 x 625 x 9,5	1/B/no load – 2/B/30N
Corridor 300	G, Q, M, R	300 x 2400 x 9,5	2/B/no load
Corridor F30	G, Q, M, R	300 x max. 2800	1/B/170N

Linings

Class B, 90% RH, 30°C

Products	Perforations	Supporting c/ç	Formats	Deflection/Humidity/Weight
Designpanel	G2F, Q2F, M2F, R	300	1200 x 2400 x 12,5	2/B/no load – 2/B/30N
Tectopanel	G, Q, M, R	300	600 x 2400 x 12,5	1/B/no load – 2/B/30N
Danopanel	G, Q, M, R	300	600 x 600 x 12,5	2/B/no load
Combipanel	G, Q, M, R	300	300 x 1200/1800/2400 x 9,5	2/B/no load
Contrapanel	G1F, R	300	600 x 1200/1800/2400 x 12,5	1/B/no load – 2/B/30N

Class A, 70% RH, 25°C

Products	Perforations	Formats	Deflection/Humidity/Weight
Contur 600	G, Q, M, R	600 x 600 x 12,5 – 625 x 625 x 12,5	2/A/no load
Contur 600	G1F, Q1F, M1F, R	600 x 1200 x 12,5	3/A/no load
Linear 600	G, Q, M, R	600 x 600 x 12,5	2/A/no load
Markant 600	G, Q, M, R	600 x 600 x 12,5 – 625 x 625 x 12,5	1/A/no load – 2/A/30N
Markant 500	G, Q, M, R	500 x 500 x 9,5	1/A/no load – 2/A/30N
Belgravia 600	G, Q, M, R	600 x 600 x 12,5 – 625 x 625 x 12,5	1/A/no load – 2/A/30N
Markant 600, Belgravia 600	G1F, Q1F, M1F, R	600 x 1200 x 12,5 – 625 x 1250 x 12,5	2/A/no load
Plaza 600	G, Q, M, R	600 x 600 x 9,5 – 625 x 625 x 9,5	1/A/no load – 2/A/30N
Plaza 600	G1F, Q1F, M1F, R	600 x 1200 x 9,5 – 625 x 1250 x 9,5	2/A/no load
Danoline Tiles Medley	R, G	600 x 600 x 9,5	1/A/no load – 2/A/30N
Danoline Tiles White, Metallic	R	600 x 1200 x 6,5 – 600 x 600 x 12,5	3/A/no load – 2/A/30N
Corridor 300	G, Q, M, R	300 x 2400	1/A/no load – 2/A/30N
Corridor Swing	G, Q, M, R	600 x max. 1800	2/A/no load – 3/A/30N

Class A, 70% RH, 25°C

Products	Perforations	Supporting c/ç	Formats	Deflection/Humidity/Weight
Designpanel	G1F, Q1F, M1F, R	450	900 x 2700 x 12,5	2/A/no load
Kinopanel	Special perforation	300	600 x 600 x 12,5	3/A/no load
Danopanel	G, Q, M, R	300	600 x 600 x 12,5	1/A/no load – 3/A/30N
Combipanel	G, Q, M, R	300	300 x 1200/1800/2400 x 9,5	1/A/no load – 2/A/30N

N = Newton, 10N ~ 1KG

Luminous reflectance – gypsum mirrors the light

The plasterboard surface is ideal for applying various types of paints and laminates. The nature of the surface can vary from high-gloss to matt surfacing. For measuring luminous reflectance, a standard measuring method is used, DIN 5036, Part 3. However, the subjective perception of luminous reflectance can vary from the measured values, since the gloss and structure of the surface also influence one's experience of reflectance.

Gloss has a bearing on reflections at very oblique incidences of light. Thus great mattness gives very little reflection. The structure also affects reflection. Perforated boards reflect light back in many directions and thus create a great scattering of light. Both are instrumental in giving gypsum products minimum reflection and take excellent advantage of reflected light, so rooms in which gypsum ceilings have been used are perceived as being light and pleasant.

Painted Danoline ceilings are supplied as standard with a white gloss 5 surface (NCS 0700). The painted surface has a fine, matt texture, providing great light dispersion to ensure optimal exploitation of working light without troublesome reflections. In functional terms, the surface can beneficially be used in rooms where work is done at computer monitors. Gloss 5 paint and dark colours create far fewer reflections but should only be used in rooms where there is adequate lighting, e.g. in the form of large window surfaces.



1249

1249:
Architect: Link Arkitekter, Oslo
Project: Nannestad skole - Norway
Product: Plaza 600 - M1



Gloss 15 surfaces should only be used as a special finish, since less light reflection is achieved together with a greater mirror reflection. In functional terms, high-gloss surfaces have the advantage of being easier to clean, and dirt is less prone to cling to the surface.



Luminous reflectance

Measurements of reflection have been carried out in accordance with DIN 5036, Part3, DLO measuring instruction B15-1:

Product	Surface	Reflective
Quadril Q1	gloss 5	75,1%
Micro M1	gloss 5	72,1%
Globe G1	gloss 5	72,8%
Globe G1	gloss 15	71,5%
Regula R, plain	gloss 5	82,6%
Regula R, plain	gloss 15	80,8%
Regula R, plain	white faced	79,2%

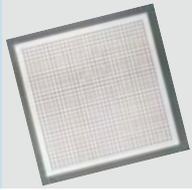






Perforations





Perforations and patterns give endless possibilities for the individual personal choice

Danoline has got a comprehensive range of perforation patterns within the 3 main types of perforations, Globe, Quadril and Micro. The shown variation of Quadril perforation has been especially designed for this particular room. Naturally, all ceiling systems come in plain, Regula.

Danoline ceilings are available in 3 basic perforations, Globe G, Quadril Q, and Micro M. The most common used perforations and patterns are described on the following pages. Danoline manufacture also customised designed patterns on request.

The designation of the main perforation are shown below, and the illustrations show also the variations of perforation patterns, which are manufactured to order.

- G: Globe perforation, 6 mm circular holes.
- Q: Quadril perforation, 12 x 12 mm square holes.
- M: Micro perforation, 3 x 3 mm square holes.
- R: Regula is the plain and non-perforated element.
- L: Linear perforation parallel to main T-profiles.
- T: Linear perforation cross-wise to main T-profiles.
- F: Squared groups of perforations.



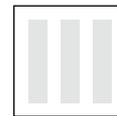
R



G1
Q1
M1



G2F
Q2F
M2F



G3L, G3T
Q3L, Q3T
M3L, M3T



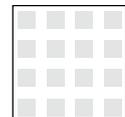
G4L, G4T
Q4L, Q4T
M4L, M4T



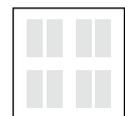
G2L, G2T
Q2L, Q2T
M2L, M2T



G3F
Q3F
M3F



G4F
Q4F

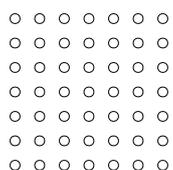


G4L2, G4T2
Q4L2, Q4T2
M4L2, M4T2

1178:
Architect: White Arkitekter
Project: Halmstads Fastighetsbolag, Halmstad - Sweden
Product: Corridor 300 - M1

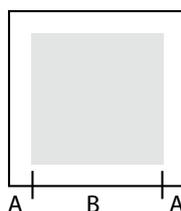
1241:
Architect: Hamsdokka & Pedersen, Porsgrunn
Project: Grønli Skole, Porsgrunn - Norway
Product: Belgravia - Q1, R

Globe perforation



Globe perforation patterns consist of 6 mm circular holes at 15 mm c/c. The width of the perimeter border of the tiles varies depending on the specific type of pattern and ceiling system. Other perforation patterns are manufactured to special order.

G 1

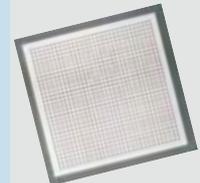


The below measurements indicate the distance from the edge of the board to the centre of the first perforated hole:

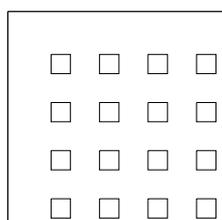
A: Edge distance

B: Section size

Product	Perforation	Size mm	Perforation %	A mm	B mm
Contur S24	G1	600 x 600	10.2	37.5	525
Contur S24	G1	625 x 625	10.5	35.0	555
Linear S24	G1	592 x 592	9.1	48.5	495
Markant S15	G1	585 x 585	10.2	30.0	525
Markant S15	G1	610 x 610	9.4	42.5	525
Markant S24	G1	575.5 x 575.5	10.2	25.25	525
Markant S24	G1	600.5 x 600.5	9.4	37.75	525
Belgravia S15	G1	584.5 x 584.5	10.2	29.75	525
Belgravia S15	G1	609 x 609	9.4	42.0	525
Belgravia S24	G1	575.5 x 575.5	10.2	25.25	525
Belgravia S24	G1	600 x 600	9.4	37.5	525
Plaza S15	G1	594 x 594	10.2	34.5	525
Plaza S15	G1	619 x 619	10.5	32.0	555
Plaza S24	G1	594 x 594	10.2	34.5	525
Plaza S24	G1	619 x 619	10.5	32.0	555
Danopanel	G1	600 x 600	10.2	37.5	525
Danopanel	G1	625 x 625	10.5	35.0	555
Tectopanel	G1	600 x 600	10.2	37.5	525
Tectopanel	G1	625 x 625	10.5	35.0	555
Corridor F30	G1	300 x 2800	9.8	37.5	225
Corridor 300	G1	300 x 2400	9.8	37.5	225

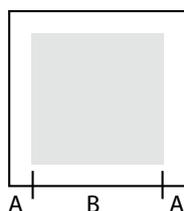


Quadril perforation



Quadril perforation patterns consist of 12 x 12 mm square holes at 30 mm c/c. The width of the perimeter border of the tiles varies depending on the specific type of pattern and ceiling system. Other perforation patterns are manufactured to special order.

Q 1



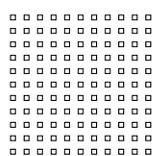
The below measurements indicate the distance from the edge of the board to the centre of the first perforated hole:

A: Edge distance

B: Section size

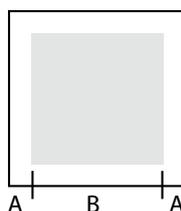
Product	Perforation	Size mm	Perforation %	A mm	B mm
Contur S24	Q1	600 x 600	13.0	45.0	510
Contur S24	Q1	625 x 625	11.9	57.5	510
Linear S24	Q1	592 x 592	10.2	71.0	450
Markant S15	Q1	585 x 585	13.0	37.5	510
Markant S15	Q1	610 x 610	11.9	50.0	510
Markant S24	Q1	575.5 x 575.5	13.0	32.75	510
Markant S24	Q1	600.5 x 600.5	11.9	45.25	510
Belgravia S15	Q1	584.5 x 584.5	13.0	36.75	510
Belgravia S15	Q1	609 x 609	11.9	49.0	510
Belgravia S24	Q1	575.5 x 575.5	13.0	32.0	510
Belgravia S24	Q1	600 x 600	11.9	45.0	510
Plaza S15	Q1	594 x 594	13.0	42.0	510
Plaza S15	Q1	619 x 619	11.9	47.0	510
Plaza S24	Q1	594 x 594	13.0	42.0	510
Plaza S24	Q1	619 x 619	11.9	47.0	510
Danopanel	Q1	600 x 600	13.0	45.0	510
Danopanel	Q1	625 x 625	11.9	57.5	510
Tectopanel	Q1	600 x 600	13.0	45.0	510
Tectopanel	Q1	625 x 625	11.9	57.5	510
Corridor F30	Q1	300 x 2800	12.3	45.0	225
Corridor 300	Q1	300 x 2400	12.3	45.0	225

Micro perforation



Micro perforation patterns consist of 3 x 3 mm square holes at 8.33 mm c/c. The width of the perimeter border of the tiles varies depending on the specific type of pattern and ceiling system. Other perforation patterns are manufactured to special order.

M 1

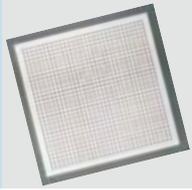


The below measurements indicate the distance from the edge of the board to the centre of the first perforated hole:

A: Edge distance

B: Section size

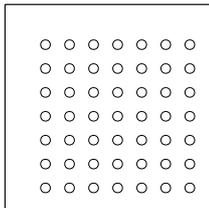
Product	Perforation	Size mm	Perforation %	A mm	B mm
Contur S24	M1	600 x 600	10.2	37.5	525
Contur S24	M1	625 x 625	10.7	33.33	558.33
Linear S24	M1	592 x 592	10.2	33.5	525
Markant S15	M1	585 x 585	10.2	30.0	525
Markant S15	M1	610 x 610	10.7	42.5	525
Markant S24	M1	575.5 x 575.5	10.2	25.25	525
Markant S24	M1	600.5 x 600.5	10.7	37.75	525
Belgravia S15	M1	584.5 x 584.5	10.2	29.75	525
Belgravia S15	M1	609 x 609	10.7	42.0	525
Belgravia S24	M1	575.5 x 575.5	10.2	25.25	525
Belgravia S24	M1	600 x 600	10.7	37.5	525
Plaza S15	M1	594 x 594	10.2	34.5	525
Plaza S15	M1	619 x 619	10.7	30.33	558.33
Plaza S24	M1	594 x 594	10.2	34.5	525
Plaza S24	M1	619 x 619	10.7	30.33	558.33
Danopanel	M1	600 x 600	10.2	37.5	525
Danopanel	M1	625 x 625	10.7	35.0	555
Tectopanel	M1	600 x 600	10.2	37.5	525
Tectopanel	M1	625 x 625	10.7	35.0	555
Corridor F30	M1	300 x 2800	9.8	37.5	225
Corridor 300	M1	300 x 2400	9.8	37.5	225



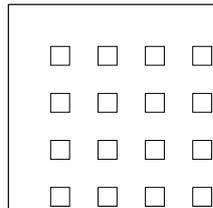
Design panel

Designpanels are perforated in 3 main types of perforations. The width of the perimeter border of the tiles varies depending of the specific type on pattern and ceiling system.

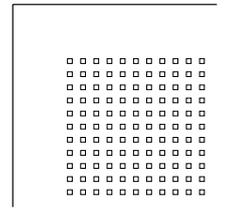
Globe perforation patterns consist of 6 mm circular holes at 15 mm c/c.



Quadril perforation patterns consist of 12 x 12 mm square holes at 30 mm c/c.

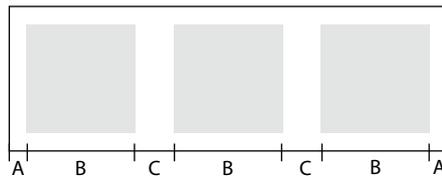


Micro perforation patterns consist of 3 x 3 mm square holes at 8.33 mm c/c.

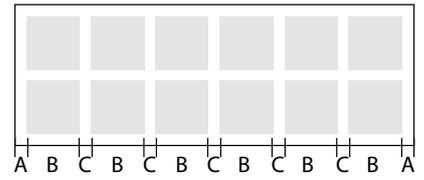


Design panel 900

G1F, Q1F, M1F

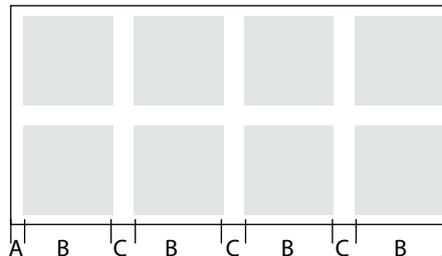


G2F, Q2F, M2F

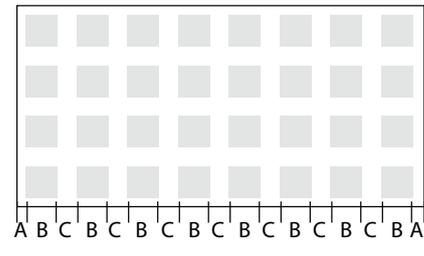


Design panel 1200

G2F, Q2F, M2F



G4F, Q4F



The measurements stated in the table indicate the distance from the edge of the board to the centre of the first perforated hole:

A: Edge distance

B: Section size

C: Section distance

Product	Perforation	Size mm	Perforation %	A mm	B mm	C mm
Design 900	G1F	900 x 2700	10.18	60.0	780	120
Design 900	G2F	900 x 2700	7.39	60.0	330	120
Design 900	Q1F	900 x 2700	12.96	60.0	780	120
Design 900	Q2F	900 x 2700	10.24	60.0	330	120
Design 900	M1F	900 x 2700	9.82	62.5	775	125
Design 900	M2F	900 x 2700	7.11	62.5	325	125
Design 1200	G2F	1200 x 2400	8.55	60.0	480	120
Design 1200	G4F	1200 x 2400	5.31	60.0	180	120
Design 1200	Q2F	1200 x 2400	11.56	60.0	480	120
Design 1200	Q4F	1200 x 2400	7.84	60.0	180	120
Design 1200	M2F	1200 x 2400	8.41	62.5	475	125





Cleaning and maintenance

Suspended and self-supporting ceilings

Valid for:

Contur 600	Plaza 600
Linear 600	Danoline Tiles 600
Markant 600	Corridor 300
Belgravia 600	Corridor F30
Markant 500	Corridor Swing 600

Materials:

Tiles and Panels:	Factory painted perforated and unperforated ceiling tiles and panels are painted with water based acrylic paint. Standard White no. 7380-3350 (as NCS 0700) gloss 5. Danoline Tiles 600 and Corridor F30 are factory laminated with a white, metallic or medley face.
Suspension system:	Galvanised metal profiles, the exposed parts are factory painted as CMC No. 001 Global White (NCS 0902-G48Y), wall angle for Corridor F30 as RAL 9010.

Maintenance:

Dust:	Vacuum cleaning with a soft brush nozzle.
Dirt:	Painted surfaces should be wiped off with a damp cloth, using a mild detergent. Laminated surfaces can be washed.
Stains and damages:	Painted surfaces should be wiped off and if necessary repainted using a paint roller or a brush, but roller is recommended. Spray painting is not recommended on perforated products, as the spray paint could be applied to the acoustic felt backing altering the acoustic properties. Slight damages and scratches on the surface can be repaired using filler and finishing with sandpaper. The painted ceiling products can be repainted using Danogips repair paint colour no. 7417-3350 (as NCS 0700). Laminated products being damaged with scratches shall be replaced.

References:

Danoline product literature.



Ceiling linings, acoustic and plain

Valid for:

Danopanel

Contrapanel

Combipanel

Kinopanel

Designpanels 900 and 1200

Curvex (arches)

Tectopanel

Mitex (folded panels)

Materials:

Panels:

Factory painted perforated and unperforated panels are painted with water based acrylic paint. Standard White no. 7380-3350 (as NCS 0700) gloss 5. Contrapanel is factory laminated with a white face.

Maintenance:

Dust:

Vacuum cleaning with a soft brush nozzle.

Dirt:

Painted surfaces should be wiped off with a damp cloth, using a mild detergent.

Stains and damages:

Painted surfaces should be wiped off and if necessary repainted using a paint roller or a brush, but roller is recommended. Spray painting is not recommended on perforated products, as the spray paint could be applied to the acoustic felt backing altering the acoustic properties.

Slight damages and scratches on the surface can be repaired using filler and finishing with sandpaper.

The painted ceiling products can be repainted using Danogips repair paint colour no. 7417-3350 (as NCS 0700).

References:

Danoline product literature.





Summary

Suspended ceilings

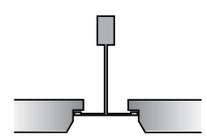
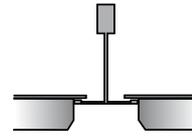
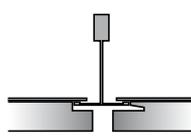
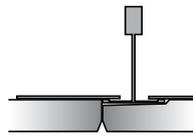
Product name

Contur

Linear

Markant 600

Belgravia



Edge

Edge D

Edge C

Edge E

Edge E

Surface

Painted, gloss 5

Painted, gloss 5

Painted, gloss 5

Painted, gloss 5

Suspension system

S24

S24

S15 / S24

S15 / S24 / Ultraline

Fire classifications

EN 14190:
Fullperforated: A₂-s1, d0 (C1)
Part and non-perforated: B-s1, d0 (C1)

EN 14190:
Fullperforated: A₂-s1, d0 (C1)
Part and non-perforated: B-s1, d0 (C1)

EN 14190:
Fullperforated: A₂-s1, d0 (C1)
Part and non-perforated: B-s1, d0 (C1)

EN 14190:
Fullperforated: A₂-s1, d0 (C1)
Part and non-perforated: B-s1, d0 (C1)

N: K1-A, In 1

N: K1-A, In 1

S: Täandskyddande beklädnad
N: K1-A, In 1

N: K1-A, In 1

Deflection and load bearing capacity

Note 1)

EN 13964: Class 2 / A / No load

EN 13964: Class 2 / A / No load

EN 13964: Class 1 / A / No load
EN 13964: Class 2 / B / No load
EN 13964: Class 2 / A / 30N

EN 13964: Class 1 / A / No load
EN 13964: Class 2 / B / No load
EN 13964: Class 2 / A / 30N

Perforations

Globe

Quadril

Globe

Quadril

Globe

Quadril

Globe

Quadril



Micro

Regula

Micro

Regula

Micro

Regula

Micro

Regula

Size

Size possibilities:

600 x 600 x 12.5 mm

625 x 625 x 12.5 mm

Size possibilities:

600 x 600 x 12.5 mm

Size possibilities:

600 x 600 x 12.5 mm

600 x 1200 x 12.5 mm

600 x 625 x 12.5 mm

625 x 1250 x 12.5 mm

Size possibilities:

600 x 600 x 12.5 mm

625 x 625 x 12.5 mm

Note 1): The Test is carried out in accordance with the principles of EN13964: 2004. The given values apply to the standard format 600 x 600mm, unless otherwise stated, see also pages 103,105.

1255:

Architect: Henning Larsens Tegnestue A/S

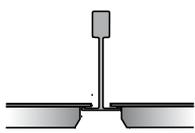
Project: IT Højskole, Amager Fælledvej - Denmark

Product: Designpanel 1200 - M



Accessories

Markant 500



Edge E

Painted, gloss 5

S15

EN 14190:

Fullperforated: A₂-s1, d0 (C1)

Part and non-perforated: B-s1, d0 (C1)

N: K1-A, In 1

EN 13964: Class 1 / A / No load

EN 13964: Class 2 / B / No load

EN 13964: Class 2 / A / 30N

Globe



Micro



Quadril

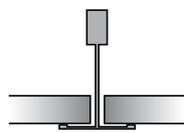


Regula

Size possibilities:

500 x 500 x 9,5 mm

Plaza



Edge A

Painted, gloss 5

S15 / S24

EN 14190:

Fullperforated: A₂-s1, d0 (C1)

Part and non-perforated: B-s1, d0 (C1)

S: Täandskyddande beklädnad

N: K1-A, In 1

EN 13964: Class 1 / A / No load

EN 13964: Class 2 / B / No load

EN 13964: Class 2 / A / 30N

Globe



Micro



Quadril



Regula

Size possibilities:

600 x 600 x 9.5 mm

600 x 1200 x 9.5 mm

600 x 600 x 12.5 mm

600 x 1200 x 12.5 mm

625 x 625 x 12.5 mm

625 x 1250 x 12.5 mm

Danoline tiles



Edge A

Laminated, White or Metallic

S15 / S24

EN 14190:

Non-perforated: B-s1, d0 (C1)

GB: ½ Hour fire-rated, 6,5

EN 13964: 9,5mm,

Class 1 / B / No load,

Class 2 / B / 30N,

EN 13964: 6,5 mm,

Class 2 / B / No load

Regula



Size possibilities:

600 x 600 x 6.5 mm

600 x 1200 x 6.5 mm

600 x 600 x 9.5 mm

600 x 1200 x 9.5 mm

625 x 625 x 9.5 mm

Danoline tiles Medley



Edge A and E

Laminated, Medley

S15 / S24

EN 14190

Fullperforated: B-s1, d0 (C1)

Part and non-perforated: B-s1, d0 (C1)

N: K1-A, In 1

EN 13964: Class 1 / A / No load

EN 13964: Class 2 / B / No load

EN 13964: Class 2 / A / 30N

Globe



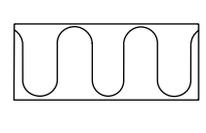
Regula



Size possibilities:

600 x 600 x 9.5 mm

Danopor



For products with edge type:

A, C, D, E

EN 13964: Edge A, E

Class 1 / A / 12N/m²

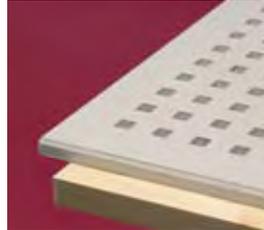
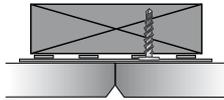
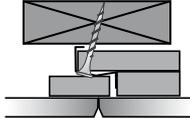
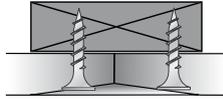
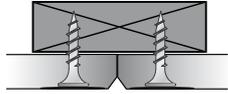
EN 13964: Edge C, D

Class 2 / A / 12N/m²

Thickness 25 and 50 mm. For module

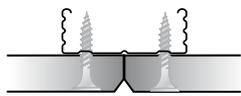
600 x 600 mm.

Linings

Product name	Danopanel	Combipanel	Designpanel	Tectopanel				
								
								
Edge	Edge B	Edge F	Edge A1/A3	Edge B				
Surface	Painted, gloss5	Painted, gloss 5	Untreated	Untreated				
Fire classifications	EN 14190: Fullperforated: A ₂ -s1, d0 (C1) Part and non-perforated: B-s1, d0 (C1) FIN: Tyyppihyväksytty REI30 –yläpohjarakenne N: K1-A, In 1 DK: Klasse 1 beklædning	EN 14190: Fullperforated: B-s1, d0 (C3) Part and non-perforated: B-s1, d0 (C3) S: Tändskyddande beklädnad N: K1-A, In 1 DK: Klasse 1 beklædning	EN 14190: Fullperforated: A ₂ -s1, d0 (C1) Part and non-perforated: A ₂ -s1, d0 (C1) FIN: Tyyppihyväksytty REI30 –yläpohjarakenne N: K1-A, In 1 DK: Klasse 1 beklædning	EN 14190: Fullperforated: A ₂ -s1, d0 (C1) Part and non-perforated: A ₂ -s1, d0 (C1) FIN: Tyyppihyväksytty REI30 –yläpohjarakenne S: Tändskyddande beklädnad N: K1-A, In 1 DK: Klasse 1 beklædning				
Deflection and load bearing capacity <small>Note 2)</small>	EN 13964: Class 1 / A / No load EN 13964: Class 2 / B / No load EN 13964: Class 3 / A / 30N	EN 13964: Class 2 / B / No load EN 13964: Class 2 / A / 30N	EN 13964: 900 x 2700 mm Class 2 / A / No load EN 13964: 600/1200 x 2400 Class 2 / B / 30N	EN 13964: Class 1 / B / No load EN 13964: Class 2 / B / 30N				
Perforations	Globe  Micro 	Quadril  Regula 	Globe  Micro 	Quadril  Regula 	Globe - G1F  Micro - M1F 	Quadril - Q1F  Regula 	Globe  Micro 	Quadril  Regula 
Size	Size possibilities: 600 x 600 x 12.5 mm	Size possibilities: 300 x 1200 x 9.5 mm 300 x 1800 x 9.5 mm 300 x 2400 x 9.5 mm	Size possibilities: 900 x 2700 x 12.5 mm 1200 x 2400 x 12.5 mm	Size possibilities: 300 x 1200 x 12.5 mm 600 x 600 x 12.5 mm 600 x 1200 x 12.5 mm 600 x 2400 x 12.5 mm 625 x 625 x 12.5 mm 625 x 1250 x 12.5 mm 300 x 1200 x 9.5 mm 400 x 600 x 9.5 mm				

Note 2): The test is carried out in accordance with the principles of EN13964: 2004. The given values apply to the standard formats, see also pages 103, 105.

Contrapanel



Edge B

Laminated

EN 14190:

Fullperforated: B-s1, d0 (C1)

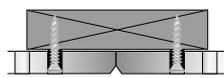
Part and non-perforated: B-s1, d0 (C1)

FIN: Tyypihyväksytty REI30
-yläpohjarakenne class

EN 13964: Class 1 / B / No load

EN 13964: Class 2 / B / 30N

Kinopanel



Edge B

Painted, gloss 15

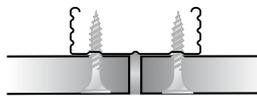
EN 14190:

Fullperforated: A₂-s1, d0 (C1)

Part and non-perforated: B-s1, d0 (C1)

EN 13964: Class 3 / A / No load

Solo- and Stratopanel



Untreated

Solo- and Stratopanel are sold in
Denmark, Norway, Sweden and
Finland.

Globe - G1F



Regula



Size possibilities:

600 x 1200 x 12.5 mm

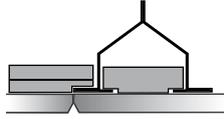
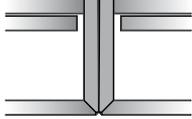
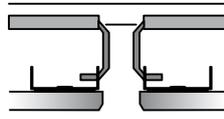
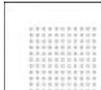
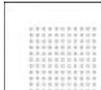
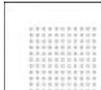
600 x 1800 x 12.5 mm

600 x 2400 x 12.5 mm

Size possibilities:

600 x 600 x 12.5 mm

Self-supporting ceilings

Product name	Corridor 300	Corridor F30	Corridor Swing 600																								
																											
																											
Edge	Edge D	Edge D	Edge E																								
Surface	Painted, gloss 5	Laminated	Painted, gloss 5																								
Fire classifications	EN 14190: Fullperforated: A ₂ -s1, d0, (C3) Part and non-perforated: B-s1, d0, (C3)	D:DIN 4102-2 Feuerwiderstandsklasse F30	EN 14190: Fullperforated: A ₂ -s1, d0 (C1) Part and non-perforated: B-s1, d0 (C1) N: K1-A, In 1																								
Deflection and load bearing capacity	EN 13964: Class 2 / B / No load EN 13964: Class 1 / A / No load EN 13964: Class 2 / A / 30N	EN 13964: Class 1 / B / 170N	EN 13964: Class 2 / A / No load EN 13964: Class 3 / A / 30N																								
Perforations	<table border="0"> <tr> <td>Globe</td> <td>Quadril</td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td>Micro</td> <td>Regula</td> </tr> <tr> <td></td> <td></td> </tr> </table>	Globe	Quadril			Micro	Regula			<table border="0"> <tr> <td>Globe</td> <td>Quadril</td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td>Micro</td> <td>Regula</td> </tr> <tr> <td></td> <td></td> </tr> </table>	Globe	Quadril			Micro	Regula			<table border="0"> <tr> <td>Globe</td> <td>Quadril</td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td>Micro</td> <td>Regula</td> </tr> <tr> <td></td> <td></td> </tr> </table>	Globe	Quadril			Micro	Regula		
Globe	Quadril																										
																											
Micro	Regula																										
																											
Globe	Quadril																										
																											
Micro	Regula																										
																											
Globe	Quadril																										
																											
Micro	Regula																										
																											
Size	Size possibilities: 300 x 1200 x 9.5 mm 300 x 1500 x 9.5 mm 300 x 1800 x 9.5 mm 300 x 2100 x 9.5 mm 300 x 2400 x 9.5 mm 300 x Special length x 9.5 mm	Size possibilities: 300 x length x 12.5 mm. Max. length is 2800 mm.	Size possibilities: 600 x 1200 x 12.5 mm 600 x 1500 x 12.5 mm 600 x 1800 x 12.5 mm																								

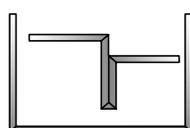
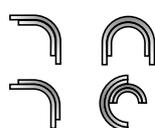
Note 3): The Test is carried out in accordance with the principles of EN13964: 2004. The given values apply to the standard formats, see also pages 103, 105.

Design elements

Product name

Curvex

Mitex



Surface

Untreated

Untreated

Fire classifications

EN 14190: A₂-s1, d0 (C2)

EN 14190: A₂-s1, d0 (C2)

Perforations

Perforated curved panels are manufactured to order.

Perforated mitred panels are manufactured to order.

Size

Size possibilities:

Min. radius of 22.5 mm

Angle cut from 0 degrees to 180 degrees.

Min. length 1000 mm

Max. length 3000 mm

Min. thickness 2 x 6 mm.

Size possibilities:

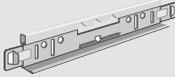
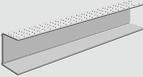
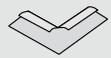
Thickness 9 or 13 mm.

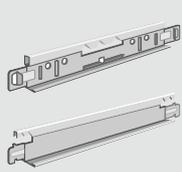
Min. width 2 x thickness of board.

Max. width between 2 cuts is 720 mm.

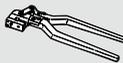
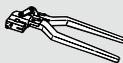
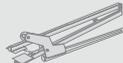
The same lengths as gypsum boards.

Suspension system and accessories for frieze and wall angles

<i>Can be used for:</i>	<i>Product name</i>		<i>SAP product no.</i>	<i>Product no.</i>	<i>W x L x H mm</i>	<i>Nos. per. pack</i>
<i>Contur 600, Linear 600 Markant 600, Belgravia 600</i>	<i>Main runner</i>		3080	6501069	35 x 3200 x 38	15
<i>Contur 600, Linear 600 Markant 600, Belgravia 600</i>	<i>Cross tee</i>		3081	6422069	35 x 600 x 38	50
			3082	6442069	35 x 1200 x 38	40
<i>Contur 600, Linear 600 Markant 600, Belgravia 600</i>	<i>Wall Angle</i>		3083	511069	30 x 3050 40,5	10
<i>Contur 600, Linear 600, Markant 600, Belgravia 600, Plaza 600, Danoline tiles 600</i>	<i>Outside corner for wall angle</i>		3107	1334	to 24 mm Wall Angle	100
			3108	1332	to 19 mm Wall Angle	100
<i>Contur 600, Linear 600, Markant 600, Belgravia 600, Plaza 600, Danoline tiles 600</i>	<i>Inside corner for wall angle</i>		3109	1348	to 24 mm Wall Angle	100
			3110	1346	to 19 mm Wall Angle	100
<i>Contur 600, Linear 600, Markant 600, Belgravia 600, Plaza 600, Danoline tiles 600</i>	<i>Perimeter channel for T-suspension 850 and 7500</i>		3111	1423	13/25 x 3050 x 39,2	32
<i>Contur 600, Linear 600, Markant 600, Belgravia 600, Plaza 600, Danoline tiles 600</i>	<i>Wall Clip</i>		3380	88	----	500
<i>Belgravia 600, Plaza 600, Danoline tiles 600</i>	<i>Hold-down clip</i>		3378	819	----	500
<i>Contur 600, Linear 600, Markant 600</i>	<i>Hold-down clip</i>		3381	935	----	1000
<i>Markant 600, Plaza 600</i>	<i>Hold-down clip 820 (Markant 600 Swing)</i>		3382	820	----	500
<i>Markant 600, Plaza 600</i>	<i>Hanger clip for 15 and 24 mm T-profil (max. 5 kg)</i>		3114	10802	----	50



Tools, clips, danopor and paint

Can be used for:	Product name		SAP product no.	Product no.	W x L x H mm	Nos. per. pack
Punching of extra holes for hangers	Hanger hold punch		----	921	----	----
Punching of extra slots in main Tee for cross-Tee	Slot puncher		3608	938	----	----
For fixing of extra suspension clips	Fixing tool for clips		3372	----	----	----
Danopanel	Clips, BE13		3389	BE13	40 x 55 x 1/10	----
Contur with Globe perforations	Clips, K013		3386	K013	40 x 40 1/10	----
Contur with Quadril and Micro perforations and Markant 600	Clips, MK13		3385	MK13	40 x 40 1/11	----
Markant 500	Clips, MK10		3384	MK10	40 x 40 x 1/8	----
Extra sound reduction pad for suspended ceiling with, edge A, C, D and E	Danopor		5860		25 x 595 x 595	----
			5846		50 x 595 x 595	----
Painting of screw fixed friezes	Ceiling paint		3373	----	5 L, NCS 0700	40m ² on untreated board



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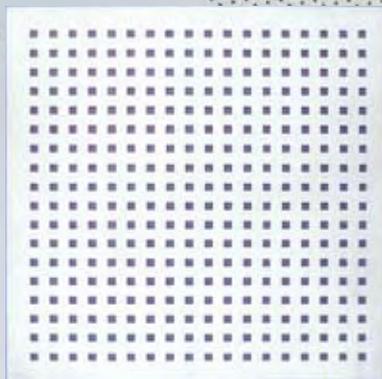
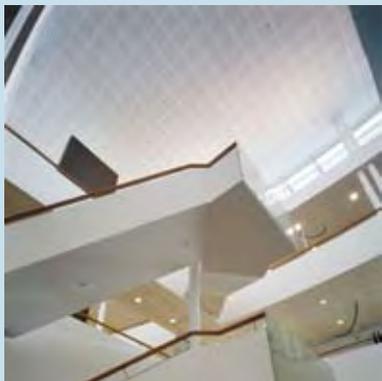
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Consult Danoline if you want your ceilings to look different or think differently in terms of building solutions. As suppliers and sparring partners we are always prepared to add resources to your task, based on your ideas, requirements and specifications, and all our long-standing experience within acoustic ceilings is at your disposal.

Danoline's know-how and trade expertise combined with our product development perfectly warrant a fruitful partnership. This has often resulted in unconventional solutions featuring unique architectural qualities.

Danoline's chief target is to develop, produce and market environmentally compatible gypsum-based building materials. Danoline A/S is part of Danogips A/S and a member of the international Knauf group.

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