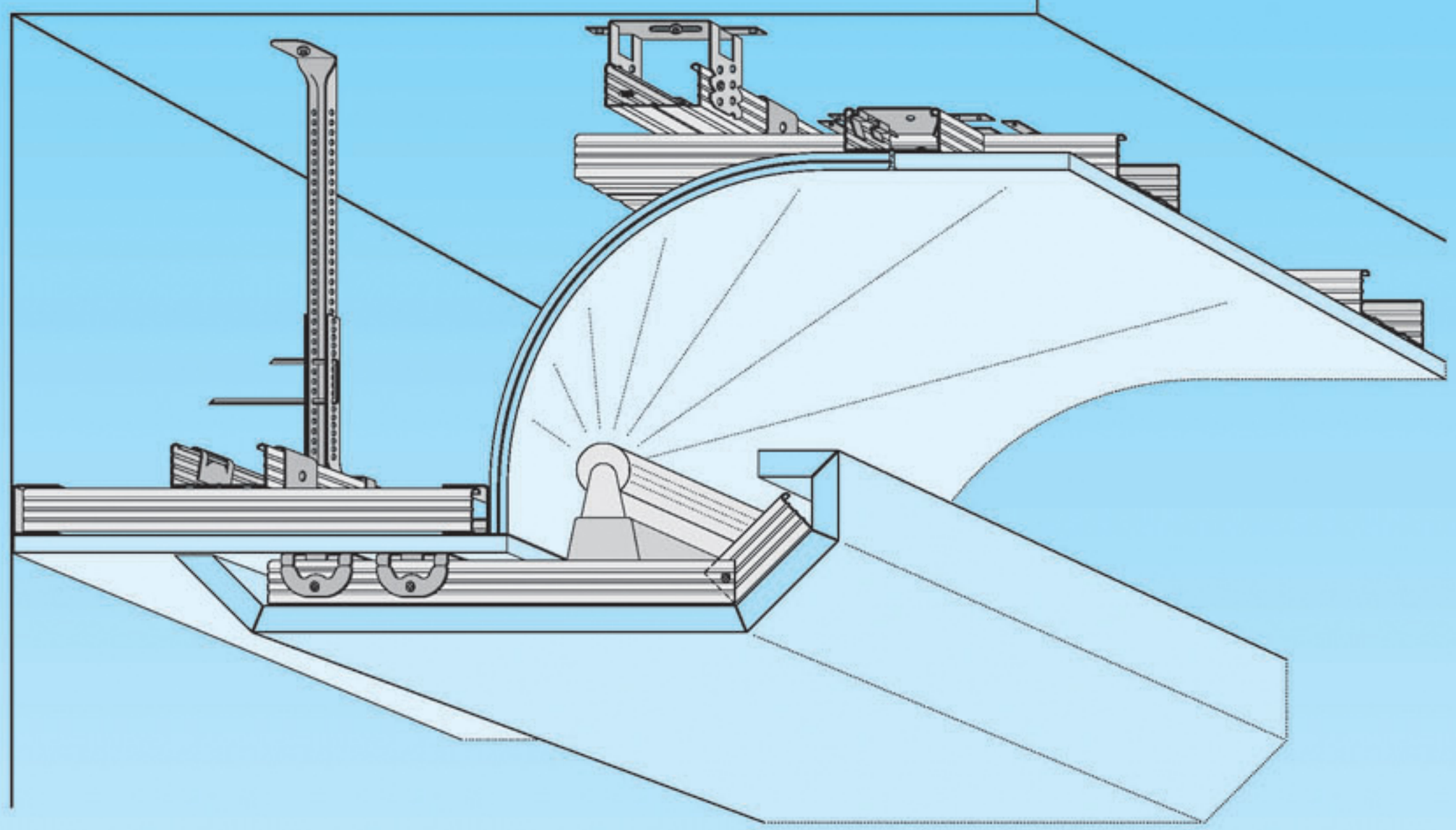
Technical Data Sheet D19

Edition 10/04

Knauf Designed Ceilings



NEW! Knauf Multi Connector for CD 60x27 - for Angled Connections, Split Level Ceilings, Connection Joints, Longitudinal Channel Connections

D191	Knauf Mitering Technology
D192	Knauf Molding Technology
D193	Knauf Domes

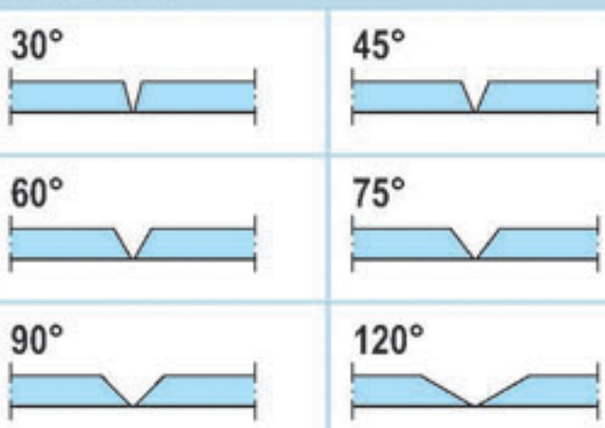
The structural, statical properties, and characteristic building physics of Knauf systems can solely be ensured with the exclusive use of Knauf system components, or other products expressly recommended by Knauf.

KNAUF

Knauf Mitering Technology

Knauf Mitered Boards

Miter cuts



Board thickness

9.5 mm to 25 mm

Board length

max. 3 m

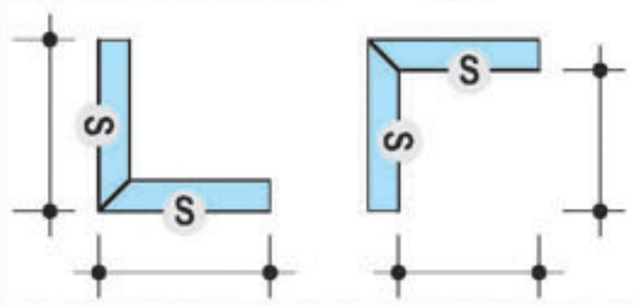
Pre-treatment

Prime miters with Knauf Tiefengrund and glue with Knauf Weißleim (PVA)

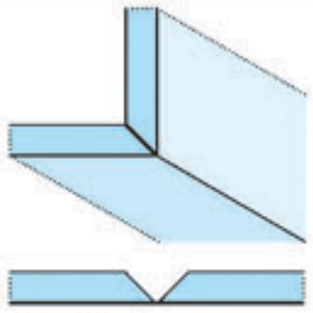
Other board thicknesses or factory glued/ partially glued boards on request

Necessary order information:

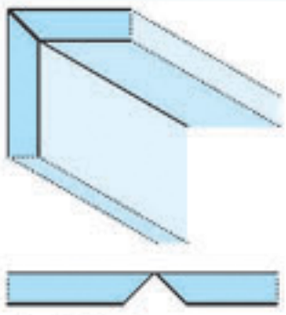
Version-No. (e.g. 1)
dimensions and
marking of the face side S



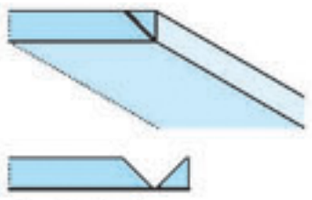
Examples: Knauf Mitered Boards



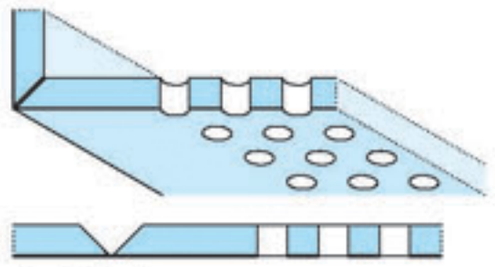
1x 90° miter
1



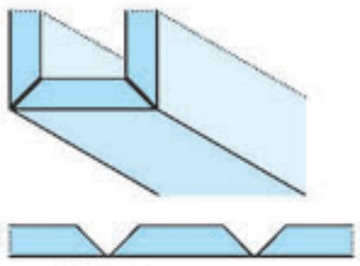
1x 90° miter
2



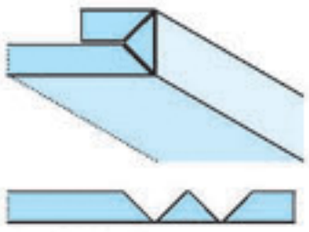
1x 90° miter
3



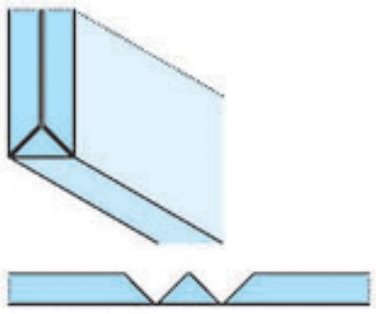
1x 90° miter
4



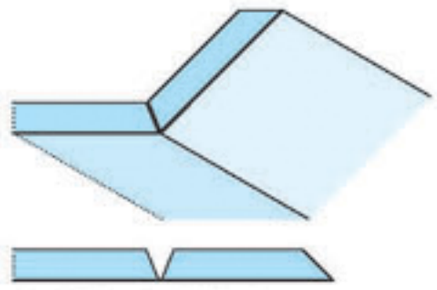
2x 90° miters
5



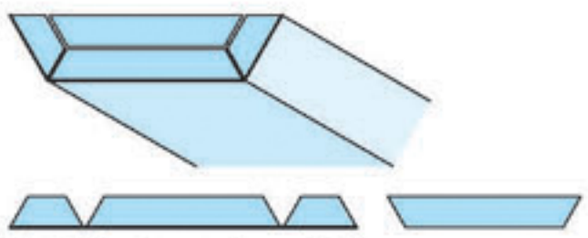
2x 90° miters
6



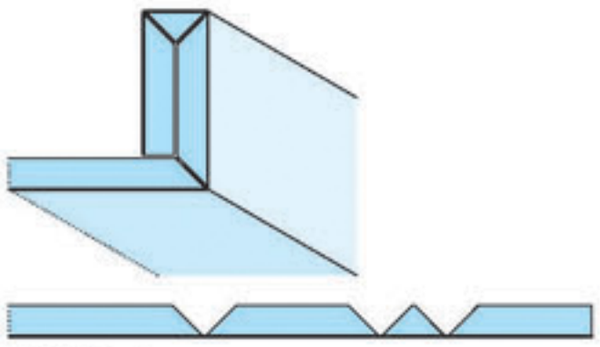
2x 90° miters
7



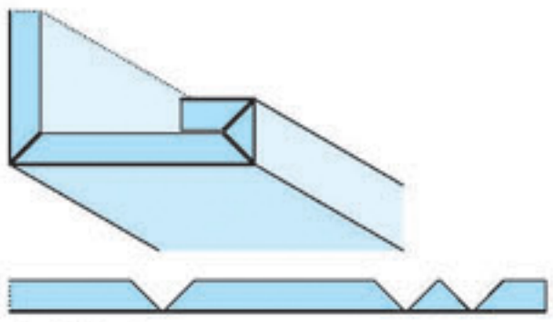
1x 45° + 1x 90° miters
8



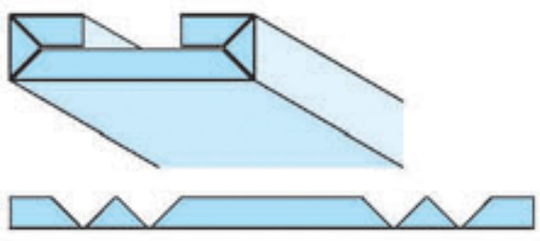
2x 60° miters + board strip
9



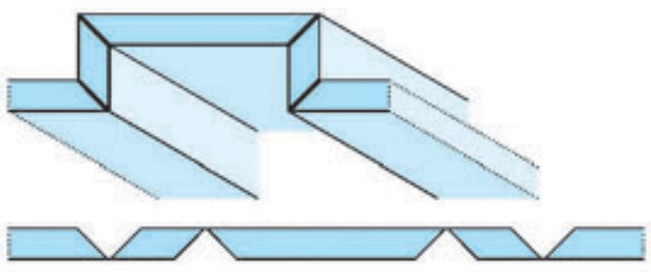
3x 90° miters
10



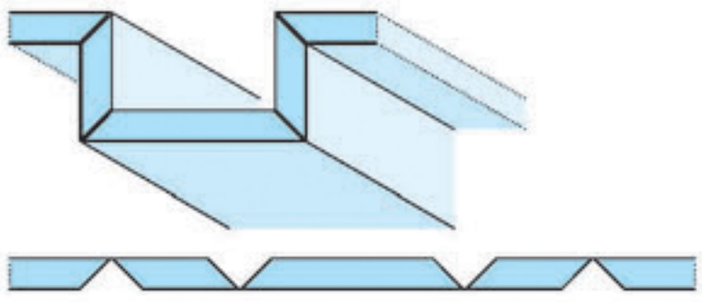
3x 90° miters
11



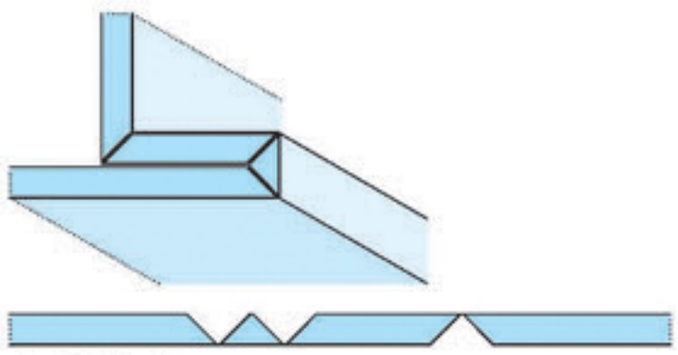
4x 90° miters
12



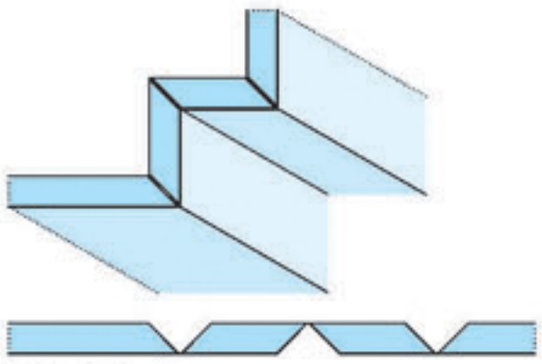
2+2 90° miters
13



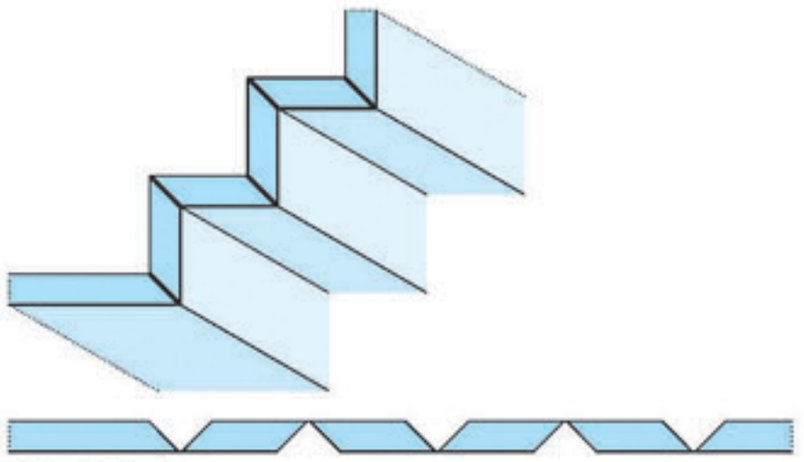
2+2 90° miters
14



2+1 90° miters
15



2+1 90° miters
16



3+2 90° miters
17

Knauf Mitering Technology

D191

Order Form / Request

Please fill in and send to the Knauf Sales Support **(facsimile +49 93 23 / 31 14 47)**

Mitering Technology - Knauf Mitered Boards

☐ **request** ☐ **order** Date: _____

	to	from
Name		
Company		
Street		
Postal code / city		
Phone / facsimile		

Commission/ building project/ object _____

Thickness of cladding (mm)

☐ **12.5** ☐ **15** ☐ **18** ☐ **20** ☐ **25**
☐ **2x 12.5** ☐ other _____

Board type

☐ **GKB / GKBI** ☐ **GKF / GKFI** ☐ **Piano** ☐ **Thermoboard**
☐ other _____

Item (cs-no., etc.) **amount / length**

item _____ amount _____ board length _____

Miter layout

detail _____ (e.g. D191-S14)
☐ **glued** ☐ **unglued**

dimensions of miter layout (mm)

Type

☐ **straight**
☐ **arched** R = _____ mm ☐ convex ☐ concave

Notes / drawings (incl. dimensions)

Knauf Mitering Technology

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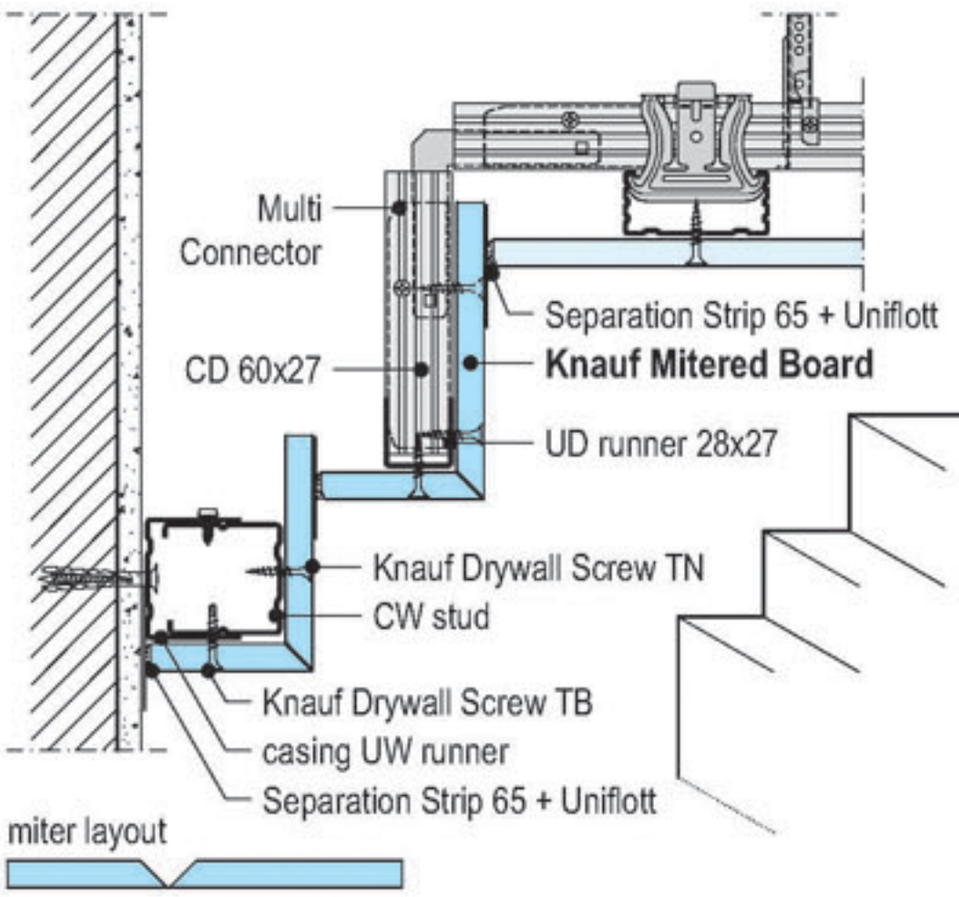
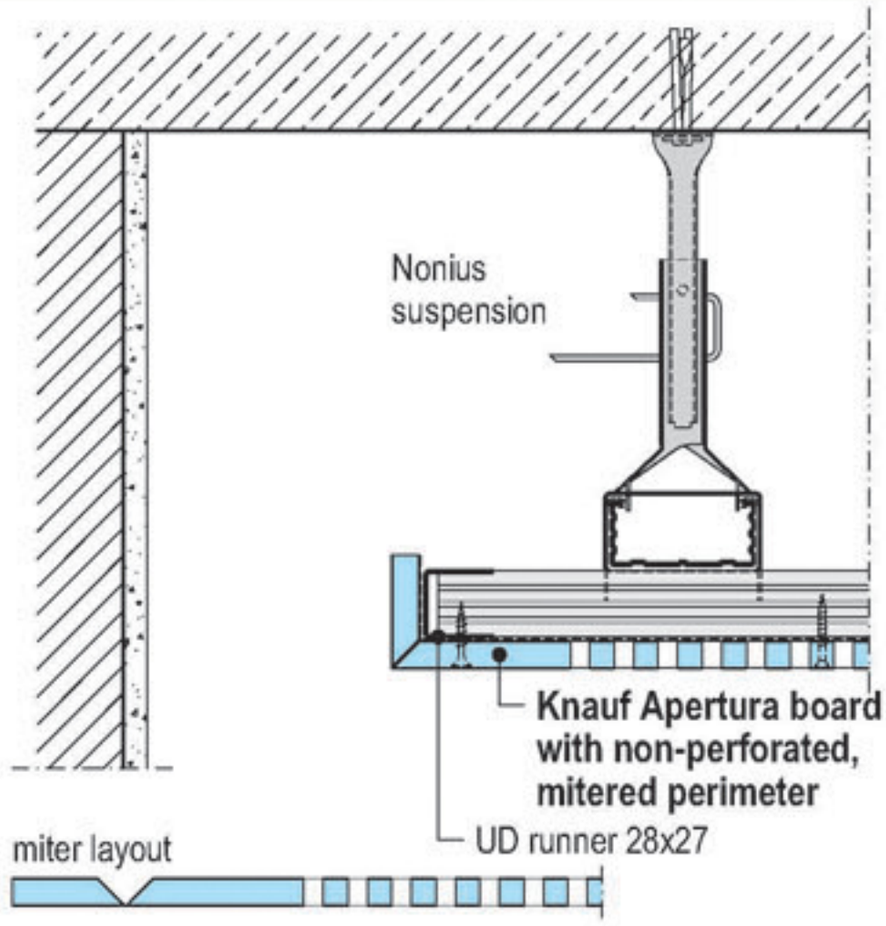
Knauf Mitered Boards

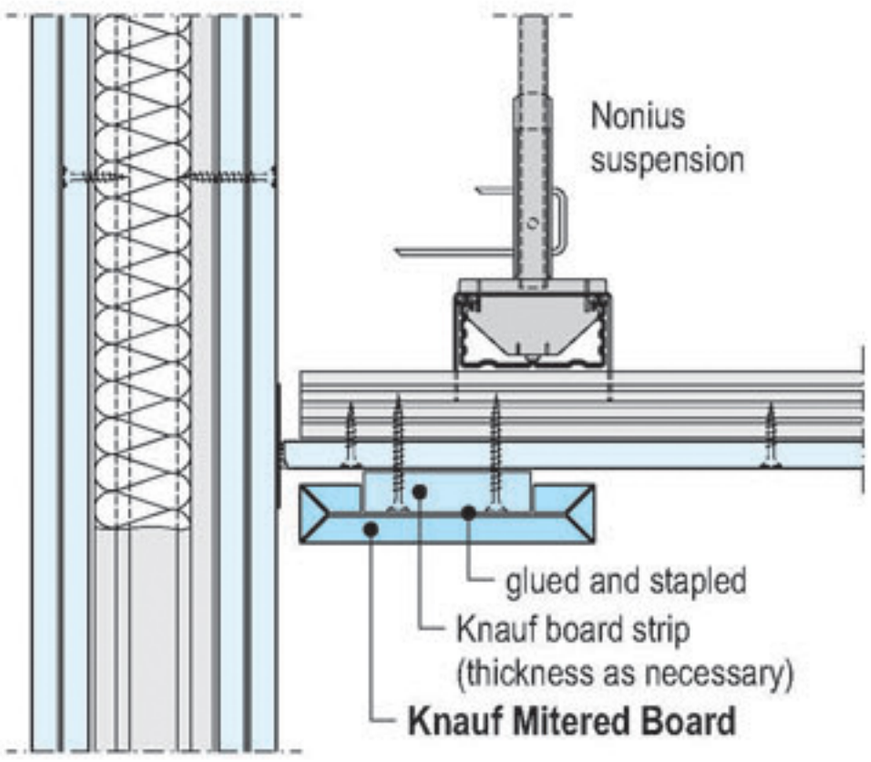
Details: Examples



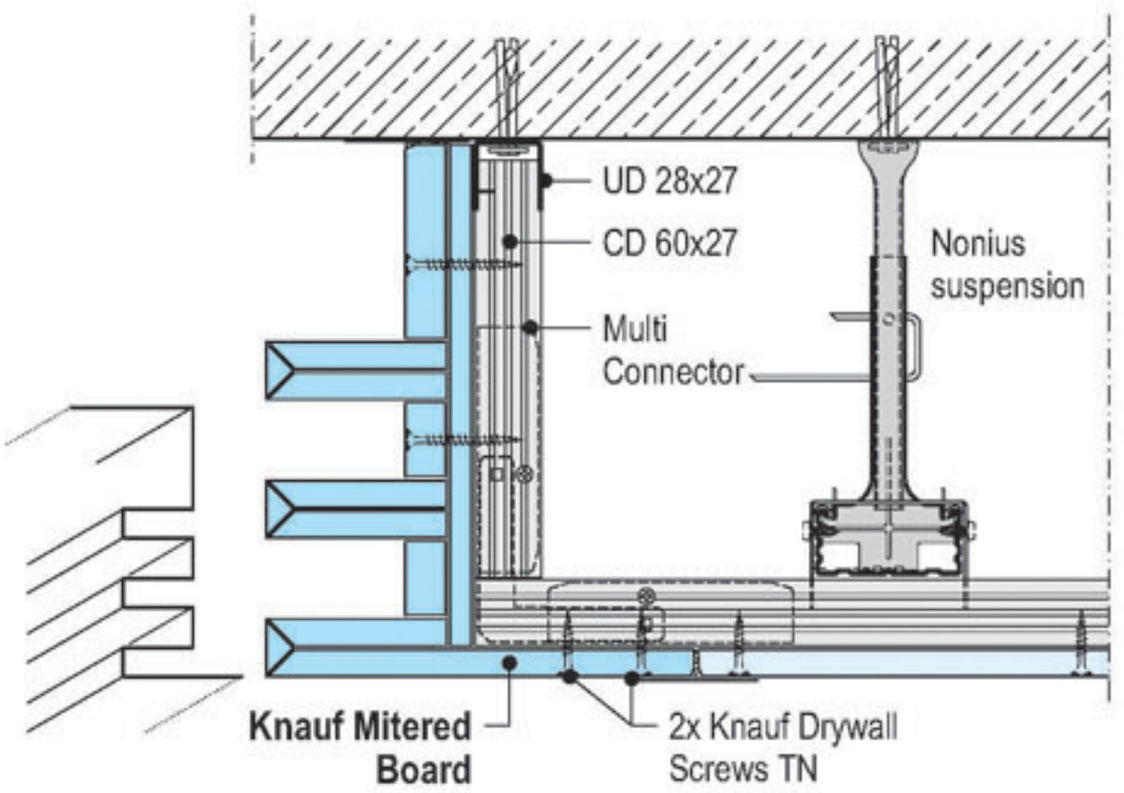
D191-S1 **Cornice**



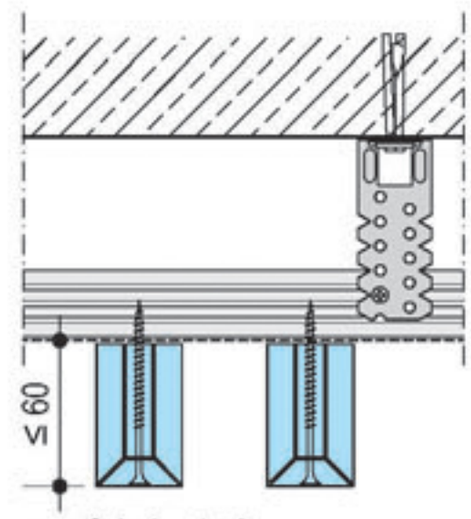
D191-S2 **Canopy**



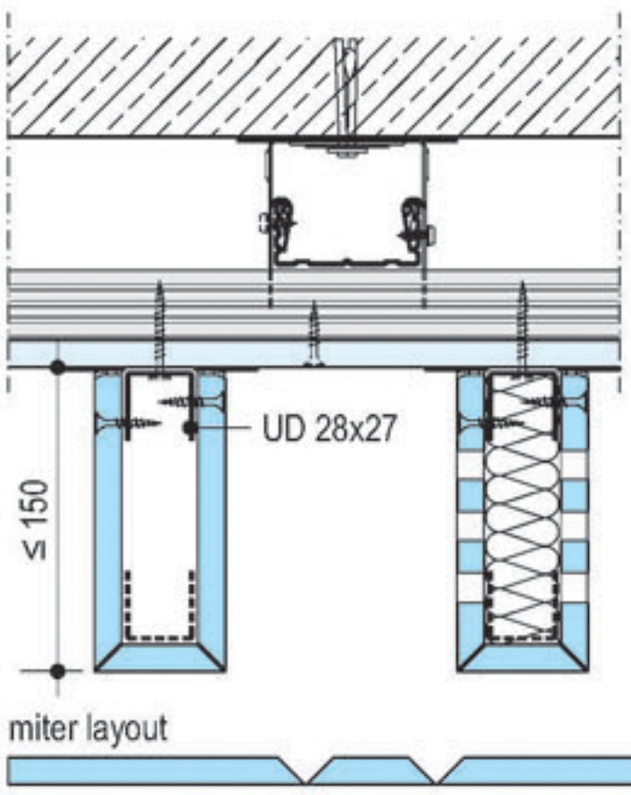
D191-S3 **Crown Frieze**



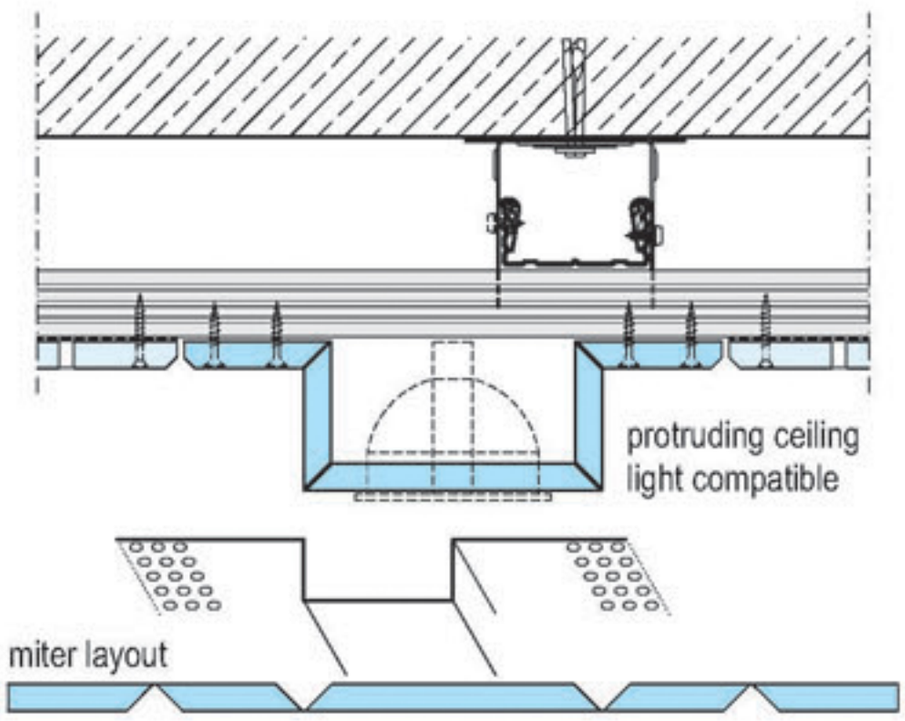
D191-S4 **Horizontal Fins**



D191-S5 **Vertical Fins**



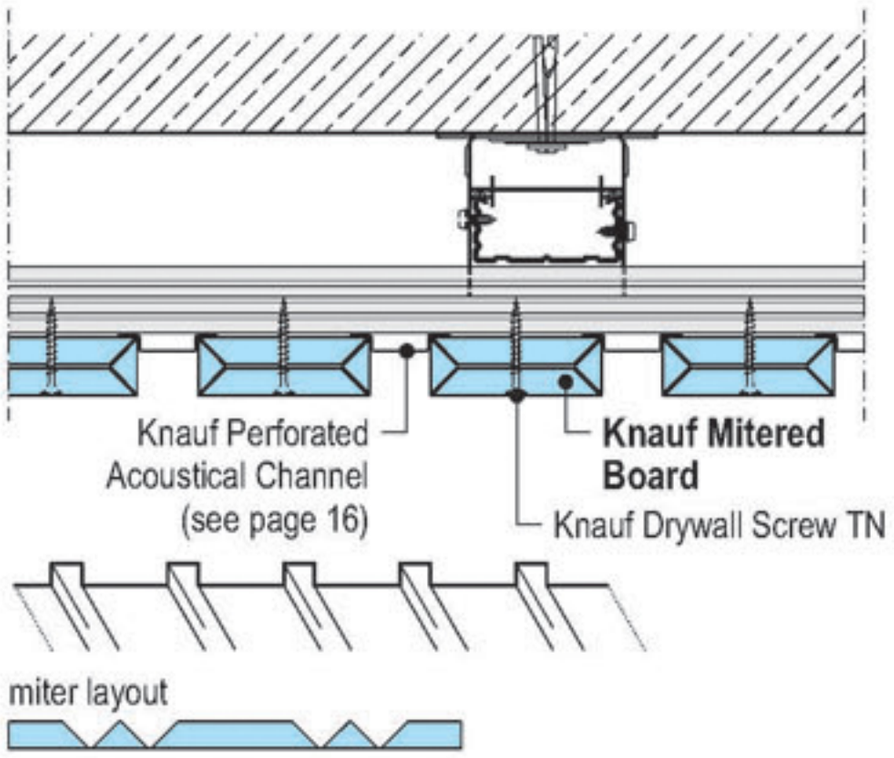
D191-S6 **Baffle**



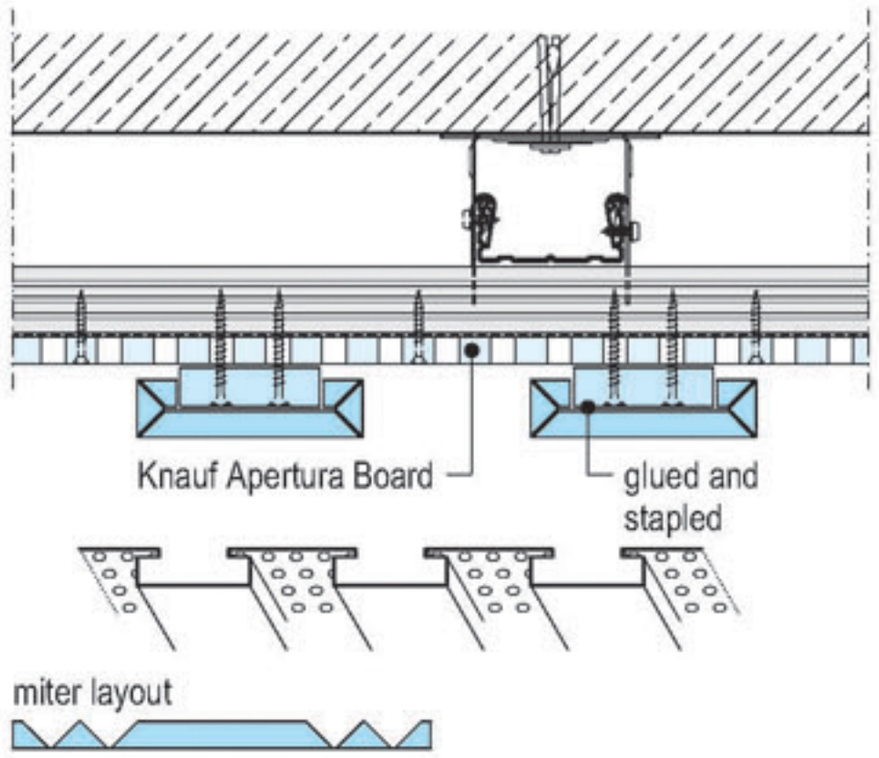
D191-S7 **Protruding**

Knauf Mitered Boards

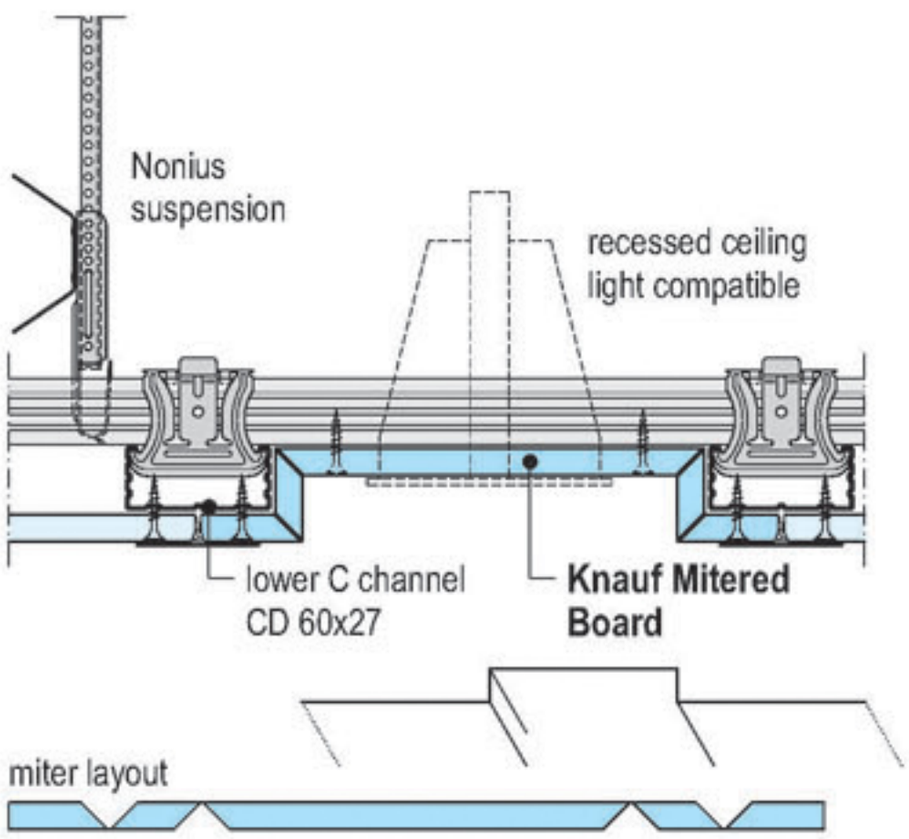
Details: Examples



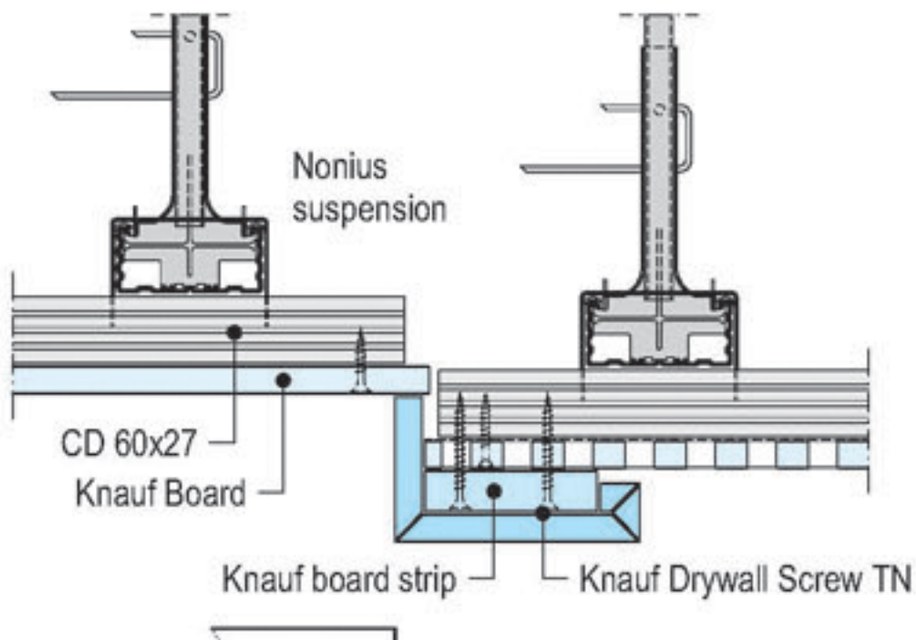
D191-S8 Panel Ceiling



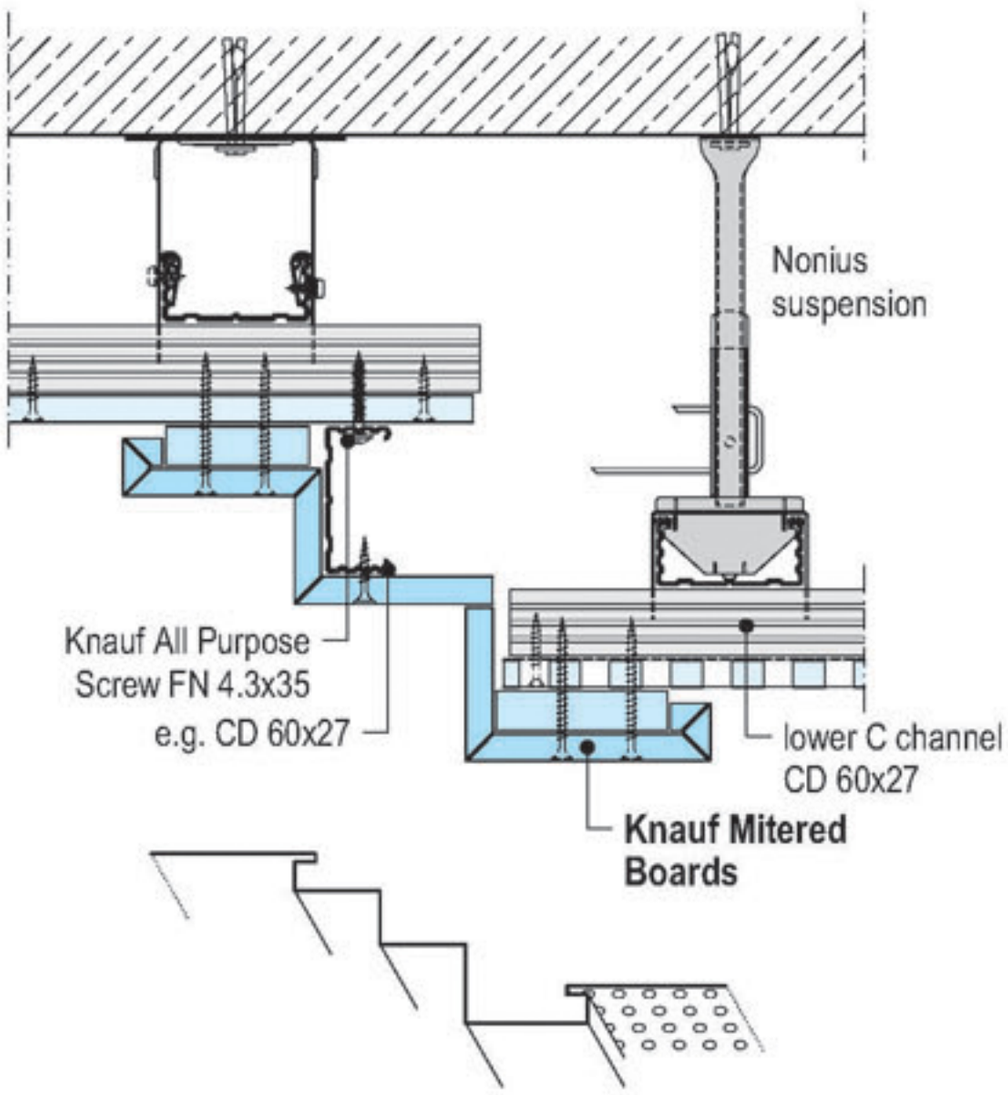
D191-S9 Module Ceiling



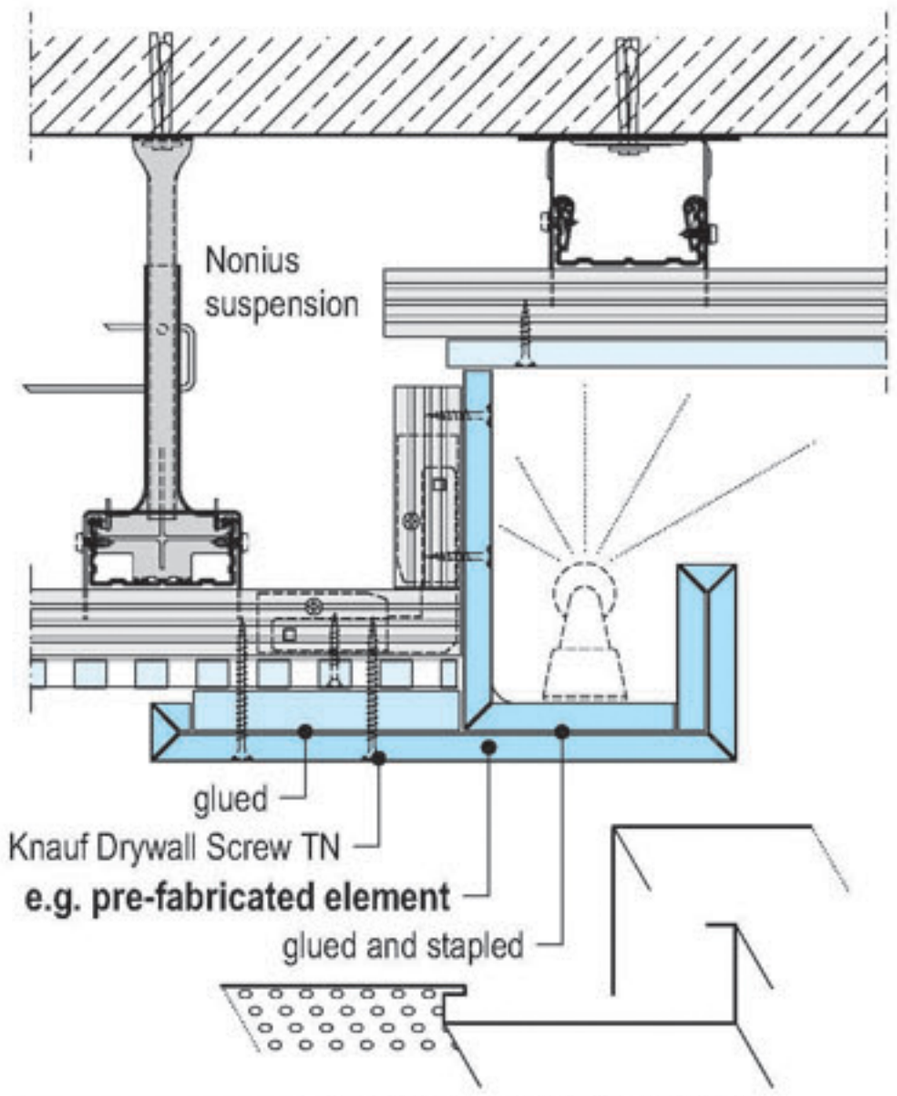
D191-S10 Recessed



D191-S11 Split Level Ceiling with Frieze



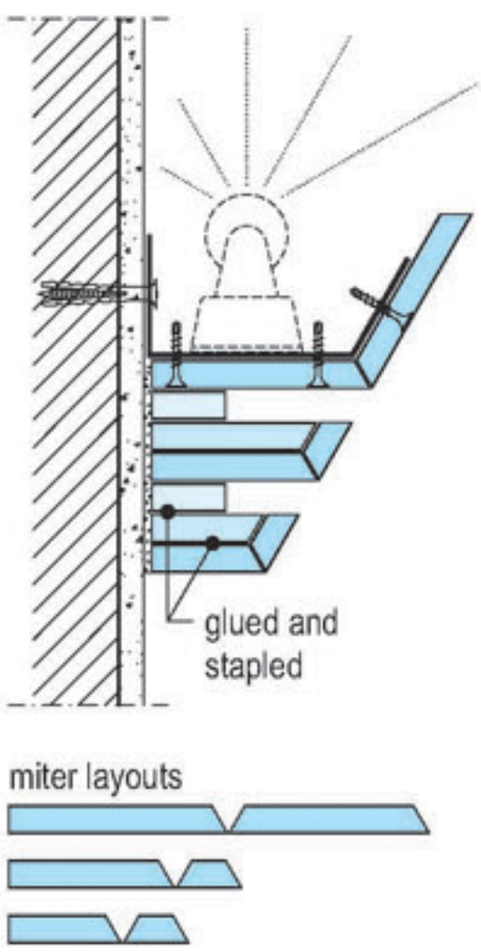
D191-S12 Split Level Ceiling with Steps



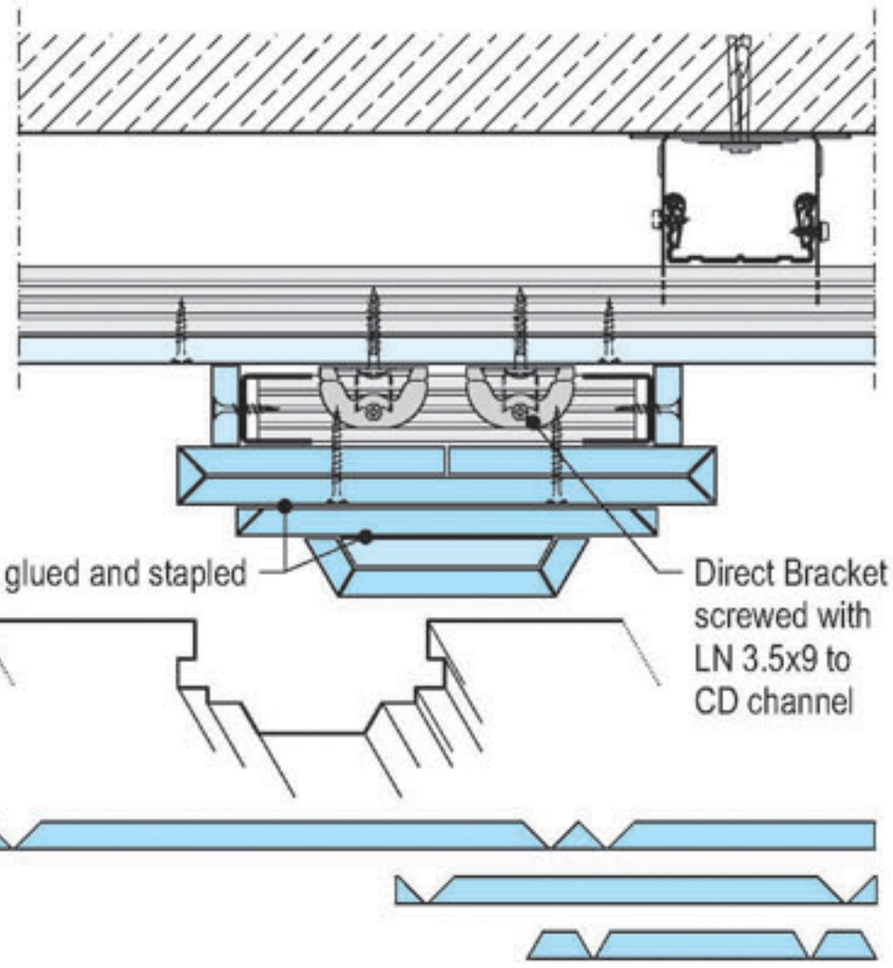
D191-S13 Split Level Ceiling with Indirect Illumination

Knauf Mitered Boards

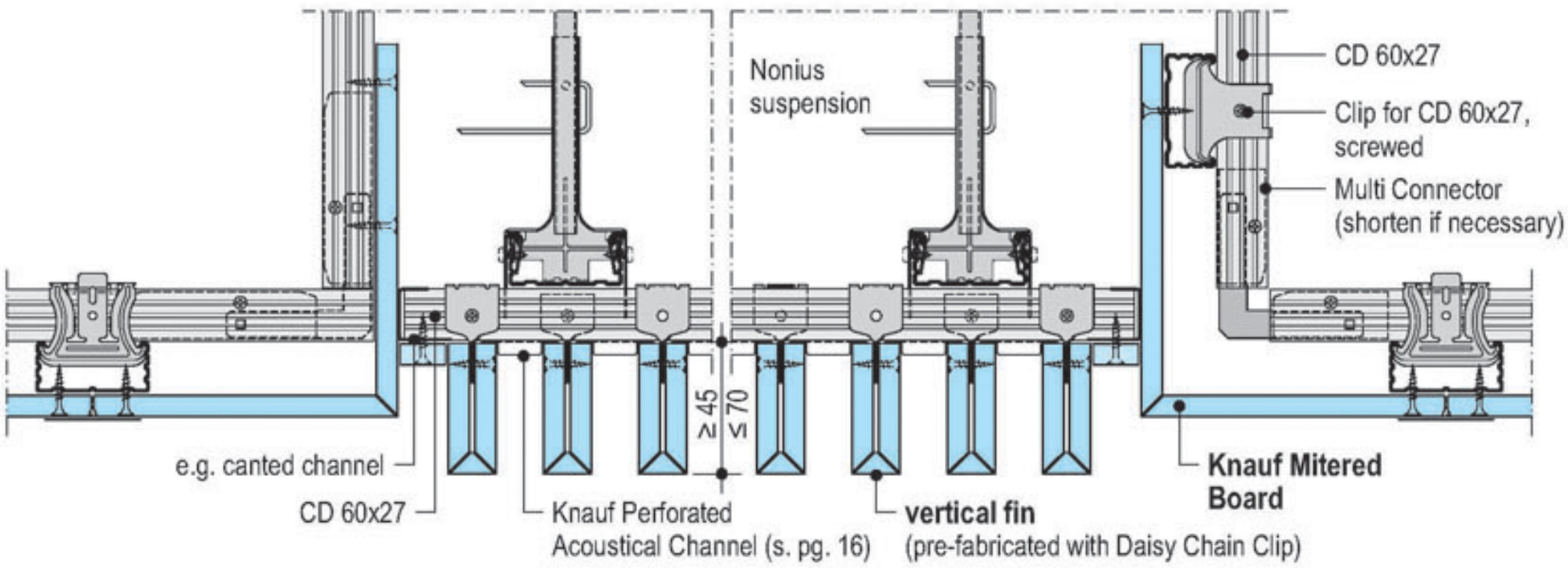
Details: Examples



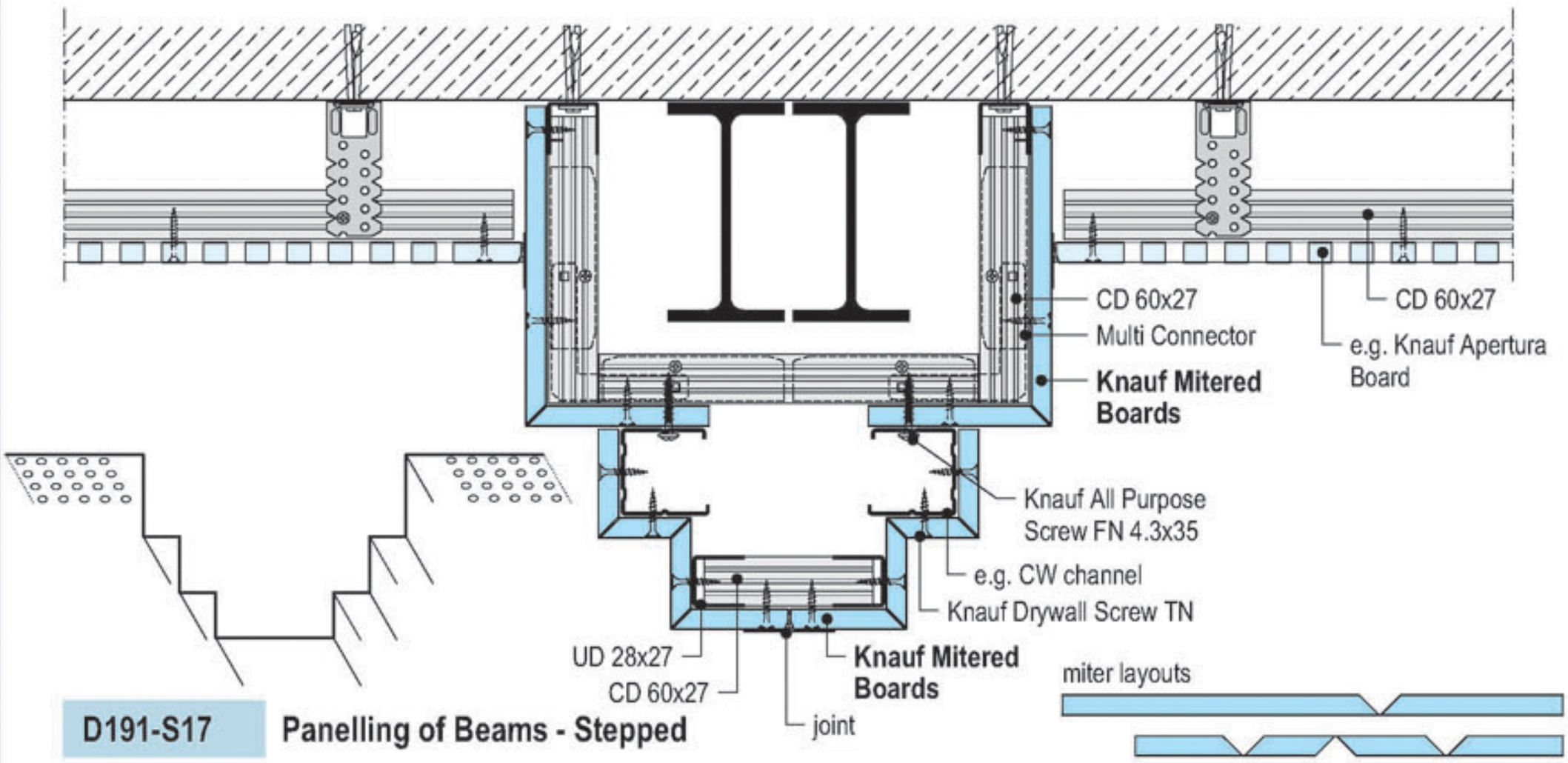
D191-S14 Cornice for Indirect Illumination



D191-S15 Protruding - Stepped



D191-S16 Fin Ceiling

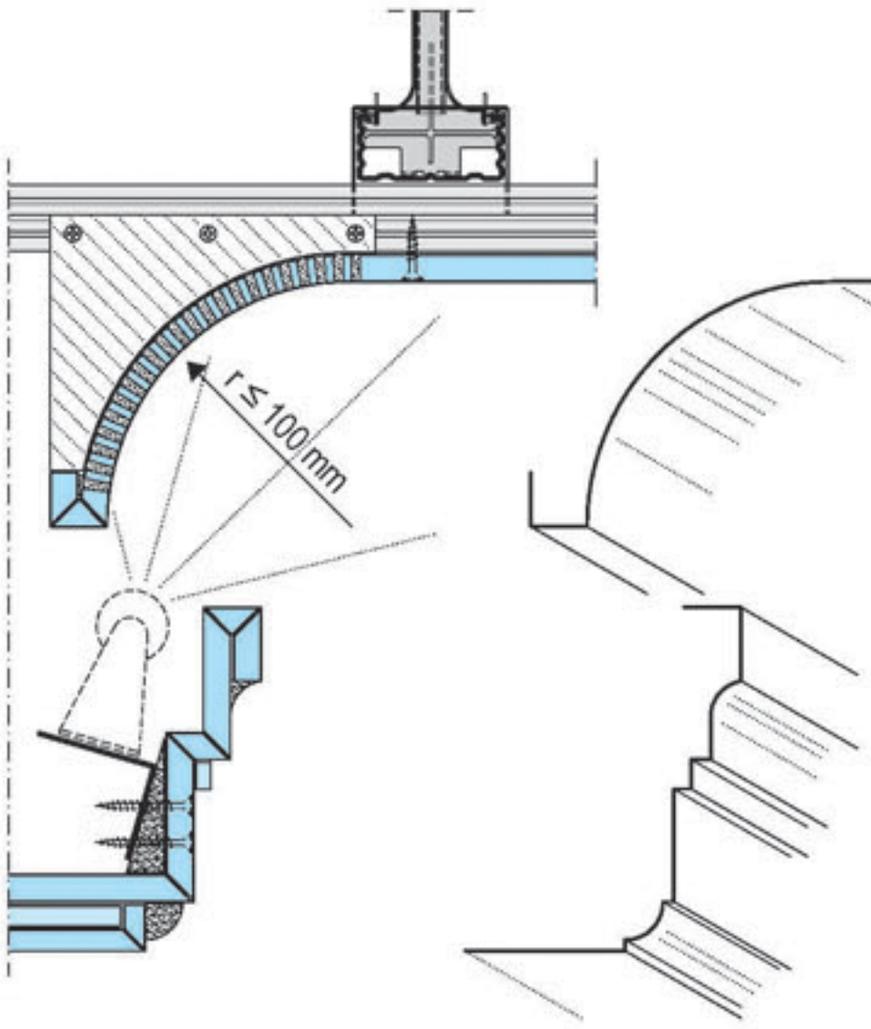


D191-S17 Panelling of Beams - Stepped

Knauf Mitering Technology

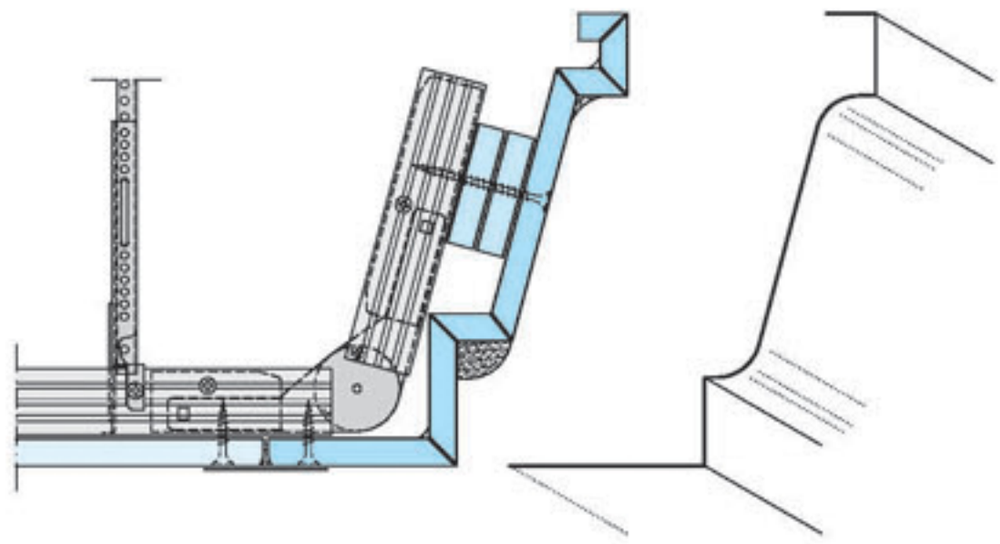
Knauf Mitered Boards

Details: Cornice Construction

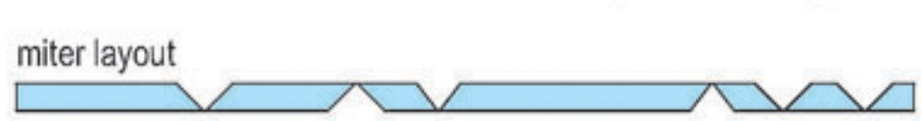


miter layout

D191-S18 Cornice with Stucco Indirect Illumination

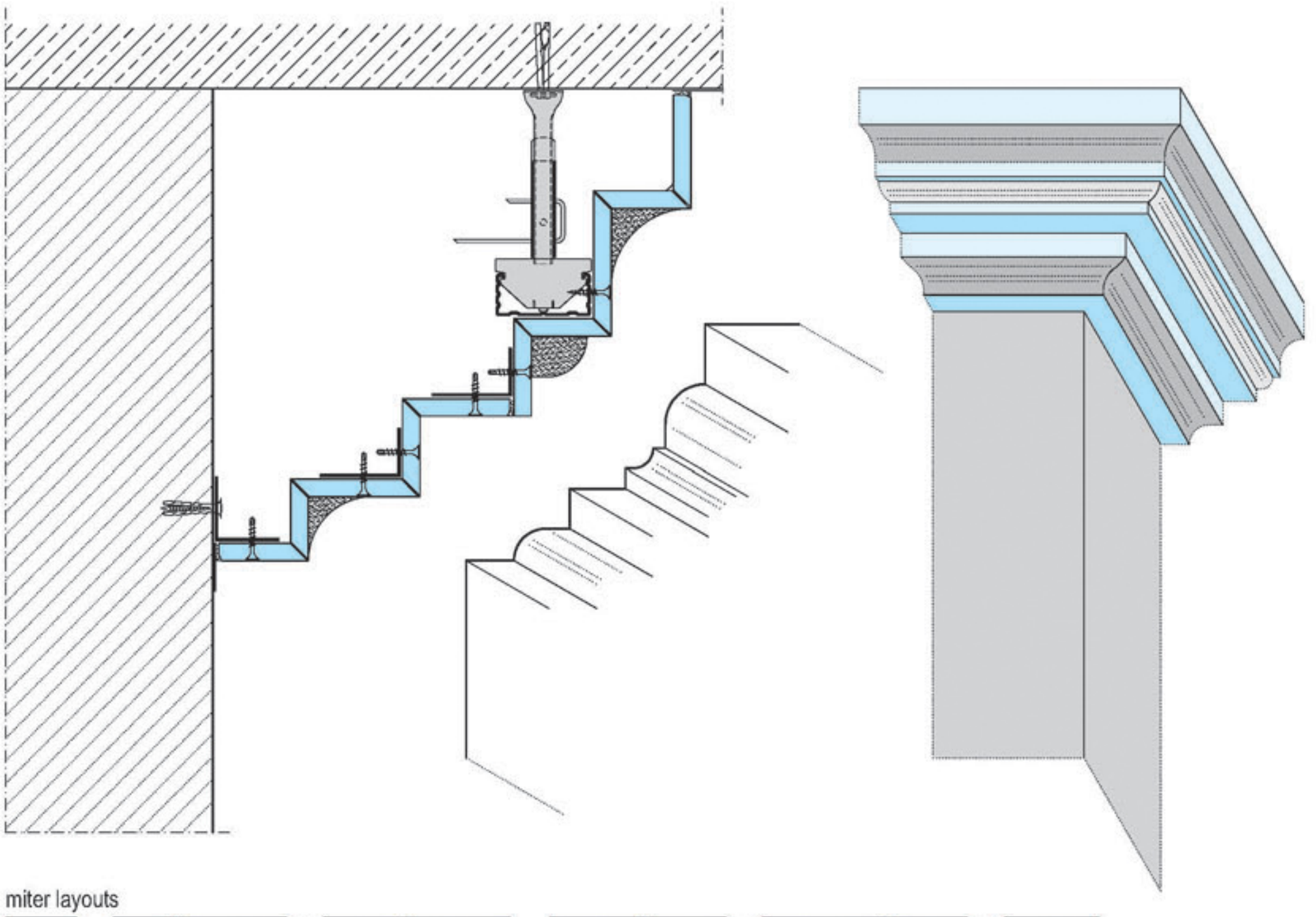


miter layout



D191-S19 Ceiling Perimeter with Stucco

Detail: Column Capital



miter layouts

D191-S20 Column Capital

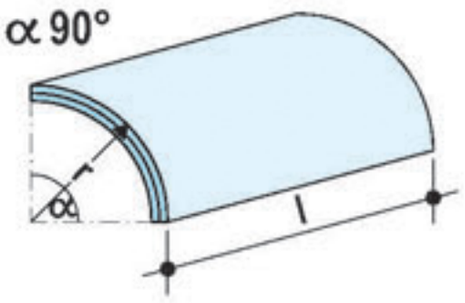
Knauf Arch Elements

D192

Factory Molded

Length of elements l

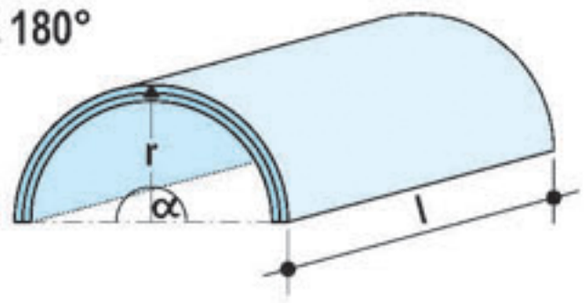
α 90°



length l max. 3480 mm
(r ≤ 700 mm)

length l max. 1150 mm
(r ≥ 700 mm)

α 180°



length l max. 3480 mm
(r ≤ 350 mm)

length l max. 1150 mm
(r ≥ 350 mm)

Thickness of elements d

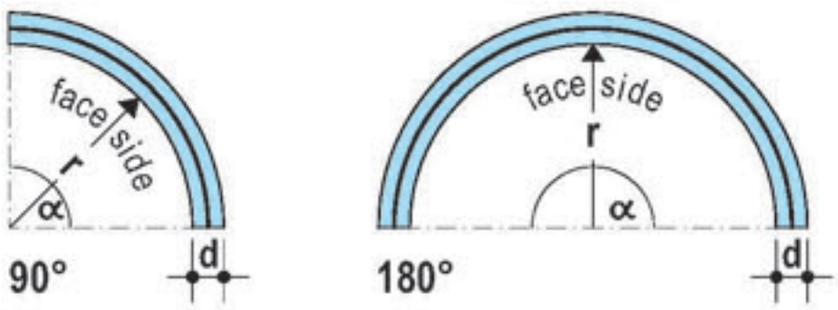
element mm	molding boards mm
12	2x 6
18	3x 6
24	4x 6

Other dimensions on request

- radius r : ≥ 100 mm
- angle α : ≤ 180°

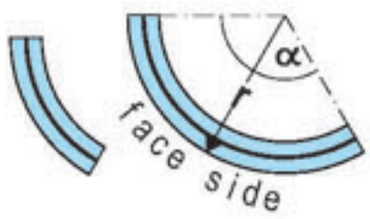
Arch Versions: Examples

Concave Inside Arches

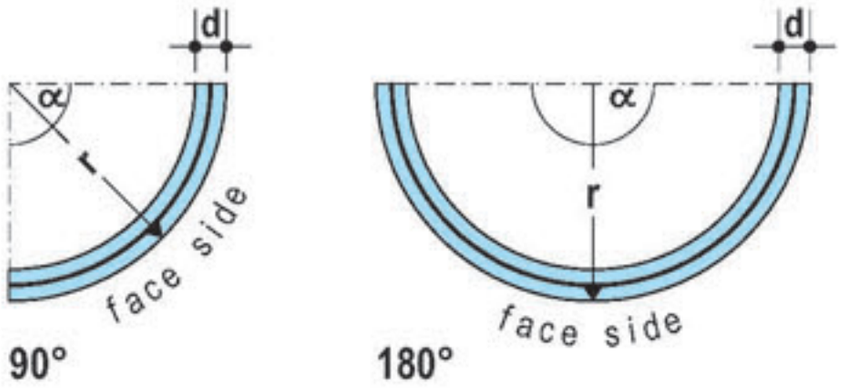


S Arch

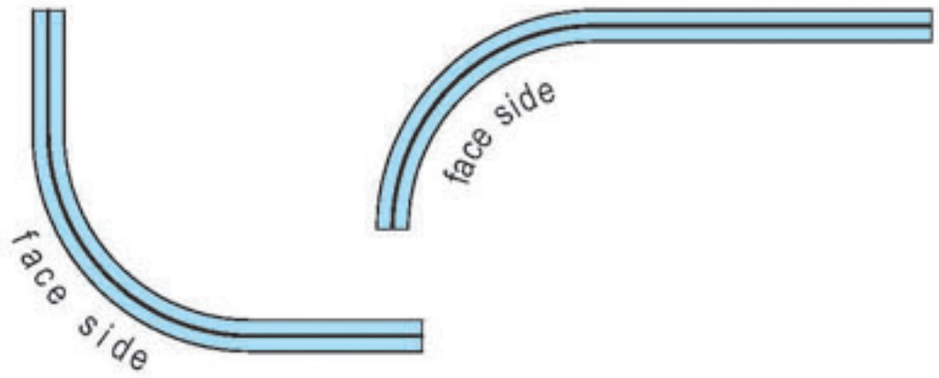
Segment Arch



Convex Outside Arches



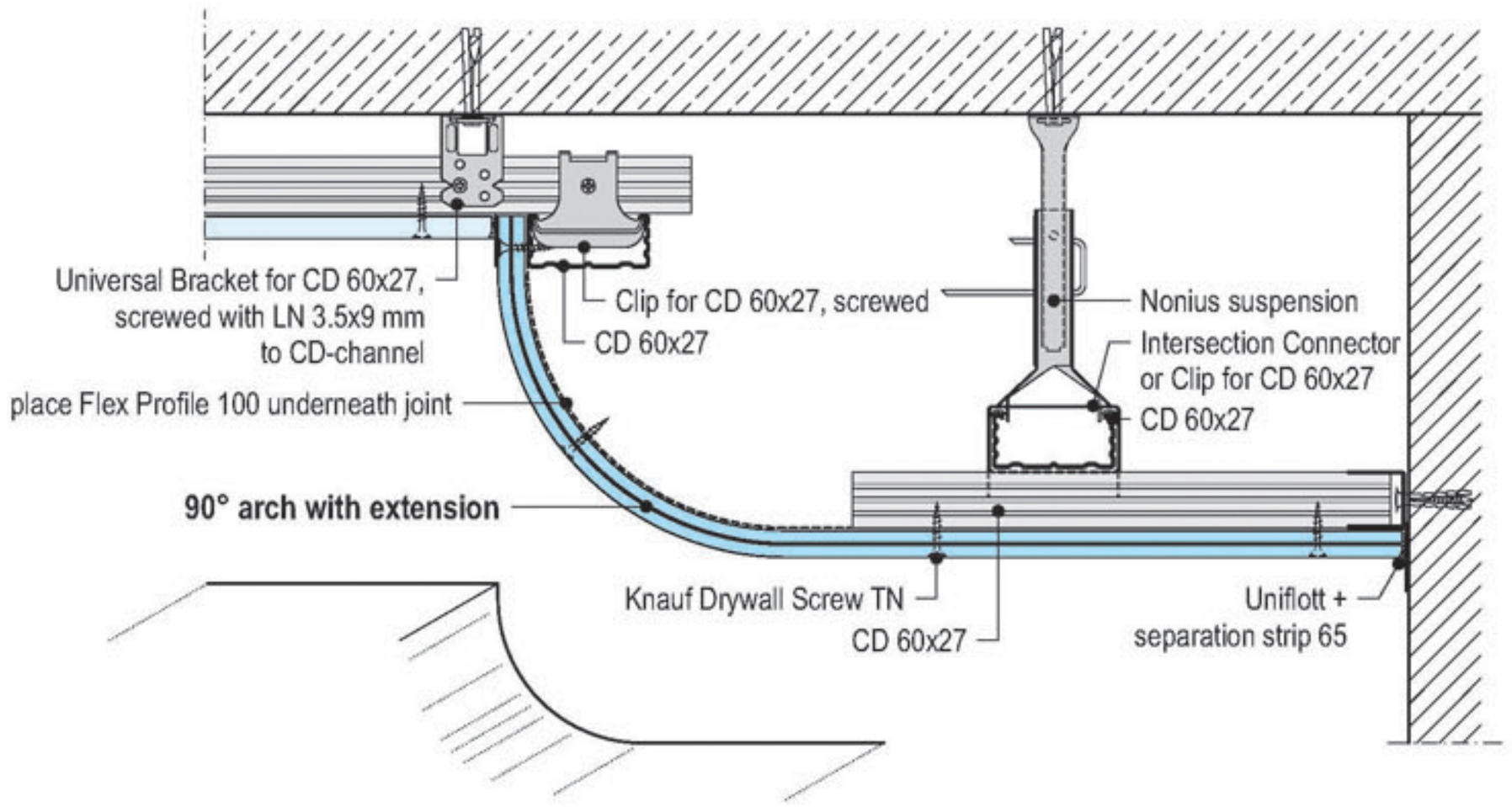
Arches with Extensions



length of layout L
max. length of layout 3480 mm, depending on radius and thickness of cladding

- angle α 90°: $L = \frac{r \cdot \pi}{2}$
- angle α 180°: $L = r \cdot \pi$
- all angles up to α 180°: $L = \frac{\alpha \cdot r \cdot \pi}{180}$

Detail: Example



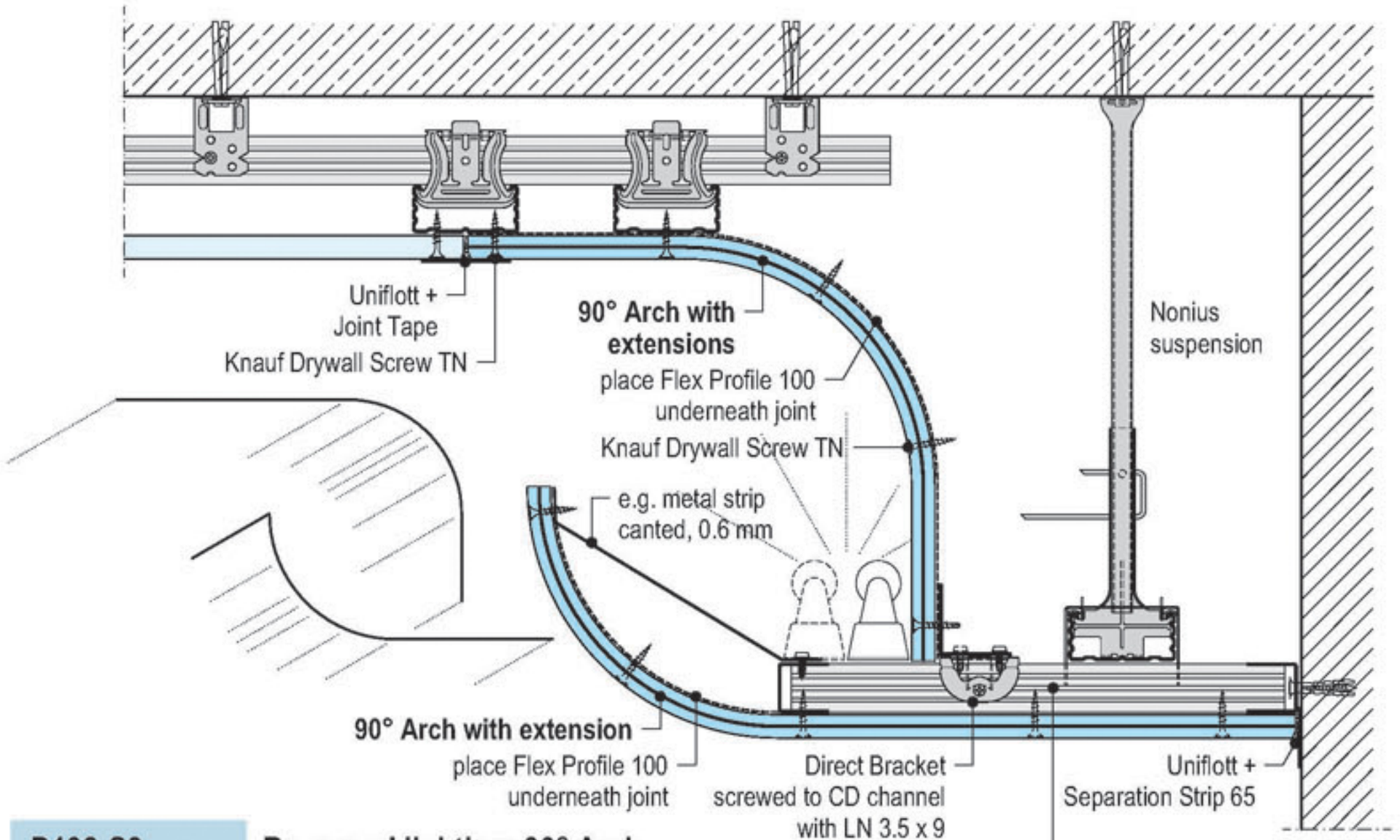
D192-S2 **Split level Ceiling: Convex 90° Arch**

Knauf Arch Elements

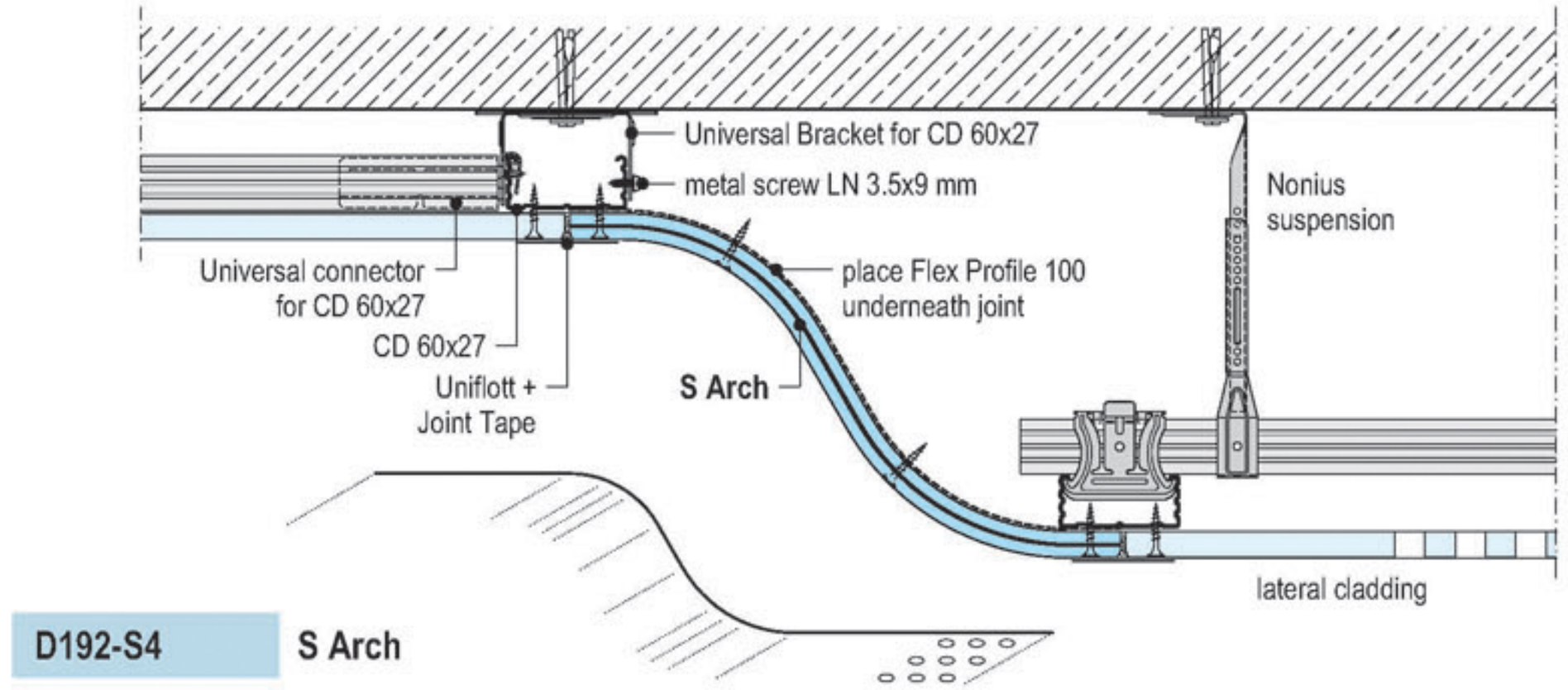
D192

Factory Molded

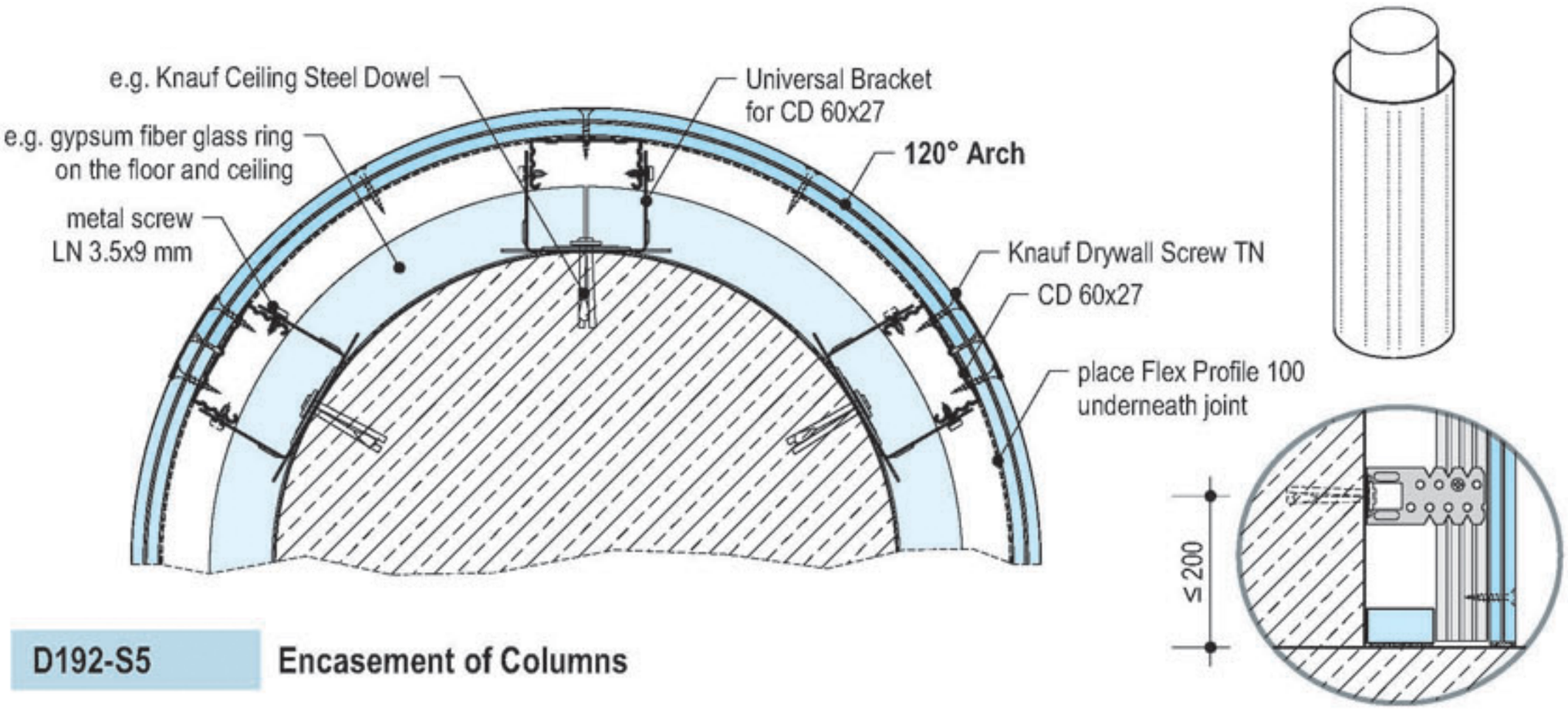
Details: Examples



D192-S3 **Recessed lighting: 90° Arch**



D192-S4 **S Arch**



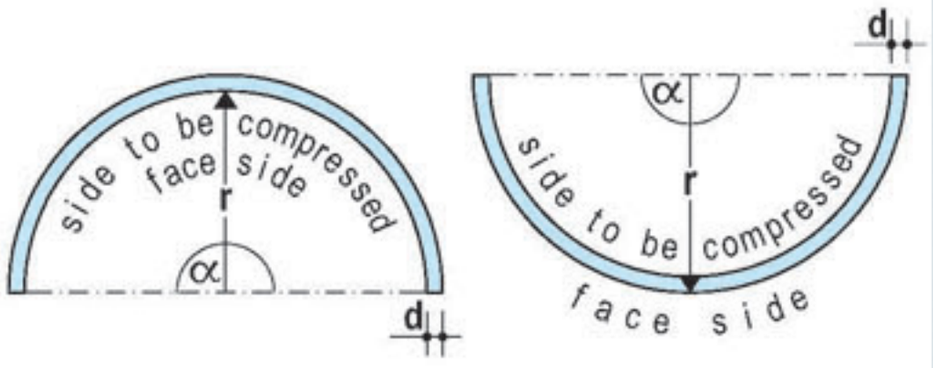
D192-S5 **Encasement of Columns**

Knauf Molded Boards

D192

Molded On Site

Inside Arch - Concave **Outside Arch - Convex**



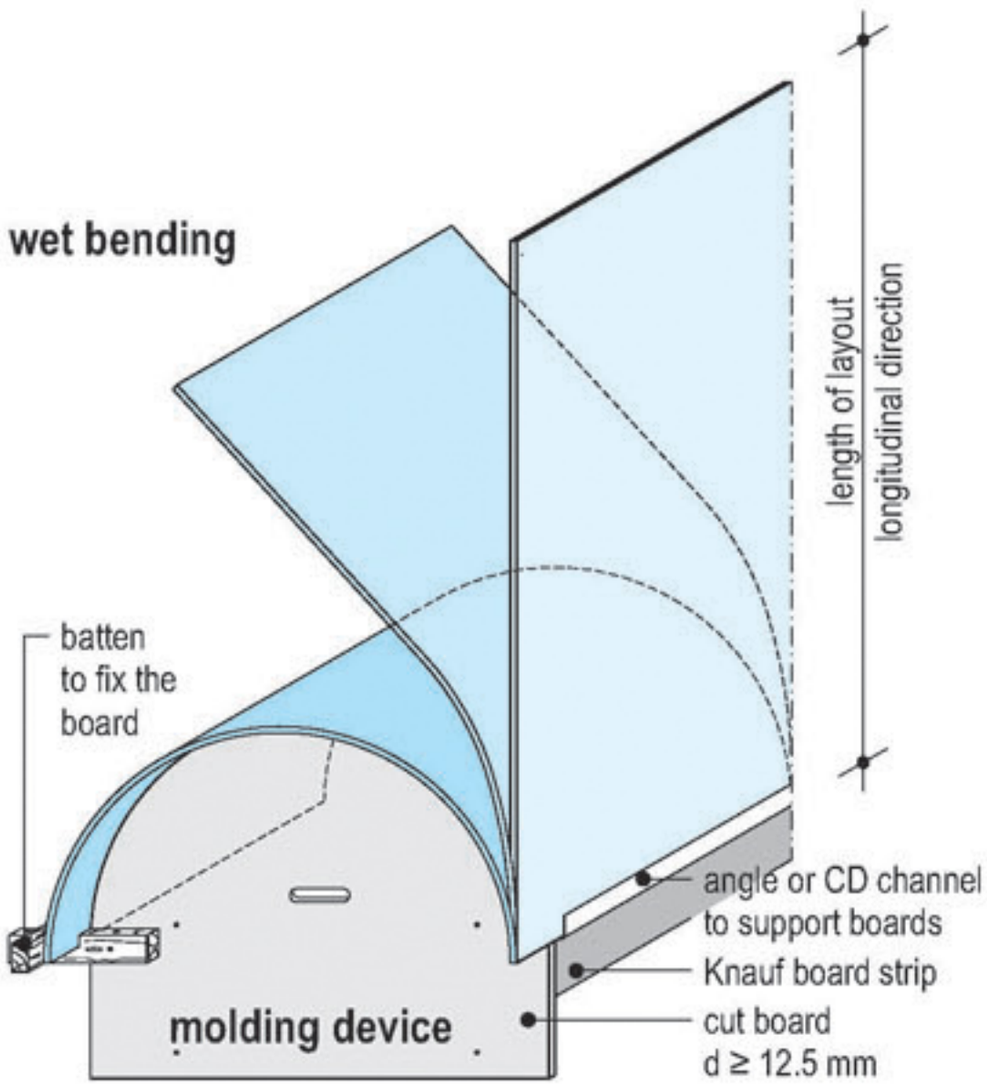
Board thickness d mm	Bending radius r dry bending mm	wet bending mm
6.5 (Mold Board)	≥ 1000	≥ 300
9.5	≥ 2000	≥ 500
12.5	≥ 2750	≥ 1000

longitudinal bending only

Length of layout L

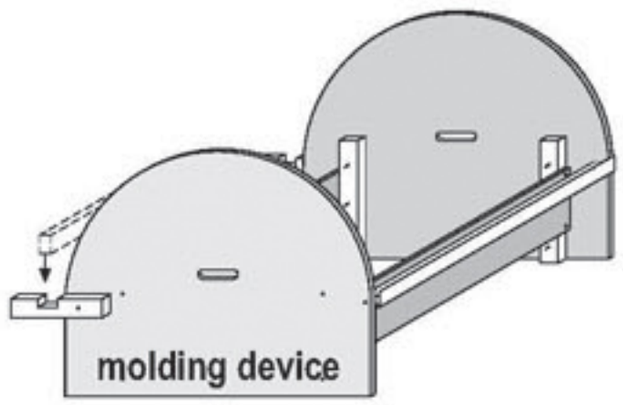
- angle α 90°
  $L = \frac{r \cdot \pi}{2}$
- angle α 180°
  $L = r \cdot \pi$
- all angles up to α 180°
  $L = \frac{\alpha \cdot r \cdot \pi}{180}$

Bending instruction



Wet bending

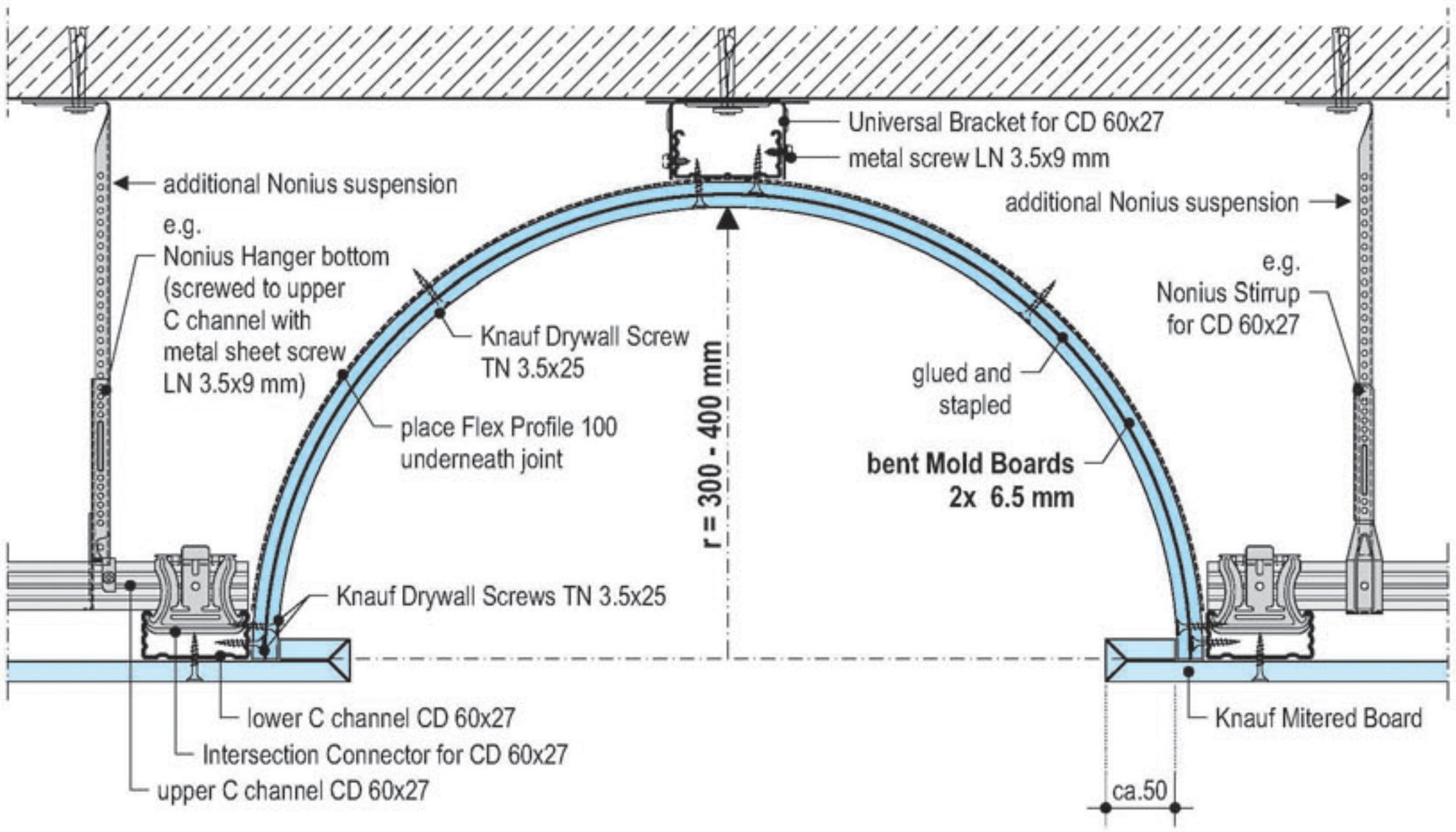
1. Put the cut-to-length Knauf Boards on a grid made of channels or similar with the side to be compressed on top and excessing the grid on the perimeters (so excess water can drip off).
2. Perforate the board laterally and longitudinally with Spike Roller.
3. Wet the board by spraying or with lambskin roller and let settle for a few minutes. Repeat process until excessive water drains.
4. Lay board on precast molding device, fix with tape and let dry.



Dry bending

1. Bend Knauf Boards over metal grid or frame, fix with Knauf drywall screws.

Detail: Example Wet Bent

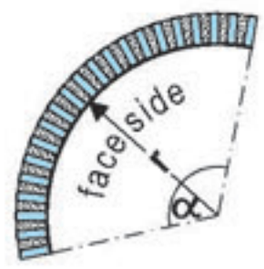
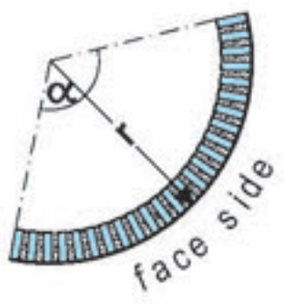


D192-S1 **Concave Barrel Vault with Knauf Molded Boards**

Parallel Slotting

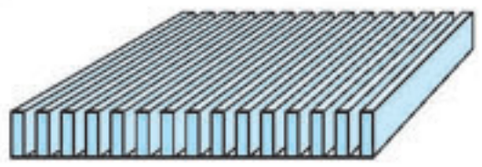
D192

Molded On Site

Concave Inside Arch	Convex Outside Arch
	
radius r ≥ 50 mm	

Board thickness	Board length
9.5 mm / 12.5 mm	max. 2.5 m

Other board thicknesses on request



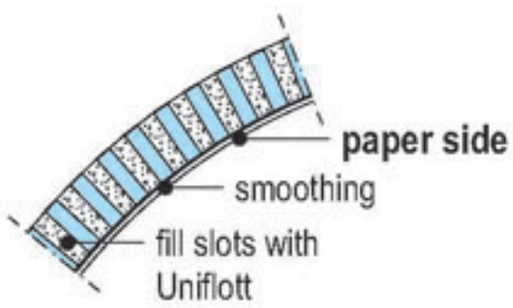
paper side = face side

Length of layout L

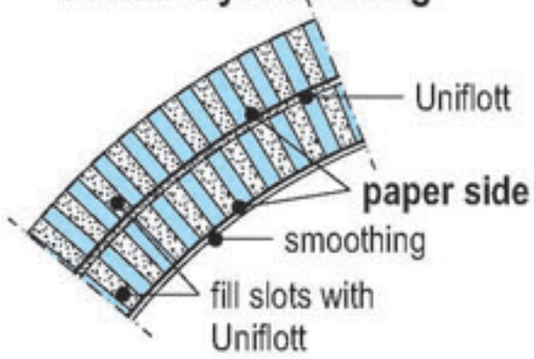
- angle α 90°
  $L = \frac{r \cdot \pi r}{2}$
- angle α 180°
  $L = r \cdot \pi r$
- all angles up to α 180°
  $L = \frac{\alpha \cdot r \cdot \pi r}{180}$

Application

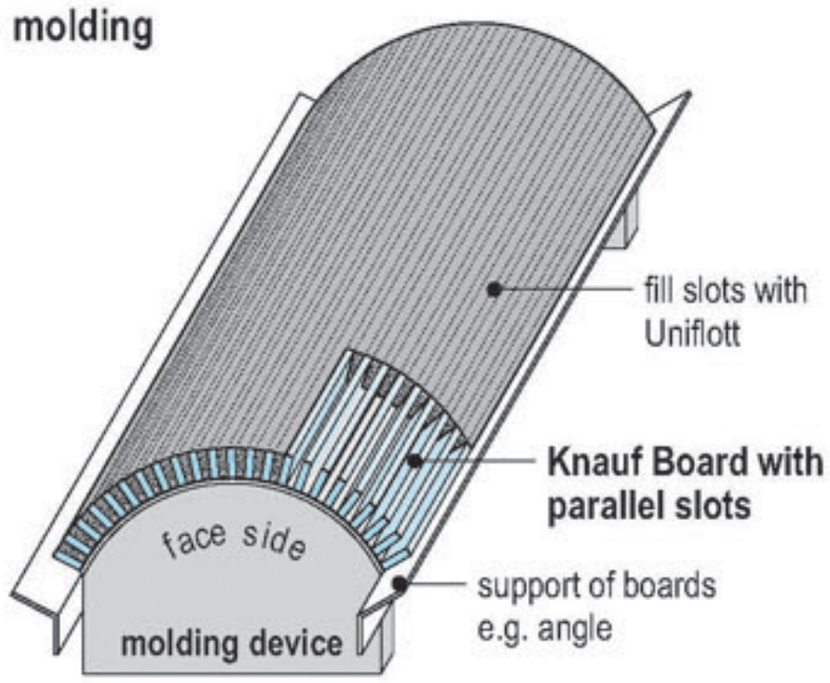
- single layer cladding



- double layer cladding

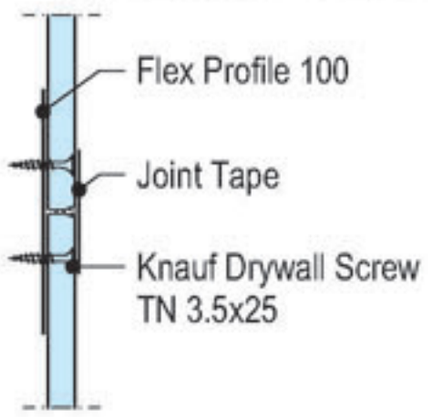


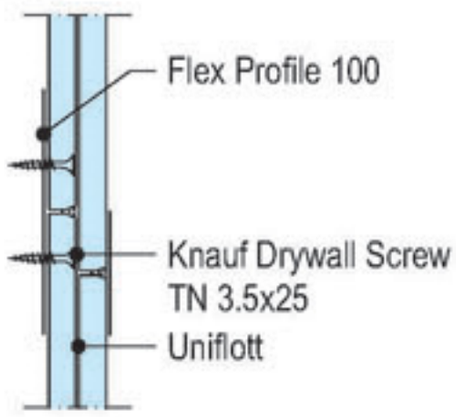
- molding



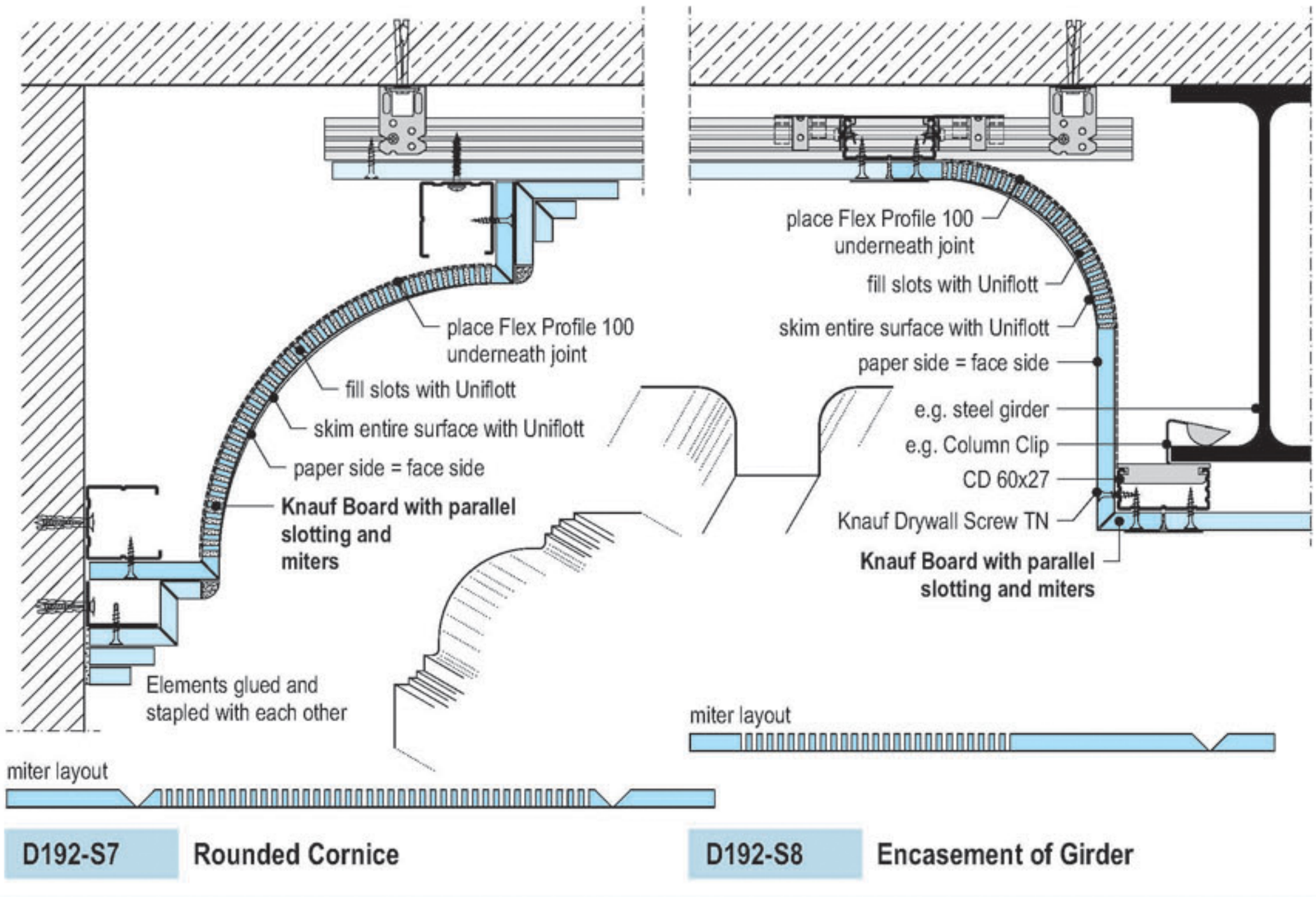
1. Place board on precast molding device, face side up, bulk fill with Uniflott and plane down.
2. After drying skim whole face side area with Uniflott.

- metal sheet covering of edge joints





Details: Examples



D192-S7 Rounded Cornice

D192-S8 Encasement of Girder

Note Factory molded elements made of Knauf Boards with parallel slotting on request

Bent CD Channels

D192

Factory-Bent

Concave min. bending radius 500 mm

- standard lengths of bent CD channels: 2600 / 3100 / 4000 mm

Convex min. bending radius 1000 mm

- start and end sections are not bent on either side for 150 mm

Bent CD channel

- radius r1

$r1 = r + d + 27$

- length of layout L1

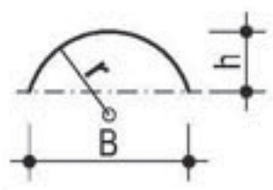
$L1 = \frac{\alpha 1 \cdot r1 \cdot \pi}{180}$

r1 = radius of bent CD channel
r = radius of Knauf Board face side
d = thickness Knauf Board

Face side Knauf Board

- radius r

$r = \frac{h}{2} + \frac{B^2}{8h}$

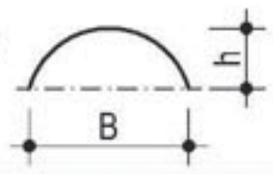


- length of layout L

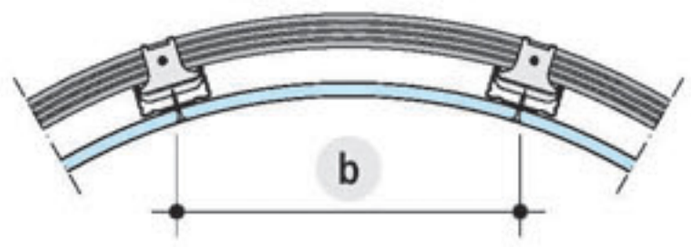
$L = \frac{\alpha \cdot r \cdot \pi}{180}$

- alternative approximate formula arc length

$L = \sqrt{B^2 + \frac{16}{3} \cdot h^2}$

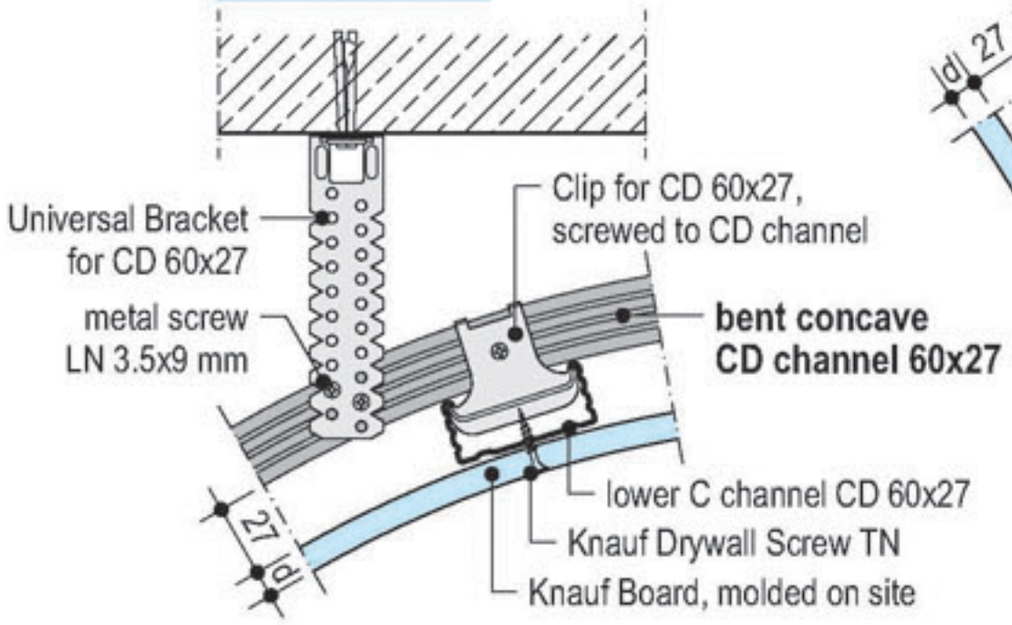


radius r Knauf Board mm	axial spacing lower C channels b mm
1000 - 2500	≤ 300
2500 - 5000	≤ 400
≥ 5000	≤ 500

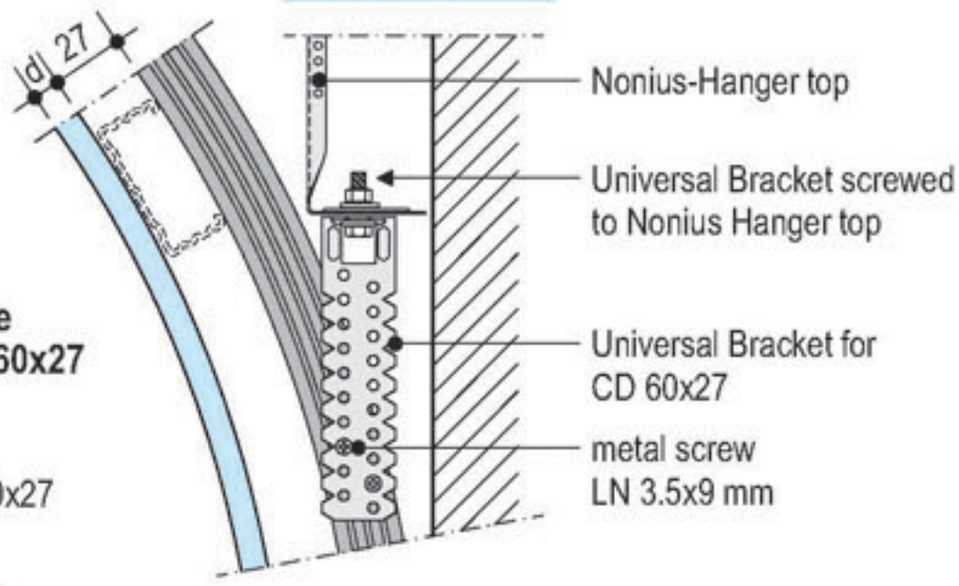


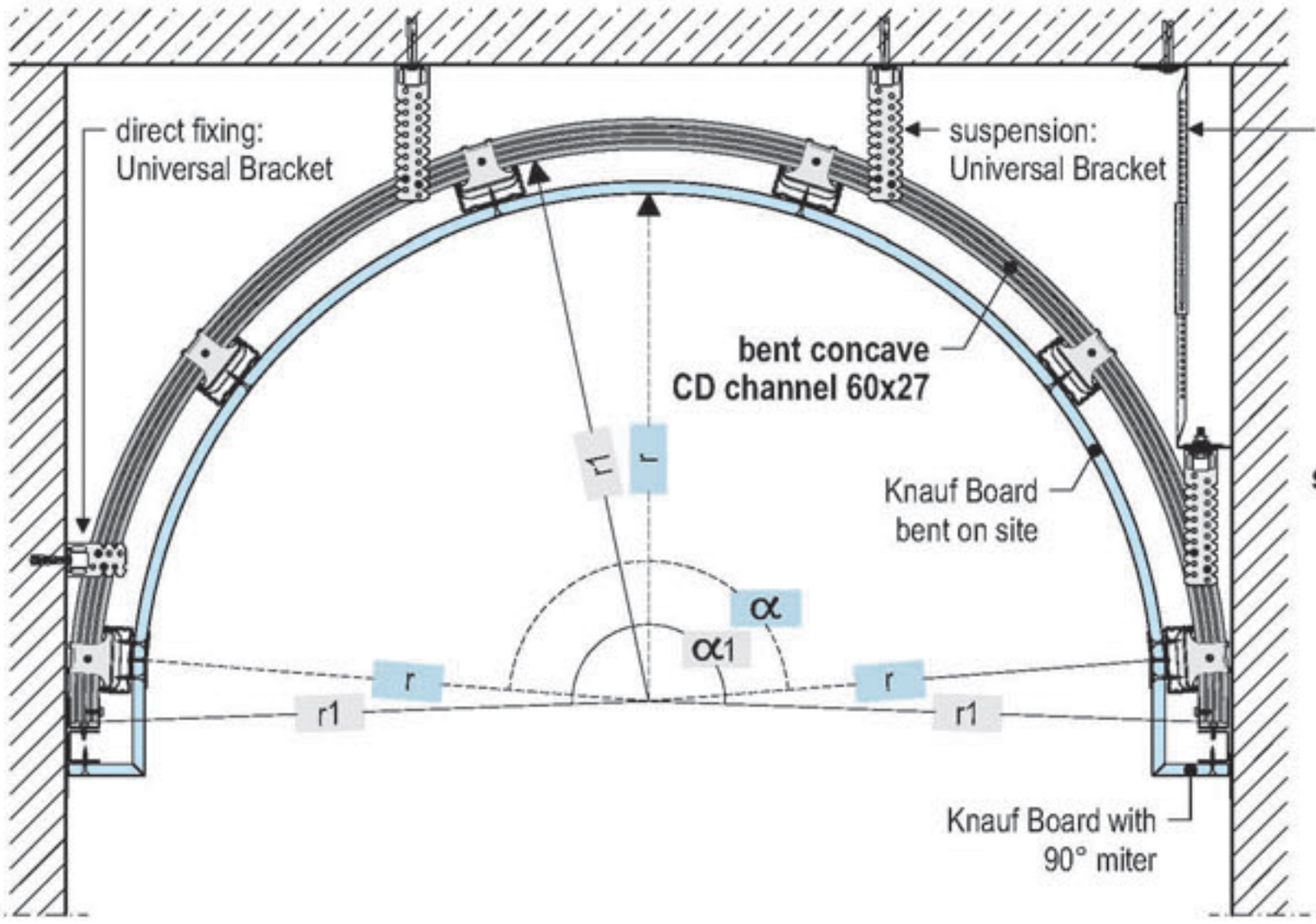
Detail: Example

Detail A

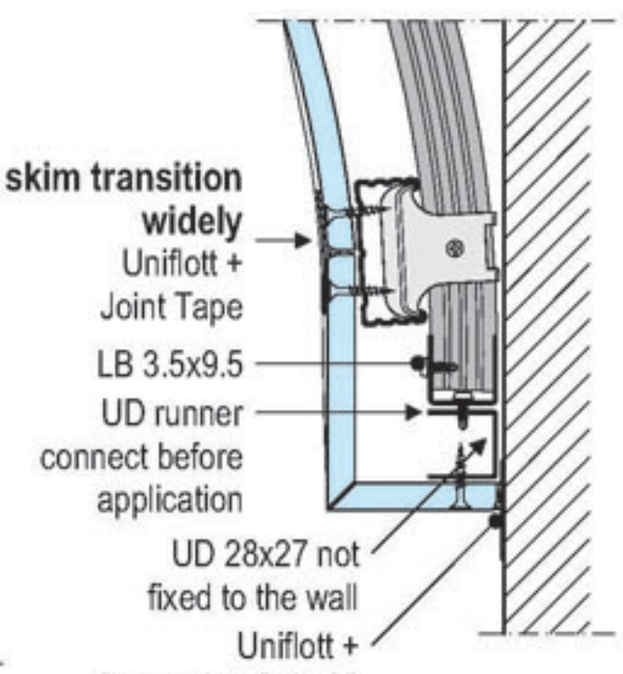


Detail B





Detail C



D192-S9 Concave Barrel Vault

Knauf Domes

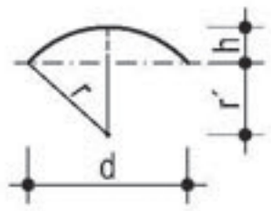
D193

Berlin, München (Munich)

Flat Dome Munich (München)		
rise of cladding	-h-	358.5 mm
diameter of cladding	-d-	2600 mm
radius of cladding	-r-	2536 mm
number of drawing		34501-TV/D19

Flat Dome Berlin		
rise of cladding	-h-	235 mm
diameter of cladding	-d-	2132 mm
radius of cladding	-r-	2536 mm
number of drawing		34502-TV/D19

- **dome surface area F**
  $F = 2 \cdot \pi \cdot r \cdot h$
- **rise h**
  $h = r - r'$
- **calculation of r´**
  $r' = \sqrt{r^2 - \left(\frac{d}{2}\right)^2}$

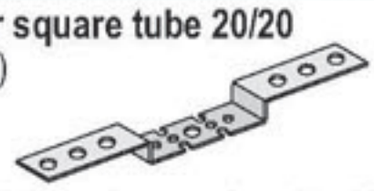


Included in delivery: kit for flat domes Berlin or Munich (München)

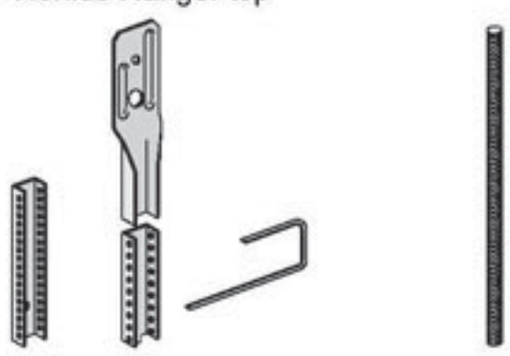
- **metal grid**
  Complete (except Nonius suspension / thread rod with necessary screwing), drawing (e.g. no. 34502-TV/D19) and instruction
- **cladding:**
  Complete cladding (Knauf board strips 12.5 mm and board segments 9.5 mm)

Suspension

suspender for square tube 20/20
(delivery unbent)

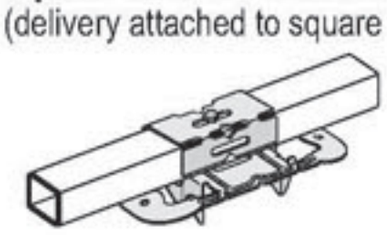


with
Nonius Suspension Stud **or** thread rod M6
+ Nonius Hanger top



Channel connection

square tube CD channel connector
(delivery attached to square tube)

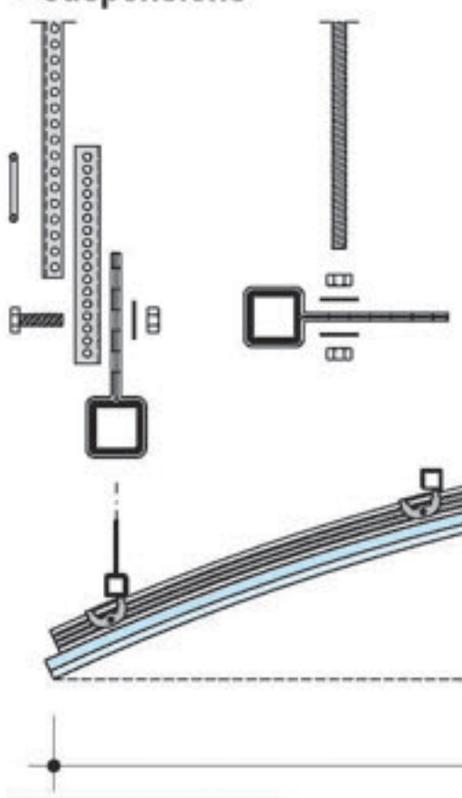


Flush Connector
connection of CD channels at vertex

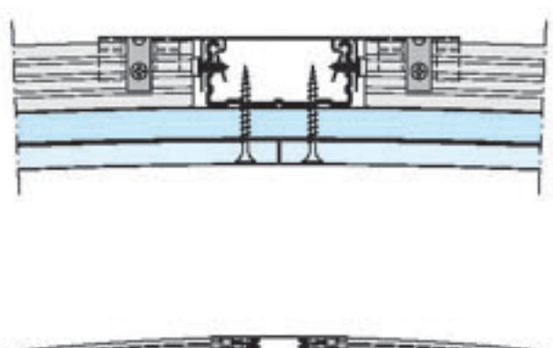
Dome: Example

scheme drawings - no scale

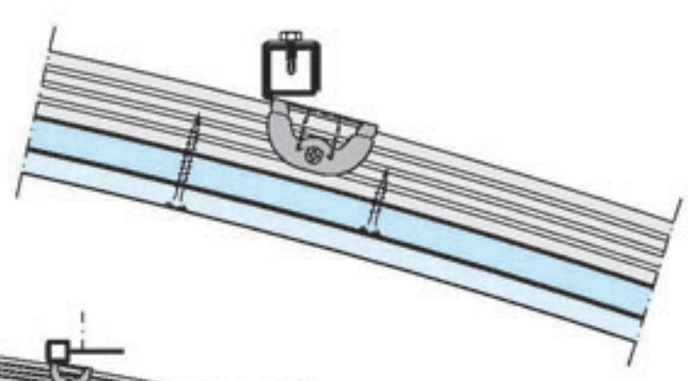
- **suspensions**

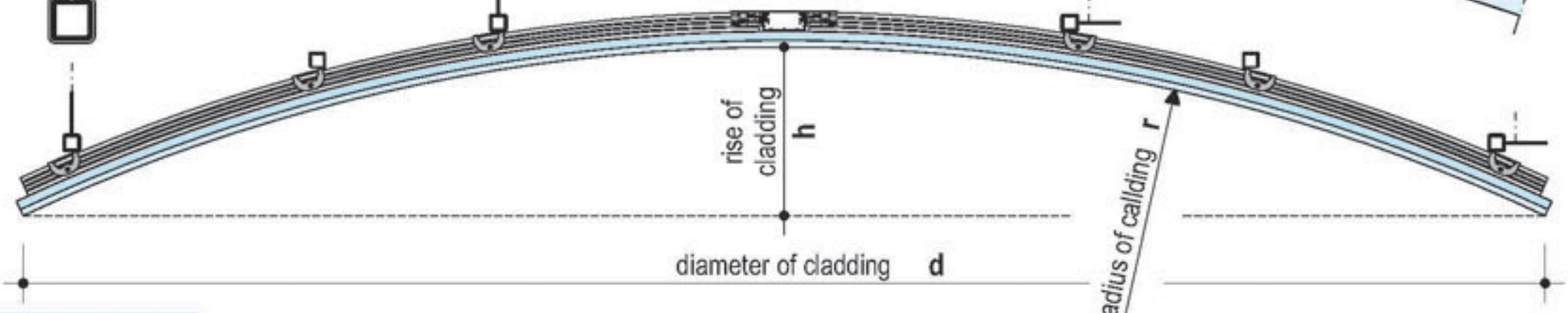


- **detail: vertex construction**



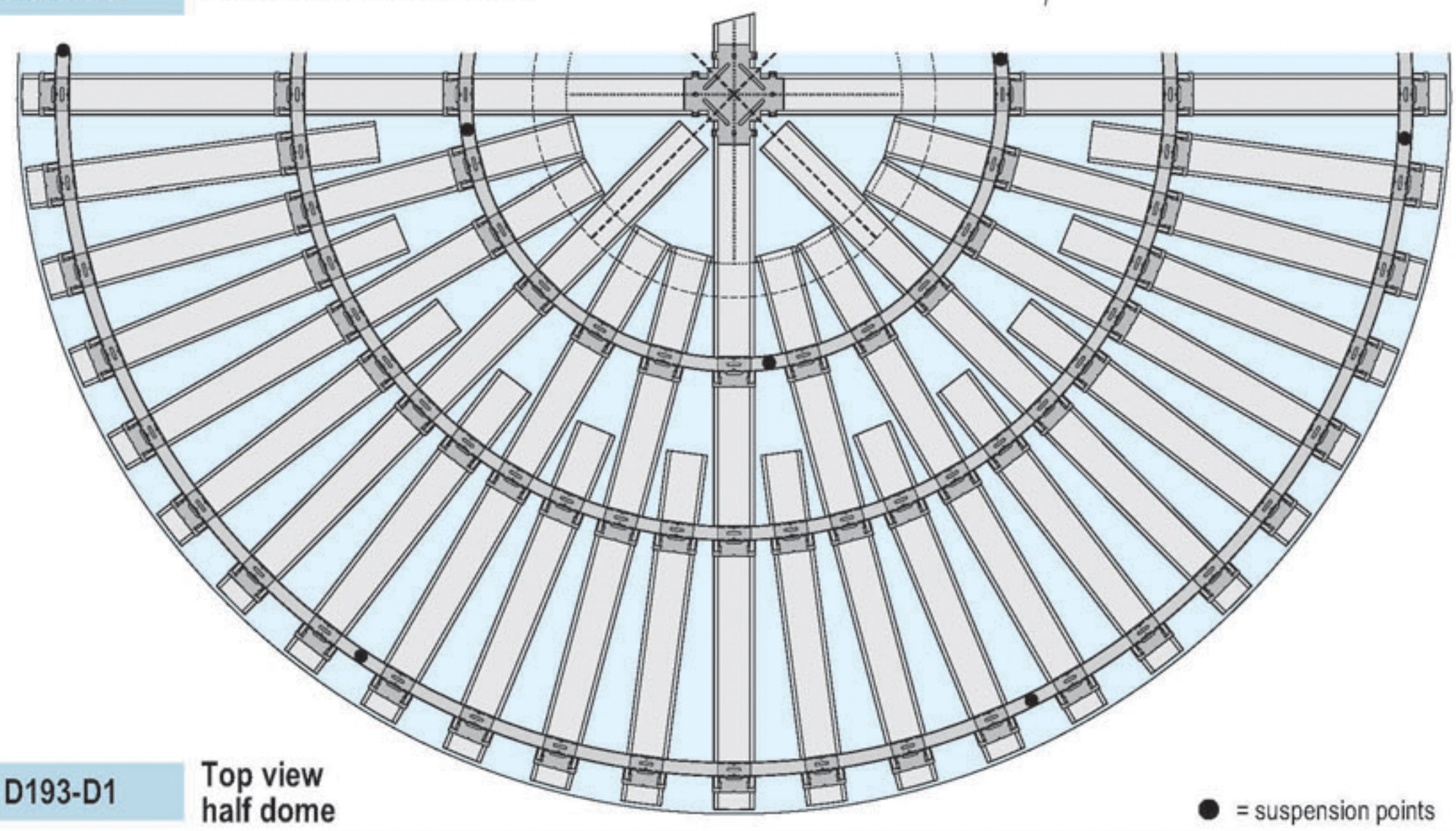
- **detail: channel connection**





D193-S1 **Vertical section of dome**

D193-D1 **Top view half dome**

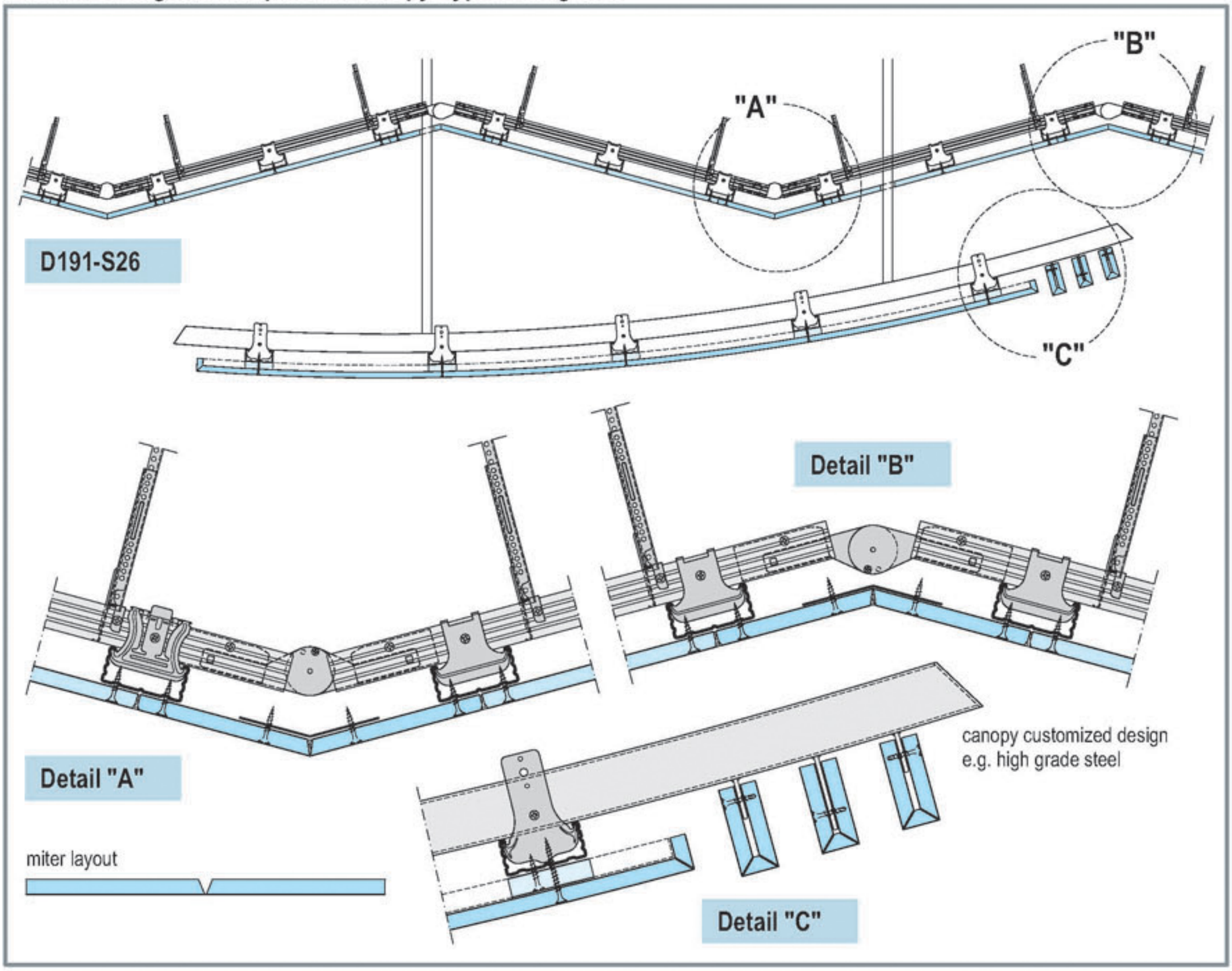


● = suspension points

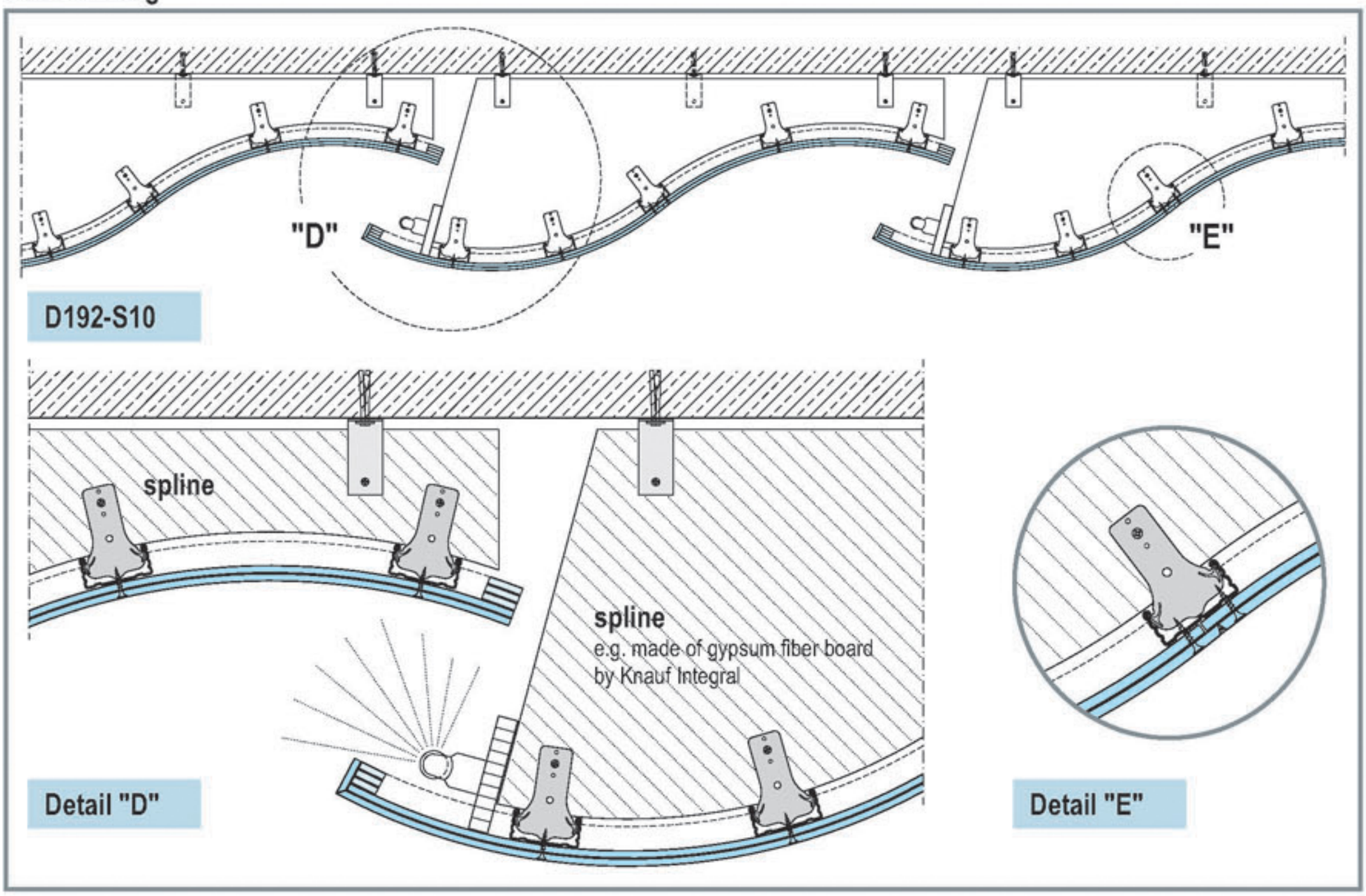
Knauf Designed Ceilings D191/D192

Examples

Mitered Ceiling with Suspended Canopy-Type Ceiling Unit



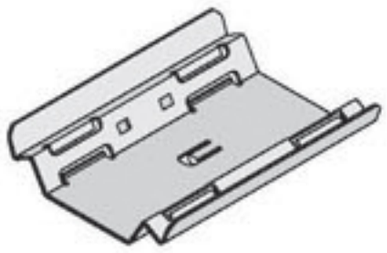
Wave Ceiling



Accessories

Multi Connector for CD 60x27

Multi Connector



Multi Connector Adaptor

- **Adaptor 90°**

- **Adaptor 135°**

- **Adaptor Z 12.5**

- **Adaptor 30° - 280°**

fix with LN 3.5x9

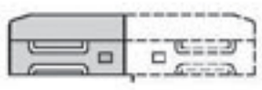
- **Adaptor for other fixed angles on request** (e.g. 120°)

Assembly

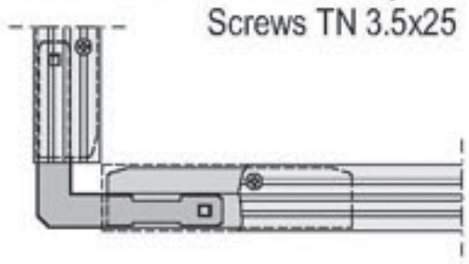
- **angled connection**
- **connection joint**

connect Multi Connector to Adaptors, **Adaptors should lock in place,** push angled connection into CD channel and fix with screw

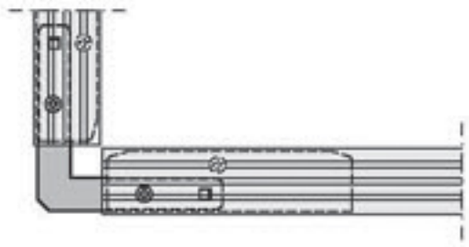
Multi Connector can be shortened with metal shears



fix Multi Connector to each CD channel with 2 Knauf Drywall Screws TN 3.5x25



Fire protection from above
the whole angled connection (Adaptor, CD channel, Multi Connector) shall be fixed with 2 Knauf Drywall Screws TN 3.5x25 to each CD channel

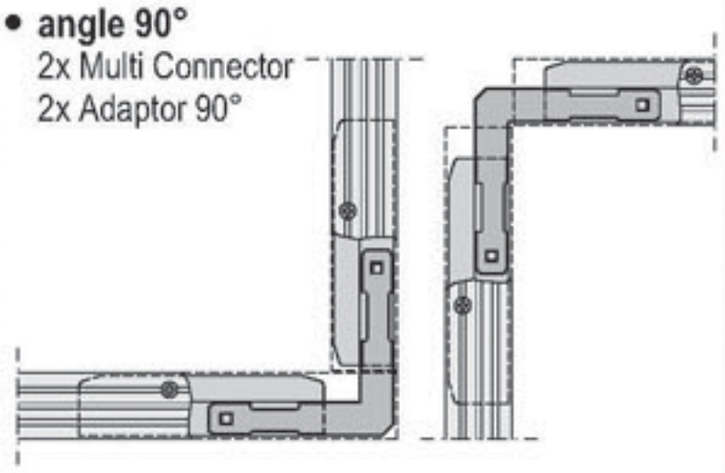


- **longitudinal connection - 2 CD channels**

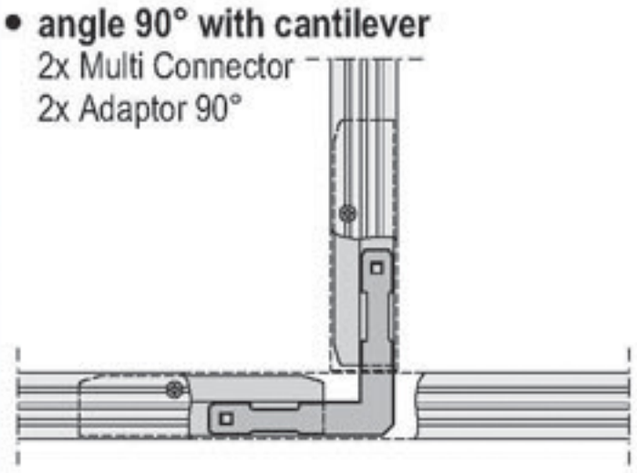
Push Multi Connector into CD channel up to stopper (shortening is not allowed)

Examples of Use (scheme drawings)

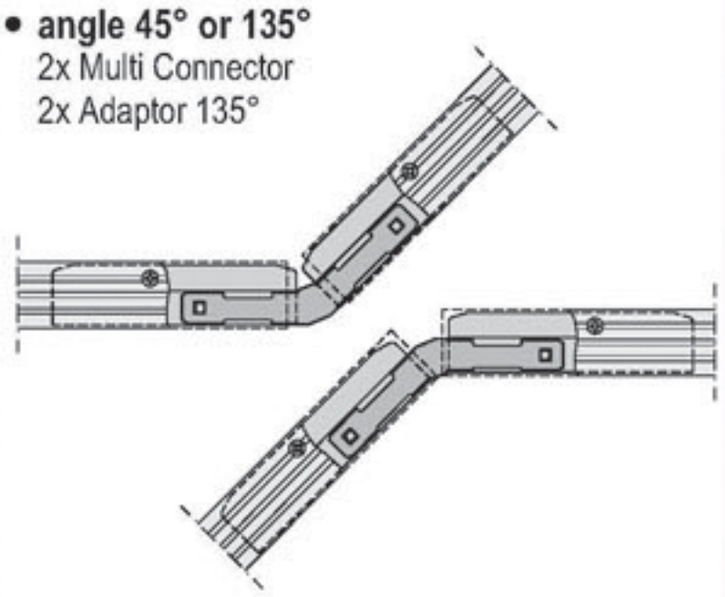
- **angle 90°**
  2x Multi Connector
  2x Adaptor 90°



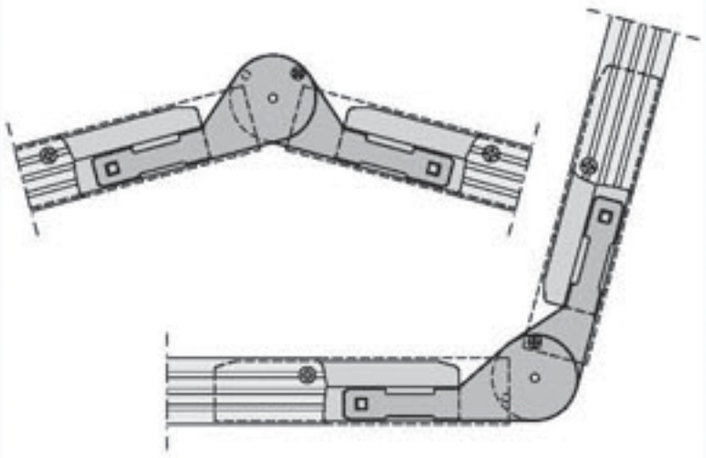
- **angle 90° with cantilever**
  2x Multi Connector
  2x Adaptor 90°



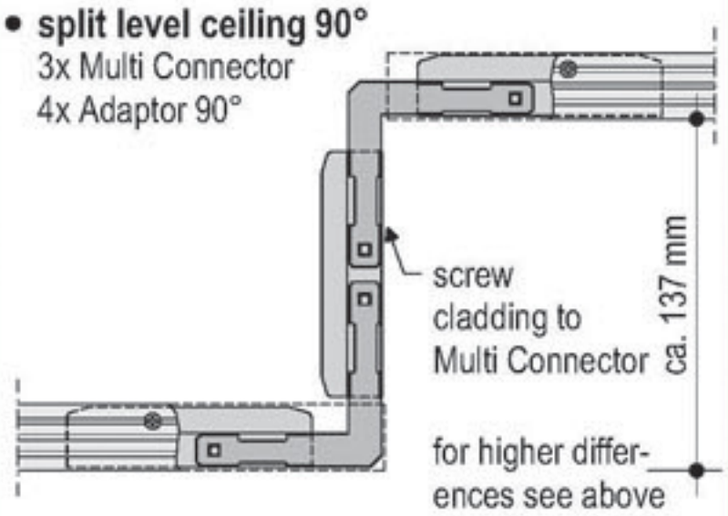
- **angle 45° or 135°**
  2x Multi Connector
  2x Adaptor 135°



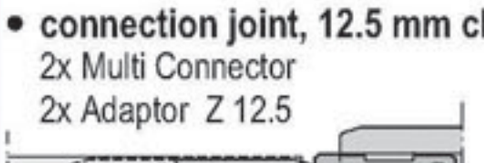
- **angle adjustable 30° to 280°**
  2x Multi Connector
  2x Adaptor 30° to 280°



- **split level ceiling 90°**
  3x Multi Connector
  4x Adaptor 90°



- **connection joint, 12.5 mm cladding**
  2x Multi Connector
  2x Adaptor Z 12.5



- **longitudinal connection: 2 CD channels**
  1x Multi Connector

Details: Examples

D191-S21 **Split Level Ceiling 45°**

D191-S27 **Connection Joint**

Daisy Chain Clip for CD 60x27

Assembly (channel connection)

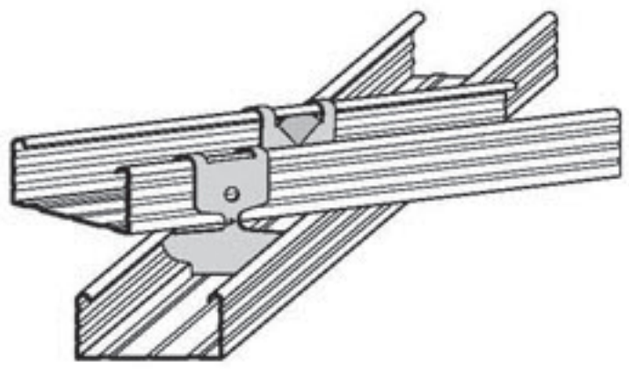
delivery untwisted

adjust angle roughly before assembly
adjust to lower and upper C channel during assembly

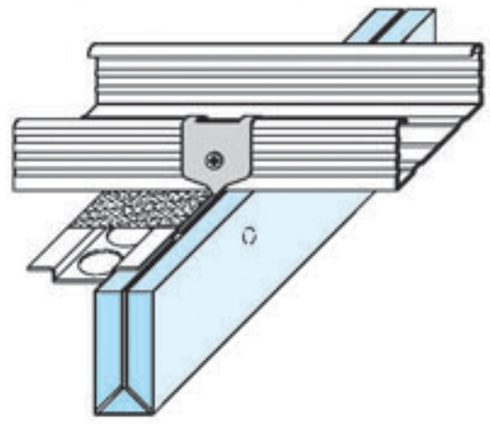
bend around upper C channel during assembly
screwing to lower C channel with LN 3.5x9 mm is optional

Fields of application

- **channel connection**
  connection of CD channels 60x27 (lower to upper channel)



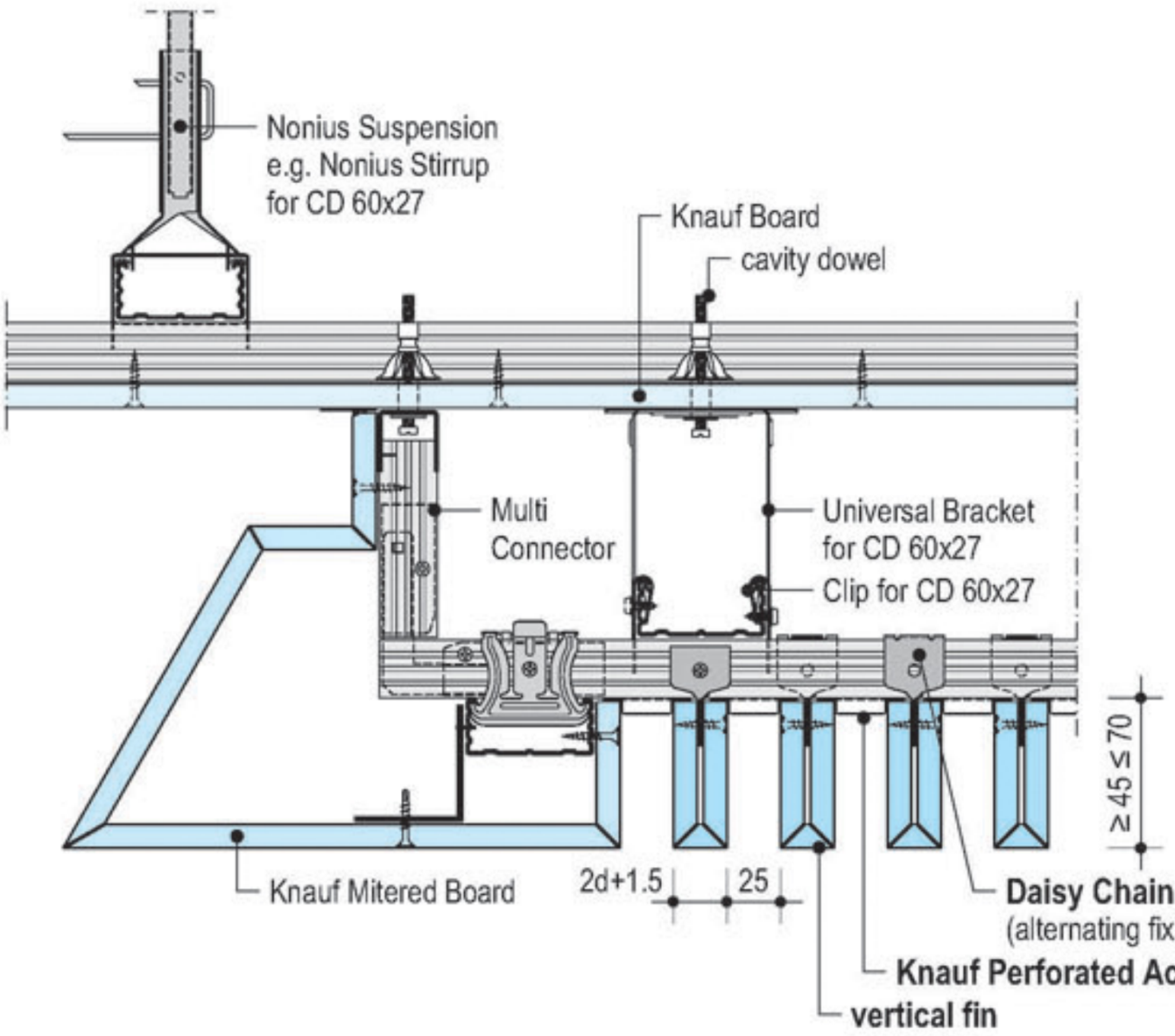
- **vertical fin**
  completely factory pre-fabricated with Daisy Chain Clip and primed white



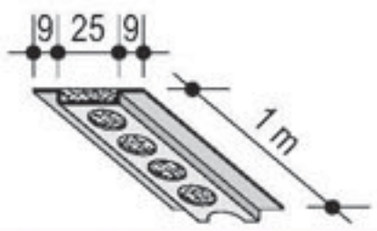
Bend over Daisy Chain Clip and screw to CD channel if necessary

Note Daisy Chain Clip is not allowed as channel connection for ceilings with fire protection requirements

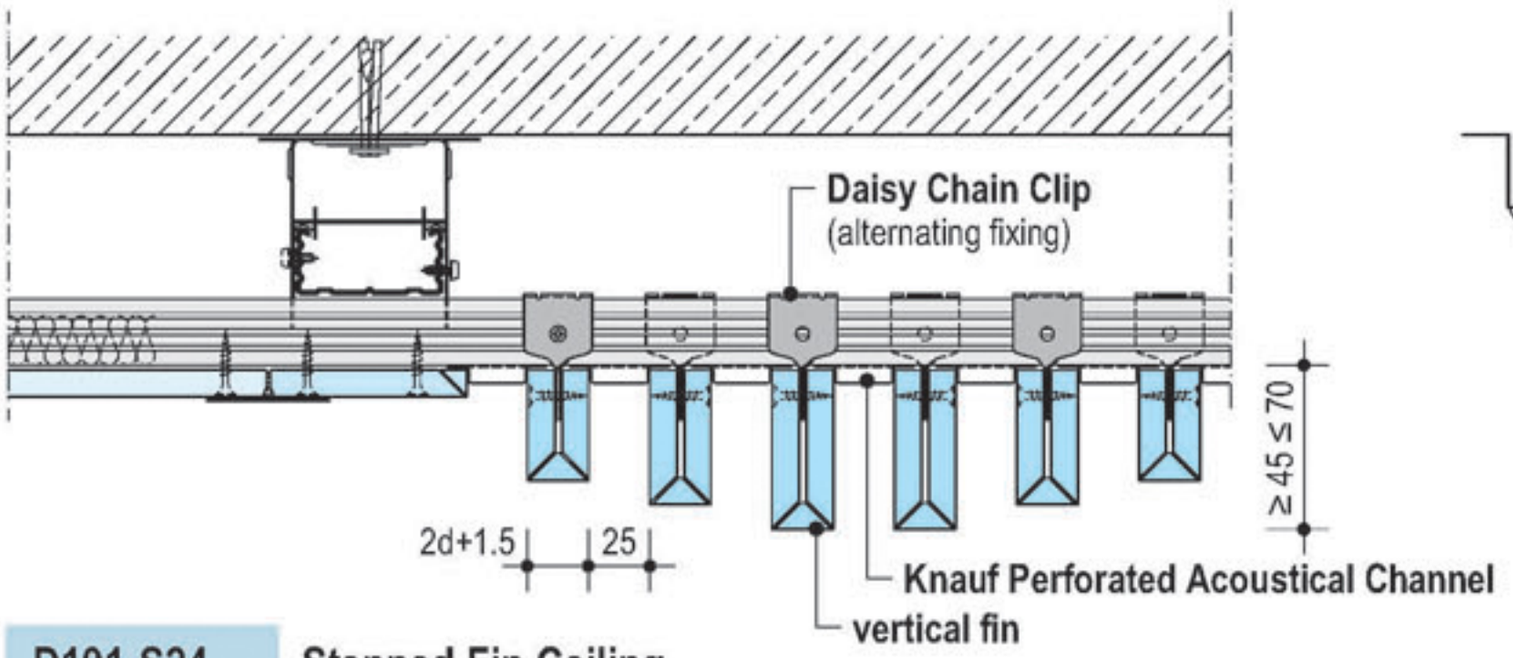
Details: Examples Vertical Fins

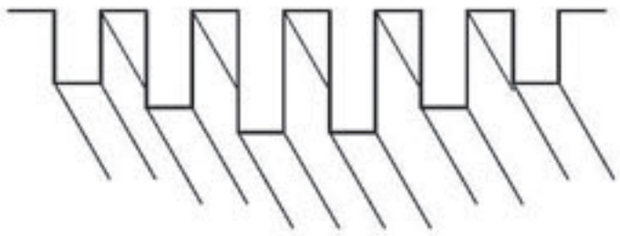


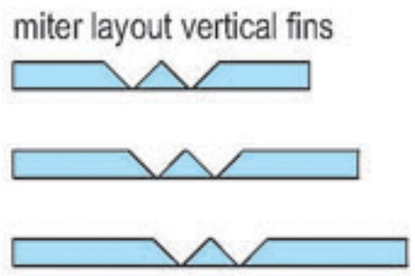
- **alternating fixing of vertical fins to CD channel**
- **first fin**
  fix Daisy Chain Clip to CD channel with LN 3.5x9 mm screws
- **cross section lower / upper C channel:**
  cut Daisy Chain Clip, fix to lower C channel with LN 3.5x9 mm screws
- **Knauf Perforated Acoustical Channel**
  Mat.-no. 00012641
  color: black
  fleece: black
  perforation: Ø 20 / 25



D191-S23 Canopy with Vertical Fins





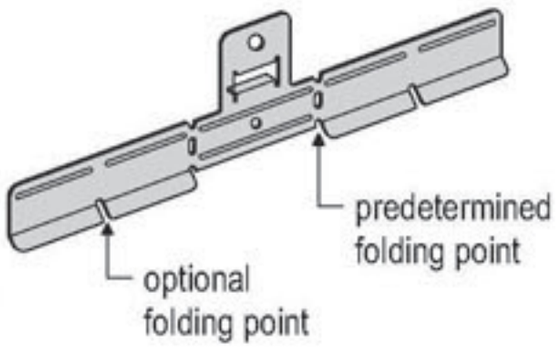


D191-S24 Stepped Fin Ceiling

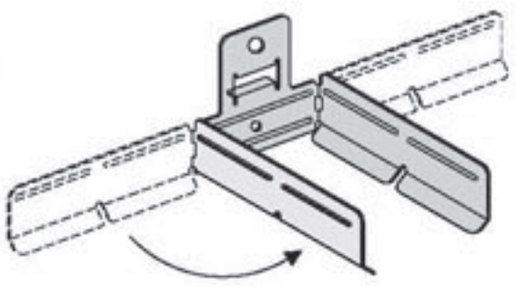
Universal Connector for CD 60x27

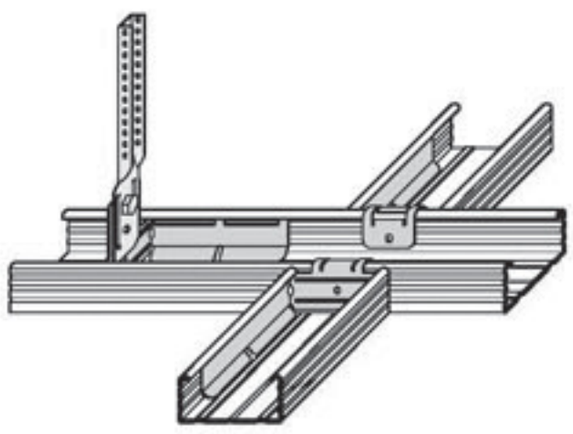
Assembly

delivery unbent



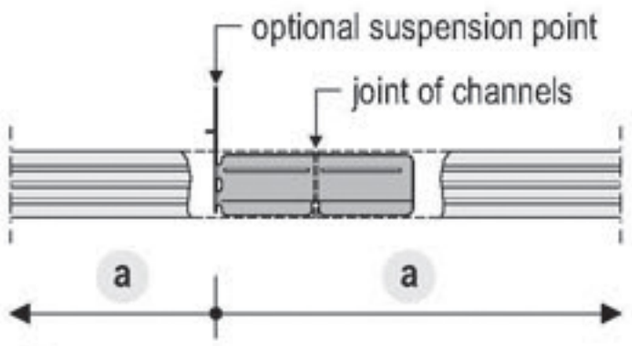
adjust roughly depending on use
adjust correctly during assembly



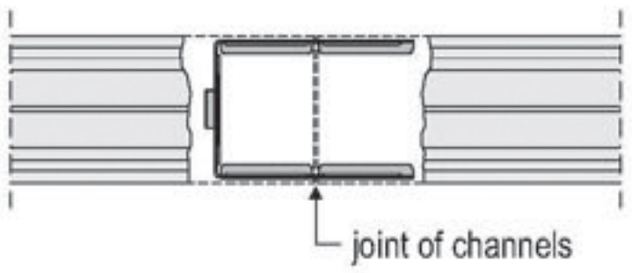


Fields of application (scheme drawings)

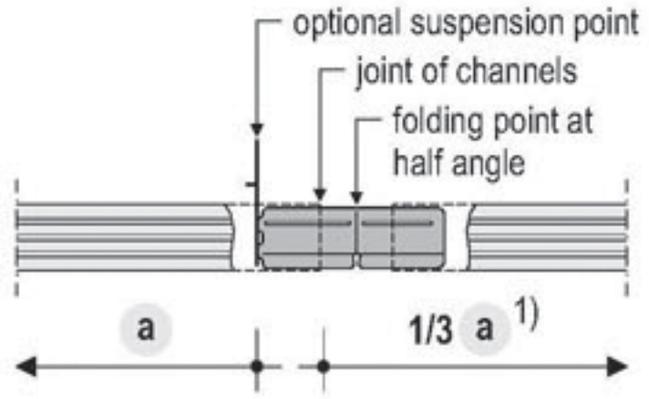
- **straight longitudinal connection**



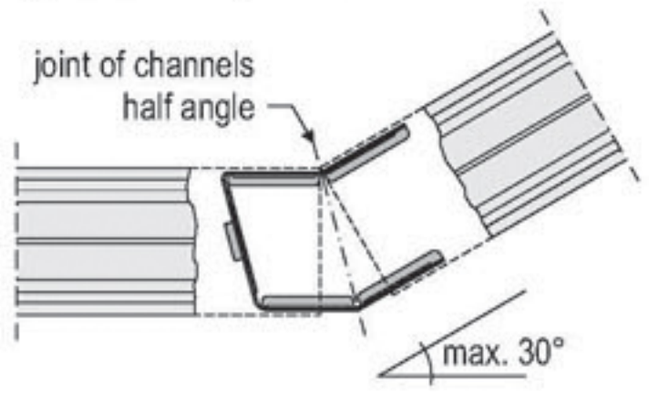
a = spacing of suspenders depending on ceiling system



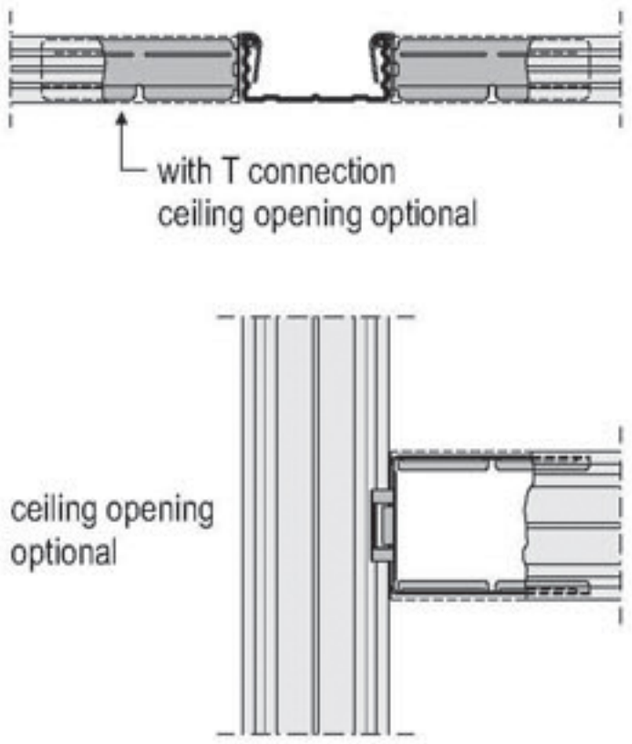
- **longitudinal connections up to 30° *)**



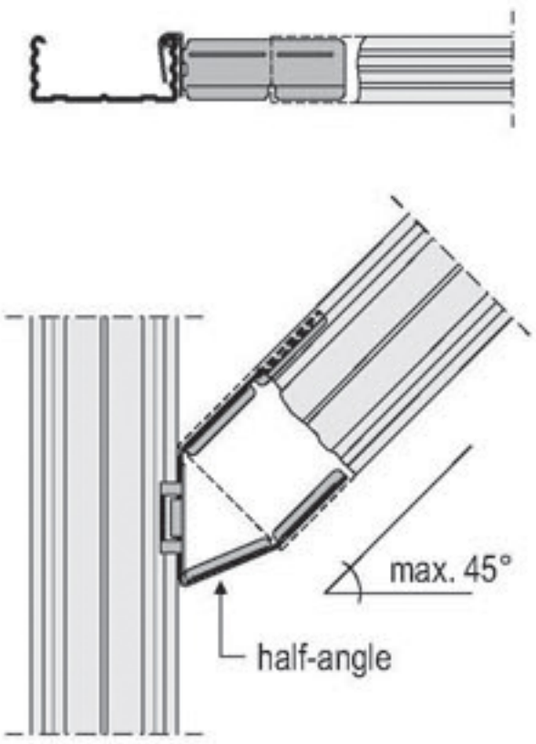
1) if used as suspender



- **T or double T connection**



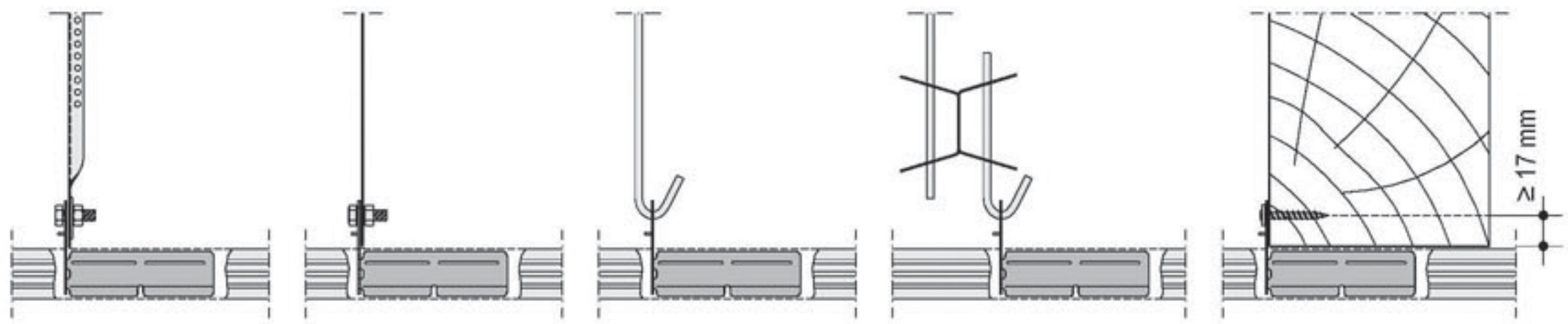
- **T connection up to 45° *)**



Options for Suspensions *) (scheme drawings)

load bearing capacity class according to DIN 18168-2

0.4 kN (40 kg)	**0.4 kN** (40 kg)	**0.4 kN** (40 kg)	**0.15 kN** (15 kg)	**0.1 kN** (10 kg)
Nonius Hanger top	slotted strip steel	direct wire	wire and cleat	directly on timber



Note

***) Ceilings with fire protection requirements: Fix Universal Connector to CD channel 60x27 with metal screws LB 3.5x9.5 mm according to technical approval ABP P-3043/0339**

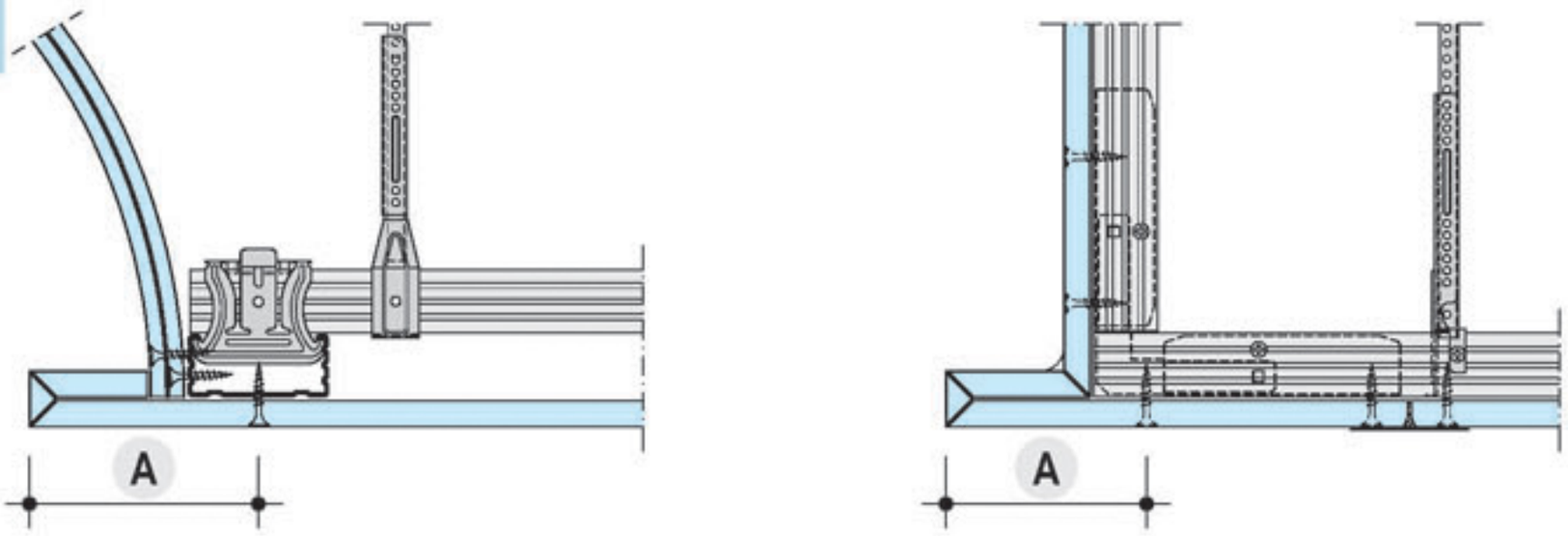
Cantilevers

Scheme Drawings

Only gypsum boards

thickness ≥ 12.5 mm

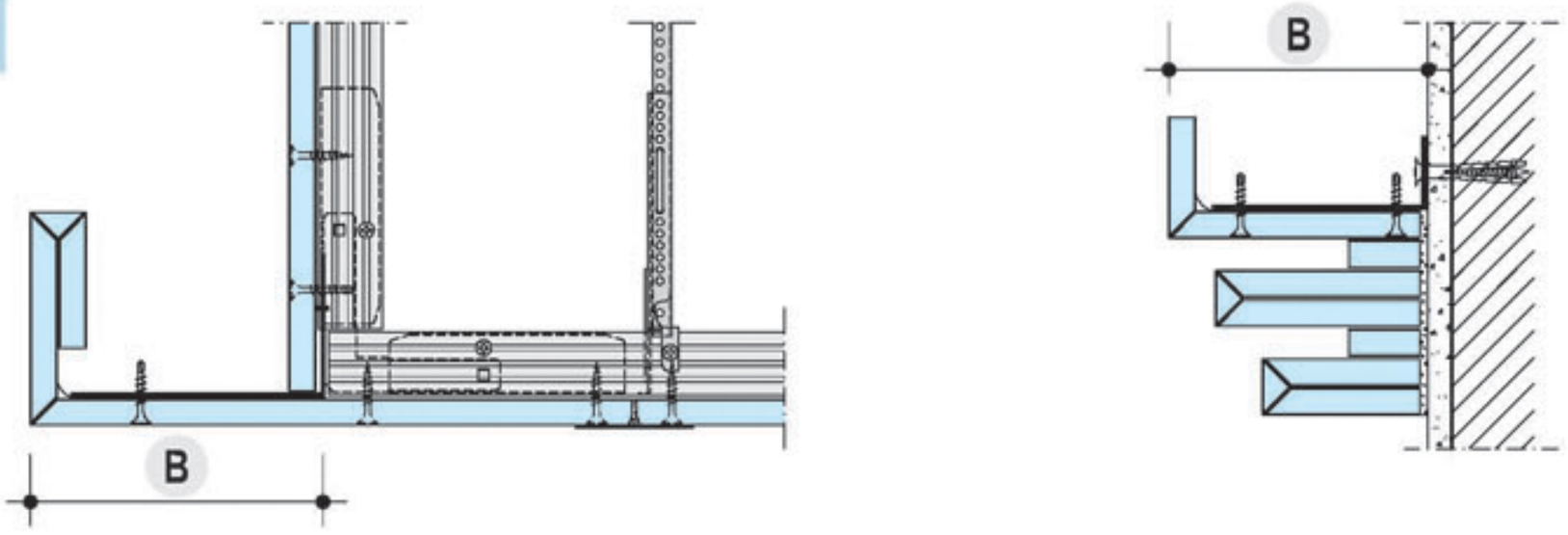
A ≤ 100 mm



With metal angle

thickness 2 mm

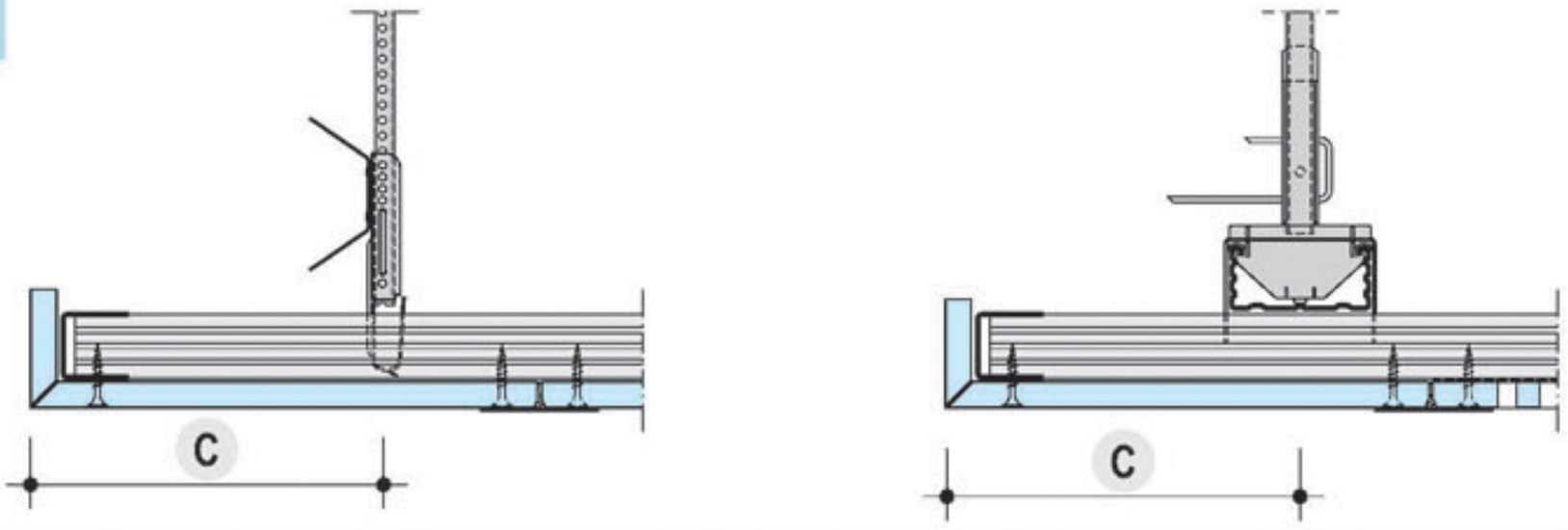
B ≤ 150 mm



With CD channel

CD 60x27x0.6

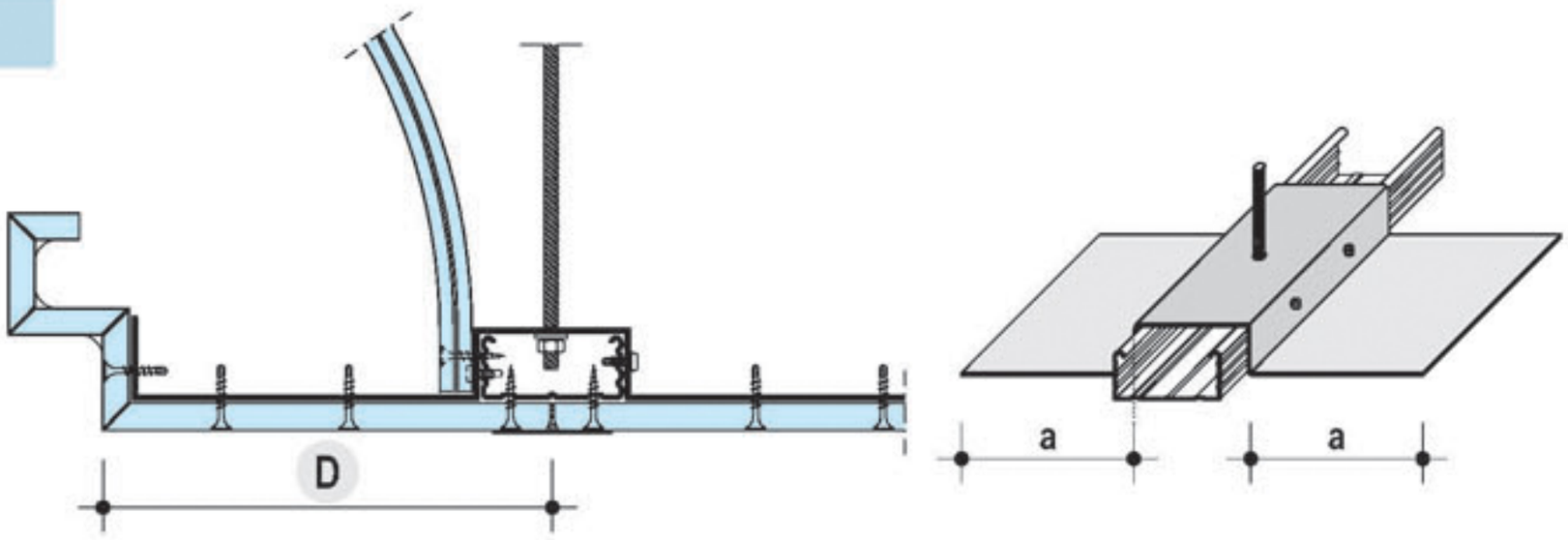
C ca.150 mm



With metal cantilever

thickness 2 mm

D ≤ 200 mm

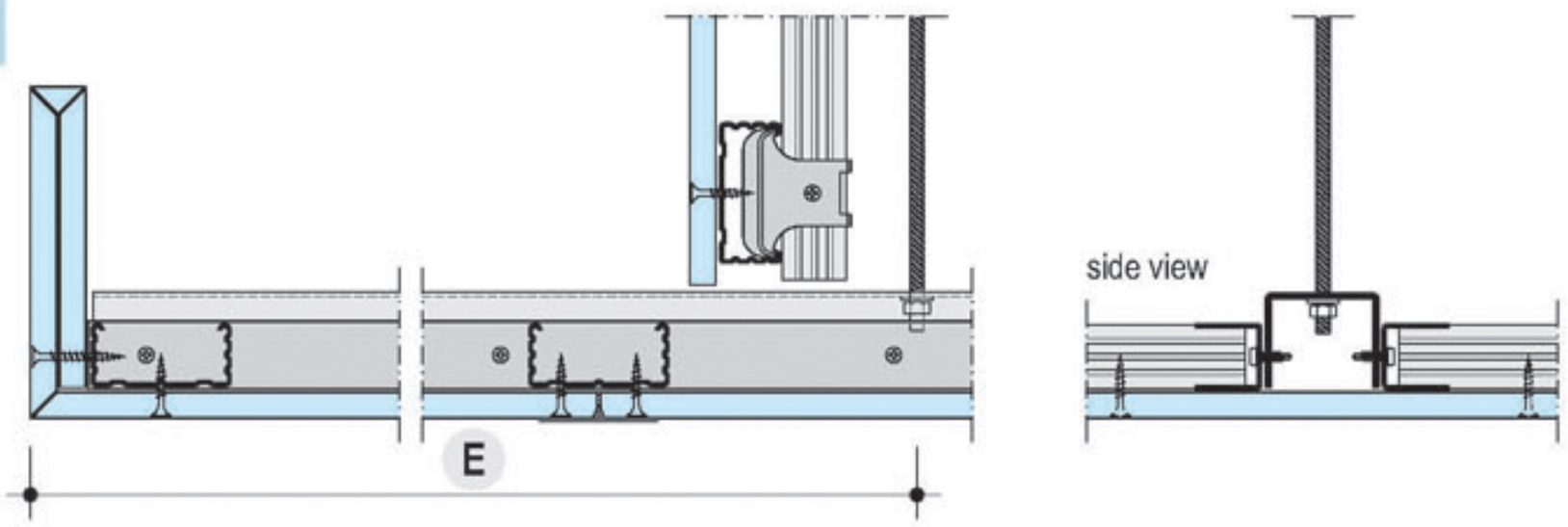


With UA channel

UA 50x40x2.0

E ≤ 300 mm

≥ 300 mm
structural analysis necessary



Note

For other cantilevers consult specialist
Metal angle and metal cantilever are not available at Knauf.

Specifications

Item	Description	No. of units	Unit price	Total price
.....	**Ceiling lining/ suspended ceiling** * DIN 18168-1, Installation height in m ....., suspension height in cm ....., anchored on reinforced concrete/ wooden beams *, spacing in cm ...../ steel girder, type ....., spacing in cm ....., * cladding with Knauf Boards GKB/ GKF *, Board thickness 12.5 mm/ 2 x 12.5 mm/ 25 mm *. Product/ System: **Knauf Gypsum Board Ceiling D112/ D113 ***	..... m²	..... €	..... €
	Knauf Mitering Technology D191			
.....	**Frieze** as upgrade to ceiling lining/ suspended ceiling *, continous, consisting of Knauf board strips with miters, thickness in mm ..... , width in mm: ....., Installation according to drawing no.	..... m	..... €	..... €
.....	**Vertical Fins/ Baffle/ Protruding** * consisting of Knauf Mitered Boards, board thickness: 12.5 mm/ 15 mm/ 18 mm *, including additional subconstruction, Installation according to drawing no.	..... m	..... €	..... €
.....	**Cornice** as upgrade to ceiling lining/ suspended ceiling *, consisting of Knauf Mitered Boards, Board thickness in mm ....., including additional subconstruction, installation according to drawing no.	..... m	..... €	..... €
.....	**Wall Junction** as upgrade to ceiling lining/ suspended ceiling *, sliding/ with connection joint *.	..... m	..... €	..... €
.....	**Split Level Ceiling** as upgrade to ceiling lining/ suspended ceiling *, height difference in mm ....., angle 45°/ 90°/ .....°, * including additional subconstruction, installation according to drawing no.	..... m	..... €	..... €
	Knauf Molding Technology D192			
.....	**Arch Elements** made of Molding Boards, thickness: 12 mm/ 18 mm/ 24 mm *. angle 90°/ 180°/ .....° *, radius in mm ....., concave/ convex *, with one side/ two side extension *, including additional subconstruction, installation according to drawing no.	..... m	..... €	..... €
.....	**Arch** made of Knauf Boards, with parallel slotting/ molded on site *, thickness: 12.5 mm/ 2 x 12.5 mm *, angle .....° *, radius: ....., concave/ convex *, including additional subconstruction, installation according to drawing no.	..... m	..... €	..... €
.....	**Barrel Vault** made of Knauf Boards, molded on site, thickness in mm ....., angle .....° *, radius: ....., concave *, including subconstruction consisting of bent upper CD channels, lower CD channels and rigid suspension, Installation according to drawing no.	..... m	..... €	..... €
.....	**Dome Ceiling** made of Knauf Boards, molded on site, thickness: 12.5 mm gypsum board strips and 9.5 mm cladding, radius dome 2536 mm *, diameter 2132 mm (Berlin) / 2600 mm (München) *, rise 235 mm (Berlin) / 358.5 mm (München) *, including subconstruction, installation according to drawing no. 34502-TV/D19(Berlin) / no. 34501-TV/D19(München) *. Product/ System: **Knauf Dome Berlin/ München * D193**	..... pcs	..... €	..... €

* *Cancel not applicable items*

Sub-total ..... €

Knauf Designed Ceilings D19

Construction and Application, Jointing, Surface Treatment

Construction

Knauf Ceilings as ceiling lining or suspended ceiling are fixed to the basic ceiling with a rigid suspension. Knauf boards and factory or bent on site boards with parallel slotting or mitering are fixed to a metal grid of lower and upper C channels (D112) or a flush grid of C channels (D113).

Settlement joints have to be taken over into the construction of the suspended ceiling systems. Use control joints in the case of ceiling areas over approx. 15 m length, or for narrow ceiling spaces caused by a break of a wall. For strongly structured suspended ceilings additional movement joints may become necessary.

Knauf C channels are delivered galvanized. This corrosion protective coating is sufficient for indoor rooms, including bathrooms and kitchens in private housing. For other areas, e.g. under influence of outdoor air, additional corrosion protection is necessary (see DIN 18168-1 table 2).

Application

Grid

- Rigid suspension with Universal Brackets/ Nonius Hanger/ Combo Hangers/ Nonius Stirrups with Nonius Hanger Top or Anchor Hanger.
- Anchored on basic ceiling made of
  Wood: Use Knauf Drywall Screws (flathead) FN 5.1 x 35 mm (used in accordance with Construction Supervisory Permit no. Z-9.1-251)
  Reinforced concrete: Knauf ceiling steel dowel (mounted in accordance with Construction Supervisory Permit no. Z-21.1-1519)
  Other building materials: anchors have to be permitted and standardized for the building material being used.
- For the spacing of fixings of the suspenders on the basic ceiling and the spacing of channels see tables D112/ D113 (TDS D11 Knauf Plattendecken). For Apertura Board Ceilings see TDS D12 (Knauf Acoustical Ceiling Systems).
- Connect upper C channels with hangers and align them at the required suspension height. Connect lower C channels CD 60/27 to upper C channels with: Intersection Connectors, Clip for CD 60x27 or Daisy Chain Clip. Other channel connectors: Multi Connector or Universal Connector 60/27.

Cladding

Cross mounting of Knauf boards to lower C channels, displacement of jointings at least 400 mm ensuring that end joints bear on C channels. Start fastening of Knauf boards either in the middle or at a corner in order to prevent upsetting deformation.

Press boards firmly on to the grid during screw attachment.

Additional loads

- Single loads applied directly to the cladding must not exceed 0,06 kN per spacing of lower channels and meter.
- Apart from that, additional loads have to be considered for the calculation of the dead load of the suspended ceiling if they are borne by the ceilings subconstruction. The loads are to be included when determining the load class from the table on page 2 of TDS D11.
- Other additional loads have to be applied directly to the basic ceiling.

Knauf Drywall Screws for the fixing of Knauf boards onto metal channels with a thickness of d = 0.6 mm

Thickness of boards	Knauf Drywall Screws (DIN 18182-2)	Spacing of screws (DIN 18181)
up to 15 mm	TN 3.5 x 25 mm	170 mm
18 to 25 mm	TN 3.5 x 35 mm	170 mm
2 x 12.5 mm	TN 3.5 x 25 mm + TN 3.5 x 35 mm	170 mm

Jointing

Fill in joints with Knauf Uniflott without using tape. If using tape, fill in with Knauf Fugenfüller Leicht or with Ames machine and Knauf Jointfiller-Super.
Cover all screw heads as well. For double layer cladding, fill in joints of first layer, smooth joints of second layer.
Recommendation: Fill in and tape cut edges of visible layers no matter which filling material is used.
Filling and covering of joints should only take place after the boards have been allowed to rest in the given humidity and temperature zones, and no more longitudinal changes can be expected, i.e. expansion or contraction. Joints should be filled at a minimum temperature of 10°C. In case of mastic asphalt screed, fill in joints after screed has been applied.

Surface Treatment

Use a primer on Knauf Boards before coating or painting them. Ensure that the primer and the coat or paint are compatible. The following coats can be used to cover Knauf Boards:

- Coats: Washable and abrasion-proof emulsion paint, multicolored (rainbow) emulsion, oil paint, matte-finish lacquer, alkyd resin paint, polymer resin paint, PUR lacquer, or epoxy-based lacquer, according to intended use or as required.
- Wall Papers: paper-, textile and synthetic wall papers. Use only adhesives made of cellulose according to „Merkblatt Nr. 16, Technische Richtlinien für Tapezier- und Klebearbeiten", Frankfurt/Main 2002, released by Bundesausschuss Farbe und Sachwertschutz.
  After wallpapering of paper and fiber glass wallpapers quick drying must be assured through adequate airing.
- Alkaline coats such as lime, water glass colors and silicate-based paints are unsuitable for gypsum board surfaces.
- Silicate-based emulsion paints may be used after referring to the manufacturer's recommendations and following the stipulated guidelines closely.

Gypsum board surfaces that have constantly been exposed to light without any protection can develop yellowing agents that show up despite a coat of paint. Therefore a trial coat is recommended that will extend across several boards including all joints. Yellowing can, however, be successfully avoided only by using a special shielding primer.

Knauf Know-how: The shown solutions are proposals for independent and extraordinary conceptions. Factory-molded elements increasingly show up as the most cost-effective solution in implementation. Make use of our technical know-how and professional CAD Service for detailed design. We accompany you from the beginning of your conception up to the implementation. Our **Call Center for Technical Information** will gladly name a contact person on location.

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Knauf websites: www.knauf.de, www.knauf.com, **e-mail:** knauf-direkt@knauf.de
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