

# TAIM Quality Standard for Metal Ceilings: Abridged version

Technical Association of Industrial Metal Ceiling Manufacturers (TAIM) e.V., P. O. Box 1842, D-64608 Bensheim, www.taim.info

Refer to the THM (Metal Ceiling Handbook) for further information

## Quality standards for metal ceilings and Long-span metal planks

### 1. Objectives

With the edition of this standard TAIM pursues the objective of redefining the technological developments and unifying the quality standard (thus defining the liability of the individual members of TAIM).

### 2. Applicability

The standard applies to industrially manufactured, visible rectangular ceiling elements made of steel sheet without inserts.

### 3. Material

Galvanized steel sheet according to respective DIN standard. Zinc coating min. 2.5 µm per side.

### 4. Tolerances

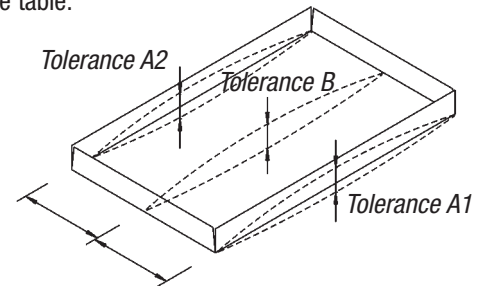
#### 4.1 Panel dimensions

for length (longer edge)	+ 0 - 0.4 mm/m
for length smaller than 1.0 m	+ 0 - 0.5 mm
for width	+ 0 - 0.4 mm

#### 4.2 Deflection

At centre of long edge (A), at centre of panel face (B).

Specifications for perforated panels, hole diameter max. 4 mm, free cross section max. 25 %. Additional inserts can increase the deflection. A1 and A2 may deviate by not more than 50% from the value indicated in the table.

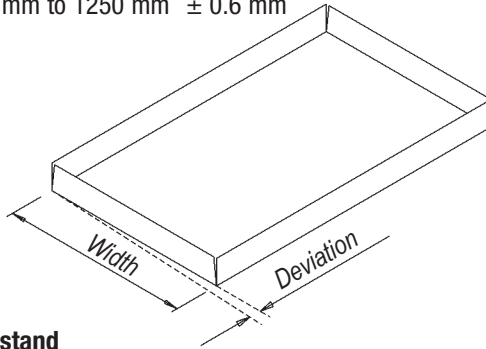


l = length in mm	0 < l ≤ 1.000		1.000 < l ≤ 2.000		2.000 < l ≤ 3.000	
b = width in mm	A1/A2	B	A1/A2	B	A1/A2	B
0 ≤ b ≤ 400	- 0,5 + 0,5	- 0,2 + 3,0	- 0,5 + 1,5	- 0,2 + 4,0	- 0,5 + 3,0	- 0,2 + 6,0
400 < b ≤ 500	- 0,5 + 0,5	0 + 4,0	- 0,5 + 1,5	0 + 5,0	- 0,5 + 3,5	0 + 7,0
500 < b ≤ 625	- 0,5 + 0,5	0 + 6,0	- 0,5 + 1,5	0 + 7,0	- 0,5 + 4,0	0 + 9,0
625 < b ≤ 1.250	- 0,5 + 0,5	0 + 10,0	- 0,5 + 1,5	0 + 13,0	To be agreed	

Constrictions at the centre of the panel depend on tolerances between A and B and can affect the straightness of the edge. Negative values mean upwards buckling.

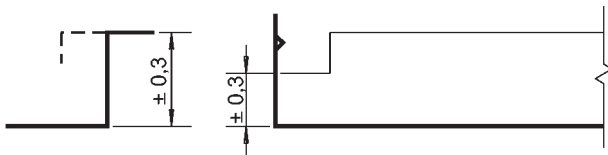
### 4.3 Angularity

of the long edge in relation to the short  
widths up to 625 mm  $\pm 0.5$  mm  
widths from 625 mm to 1250 mm  $\pm 0.6$  mm



### 4.4 Height of upstand

$\pm 0.3$  mm to support or upstand depending on design measured on the panel



Deviations from 90° angle of the vertical upstand are immanent to production process and system-inherent. Indication of tolerance is not necessary. Indication of tolerance for the recess is only valid for clamp constructions.

### 4.5 Perforation

Choice of visible perforation pattern depends on architectural and acoustical requirements. See specifications of the manufacturer for designations of the various patterns. The unperforated border depends on the perforation pattern and may be different at the long and short edge. Indication of the perforation diameter applies only to material without surface coating. When determining the free sectional area the unperforated areas are not considered.

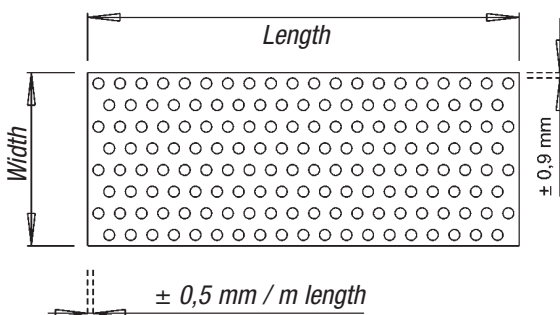
#### 4.5.1 Deviation in width

of unperforated border on long edges  $\pm 0.9$  mm

#### 4.5.2 Deviation in length

from unperforated border on

short edges  $\pm 0.5$  mm/m length of element  
for lengths  $\leq 1.0$  m  $\pm 0.5$  mm



## 5. Surface finishes

### 5.1 Measurement of colour differences

Any computerized measuring device operating according to the Cielab method may be used. ISO 7724-2 and ISO 7724-3 must be complied with.

### 5.2 Binding colour samples

The samples must meet the following criteria:

- min. size DIN-A5
  - unperforated
  - coating thickness according to respective production process.
- It is advisable to keep samples of the main colours of each batch.

### 5.3 Desired coating thickness

It must be ensured that base material is uniformly covered. The coating thickness depends on the manufacturing process used.

### 5.4 Gloss rate

Measuring method according to ISO 2813. Normally, the angle of incidence is 60°.

Tolerances:

dull-bright	0 < 30 (E)	$\pm 4$ deviation E
semi-matt	30 < 70 (E)	$\pm 5$ deviation E
high gloss	70 $\leq$ 100 (E)	$\pm 6$ deviation E

Greater gloss differences must be accepted in case of additional deliveries after extended periods of time.

The same applies if, by change of technical conditions (e. g. new environmental laws), a finish cannot be matched.

### 5.5 Allowable tolerances in shade of colour

#### 5.5.1

For whites mainly used, the difference in  $\Delta E$  value may not exceed 1.0 within one delivery. On materials out of several deliveries this value may add up to tolerances greater than  $\Delta E = 1.0$ .

Greater colour differences must be accepted in case of additional deliveries after extended periods of time.

The same applies if, by change of technical conditions (e. g. new environmental laws), a finish cannot be matched.

#### 5.5.2

For non-white colours the  $\Delta E$  differences may be greater than 1.0; here colour differences are harder to visually ascertain. Tolerances are to be agreed upon from case to case.

#### 5.5.3

Criteria quoted above for whites and non-white colours also apply to colour differences of deliveries and samples mutually declared binding.

#### 5.5.4

These provisions do not apply for deliveries of other supplier or other construction units.

### 5.6 Mechanical properties / resistance

Basically varnish coatings are according to EN 13964 Table 7 Class A and B. Special requirements exceeding the above criteria must be agreed upon separately. The possible load of the top coating is up to 400 g/m<sup>2</sup>.

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## Instructions for installation and application

### 1. General

Metal ceilings must be installed by qualified installers in possession of the required knowledge and expertise. The ceiling contractor shall appoint a responsible foreman who will ensure installation according to current standard construction methods.

The ceiling contractor has the duty and the responsibility of ensuring proper safety, so that during and after completion of the work of installation the hung ceiling cannot fall down.

The instructions for installation and application of the manufacturer must be obeyed. The ceiling contractor must ensure that there will be no danger of damage to property or injury to people who are in the room during and after installation of the metal ceiling. In cases of doubt the manufacturer must be consulted.

### 2. Static

Connections to the construction are to be chosen or designed in such a way that standard tolerances may be allowed for. Allowance must be given to static considerations such as façade movement, building expansion and contraction and expansion joints.

The regulations according to EN 13964 and regulations in the country of use, e.g. DIN 18168 Part 1 and Part 2, are to be applied or a static check undertaken or a tested construction used.

### 3. Sub-construction

#### 3.1 Planks- Tiles- Linear panels

##### 3.1.1

Only construction parts approved by the manufacturer may be used. The sub-construction/ carrier must suit the system of panels installed and possess sufficient longitudinal and lateral stability.

##### 3.1.2

For the installation of the sub-construction and the ceiling panels and edge-trim profiles the allowed tolerance in the levelling is  $\pm 2$  mm per 1.0 m length, with a maximum of 5 mm measured horizontally over 5.0 meter distance in any direction from a suspension point. Allowed bendings of the insert material are not included in the flatness tolerances and must additionally be observed.

##### 3.1.3

To ensure the proper level of the ceiling during installation, first the edge-trim profiles must be fixed at the required level to the adjacent construction. In case of a floating installation the level of the ceiling must be ensured by measuring from proper datum points.

##### 3.1.4

The linear alignment of panels, together with any elements and panel carriers, have to be exactly aligned (either by laser or mason 's string) on module. Special attention must be paid to the alignment of the modules when joining the carriers.



### 3.1.5

The suspension of the carriers must provide stress-free and level conditions whilst at the same time being tight.

### 3.1.6

Metal Ceilings in general and long linear panels in particular necessitate precise installation and alignment of the sub-construction and carriers. It especially applies to linear ceilings where lateral connections between the carriers (secondary grid) are not customary.

## 4. Panels

### 4.1 Planks- Tiles- Linear panels

#### 4.1.1

To avoid deviations in colour and gloss-level between different production runs of the painted material, it is advised that projects requiring larger quantities should be manufactured and supplied in one batch.

#### 4.1.2

The production process of metal ceilings from roll-forming/ press-breaking to coating is generally "direction bound". To avoid optical colour deviations it is necessary to install all planks, tiles or linear panels in the same direction. The installation direction is determined either by markings on the ceiling elements or by an instruction on the packing by the ceiling manufacturer.

### 4.2 Linear panels

#### 4.2.1

Due to the manufacturing process of thin-walled linear panels it is possible that deviations in the plane of the panel occur at the point where the panel lies on the edge-trim profile. These deviations can occur when cutting the panels in the factory as well as on site cutting, are imminent to the production- and manufacturing process, are unavoidable and current technology. Any special demands on the planeness of the panels must be specified beforehand.

#### 4.2.2

Joints in perforated panels (without closed panel ends) must be made with black panel splices. A slight optical detrimental effect in the continuity of the perforated panels is unavoidable for technical reasons: perforated linear panels can not be executed with a blind border at the panel ends.

#### 4.2.3

Resulting from the chosen direction of the panels in the linear ceiling the absolute squareness of the angle between linear panel and carrier must at any point be taken care of.

## 5. (Thermal) expansion of the sub-construction and ceiling panels

The installation of construction profiles, including the ceiling panels, has to allow for the thermal expansion and contraction of aluminium. The expansion coefficient of aluminium is 0.024mm per 1.0 m profile-length for each 1°C temperature difference.

Ceiling elements from aluminium are normally produced at an ambient temperature of +18°C. The tolerances in length as indicated in the Quality Standard for Metal Linear Panels do not take into account the thermal expansion and contraction of the elements.

## 6. Fixtures

Additional fixtures and loads must be suspended separately. Any fixings to the ceiling system must be agreed upon with the ceiling manufacturer beforehand. Fixtures, in particular for chilled or fire resistant ceilings must be installed by qualified installers with proper experience in- and knowledge of the systems and any special requirements.

## 7. Non-standard applications

For non-standard applications, i.e. kitchens, exterior ceilings, high-humidity level rooms and clean room ceilings as well as applications with demands for fire resistance, acoustic performance and sporthall ceilings both the sub-construction and the quality of the ceiling panels must be agreed upon separately. The instructions for installation and application of the manufacturer must be complied with.

## 8. Instructions for transportation and storage

The transportation instructions of the manufacturer and the details concerning correct stacking and dry storage must be obeyed.

## 9. Care and maintenance

Works of care and maintenance must be in accordance with the manufacturer 's instructions.

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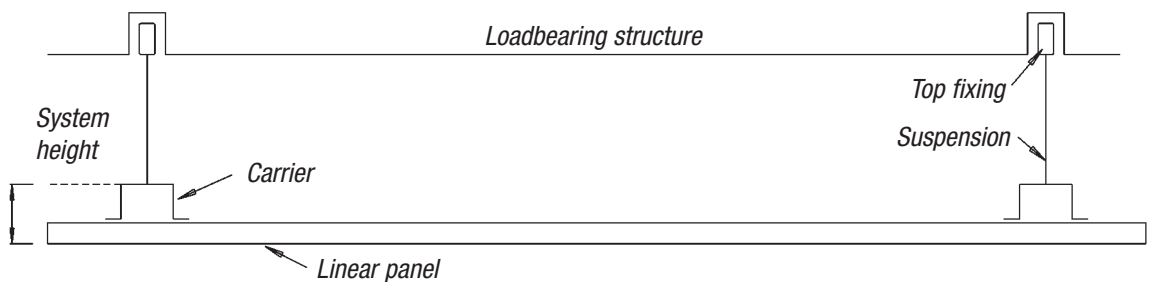
## Quality Standard for Metal Linear Panels

### 1. Objectives

With the edition of this standard TAIM pursues the objective of redefining the technological developments of metal linear panels and unifying the quality standard (thus defining the liability of the individual members of TAIM).

### 2. Applicability

The standard applies to industrially manufactured metal -linear panels for interior use in standard applications. In case of special demands on performance, f.i. application in swimming pools-sport halls and exterior usage, additional relevant standards have to be taken into consideration.



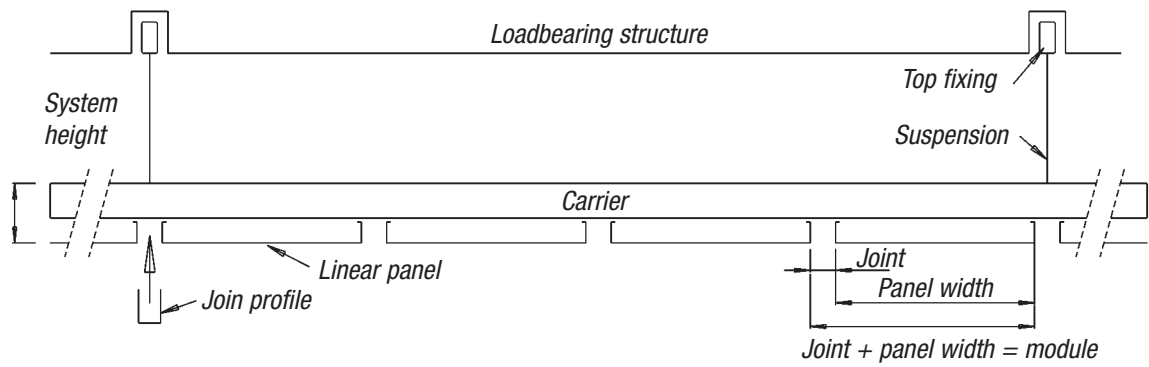
Picture 1

#### 2.1 Product definition:

Ceiling components of relatively narrow width with a length that is a multiple of the width.

Width max. 400 mm.

- the linear panels attach with their sides to the carriers. In general the angle between linear panel and carrier is 90°.
- the sides of the linear panels can be executed in many different shapes.
- at both ends the linear panels are open.
- the joint between the sides of the panels can have a width of 0 - X mm.
- the modular dimension is panel width and joint.
- the open joints between the linear panel sides may be closed with a join profile.



Picture 2

### 2.2 Construction parts: suspension, carriers and hangers

The sub-construction has to fit the linear panels. It is only allowed to use construction parts which are approved by the manufacturer.

### 2.3 Acoustic pads

with a maximum dead weight of 1.5 kg/m<sup>2</sup> are to be carried by the ceiling system.

Additional loads have to be calculated and approved by the manufacturer.

Inserts are permissible up to 400 g/m<sup>2</sup>.

### 3. Material: Panels

Aluminium according to EN 1396.

### 4. Tolerances of the Linear Panels

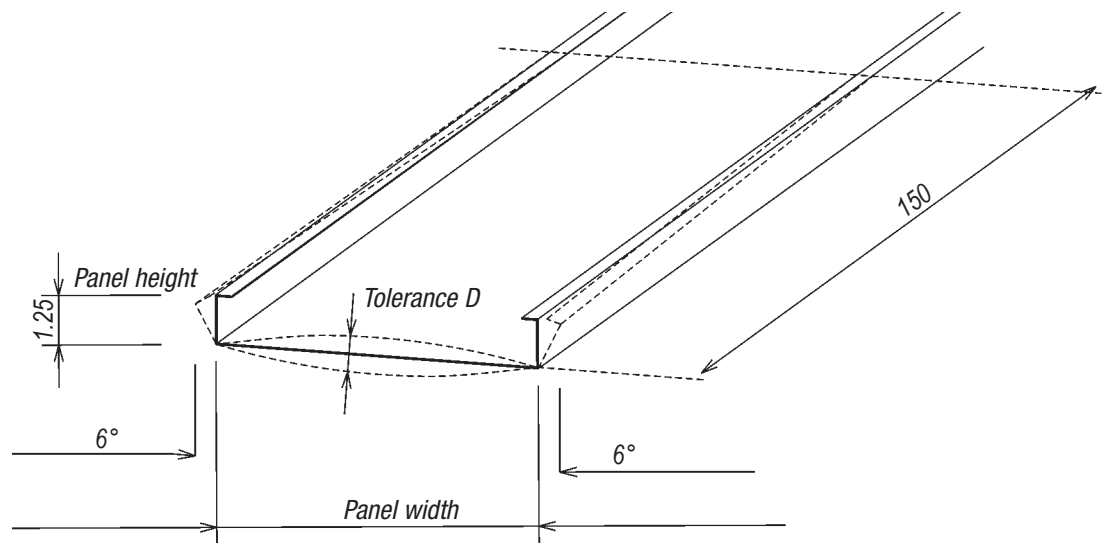
#### 4.1 Dimensions

Panel height	$\pm 0,30$ mm
Panel length	850 - 3000 mm $\pm 1,00$ mm 3000 - 6000 mm $\pm 1,50$ mm
Panel width	$\pm 0,50$ mm

Due to material- and production properties additional dimensional tolerances occur because of spring back at the panel ends (see pictures 3 and 4). The spring back is up to a maximum of  $6^\circ$  on each side or  $0,1 \times$  metal panel height (corresponding to 1,25 mm with a metal panel height of 12,5 mm).

<b>Metal panel height</b>	12,5	15,5	24,5	28,5	38,5
<b>Spring back per edge</b>	1,25	1,55	2,45	2,85	3,85

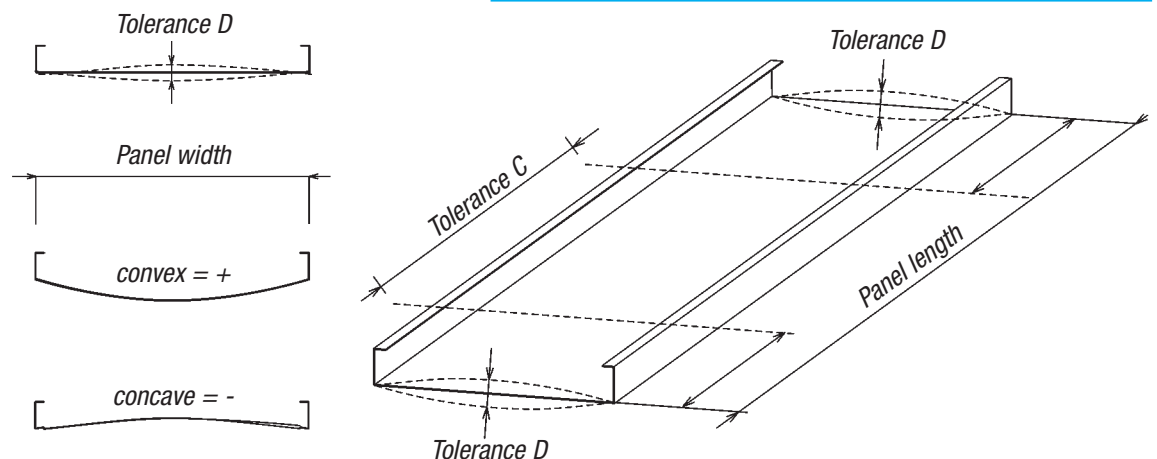
Picture 3



#### 4.2 Plane and Ripples

##### 4.2.1 Plane

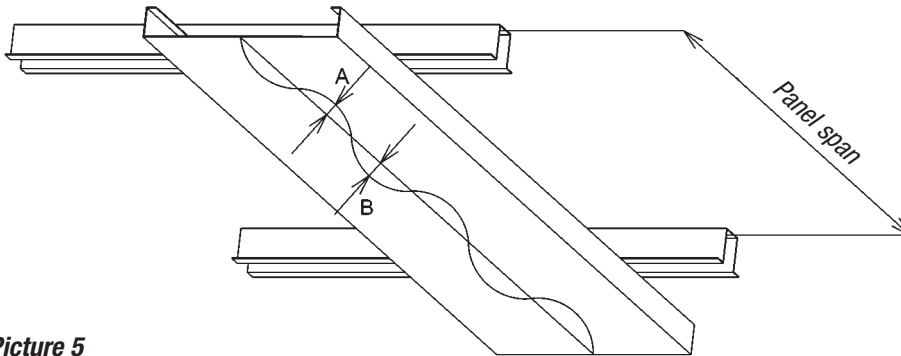
Linear panel width			
0 - 100	101 - 200	201 - 300	301 - 400
<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>
- 0.50 + 1.00	- 0.75 + 1.50	- 1.00 + 2.00	- 1.25 + 2.20
<b>D</b>	<b>D</b>	<b>D</b>	<b>D</b>
- 1.00 + 1.00	- 2.00 + 1.50	- 3.00 + 2.00	- 3.50 + 2.20



Picture 4

#### 4.2.2 Ripples

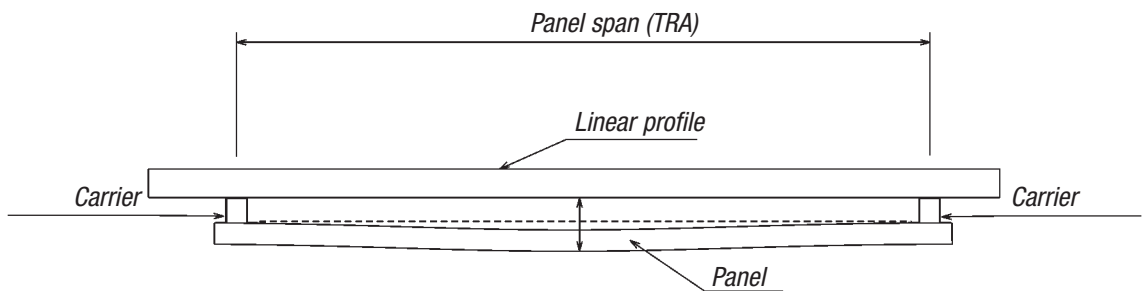
Ripples			
Linear panel width			
0 - 200		201 - 400	
A	B	A	B
- 0.25	+ 0.25	- 0.40	+ 0.40



Picture 5

#### 4.2.3 Deflection between two carriers

The deflection of the panel between two carriers/ points of support is  $1/500 \times$  carriers distance (TRA), measured in the middle between two carriers/ points of support.



Picture 6

#### 4.2.4 Special lighting conditions

Under special lighting conditions it is possible that material- and production specific deviations are visible even when above tolerances are kept.

#### 4.3 Camber

Deviation is maximal  $1/1667 \times$  panel length, measured in the middle of the length of the panel (equals 0.6 mm over 1.0 m).

#### 4.4 Perforation

The panels are perforated over the panel ends. Therefore differently cut perforation holes at the panel ends can occur.

#### 4.5 System height of the linear panel system

The height of the linear panel system as defined by the manufacturer has a tolerance of  $\pm 1$  mm (see picture 1 and picture 2).

## 5. Sub-construction

### 5.1 Carriers

The carrier should take up the panels in a modular way (see picture 2).

The shape of the carriers is manufacturer specific. The panels are fixed to the carriers either by clamping- or by hanging on the prongs.

Longitudinal connections of the carriers are realised by manufacturer-approved elements (modular carrier splices) or by way of a manufacturer-approved installation method.

### 5.2 Carrier distance/ panel span

Due to the often long length of the linear panels the:

- carrier distances (panel spans)
- distances between the suspension points over the length of the carriers (carrier spans)

should comply with manufacturers recommendations.

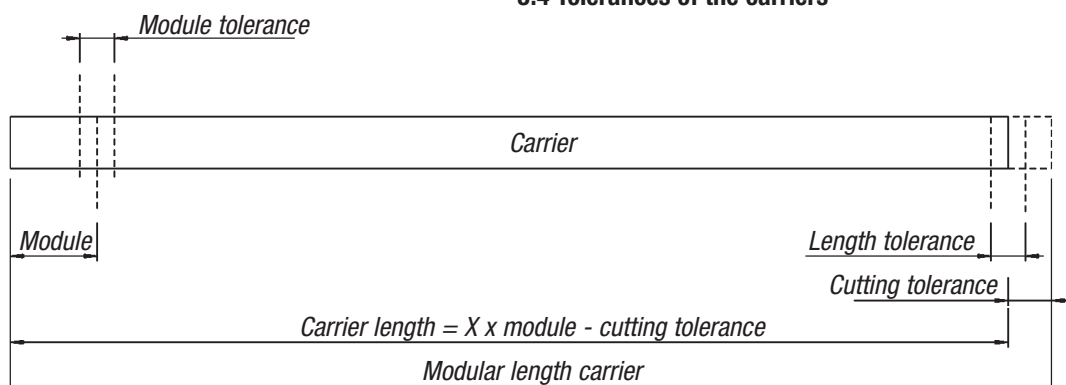
Lateral connections between the carriers are possible, however with linear ceilings not customary.

### 5.3 Material: Carriers

Material for the carriers can be aluminium according to EN 1396 or pre-coated steel strip according to EN 10169 part 1 and 3.

Carriers from pre-coated steel strip shall fulfil the requirements of 6.2

### 5.4 Tolerances of the carriers



#### 5.4.1 Tolerance of the carrier module

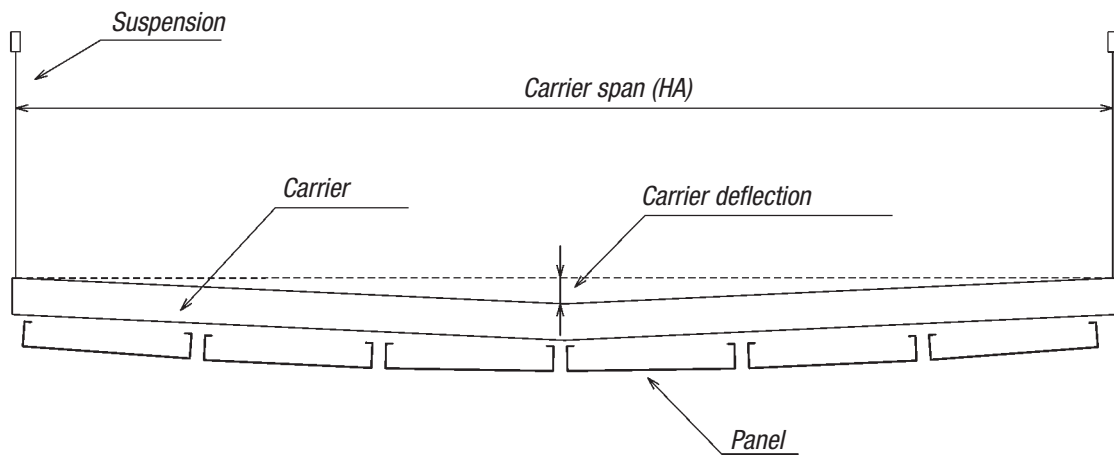
The tolerance of the carrier module is  $\pm 5/100$  of the linear panel module.

#### 5.4.2 Tolerance of the carrier length

The length of the carrier is a multiple of the carrier module. The total length of the carrier follows from the number of carrier modules including the module-tolerance, minus a cutting tolerance which is determined by the manufacturer (see picture 6).

Production wise each carrier starts and ends in the joint of the punching-module.

Carrier splices or manufacturer 's installation instructions ensure the modular dimensions over the length of more carriers.



Picture 8

### 5.4.3 Deflection of the carriers between two suspension points

The deflection of the carriers between two suspension points is  $1/500 \times$  suspension distance (HA), measured in the middle between two suspension points.

## 6. Surface finishes

### Measurement of colour differences

According to EN 1396

### Coating thickness

According to EN 1396

### Gloss

According to EN 1396

### Allowable deviations in shade of colour

According to EN 1396

### 6.1 Mechanical properties/ resistance

Basically the paint finish is in compliance with EN 1396, Table C1, Category 2a.

### 6.2 Classes of exposure

The linear panels made from aluminium fulfil the requirements for normal use in normal climatic conditions in the interior of buildings, generally exposed to varying relative humidity up to 70% and varying temperature from  $+7^{\circ}\text{C}$  up to  $+30^{\circ}\text{C}$  but without corrosive pollutants.

In situations likely to produce corrosion contact between dissimilar materials shall be avoided.

Special requirements exceeding the above criteria must be agreed upon separately.

## 7. Installation

EN 13964 as well as regulations in the country of use, e.g. DIN 18168 Part 1 and Part 2, are mandatory.

The instructions for installation and applications as published by TAIM e.V. as well as the installation instructions of the manufacturer apply.

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## Quality standard for Metal Cell Ceiling

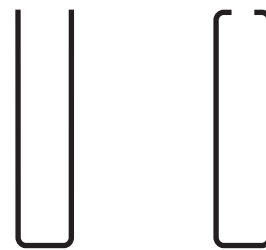
### 1. Objectives

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### 2. Applicability

The quality standard applies to industrially manufactured Metal Cell Ceiling for use in the interior of buildings without special requirements.

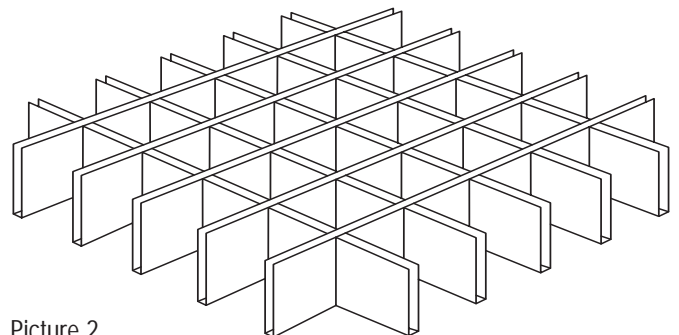
For applications with special requirements, as for instance in swimming pools or exterior use, applicable standards and regulations shall be applied.



Picture 1

U-shape

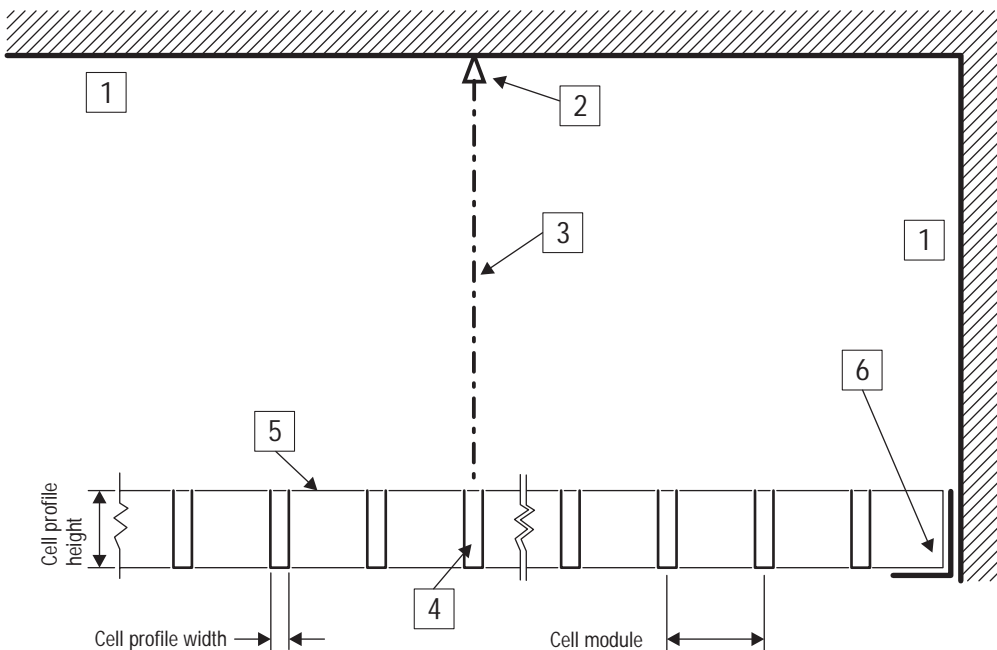
C-shape



Picture 2

#### 2.1 Product definition:

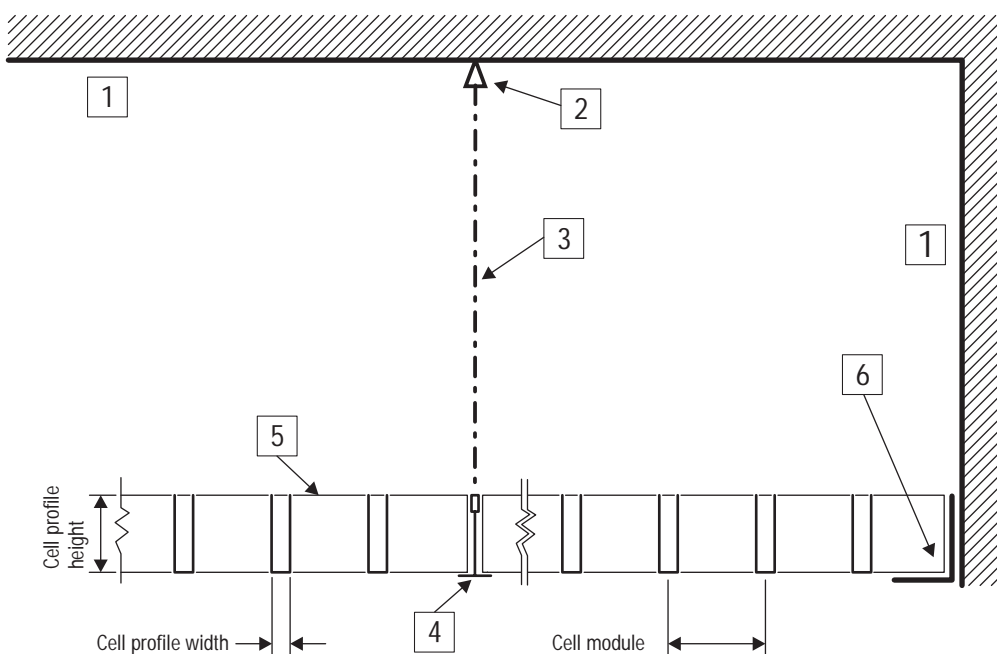
- U- or C-shaped, painted profiles, assembled in such a way that a square- or rectangular shaped continuous open cell ceiling membrane is formed.
- Cell Ceiling profiles are produced in a variety of widths (visible under side), profile heights and cell modules.
- The Cell module is defined as the centre-to-centre distance of two adjacent profiles.
- The assembled profiles form open cell elements that either:
  - are **hooked-in** onto grid profiles (main- and cross runners) that are identical in shape, material and finish,
  - or:
  - laid-on** onto a carrying grid made from other type(s) of profiles.
- The ceiling is either by lay-on on a perimeter trim connected to the wall or installed as a floating ceiling. Floating ceilings must always be finished with full cell-modules around the perimeter.



### Hooked-in onto grid profiles

- 1 Load bearing structure
- 2 Top fixing
- 3 Suspension
- 4 Profile Cell Ceiling element
- 5 Profile Cell Ceiling grid
- 6 Perimeter trim

Picture 3



### Laid-on onto carrying profiles

- 1 Load bearing structure
- 2 Top fixing
- 3 Suspension
- 4 Grid profile
- 5 Profile Cell Ceiling element
- 6 Perimeter trim

Picture 4

## 2.2 Construction parts - sub-construction, main-/cross runners and suspension

The sub-construction has to fit the Metal Cell Ceiling system. It is only allowed to use construction parts that are approved by the manufacturer.

## 2.3 Acoustic pads

with a maximum deadweight of 1.5 kg/m<sup>2</sup> are to be carried by the Metal Cell Ceiling system.

Additional loads have to be calculated separately and approved by the manufacturer.

## 3. Material - Metal Cell Ceiling elements

Material can be coil-coated aluminium strip according to EN 1396 or coil-coated steel strip according to EN 10169 Part 1 and 3 with continuous hot-dip metal coating minimum quality DX 51D according to EN 10327 or electroplated zinc coating DC 01 according to EN 10152.

## 4. Tolerances of Metal Cell Ceiling elements

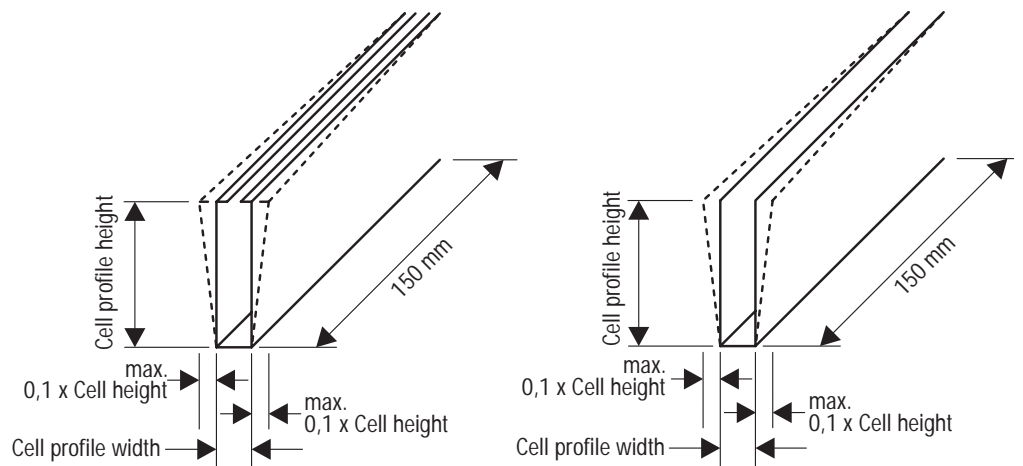
### 4.1 Dimensions

Cell profile height (both sides)	20 - 60 mm	+/- 0,30 mm
Element - length / width	600 - 3600 mm	+ 0,8 -1,0 mm
Cell profile width (underside)	3 - 20 mm	+ 0 -0,50 mm
Cell module	50 - 200 mm	+/- 0,10 mm

Above dimensions cover the product range of reputed and well-known manufacturers of Metal Cell Ceiling.

Depending on manufacturers' specifications the U- or C-shaped Metal Cell Ceiling profiles can have a slight V-shape. Due to material- and production properties additional dimensional tolerances occur because of spring back at the profile ends (see Picture 5).

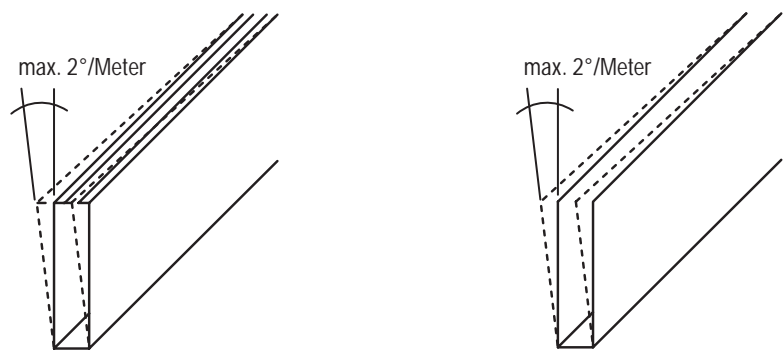
The spring back is up to a maximum of 0,1 x Cell profile height, but not more than 5 mm over the total width.



Picture 5

### 4.2 Twist

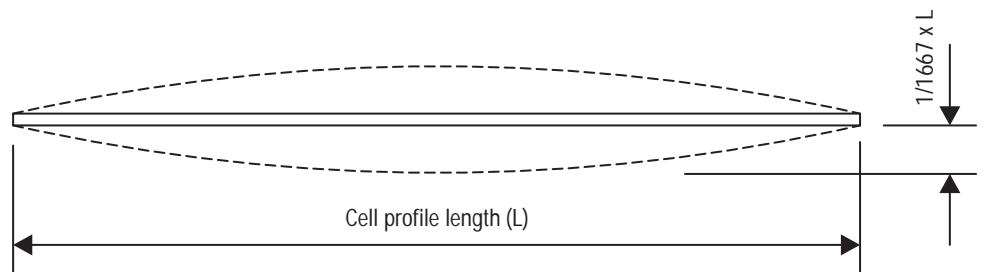
The maximum allowable twist in the Cell profiles is 2° / m1, but not more than 3mm over the total length.



Picture 6

### 4.3 Camber

The deviation is maximal  $1/1667 \times$  profile length measured in the middle of the length of the profile (equals 0,6 mm over 1,0 m profile length).



Picture 7

### 4.4 Perforation

Metal Cell Ceiling profiles can be perforated. Therefore differently cut perforation holes can occur at the ends of the profiles.

## 5. Construction

### 5.1 Metal Cell Ceiling grid

The grid consists of main runners and cross runners. Variations without cross runners are possible.

The grid shall enable the fitting of the Cell Ceiling elements in a modular way (see Picture 3 and Picture 4).

The shape of the grid profiles is manufacturer specific. The grid enables the fixing of the Cell Ceiling elements either by hook-in or lay-on.

Longitudinal connections of the main runners are realised by manufacturer-approved elements (modular main runner splices) or by way of a manufacturer-approved installation method.

### 5.2 Material - Metal Cell Ceiling grid

Material can be coil-coated aluminium strip according to EN 1396 or coil-coated steel strip according to EN 10169 Part 1 and 3 with continuous hot-dip metal coating minimum quality DX 51D according to EN 10327 or electroplated zinc coating DC 01 according to EN 10152.

For grids made from aluminium EN 13964, Clause 4.3.2.2.2 applies.

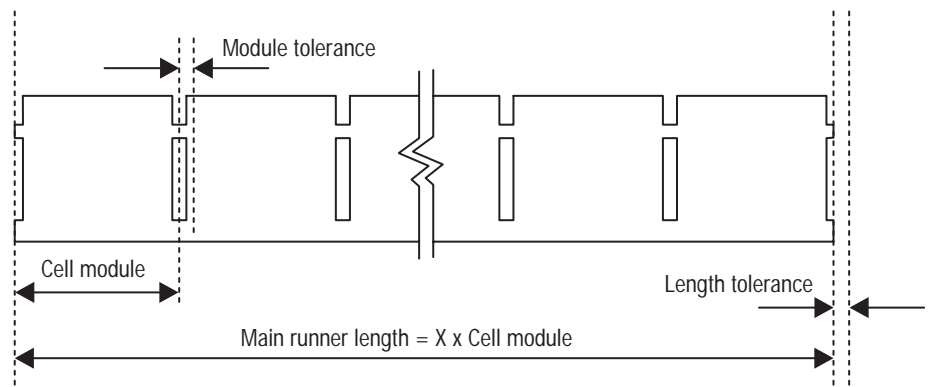
For grids made from steel EN 13964, Clause 4.3.2.2.1 applies.

### 5.3 Tolerances of the grid profiles

#### 5.3.1 Grids for lay-on systems

EN 13964, Table 1 and Table 2 applies.

### 5.3.2 Grids with modular punches for hook-in systems



Picture 8

#### 5.3.2.1 Module tolerance of the grid profiles

The module of the grid (main- and cross runners) shall be the same as the Cell module or a multiple of the Cell module. The tolerance of the main-/cross runner module is  $\pm 1/10$  of the Cell module. The module tolerances shall not add up.

#### 5.3.2.2 Length tolerance

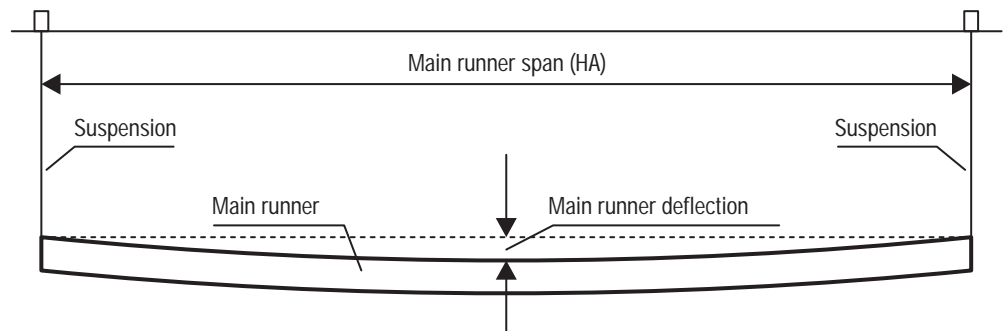
The length of the main-/cross runner is a multiple of the main-/cross runner module. The tolerance for the length of the main-/cross runner is  $\pm 2\text{mm}$ .

The mathematical relation between the module tolerance of the main-/cross runner and the length of the main-/cross runner is manufacturer specific and shall be observed by the manufacturer. If required the module tolerance shall be set smaller than the under 4.1 stated value of  $\pm 0,10\text{mm}$ .

Main runner splices or manufacturer's installation instructions ensure the modular dimensions over the length of more main runners.

#### 5.3.2.3 Deflection of the main runners between two suspension points

The allowable deflection of the main runner between two suspension points is  $1/500 \times \text{main runner span (HA)}$  measured in the middle between two suspension points but not more as 4mm. This corresponds with EN 13964, Table 6, deflection Class 1.



Picture 9

## 6. Finishes

Due to variations in the shape of profiles and the materials of the various Cell Ceiling elements on one hand and the profiles for the grids on the other hand, deviations in colour and gloss between these components are possible and unavoidable.

The following specifications are only applicable for identical profile shapes, materials and finishes.

### Measurement of colour differences

According to EN 1396 (aluminium) or EN 10169-1 and -3 (steel)

### Coating thickness

According to EN 1396 (aluminium) or EN 10169-1 and -3 (steel)

### Gloss

According to EN 1396 (aluminium) or EN 10169-1 and -3 (steel)

### Allowable deviations in shade of colour

According to EN 1396 (aluminium) or EN 10169-1 and -3 (steel)

### Mechanical properties / resistance

Metal Cell Ceiling elements and grids fulfil the requirements for exposure to conditions of EN 13964, Table 7, Class A and Class B (for abridged version see Table 1):

Class	Conditions
<b>A</b>	Building components generally exposed to varying relative humidity up to 70% and varying temperature up to 25 °C but without corrosive pollutants
<b>B</b>	Building components generally exposed to varying relative humidity up to 90% and varying temperature up to 30 °C but without corrosive pollutants

Table 1

Metal cell ceiling elements and grids fulfil the requirements for corrosion protection of EN 13964, Table 8, Class A and Class B (for abridged version see Table 2).

Class of Table 1	Profiles, suspensions <sup>a)</sup> , connecting elements and membranes	
	Components made of steel	made of aluminium
<b>A</b>	<p>Products with a continuously hot-dip metal coating Z100, ZA095 or AZ 100 according to EN 10327<sup>b) c)</sup></p> <p>Products with electroplated zinc coating flat ZE25/25 according to EN 10152<sup>d)</sup></p> <p>Continuously organic coated (coil-coated) products of corrosion protection (interior) category CPI2 for the exposed side according to EN 10169 part 1 und 3<sup>e)</sup> (e.g. coating system ZE15/15-HDP25-2T-CPI2)</p>	No additional corrosion protection required
<b>B</b>	<p>Products with a continuously hot-dip metal coating Z100, ZA095 or AZ 100 according to EN 10327<sup>b) c)</sup></p> <p>Products with electroplated zinc coating flat according to EN 10152 with or without an additional organic coating<sup>d)</sup> as follows<sup>d)</sup>: ZE25/25 + 40 µm per face<sup>e)</sup>, ZE50/50 + 20 µm per face<sup>e)</sup> or ZE100/100 without organic coating</p> <p>Continuously organic coated (coil-coated) products of corrosion protection (interior) category CPI2 for the exposed side according to EN 10169 part 1 und 3<sup>e)</sup> (e.g.. coating system ZE15/15-HDP25-2T-CPI2)</p>	No additional corrosion protection required or coil-coating according to EN 1396 corrosion index 2a

Table 2

a) Round steel wires used as suspension or part of a suspension shall meet the requirements of EN 10244-2 (zinc or zinc alloy coating on steel wire).

b) EN 10327 replaces EN 10142 (zinc), EN 10214 (zinc-aluminium) and EN 10215 (aluminium-zinc).

c) Any equivalent corrosion protection leading to a similar level of protection is permitted.

d) Coating of exposed parts with zinc compatible organic coating according to EN ISO 12944-3 applied by a post-painting process or equivalent coil coating according to EN 10169-3.

e) Applies only to membrane components.

f) Applies only to "capping" material for substructure components.

Any special requirements going beyond the above shall be agreed on separately.

## 7. Installation

EN 13964 as well as regulations in the country of use e.g. DIN 18168 Part 1 and Part 2, are mandatory

The instructions for installation and application as published by TAIM e.V as well as the installation instructions of the manufacturer apply.