KNAUF DANOLINE

ACOUSTIC CEILINGS AND WALLS IN GYPSUM

GYPSUM - Endless Possibilities

KNAUF UNITY

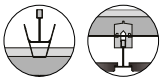
EXPERIENCE THE UNITY OF ACOUSTICS AND AESTHETICS

The Unity series seeks to return the ceiling surface to its calm, undisturbed state. And still maintain the functionality of a T-grid ceiling. It's a fusion of two worlds. Developed for architects. And it's your opportunity to explore new architectural possibilities with perfect acoustics.

The uniqueness of Unity series lies in its perforation designs which extend to the edge of the tile. Find the Unity perforations under Contur, Plaza and Belgravia and learn more.

Olivier TARDY architect, Adomis office, Besançon, France, Plaza Quadril 1200×300

PRODUCT OVERVIEW

PRODUCT	EDGE	PERFORATION	SIZE (mm)	APPLICATION	PAGE
ACOUSTIC CEILING TILES					
VISONA Edge E/B		Tangent Regula	400 x 1200 x 12.5	Demountable, suspended ceiling in double T-grid with Drag ‚n' Drop feature for flexibile ceiling and lighting design	10
CONTUR Edge D		Globe Quadril Micro Regula	600 x 600 x 12.5 625 x 625 x 12.5	Demountable, suspended ceiling in concealed T-grid	18
CONTUR Edge D-Plus (D+)		Unity 3 Unity 4 Unity 8|15|20 Unity 9 Regula	600 x 600 x 12.5 625 x 625 x 12.5* * Not with Unity perforation	Demountable, suspended ceiling in concealed T-grid with perforation to the edge	18
BELGRAVIA Edge E		Globe Quadril Micro Tangent Regula	600 x 600 x 12.5 625 x 625 x 12.5	Demountable, suspended ceiling in recessed T-grid	26
BELGRAVIA Edge E-Plus (E+)		Unity 3 Unity 4 Unity 8|15|20 Unity 9 Regula	600 x 600 x 12,5 625 x 625 x 12.5* * Not with U4	Demountable, suspended ceiling in recessed T-grid with perforation to the edge	26
MARKANT Edge E		Globe Quadril Micro Regula	600 x 600 x 12.5 625 x 625 x 12.5	Demountable, suspended ceiling in recessed T-grid	34
PLAZA Edge A 9.5 mm		Globe Quadril Micro Regula	600 x 600 x 9.5 600 x 1200 x 9.5	Demountable, suspended ceiling in visible T-grid	42
PLAZA Edge A 12.5 mm		Tangent	600 x 600 x 12.5 625 x 625 x 12.5	Demountable, suspended ceiling in visible T-grid	42
PLAZA Edge A-Plus (A+)		Unity 3 Unity 4 Unity 8|15|20 Unity 9 Regula	600 x 600 x 12.5 625 x 625 x 12.5	Demountable, suspended ceiling in visible T-grid with perforation to the edge	42
DANOTILE Edge A		Regula	600 x 600 x 6.5 600 x 600 x 9.5 600 x 1200 x 6.5 600 x 1200 x 9.5 625 x 625 x 9.5	Special purpose hygiene ceiling. Demountable, suspended ceiling in visible T-grid	50
MEDLEY Edge A		Regula	600 x 600 x 9.5	Demountable T-grid ceiling with a matt, dust proof foil surface. Robust ceiling that is easy to mount and clean.	58
ACOUSTICAL PLANK CEILINGS					
CORRIDOR 400 Edge D		Globe Quadril Micro Tangent Regula	400 x 1200 x 9.5 400 x 1800 x 9.5 400 x 2400 x 9.5 400 x L x 9.5	Demountable self-supporting ceiling requiring no hangers, for corridors and narrow rooms. Easy access to cavity	66
CORRIDOR SWING Edge E		Globe Quadril Micro Regula	600 x 1200 x 12.5 600 x 1500 x 12.5 600 x 1800 x 12.5	Hinged ceiling panels for corridors and access areas in non-demountable ceilings, allowing easy access to the cavity and installations.	74

Pharmacy Val d'Ajol, France, Belgravia E+ Unity 9, 600×600
Architect: François BENEDINI

DID YOU KNOW THAT ...

in nature, when limestone and smoke particles from volcanos come in contact with water, the crystal Ca SO4 + H2O is produced? The Beerenberg volcano on Jan Meyen is the reason for large quantities of natural gypsum found around the world today.

BELGRAVIA

ACOUSTIC CEILING TILES

Recessed grid look with discreet shading. Classic and highly robust acoustic ceiling.
Exceptionally easy to install and demount.

ACOUSTIC CEILING TILES

BELGRAVIA

SIZES

600 x 600 x 12.5 mm
625 x 625 x 12.5 mm

SURFACE

Standard white painted surface (closest match RAL 9003, gloss 5). Other colours available on request

DANISH INDOOR CLIMATE LABELLING (DIM)

Indoor value: 10 days. Particle emission: low (< 0.75 mg)

CLEANING

Dust is removed using a dry duster or vacuum cleaner. Marks can be removed with a damp cloth using normal cleaning practices and neutral cleaning solutions.

AMBIENT CONDITIONS

The product is designed to perform under normal conditions of use. Tested at 90% RH and 30°C. The product can withstand ambient temperatures of up to 50°C.

LIGHT REFLECTION

Globe: 72.8%
Quadril: 75.1%
Micro: 72.1%
Tangent: 70.9%
Regula: 82.6%
Unity 3: 69.2%
Unity 4: 72.5%
Unity 8|15|20: 72.2%
Unity 9: 71.6%

LOAD-BEARING CAPACITY

1 / A / No load	600 x 600 625 x 625	Globe, Quadril, Micro, Tangent, Regula, Unity 3, Unity 4, Unity 9 Unity 8|15|20
2 / A / 30 N	600 x 600 625 x 625	Globe, Quadril, Micro, Regula
2 / B / No load	600 x 600 625 x 625	Globe, Quadril, Micro, Regula

FIRE CLASS

A2-s1,d0

ROBUSTNESS

Made of robust, glass fibre reinforced material with excellent pressure resistance. Under normal conditions of use, the product properties are preserved and there is no decomposition of material over time.

WEIGHT

Indicative tile weight: 9.20 – 9.90 kg/m^2.
All according to type of perforation.

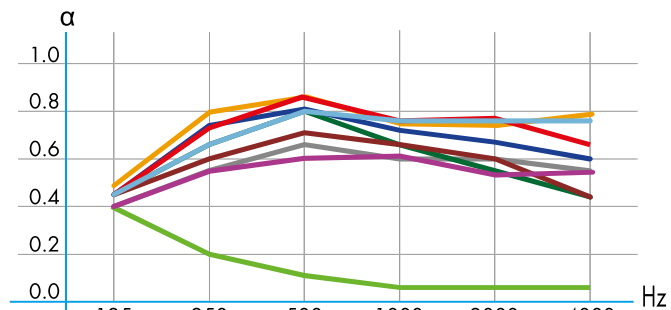
CERTIFICATES

- FDES LCA Declaration
- Declaration of Conformity (EN 14190)
- Danish Indoor Climate Labelling

ACOUSTIC CEILING TILES

BELGRAVIA

ACOUSTICS



		125	250	500	1000	2000	4000
●	α	0.45	0.65	0.80	0.65	0.55	0.45
●	α	0.45	0.60	0.70	0.65	0.60	0.45
●	α	0.40	0.55	0.65	0.60	0.60	0.55
●	α	0.45	0.65	0.80	0.75	0.75	0.75
●	α	0.50	0.80	0.85	0.75	0.75	0.80
●	α	0.45	0.75	0.80	0.70	0.65	0.60
●	α	0.40	0.55	0.60	0.60	0.50	0.50
●	α	0.45	0.75	0.85	0.75	0.75	0.65
●	α	0.40	0.20	0.10	0.05	0.05	0.05

● Globe, 200 mm suspension, no mineral wool	αw: 0.60, NRC: 0.65
● Quadril, 200 mm suspension, no mineral wool	αw: 0.60, NRC: 0.65
● Micro, 200 mm suspension, no mineral wool	αw: 0.65, NRC: 0.60
● Tangent, 200 mm suspension, no mineral wool	αw: 0.80, NRC: 0.75
● Unity 3, 200 mm suspension, no mineralwool	αw: 0.80, NRC: 0.80
● Unity 4, 200 mm suspension, no mineralwool	αw: 0.70, NRC: 0.75
● Unity 8|15|20, 200 mm suspension, no mineralwool	αw: 0.60, NRC: 0.55
● Unity 9, 200 mm suspension, no mineralwool	αw: 0.75, NRC: 0.80
● Regula, 200 mm suspension, no mineral wool	αw: 0.10, NRC: 0.05

For acoustic data on alternative constructions please see "Absorption Data" at knaufdanoline.com

EDGES

Edge E

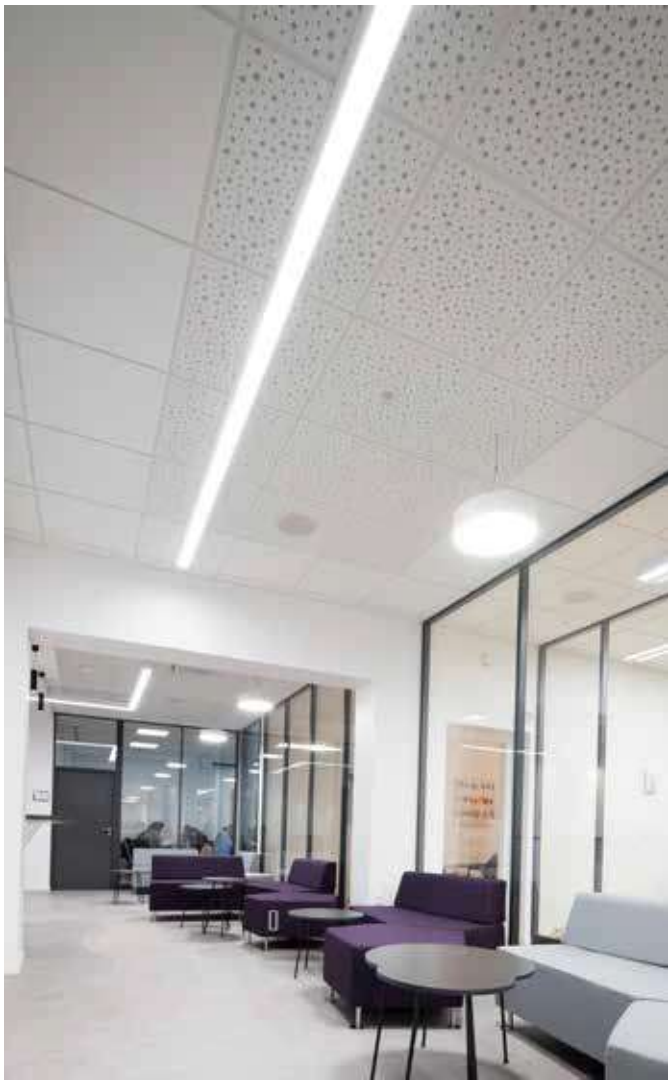
(TEGULAR) / S15 OR S24 Recessed grid

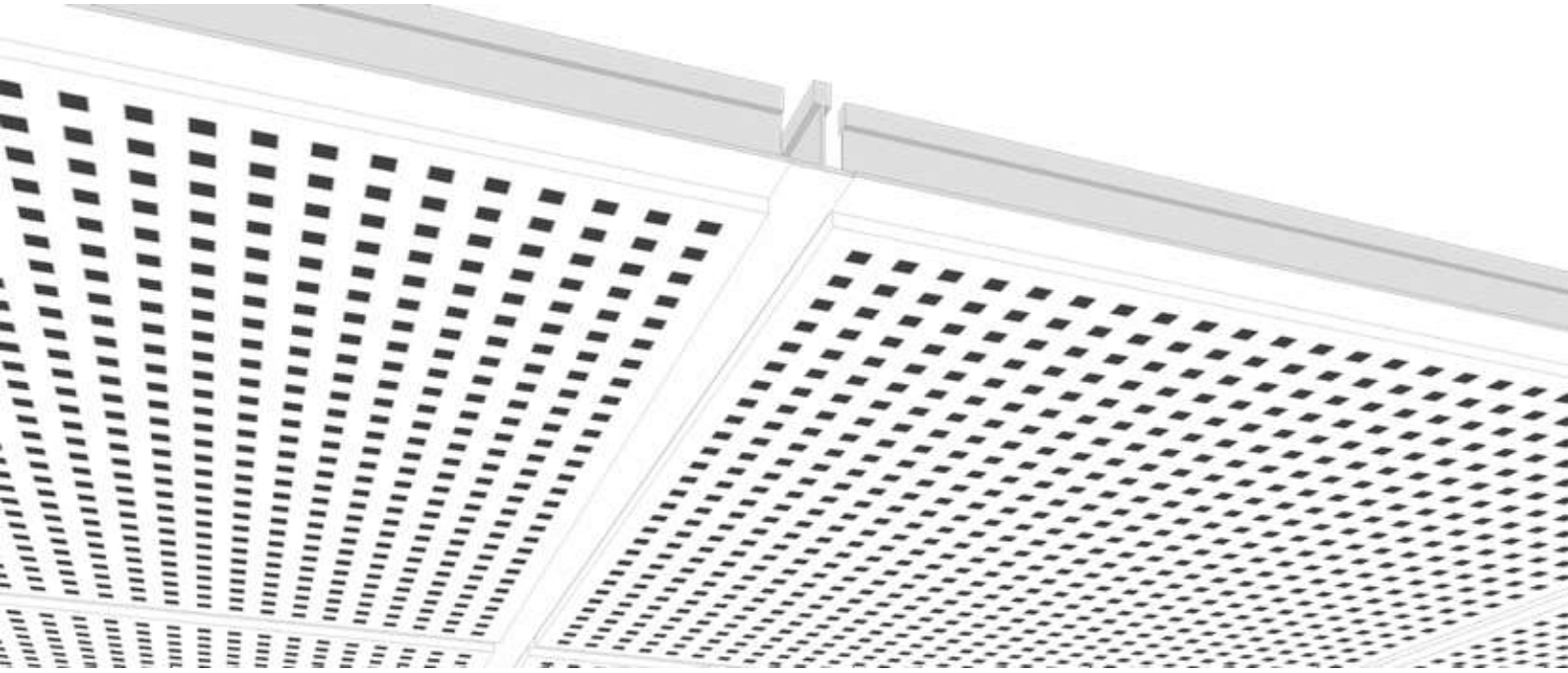
For Globe, Quadril, Micro and Tangent

Edge E-Plus [E+]

(TEGULAR) / S15 OR S24 Recessed grid

For Unity 3, Unity 4, Unity 9 and U 8|15|20





PERFORATION

Also available as Regula.

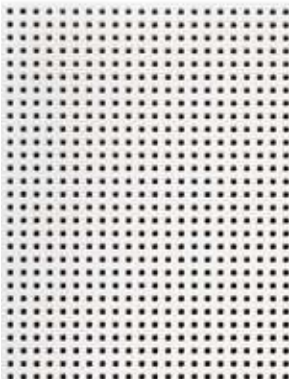
Other perforation patterns are manufactured to order.

Globe, Ø6 mm,
15 mm c/c
Perforation: 10.2%

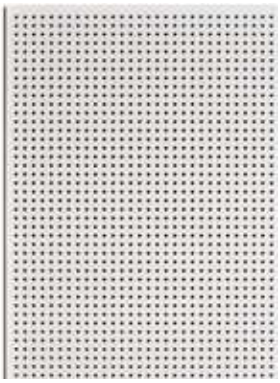
Quadril, 12 x 12 mm,
30 mm c/c
Perforation: 13%

Micro, 3 x 3 mm,
8.3 mm c/c
Perforation: 10.2%

Tangent, 4 x 14 mm,
10/20 mm c/c
Perforation: 21.3%

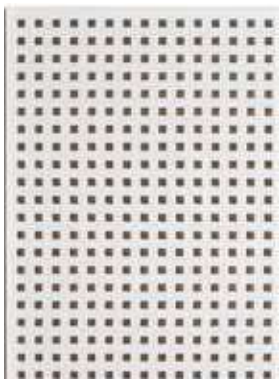


Unity 3, 3.5 x 3.5 mm,
8⅓ mm c/c
Perforation: 17.2%



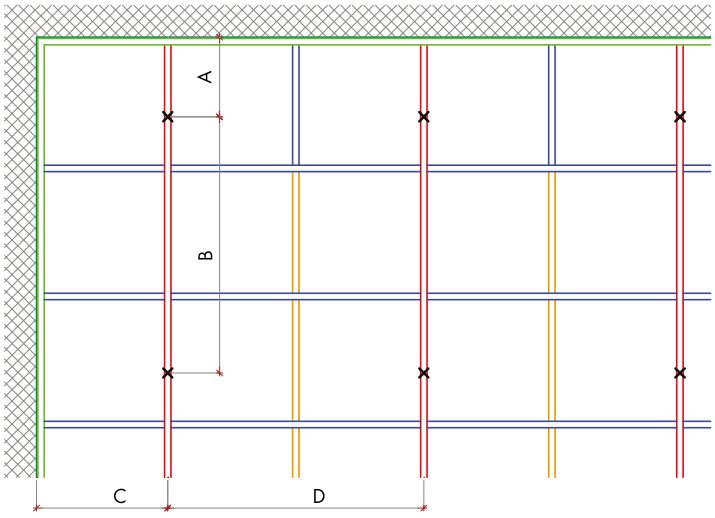
Unity 4, Ø4 mm,
10 mm c/c
Perforation: 12.2%

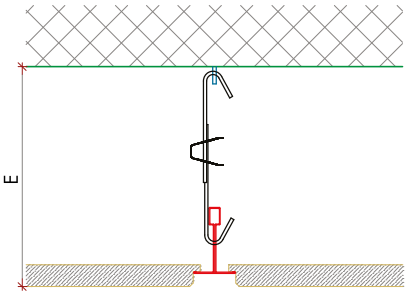
Unity 8|15|20,
Ø8 mm, Ø15 mm, Ø20 mm
Perforation: 10.8%



Unity 9, 9 x 9 mm,
20 mm c/c
Perforation: 18.9%

INSTALLATION GUIDE 600 x 600 mm module



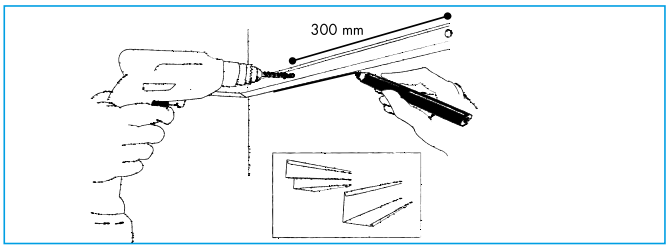


Legend:
- Wall angle or shadow line trim
- Main runner T15 or T24
- Cross tee T15 or T24, 1200 mm
- Cross tee T15 or T24, 600 mm
- X Adjustable hanger (type depends on installation depth)

A = Max. 400 mm B = Max.1200 mm C = Max. 600 mm D = 600/1200 mm E = Min. 120 mm

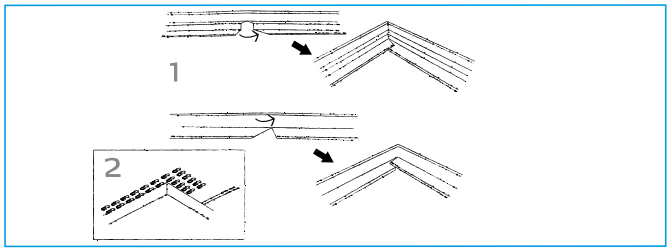
Fig. 1

Best Practice: Use of clean cotton gloves when handling product elements will ensure a good result and a ceiling without fingermarks.



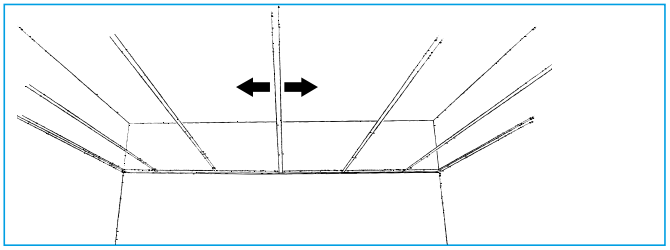
MARKING AND WALL ANGLES

- Mark the location of the wall angles on the walls and columns in relation to the required ceiling height.
- Fix the wall angles at max. 300 mm c/c. Choose the fixings in accordance with the substrate.



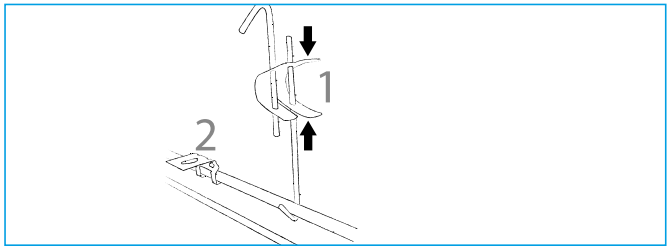
CORNERS

- Inside corners (1): cut the corners in a false mitre letting the ends overlap each other, unless anything to the contrary is specified.
- Outside corners (2): must always be mitred.



CEILING LAYOUT

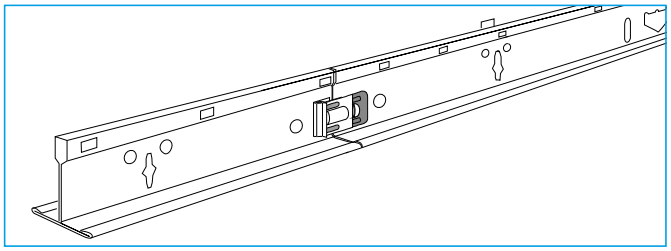
- Divide the ceiling surface from the centre of the room or in accordance with the existing ceiling plans.
- The location of light fittings and ventilation units will have an influence on ceiling layout.
- The first main runner is installed at max. 600 mm from the wall. The other main runners should be installed at 600/1200 mm c/c.



HANGERS

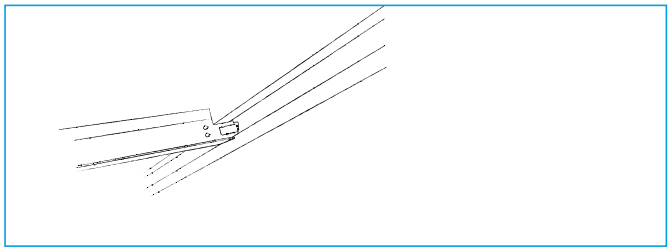
- Fix adjustable hangers (1) with eye screws or similar securely fastened to the primary construction.
- Direct hangers (2) are secured to the ceiling using appropriate fixings in accordance with the substrate.
- Install the first hanger at max. 400 mm from the wall. The other hangers should be installed at max. 1200 mm c/c.
- If loads from light fittings etc. are to be borne by the ceiling, install additional hangers.
- Refer to distances in figure 1.

INSTALLATION GUIDE 600 x 600 mm module



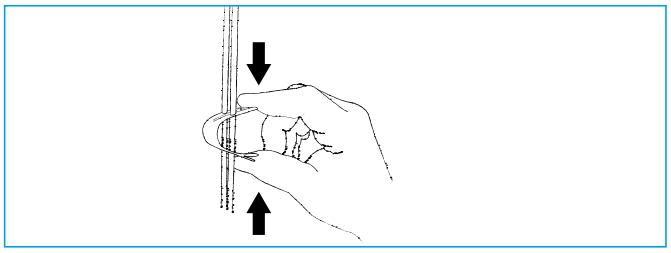
MAIN RUNNERS

- Install the main runners parallel to each other so that the slots are directly opposite each other.
- Join the main runners longitudinally by clicking them together.
- Adjust the lengths of the profiles with plate shears, a hacksaw or a cross-cut saw with a special blade.
- Make sure there is a hanger between the end joints of the main runners and the fire break.



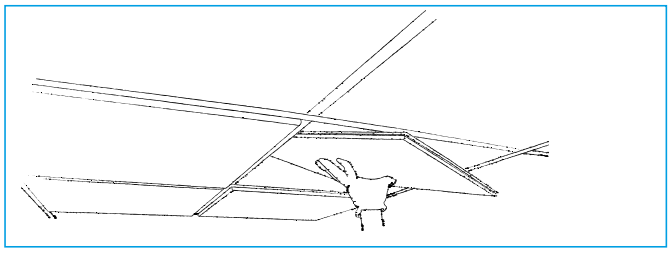
CROSS PROFILES

- Push the snap-in tongue into the slot on the main runner until it securely clicks into place.
- If there is a cross profile on the opposite side of the main runner, the new one must be on the left hand side of the one already in place.



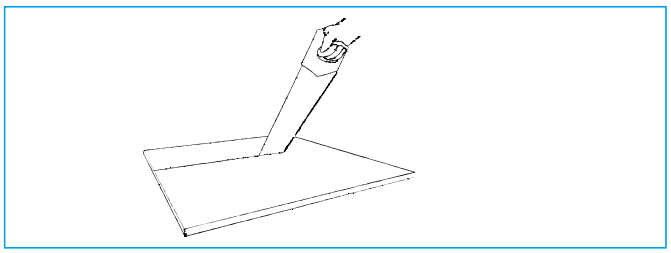
ADJUSTMENT

- Check that all profiles are correctly aligned when the entire suspension grid has been installed.
- Adjust the hangers so that they are tant and the ceiling surface is level.



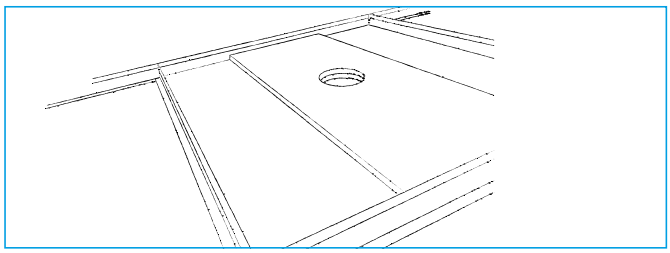
INSTALLATION

- Always wear clean cotton gloves when handling ceiling elements.
- Install the elements by tilting them up between the T-profiles.



CUTTING

- Cut the elements to size from the front face with a fine-toothed saw.

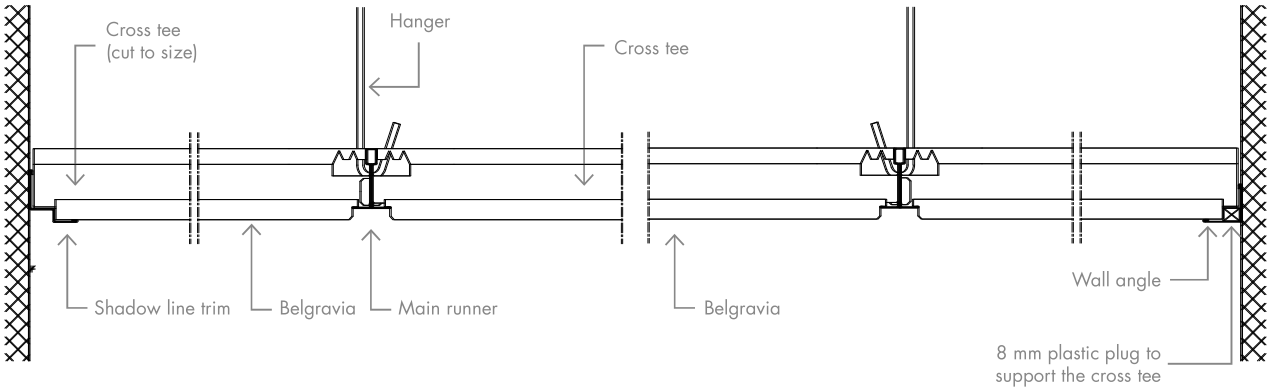


FIXTURES AND FITTINGSS

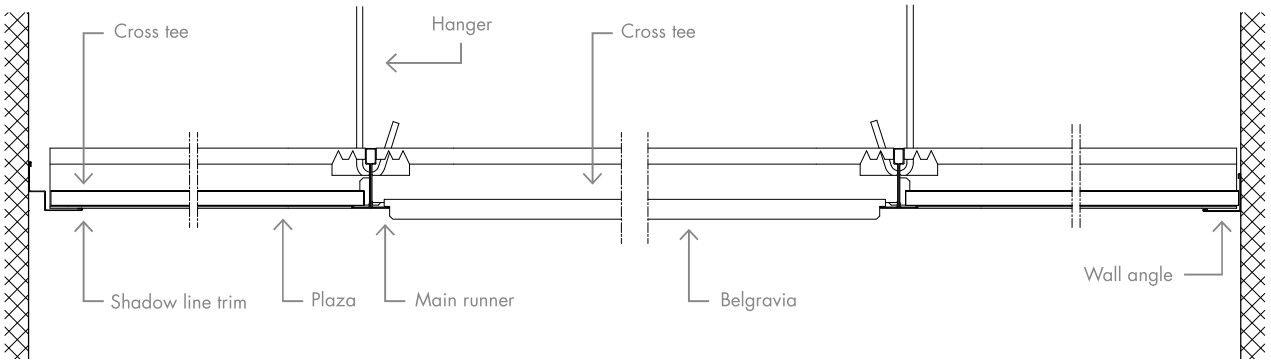
- For sizes up to 625x625 not in Tangent and Unity perforations, units of up to 3kg can be installed directly into the panel without reinforcement.
- For larger module sizes and all sizes with Tangent perforation a reinforcement panel of sufficient strength can be installed behind the Belgravia element.
- The reinforcement panel must extend all the way into the main runners, so that the weight is transferred to them.
- The total weight should not be greater than 3kg for each m^2 of ceiling. Where loads are greater than 3kg/m^2, additional hangers must be used.
- Units over 3kg, should be installed independently, so that they do not place any load on the ceiling.

DETAILS

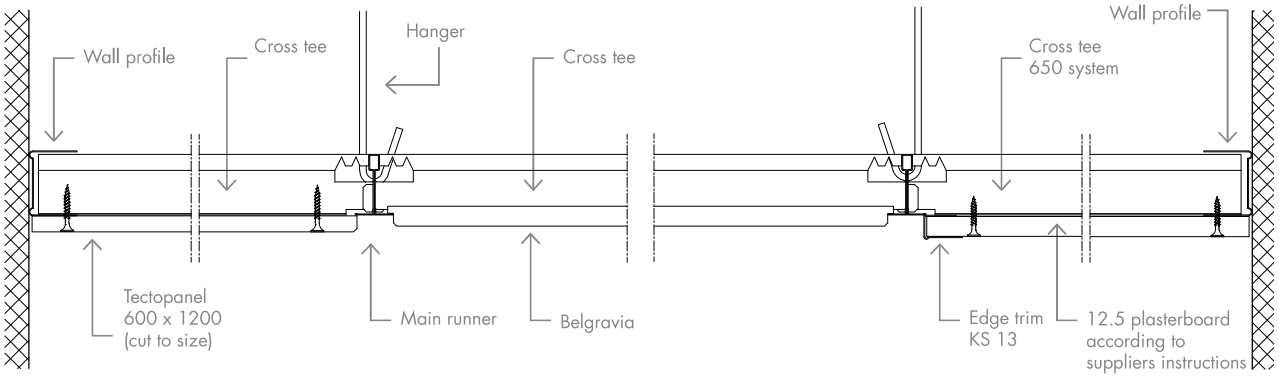
BELGRAVIA IN GRID SYSTEM S15 OR S24 DIRECT TO WALL



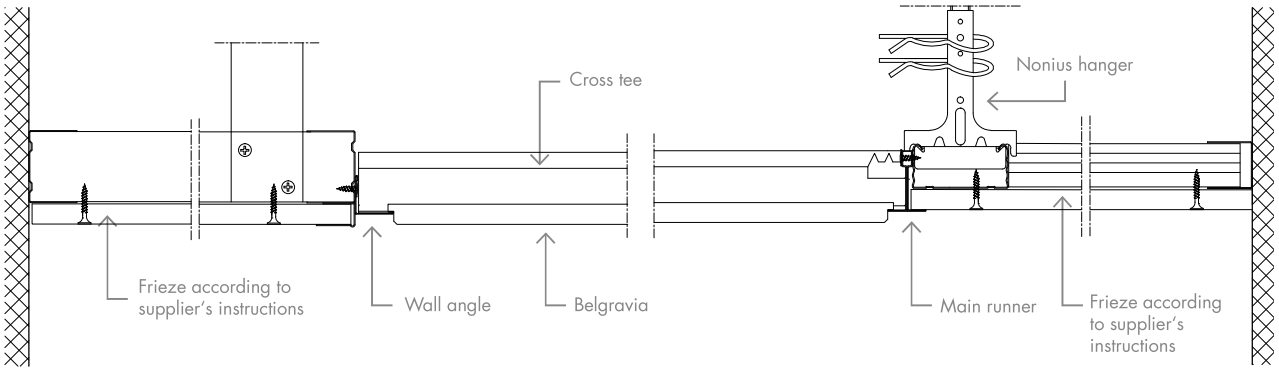
BELGRAVIA IN GRID SYSTEM S15 OR S24 WITH PLAZA FRIEZE



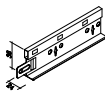
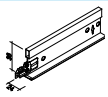
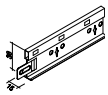
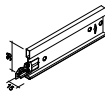
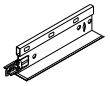
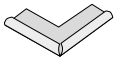
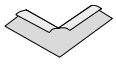
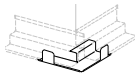
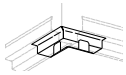
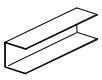
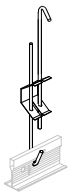
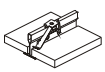
BELGRAVIA IN GRID SYSTEM S15 OR S24 WITH FIXED FRIEZE ON T-PROFILES



BELGRAVIA IN GRID SYSTEM S15 OR S24 WITH ALTERNATIVE FRIEZE SOLUTIONS



ACCESSORIES

PRODUCT NAME		SAP NO.	W x L x H (mm)
Main runner T24		467385	24 x 3700 x 38
Cross tee T24		467388 467389	24 x 600 x 38 24 x 1200 x 38
Main runner T15		593513	15 x 3700 x 38
Cross tee T15		593507 593510	15 x 600 x 38 15 x 1200 x 38
Cross tee T40 (galvanized)		316299 316297	40 x 600 x 38 40 x 1200 x 38
Wall angle type MIE2024		434023	20 x 3000 x 24
Shadow line trim type MS15		316335	15+15x3000/8+25
Outside corner for wall angle		109100	for 24 mm Wall angle
Inside corner for wall angle		109102	for 24 mm Wall angle
Outside corner for wall angle		316310	for 15 mm Shadow line trim
Inside corner for wall angle		316312	for 15 mm Shadow line trim
Wall profile		316346	32 x 3000 x 41
Adjustable hanger The size specification indicates the min. and max. range		469861 469868 469872 469876 469878 469880 469881	165 - 280 315 - 580 510 - 970 630 - 1210 755 - 1460 900 - 1750 1020 - 1990
Hold down clip		430744	-
Hanger clip		198242	-
Lamp hanger		198896	-
Repair kit White paint for prepainted tiles		198956 -	100 mm NCS 0700

DANOPOR

Extra sound absorption and reduction as backing.

Mineral wool backing sealed in plastic bags.

No risk of dust particles.

SIZES

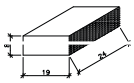
600 x 600 x 25 mm

600 x 600 x 50 mm

PLUGS

Plug for Belgravia w/24 mm T-profiles in wall angle 434023

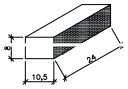
SAP NO. 430801



8x19x24 mm

Plug for Belgravia w/24 mm T-profiles in wall angle 316335

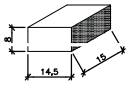
SAP NO. 430864



8x10,5x24 mm

Plug for Belgravia w/15 mm T-profiles in wall angle 434023

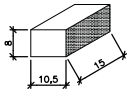
SAP NO. 430859



8x14,5x15 mm

Plug for Belgravia w/15 mm T-profiles in wall angle 316335

SAP NO. 430863



8x10,5x15 mm

PEUGEOT, Colmar, Architect: Céline OFFENBURGER, France, Plaza, Unity 3

DID YOU KNOW THAT ...

thanks to their robustness, perforated gypsum boards can be fully integrated with the wall construction, thereby creating a uniform wall surface with acoustic performance?

PLAZA

ACOUSTIC CEILING TILES

Functional design with a clean-cut look. Straight-forward acoustic ceiling with visible T-grid. Robust ceiling, easy to mount.

ACOUSTIC CEILING TILES

PLAZA

SIZES

600 x 600 x 9.5 mm*
600 x 600 x 12.5 mm
625 x 625 x 12.5 mm
600 x 1200 x 9.5 mm*
600 x 1200 x 12.5 mm*
625 x 1250 x 12.5 mm*

** Not available with Tangent and Unity perforation*

SURFACE

Standard white painted surface (closest match RAL 9003, gloss 5). Other colours available on request

DANISH INDOOR CLIMATE LABELLING (DIM)

Indoor value: 10 days. Particle emission: low (< 0.75 mg)

CLEANING

Dust is removed using a dry duster or vacuum cleaner. Marks can be removed with a damp cloth using normal cleaning practices and neutral cleaning solutions.

AMBIENT CONDITIONS

The product is designed to perform under normal conditions of use. Tested at 90% RH and 30°C. The product can withstand ambient temperatures of up to 50°C.

LIGHT REFLECTION

Globe: 72.8%
Quadril: 75.1%
Micro: 72.1%
Tangent: 70.9%
Regula: 82.6%
Unity 3: 69.2%
Unity 4: 72.5%
Unity 8|15|20: 72.2%
Unity 9: 71.6%

LOAD-BEARING CAPACITY

1 / A / No load	600 x 600 625 x 625	Globe, Quadril, Micro, Tangent, Regula, Unity 3, Unity 4, Unity 9 Unity 8|15|20
2 / A / No load	600 x1200 625 x 1250	G1F, Q1F, M1F, R
2 / A / 30 N	600 x 600 625 x 625	Globe, Quadril, Micro, Regula
2 / B / No load	600 x 600 625 x 625	Globe, Quadril, Micro, Regula

FIRE CLASS

A2-s1,d0

ROBUSTNESS

Made of robust, glass fibre reinforced material with excellent pressure resistance. Under normal conditions of use, the product properties are preserved and there is no decomposition of material over time.

WEIGHT

Indicative tile weight: 7.80 – 8.70 (9.5 mm) / 9.00 – 9.90 (12.5 mm) kg/m². All according to type of perforation and thickness.

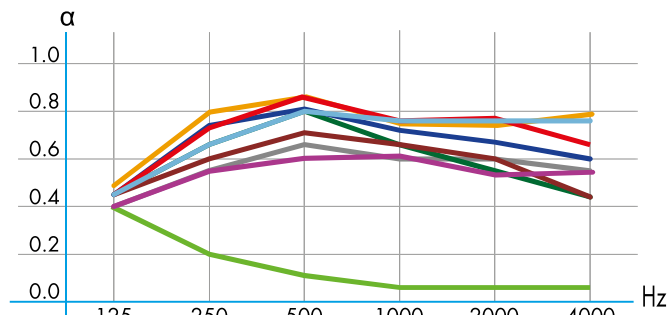
CERTIFICATES

- FDES LCA Declaration
- Declaration of Conformity (EN 14190)
- Danish Indoor Climate Labelling

ACOUSTIC CEILING TILES

PLAZA

ACOUSTICS



● α	0.45	0.65	0.80	0.65	0.55	0.45
● α	0.45	0.60	0.70	0.65	0.60	0.45
● α	0.40	0.55	0.65	0.60	0.60	0.55
● α	0.45	0.65	0.80	0.75	0.75	0.75
● α	0.50	0.80	0.85	0.75	0.75	0.80
● α	0.45	0.75	0.80	0.70	0.65	0.60
● α	0.40	0.55	0.60	0.60	0.50	0.50
● α	0.45	0.75	0.85	0.75	0.75	0.65
● α	0.40	0.20	0.10	0.05	0.05	0.05

● Globe, 200 mm suspension, no mineral wool	αw: 0.60, NRC: 0.65
● Quadril, 200 mm suspension, no mineral wool	αw: 0.60, NRC: 0.65
● Micro, 200 mm suspension, no mineral wool	αw: 0.65, NRC: 0.60
● Tangent, 200 mm suspension, no mineral wool	αw: 0.80, NRC: 0.75
● Unity 3, 200 mm suspension, no mineralwool	αw: 0.80, NRC: 0.80
● Unity 4, 200 mm suspension, no mineralwool	αw: 0.70, NRC: 0.75
● Unity 8|15|20, 200 mm suspension, no mineralwool	αw: 0.60, NRC: 0.55
● Unity 9, 200 mm suspension, no mineralwool	αw: 0.75, NRC: 0.80
● Regula, 200 mm suspension, no mineral wool	αw: 0.10, NRC: 0.05

For acoustic data on alternative constructions please see "Absorption Data" at knaufdanoline.com

EDGES

Edge A

(SQUARE EDGE) / S15 or S24. Visible grid

For Globe, Quadril, Micro and Tangent

Edge A-Plus [A+]

S15 OR S24 Visible grid

For Unity 3, Unity 4, Unity 9 and U 8|15|20

PERFORATION

Also available as Regula.

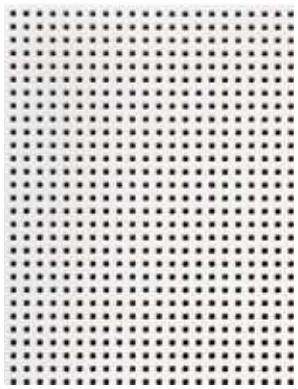
Other perforation patterns are manufactured to order.

Globe, Ø6 mm,
15 mm c/c
Perforation: 10.2%

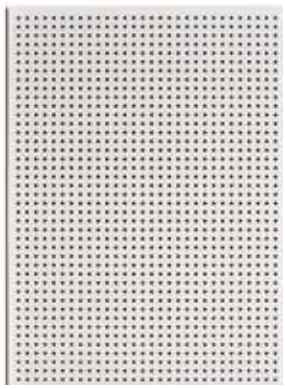
Quadril, 12 x 12 mm,
30 mm c/c
Perforation: 13%

Micro, 3 x 3 mm,
8.3 mm c/c
Perforation: 10.2%

Tangent, 4 x 14 mm,
10/20 mm c/c
Perforation: 21.3%

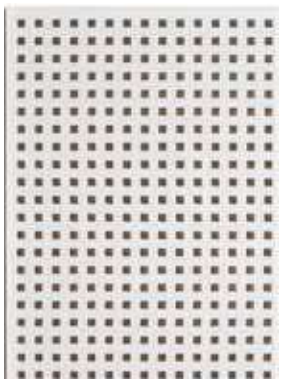


Unity 3, Ø3.5 mm,
8⅓ mm c/c
Perforation: 17.2%



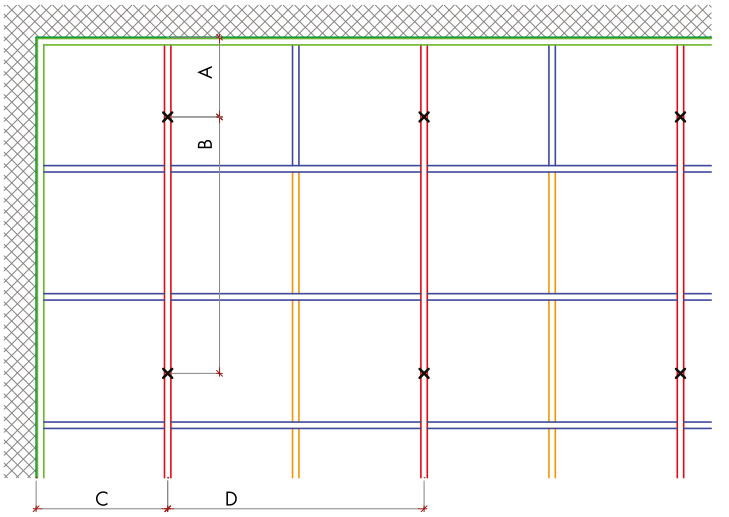
Unity 4, Ø4 mm,
10 mm c/c
Perforation: 12.2%

U8|15|20,
Ø8mm, Ø15 mm, Ø20 mm
Perforation: 10.8%



Unity 9, 9 x 9 mm,
20 mm c/c
Perforation: 18.9%

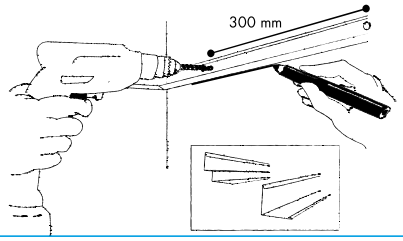
INSTALLATION GUIDE 600 x 600 mm module



A = Max. 400 mm B = Max. 1200 mm C = Max. 600 mm D = 600/1200 mm E = Min. 120 mm

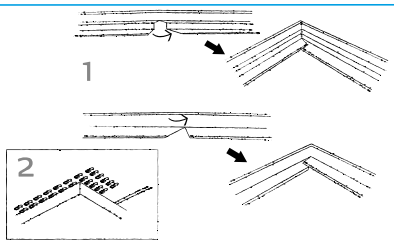
Fig. 1

Best Practice: Use of clean cotton gloves when handling product elements will ensure a good result and a ceiling without fingermarks.



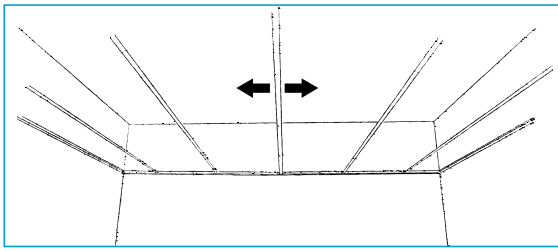
MARKING AND WALL ANGLES

- Mark the location of the wall angles on the walls and columns in relation to the required ceiling height.
- FIx the wall angles at max. 300 mm c/c. Choose the fixings in accordance with the substrate.



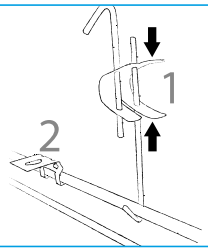
CORNERS

- Inside corners (1): cut the corners in a false mitre letting the ends overlap each other, unless anything to the contrary is specified. Finish with a corner cover, if necessary.
- Outside corners (2): must always be mitred and finished with a corner cover if necessary.



CEILING LAYOUT

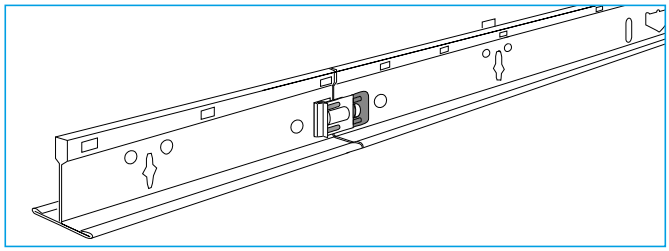
- Divide the ceiling surface from the centre of the room or in accordance with the existing ceiling plans.
- The location of light fittings and ventilation units will have an influence on ceiling layout.
- The first main runner is installed at max. 600 mm from the wall. The other main runners should be installed at 600/1200 mm c/c.



HANGERS

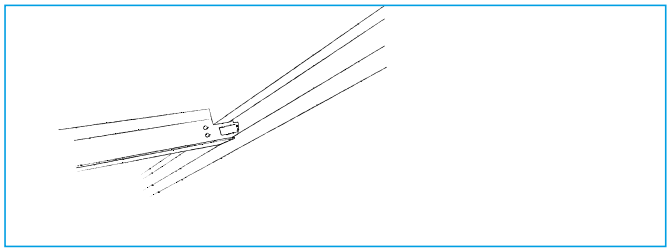
- Fix adjustable hangers (1) with eye screws or similar securely fastened to the primary construction.
- Direct hangers (2) are secured to the ceiling using appropriate fixings in accordance with the substrate.
- Install the first hanger at max. 400 mm from the wall. The other hangers should be installed at max. 1200 mm c/c.
- If loads from light fittings etc. are to be borne by the ceiling, install additional hangers.
- Refer to distances in figure 1.

INSTALLATION GUIDE 600 x 600 mm module



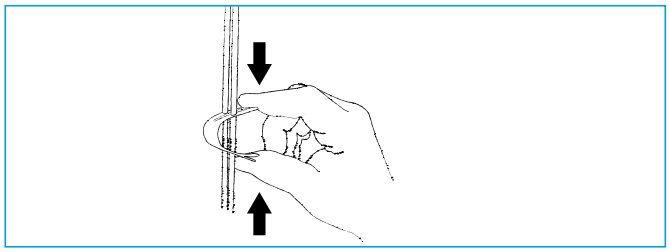
MAIN RUNNERS

- Install the main runners parallel to each other so that the slots are directly opposite each other.
- Join the main runners longitudinally by clicking them together.
- Adjust the lengths of the runners with metal shears, a hacksaw or a circular power saw with a special blade.
- Make sure there is a hanger between the end joints of the main runners and the fire break.



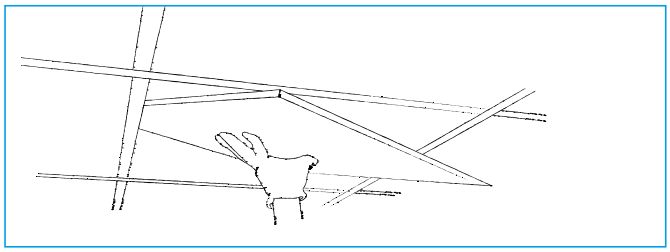
CROSS PROFILES

- Push the snap-in tongue into the slot on the main runner using light downward pressure.
- If there is a cross profile on the opposite side of the main runner, the new one must be on the left hand side of the one already in place.



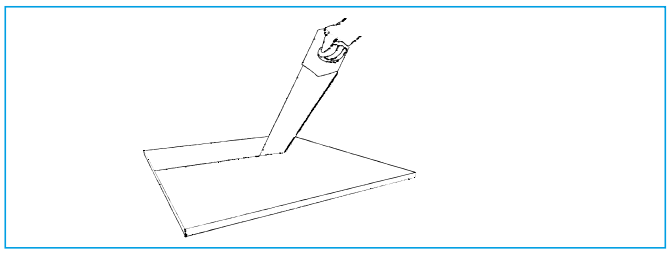
ADJUSTMENT

- Check that all profiles are correctly aligned when the entire suspension grid has been installed.
- Adjust the hangers so that they are tant and the ceiling surface is level.



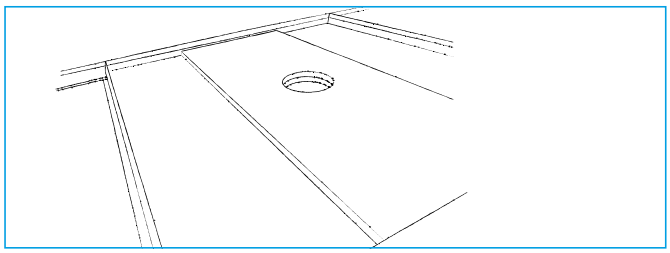
INSTALLATION

- Always wear clean cotton gloves when handling ceiling elements.
- Install the elements.



CUTTING

- Cut the elements to size from the front face.

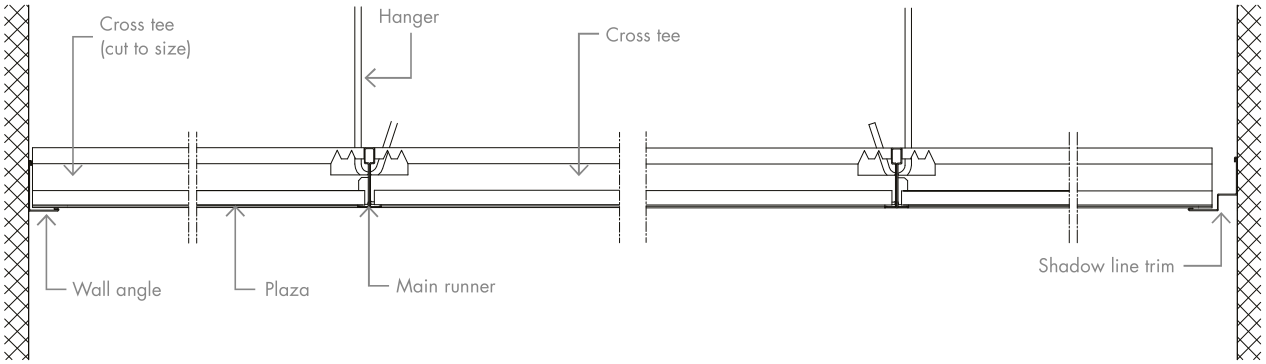


FIXTURES AND FITTINGS

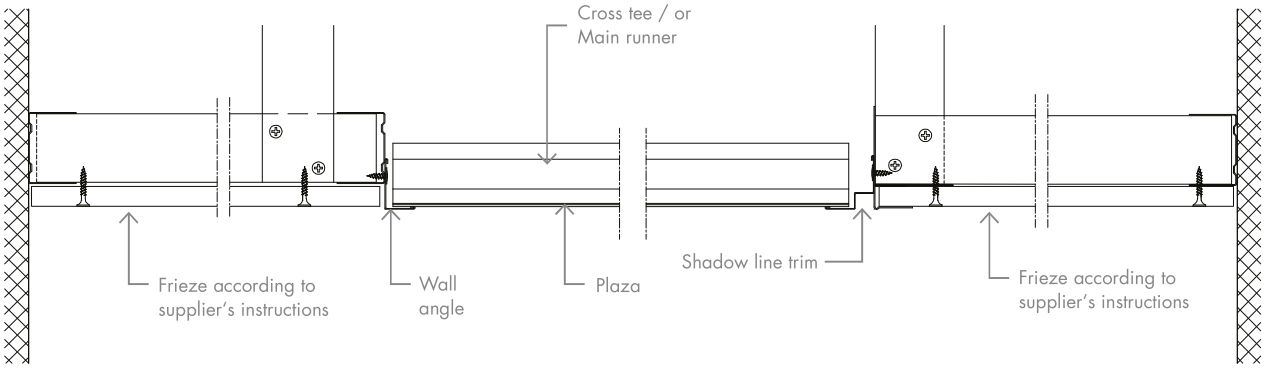
- For sizes up to 625x625 not in Unity and Tangent perforation, units of up to 3kg can be installed directly into the panel without reinforcement.
- For larger module sizes and all sizes with Tangent perforation a reinforcement panel of sufficient strength can be installed behind the Plaza element.
- The reinforcement panel must extend all the way into the main runners, so that the weight is transferred to them.
- The total weight should not be greater than 3kg for each m^2 of ceiling. Where loads are greater than 3kg/m^2, additional hangers must be used
- Units over 3kg, should be installed independently, so that they do not place any load on the ceiling.

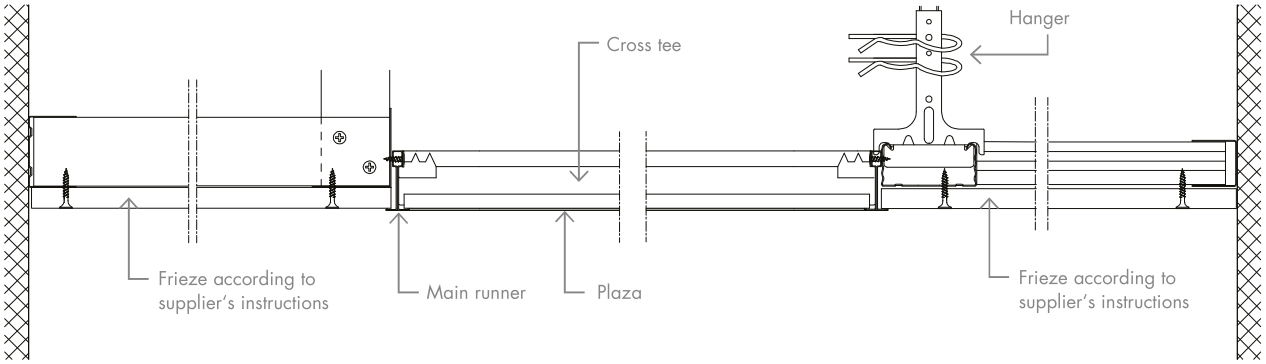
DETAILS

PLAZA IN GRID SYSTEM S15 OR S24 DIRECT TO WALL

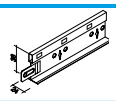
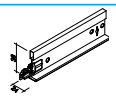
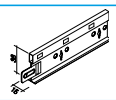
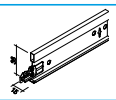
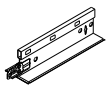
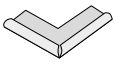
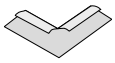
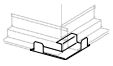
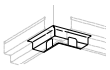
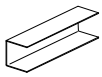
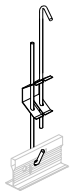
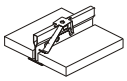


PLAZA IN GRID SYSTEM S15 OR S24 WITH FIXED FRIEZE





ACCESSORIES

PRODUCT NAME		SAP NO.	W x L x H (mm)
Main runner T24		467385	24 x 3700 x 38
Cross tee T24		467388 467389	24 x 600 x 38 24 x 1200 x 38
Main runner T15		593513	15 x 3700 x 38
Cross tee T15		593507 593510	15 x 600 x 38 15 x 1200 x 38
Cross tee T40 (galvanized)		316299 316297	40 x 600 x 38 40 x 1200 x 38
Wall angle type MIE2024		434023	20 x 3000 x 24
Shadow line trim type MS15		316335	15+15 x 3000 / 8+25
Shadow line trim type MS10		316330	19+11 x 3000 / 13+19
Outside corner for wall angle		109100	for 24 mm Wall angle
Inside corner for wall angle		109102	for 24 mm Wall angle
Outside corner for wall angle		316310	for 15 mm Shadow line trim
Inside corner for wall angle		316312	for 15 mm Shadow line trim
Wall profile		316346	32 x 3000 x 41
Adjustable hanger The size specification indicates the min. and max. range		469861 469868 469872 469876 469878 469880 469881	165 - 280 315 - 580 510 - 970 630 - 1210 755 - 1460 900 - 1750 1020 - 1990
Hold down clip		430744	-
Hanger clip		198242	-
Lamp hanger		198896	-
Repair kit White paint for prepainted tiles		198956	100 mm NCS 0700

DANOPOR

Extra sound absorption and reduction as backing.

Mineral wool backing sealed in plastic bags.

No risk of dust particles.

SIZES

600 x 600 x 25 mm

600 x 600 x 50 mm

School canteen Saint Julien, France, Danotile Regula, Architect: Linda Aydostian

DID YOU KNOW THAT ...

gypsum boards are so robust that they can be curved even with small radii?

DANOTILE

ACOUSTIC CEILING TILES

Hygiene ceiling suitable for rooms with high cleaning and infection control requirements. White foil-covered surface with a clean-cut look. Robust ceiling tolerating tough cleaning and disinfection agents with pH levels from 2 – 13. Clean-room certified gypsum ceiling.

ACOUSTIC CEILING TILES

DANOTILE

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 x 9.5 mm
625 x 625 x 9.5 mm
600 x 600 x 12.5 mm
600 x 1200 x 12.5 mm

SURFACE
Foil-covered with pre-impregnated, non-toxic white paper
RAL 9016 (NCS S0300-N, gloss 10)
Tested for chemical resistance in accordance with
DIN 68 861, FIRA BS 3962 and NEMA LD-3-1991.

DANISH INDOOR CLIMATE LABELLING (DIM)
Indoor value: 10 days. Particle emission: low (< 0.75 mg)

CLEANING
Dust is removed using a dry duster or vacuum cleaner. Marks can be removed with a damp cloth using normal cleaning practices and neutral cleaning solutions.

AMBIENT CONDITIONS
The product is designed to perform under normal conditions of use. Tested at 90% RH and 30°C. The product can withstand ambient temperatures of up to 50°C.

LIGHT REFLECTION
86.3%

LOAD-BEARING CAPACITY

2 / A / No load	600 x 1200 x 6.5
1 / B / No Load	600 x 600 x 9.5 625 x 625 x 9.5
2 / B / 30N	600 x 600 x 9.5 625 x 625 x 9.5

FIRE CLASS
B-s1,d0

FIRE RESISTANCE
½ hour fire resistance (6.5 mm)

ROBUSTNESS
Durable and dirt resistant surface. Product made of robust, glass fibre reinforced material with excellent pressure resistance. Under normal conditions of use, the product properties are preserved and there is no decomposition of material over time.

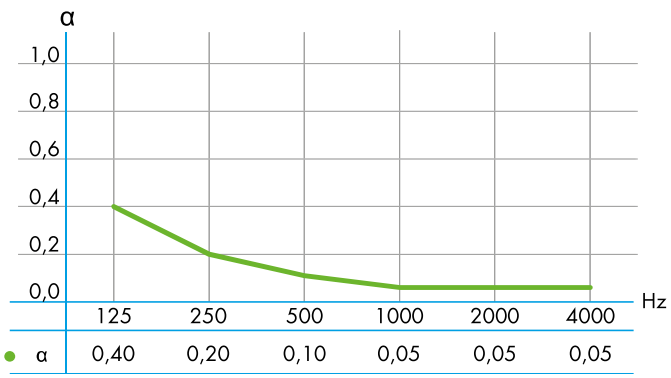
WEIGHT
Indicative tile weight: 6.90 – 7.90 kg/m². All according to thickness.

CERTIFICATES
- Clean room certificate (Céra Labo report)
- Physical resistance to disinfectants (Céra Labo report)
- Excell Hygiene Certificate
- FDES LCA Declaration
- Declaration of Conformity (EN 14190)
- Danish Indoor Climate Labelling

ACOUSTIC CEILING TILES

DANOTILE

ACOUSTICS



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

Regula, 200 mm suspension, no mineral wool αw: 0.10, NRC: 0.05

For acoustic data on alternative constructions please see "Absorption Data" at knaufdanoline.com

HYGIENE

Danotile can stand rigorous cleaning with concentrated disinfectants and detergents with a very high pH (up to pH 13.0) and a very low pH (down to pH 2.5). Danotile has also been tested for airborne particles in accordance with ISO 14644-1 and are classified as ISO 5.

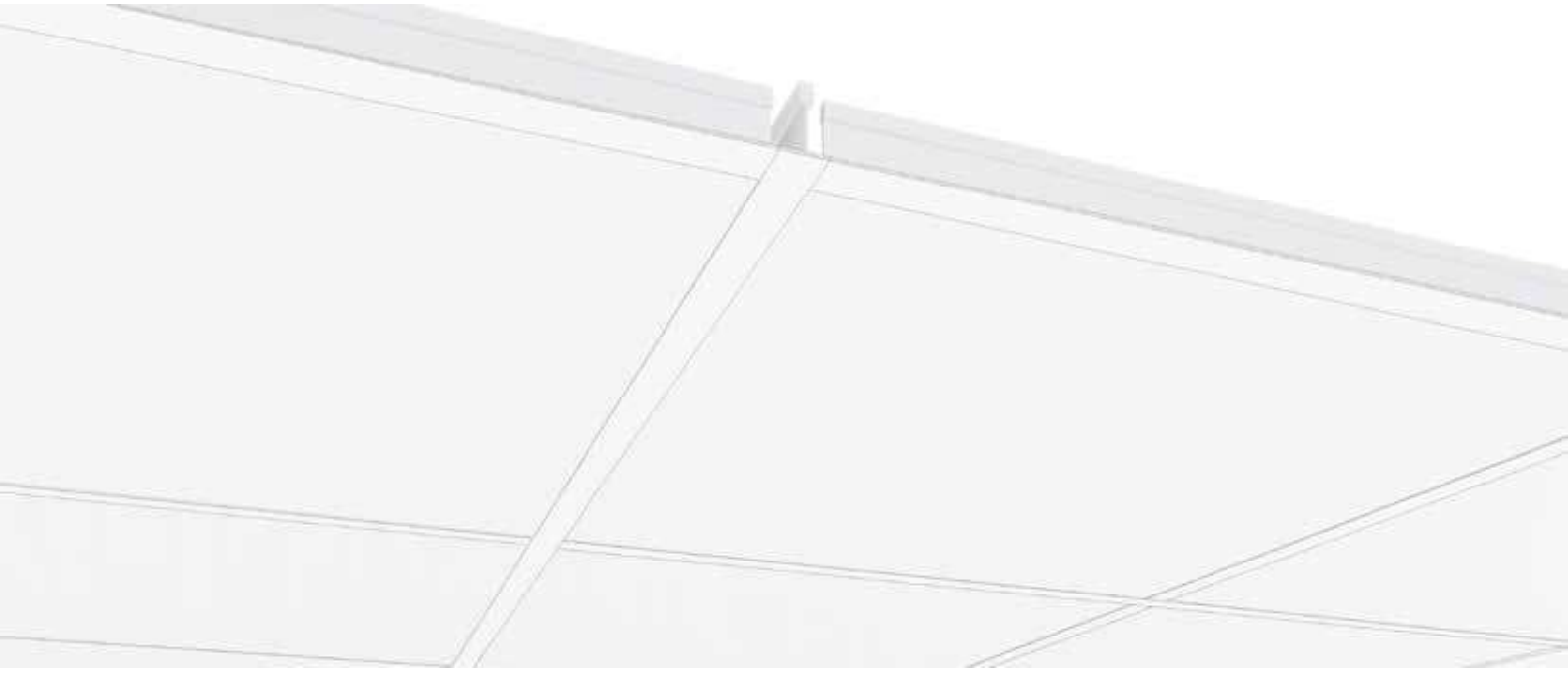
EDGES

Edge A

(SQUARE EDGE) / S15 or S24

Visible grid

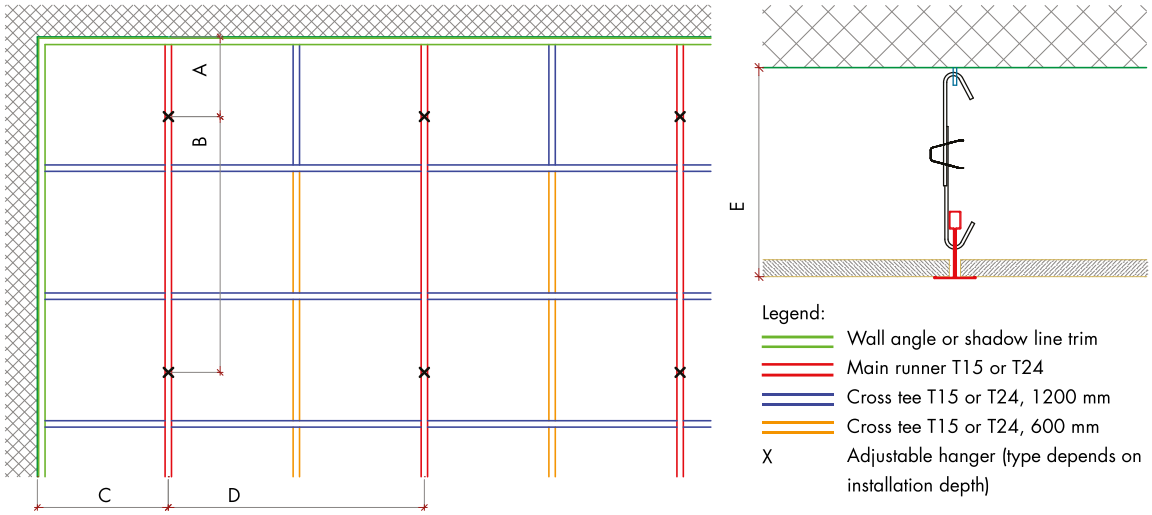
For Regula



PERFORATION

Available only as Regula.

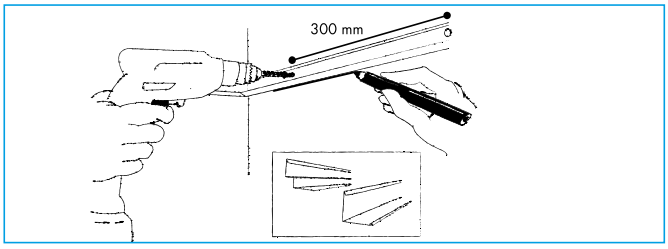
INSTALLATION GUIDE 600 x 600 mm module



A = Max. 400 mm B = Max. 1200 mm C = Max. 600 mm D = 600/1200 mm E = Min. 120 mm

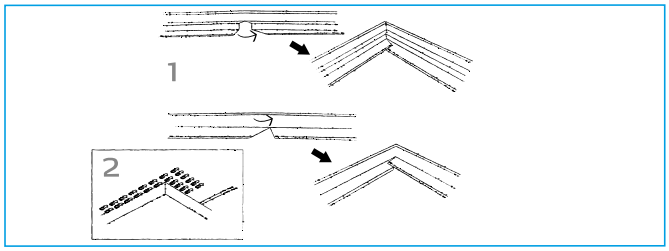
Fig. 1

Best Practice: Use of clean cotton gloves when handling product elements will ensure a good result and a ceiling without fingermarks.



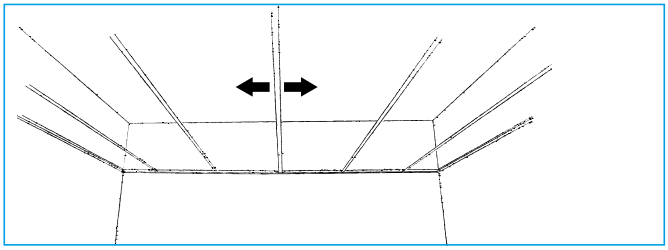
MARKING AND WALL ANGLES

- Mark the location of the wall angles on the walls and columns in relation to the required ceiling height.
- Fix the wall angles at max. 300 mm c/c. Choose the fixings in accordance with the substrate.



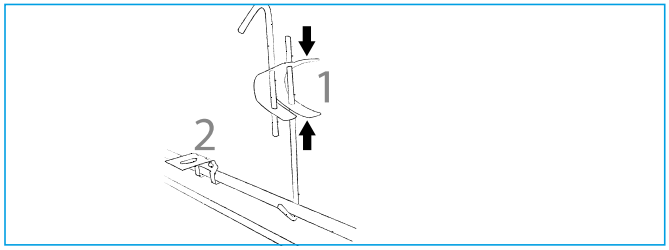
CORNERS

- Inside corners (1): cut the corners in a false mitre letting the ends overlap each other, unless anything to the contrary is specified. Finish with a corner cover, if necessary.
- Outside corners (2): must always be mitred and finished with a corner cover if necessary.



CEILING LAYOUT

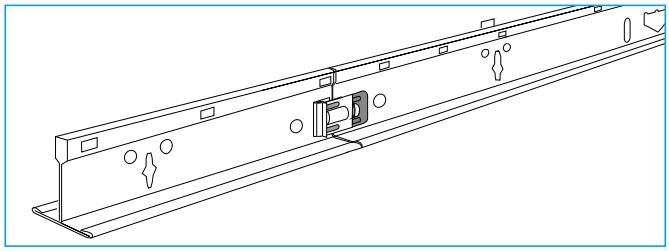
- Divide the ceiling surface from the centre of the room or in accordance with the existing ceiling plans.
- The location of light fittings and ventilation units will have an influence on ceiling layout.
- The first main runner is installed at max. 600 mm from the wall. The other main runners should be installed at 600/1200 mm c/c.



HANGERS

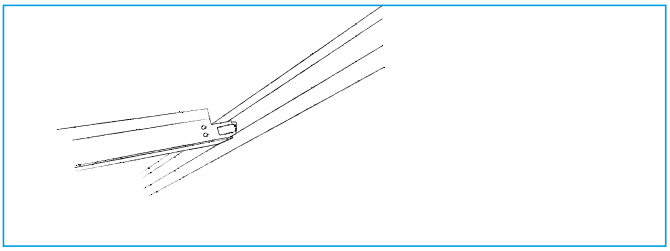
- Fix adjustable hangers (1) with eye screws or similar securely fastened to the primary construction.
- Direct hangers (2) are secured to the ceiling using appropriate fixings in accordance with the substrate.
- Install the first hanger at max. 400 mm from the wall. The other hangers should be installed at max. 1200 mm c/c.
- If loads from light fittings etc. are to be borne by the ceiling, install additional hangers.
- Refer to distances in figure 1.

INSTALLATION GUIDE 600 x 600 mm module



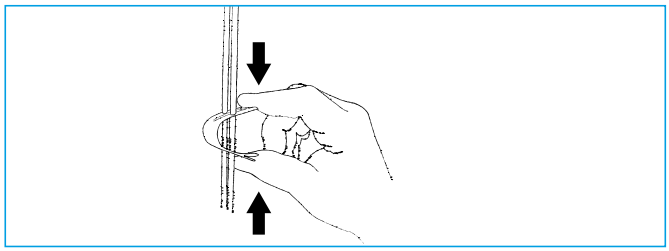
MAIN RUNNERS

- Install the main runners parallel to each other so that the slots are directly opposite each other.
- Join the main runners longitudinally by clicking them together.
- Adjust the lengths of the runners with metal shears, a hacksaw or a circular power saw with a special blade.
- Make sure there is a hanger between the end joints of the main runners and the fire break.



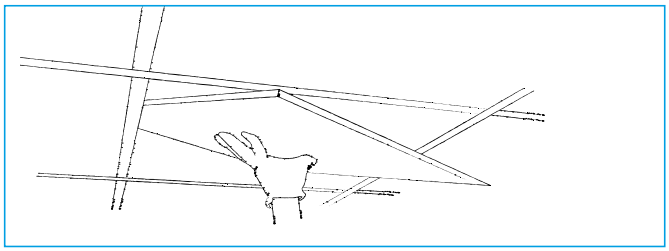
CROSS PROFILES

- Push the snap-in tongue into the slot on the main runner using light downward pressure.
- If there is a cross profile on the opposite side of the main runner, the new one must be on the left hand side of the one already in place.



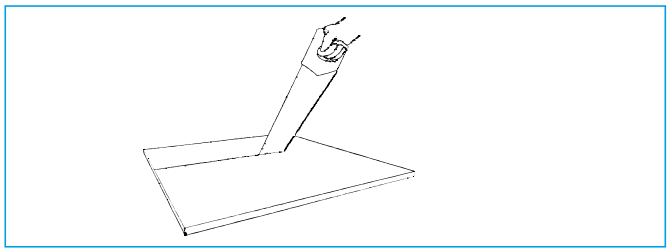
ADJUSTMENT

- Check that all profiles are correctly aligned when the entire suspension grid has been installed.
- Adjust the hangers so that they are tant and the ceiling surface is level.



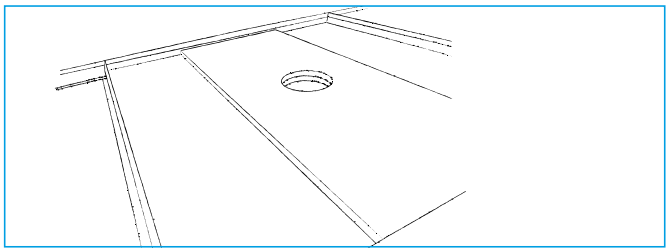
INSTALLATION

- Always wear clean cotton gloves when handling ceiling elements.
- Install the elements.



CUTTING

- Cut the elements to size from the front face.

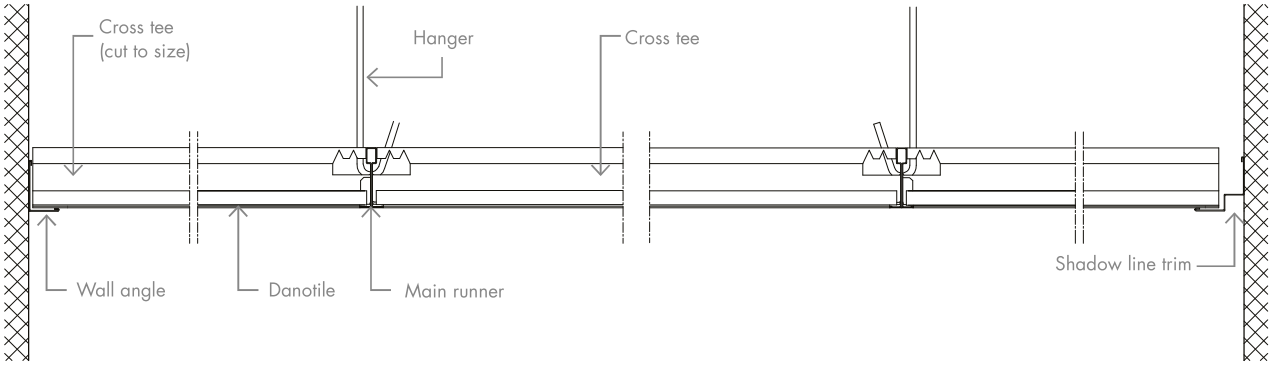


FIXTURES AND FITTINGS

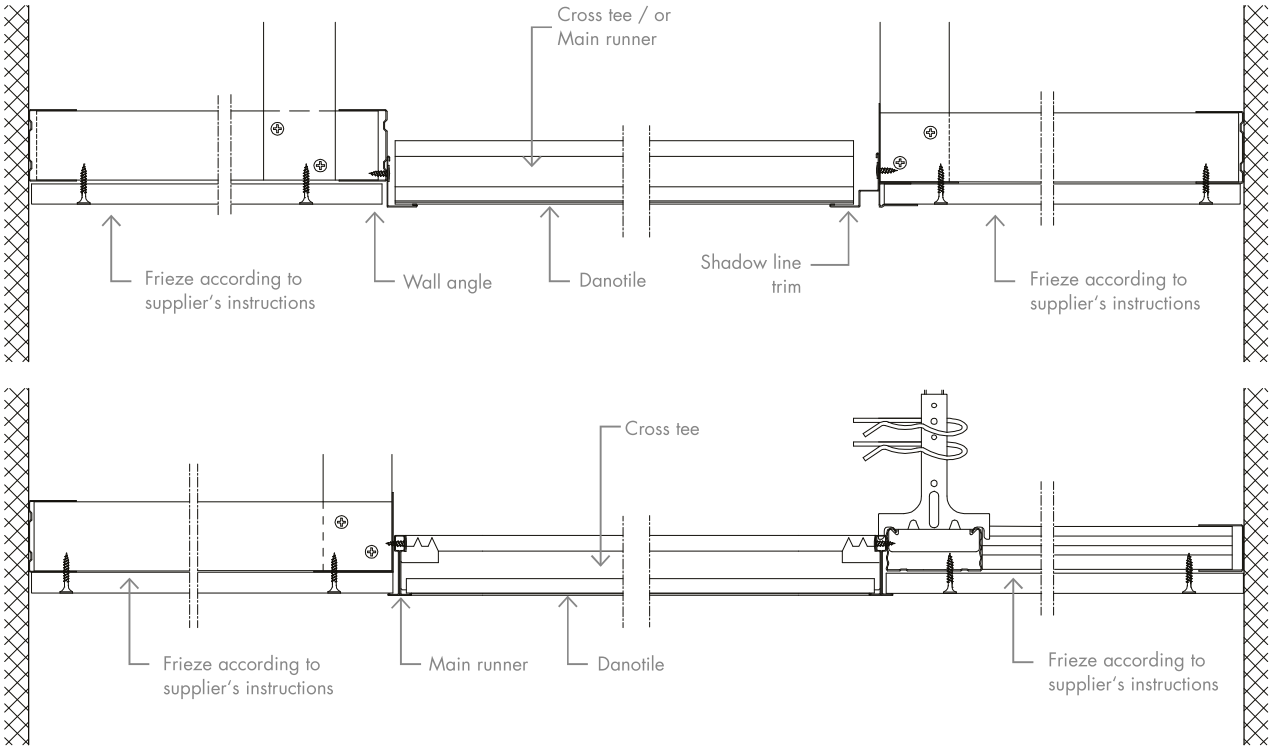
- For sizes up to 625x625 and min. thickness 9mm, units of up to 3kg can be installed directly into the panel without reinforcement.
- For larger module sizes and all sizes in 6mm thickness, a reinforcement panel of sufficient strength can be installed behind the Danotile element.
- The reinforcement panel must extend all the way into the main runners, so that the weight is transferred to them.
- The total weight should not be greater than 3kg for each m^2 of ceiling. Where loads are greater than 3kg/m^2, additional hangers must be used.
- Units over 3kg, should be installed independently, so that they do not place any load on the ceiling.

DETAILS

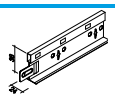
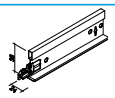
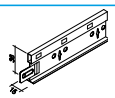
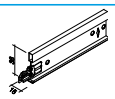
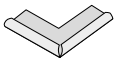
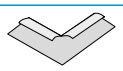
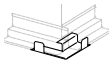
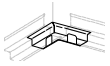
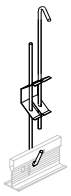
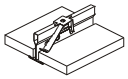
DANOTILE IN GRID SYSTEM S15 OR S24 DIRECT TO WALL



DANOTILE IN GRID SYSTEM S15 OR S24 WITH FIXED FRIEZE



ACCESSORIES

PRODUCT NAME		SAP NO.	W x L x H (mm)
Main runner T24		467385	24 x 3700 x 38
Cross tee T24		467388 467389	24 x 600 x 38 24 x 1200 x 38
Main runner T15		593513	15 x 3700 x 38
Cross tee T15		593507 593510	15 x 600 x 38 15 x 1200 x 38
Wall angle type MIE2024		434023	20 x 3000 x 24
Shadow line trim type MS15		316335	15+15 x 3000 / 8+25
Shadow line trim type MS10		316330	19+11 x 3000 / 13+19
Outside corner for wall angle		109100	for 24 mm Wall angle
Inside corner for wall angle		109102	for 24 mm Wall angle
Outside corner for wall angle		316310	for 15 mm Shadow line trim
Inside corner for wall angle		316312	for 15 mm Shadow line trim
Adjustable hanger The size specification indicates the min. and max. range		469861 469868 469872 469876 469878 469880 469881	165 - 280 315 - 580 510 - 970 630 - 1210 755 - 1460 900 - 1750 1020 - 1990
Hold down clip		430744	-
Hanger clip		198242	-
Lamp hanger		198896	-

PROPERTIES

AIR QUALITY

The hardening of gypsum boards used for the manufacturing of Knauf Danoline products is based purely on reactions with water, and contains therefore no volatile liquids or suchlike. Thus, the use of Knauf Danoline products causes no health nuisances.

All surface finishes used on Knauf Danoline products (i.e. high and low gloss paint and different foils) are also classified as non-hazardous and for reasons of indoor climate safety and consideration for the environment, there are no added biocides that give an active biocidal effect within or on the finished surface film.

Danish Indoor Climate Labelling is a voluntary labelling scheme, the first one in the world to rate construction materials according to their indoor climate properties during the service phase.

The rating covers degassing with a time value in days, and particle emission, based on the release of particles from sedimentable dust.

Knauf Danoline products have the following classifications:

- Indoor climate value: 10 days
- Particle emission: LOW (< 0.75 mg)

Knauf Danoline products are additionally rated according to the Swedish Sunda Hus labelling - an overall assessment of the product's environmental and health impacts, from its origin to its disposal:

- Untreated and painted products: Class A↑
- Foil-finished products: Class B↑

Knauf Danoline products are recommended by the Swedish Byggvarubedömningen, an association gathering the largest property companies and investors in Sweden with the view of establishing a common standard for building materials by assessing the chemical contents, the life cycle criteria and the possible effects on indoor climate of a building material.

PROPERTIES

CLEANING

All Knauf Danoline products tolerate normal cleaning practices and neutral cleaning solutions. Dust can be removed by a dry duster or a vacuum cleaner. Removal of marks can be carried out with a damp cloth.

Danotile - hygiene ceiling - is able to withstand tough cleaning and disinfection agents with pH from 2 to 13.

Danotile is clean-room certified and can be used in rooms requiring high infection control such as laboratories, kitchens, slaughterhouses, etc.

Danotile achieves silver classification in Excell, and is classified as ISO 5 in accordance with ISO 14644-1.

PROPERTIES

LIGHT REFLECTION

The paint on Knauf Danoline products has a low gloss value which ensures good light spreading - a property which is sustained over time. For the finished Knauf Danoline products, the light reflectance values are influenced by the product's perforation design, the colour and gloss value of the factory paint. For untreated products, the light reflectance values are determined by the paint applied on site.

Light reflection requirements depends on the activity in the room. For offices with direct
lighting the recommendation is approximately 70%.

PERFORATION	PAINT COLOUR	GLOSS	GLOSS ON SUBSTRATE	REFLECTANCE
Tangent T1	Standard white	5	2	70.9 %
Micro M1	Standard white	5	2	72.1 %
Quadril Q1	Standard white	5	2	75.1 %
Globe G1	Standard white	5	2	72.8 %
Regula R plain	Standard white	5	2	82.6 %
Unity U3	Standard white	5	2	69.2%
Unity U4	Standard white	5	2	72.5%
Unity U8|15|20	Standard white	5	2	72.2%
Unity U9	Standard white	5	2	71.6%
Regula R plain	Standard white	15	10	80.8%
Regula R plain	White foil laminated	10	White foil	86.3 %

PROPERTIES

LOAD-BEARING CAPACITY

The breaking load test in accordance with EN 14190 ensures that the products can bear 5 times their own weight. This means e.g. a non-perforated Belgravia tile is tested with a load of up to 17 kg without any damage
to the tile. The purpose of the test is to secure the stability of the ceiling.

Knauf Danoline's products adhere to the EN 13964 standard for deflection, which consists of the classifications listed below.

The individual product's load-bearing capacity in relation to fittings (for instance lamps), varies from product to product and can therefore be found on page 236 and 237 of this catalogue.

CLASS CONDITIONS

CLASS	CONDITIONS
A	Building structures exposed to a max. RH of 70% and a maximum temperature of 25°C
B	Building structures exposed to a max. RH of 90% and a maximum temperature of 30°C

DEFLECTION CLASSES

CLASS	MAX. 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 supporting profiles. For a 600 module the maximum deflection for class 1 is 1.2 mm and 2 mm for class 2

PROPERTIES

AMBIENT CONDITIONS

Knauf Danoline products are tested for resistance to moisture in service. Products tested for resistance up to 70% RH at 25°C are designed for use under normal living and working conditions, i.e. in offices, institutions and similar premises.

Products tested for resistance up to 90% RH at 30°C are designed for use under more extreme conditions and can thus be used in high humidity rooms and rooms with frequent and major changes in the humidity of the air.

However, at lower relative humidity gypsum is able to tolerate much higher temperatures. Gypsum can therefore also be used in buildings where temperatures can fluctuate up to 50°C for shorter periods of time.

PROPERTIES

ROBUSTNESS

Knauf Danoline products are made of robust material with excellent pressure resistance. Under normal conditions of use, the product properties are preserved, and there is no decomposition over time.

Foil-covered products have a highly durable and dirt resistant surface.

Contrapanel - impact resistant acoustical ceiling and wall panel - is specially designed to meet the strictest requirements for ceiling and wall linings in intensively used facilities such as sport halls and gymnasiums. Contrapanel meets the class 3 requirements in accordance with EN 13964 for impact resistant ceiling linings, and DIN 18032 for impact resistant wall linings, making the product suitable for handball and hockey courts where materials are required to absorb sound as well as withstand heavy impacts.

PROPERTIES

ENVIRONMENT

Knauf Danoline acoustic ceiling and wall materials are manufactured from high grade gypsum boards, supplied from our company, Knauf A/S. The gypsum boards are made from following gypsum types:

- naturally occurring gypsum, found in large quanitities in the ground
- gypsum produced from by-products at local power plants during desulphurisation – a chemical process in which the sulphur dioxide is removed using limestone powder mixed with water to form the by-product gypsum
- preconsumer recycled gypsum, waste produced through our own production processes
- postconsumer recycled gypsum, is plasterboard waste that is received from gypsum recycling companies. Companies gathering and recycling gypsum waste from building sites accross Denmark.

Both Knauf Danoline and Knauf A/S are ISO certified companies with constant focus on environmental management and optimisation of the production processes to the benefit of the local surroundings, our customers and the environment in general. Knauf Danoline products are distinguishable by their unique features:

- natural material
- long lifetime and service time
- re-use and recycling
- environmentally responsible production
- high quality service life

In order to ensure the possibility that used Knauf Danoline products can be recycled, they are painted with water-based paint, which not only allows recycling but also has no deteriorating effect on the humidity regulating properties of the gypsum material.

Another essential prerequisite for the recycling of gypsum board is to keep the gypsum core free from harmful additives. The main binding agent in the core is in fact water.

The acoustic felt on the back of Knauf Danoline's perforated gypsum boards is made of cellulose which makes it unnecessary to remove the felt before the recycling of gypsum board. In fact, the dissolved cellulose felt gives increased flexibility to the gypsum board.

The cardboard used in our plasterboard products is produced from 100% recycled sources. The cardboard and paper foils are also separated out from the core gypsum material at the recycling plant, so that a greater proportion of gypsum board waste is able to be recycled. The cardboard fraction is used as a structure material in the formation of compost at KomTek Environment A/S in Denmark.

ENVIRONMENTAL POLICY

Based on the life cycle approach, we wish to contribute to ensuring sustainable development in the long term. We therefore work continuously on improving the environmental conditions and to prevent pollution by:

- using environmentally responsible raw materials in the manufacturing of our products
- using packaging that can be recycled or utilised
- optimising the consumption of energy, raw materials and packaging
- reducing the waste
- utilising the waste

Knauf Danoline is committed to reducing waste and energy consumption. Therefore, investments are made each year in energy and waste efficiency.

The guiding principle for the manufacturing of Knauf Danoline products is to keep the basic material as pure as possible in order to secure continuous recycling.

CERTIFICATES

ISO ACCREDITATIONS & OTHER APPLICABLE CERTIFICATES:

- ISO 9001- Quality management
- ISO 14001- Environmental management
- OHSAS 18001 - Occupational Health & Safety

- LES FICHES DE DÉCLARATION ENVIRONNEMENTALES ET SANITAIRES (FDES) - French Environmental & Health and Safety declaration based on Life Cycle Analysis

- LEED DECLARATION

PROPERTIES

FIRE SAFETY

Knauf Danoline ceiling and wall products meet all the necessary fire safety requirements:

Material classes according to EN 13501-1

- A2-s1,d0
  White painted ceiling tiles
  Untreated lining panels

- B-s1,d0
  Foil laminated ceiling tiles

Material classes according to ASTM E84

- Class A
  White painted ceiling tiles, perforated and non-perforated
  Untreated perforated and non-perforated lining panels
  Foil laminated ceiling tiles

Fire resistance according to BS 476-23:1987

- ½ hour fire resistance
  Danotile 6.5 mm – foil finished, non-perforated

Fire resistance according to EN 13501-2 and DS 1052-1 1985

- EI 30 (BD-30)

Fire protection according to EN 13501-2 and EN 14135 2004 & DS 1065-2 1990

- K1 10 and K2 10
  Untreated perforated lining panels

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