

## Technical Association of Industrial Metal Ceiling Manufacturers

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

### 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.

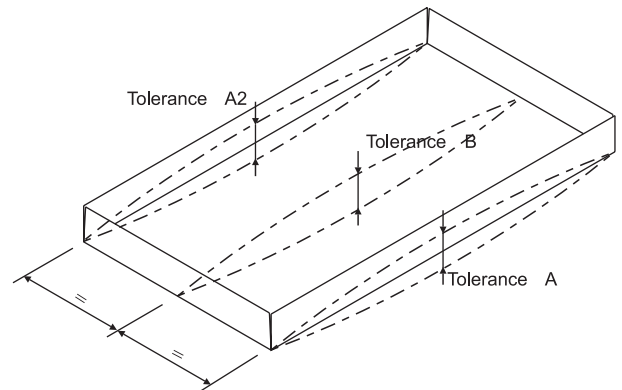
### 4. Tolerances

#### 4.1 Panel dimensions

for length (longer edge)	+0 - 0.016" (+0 - 0.4mm/m)
for length smaller than 39 3/8" (1,0 m)	+0 - 0.02" (+0 - 0.5mm)
for width	+0 - 0.016" (+0 - 0.4mm)

#### 4.2 Deflection

At center of long edge (A), at center of panel face (B). Specifications for perforated panels, hole diameter max. 5/32" (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 inch (mm)	0 < l ≤ 39 3/8" (1000)		39 3/8" (1000) < l ≤ 78 3/4" (2000mm)		78 3/4" (2000mm) < l ≤ 118 1/8" (3000mm)	
b = width in inch (mm)	A1/A2	B	A1/A2	B	A1/A2	B
0 ≤ b ≤ 15 3/4" (400mm)	-0.02" (-0.5mm) +0.02" (+0.5mm)	-0.01" (-0.2mm) +0.12" (+3.0mm)	-0.02" (-0.5mm) +0.06" (+1.5mm)	-0.01" (-0.2mm) +0.16" (+4.0mm)	-0.02" (-0.5mm) +0.12" (+3.0mm)	-0.02" (-0.5mm) +0.24" (+6.0mm)
15 3/4" (400mm) < b ≤ 19 11/16" (500mm)	-0.02" (-0.5mm) +0.02" (+0.5mm)	0 +0.16" (+4.0mm)	-0.02" (-0.5mm) +0.06" (+1.5mm)	0 +0.20" (+5.0mm)	-0.02" (-0.5mm) +0.14" (+3.5mm)	0 +0.28" (+7.0mm)
19 11/16" (500mm) < b ≤ 24 5/8" (625mm)	-0.02" (-0.5mm) +0.02" (+0.5mm)	0 +0.24" (+6.0mm)	-0.02" (-0.5mm) +0.06" (+1.5mm)	0 +0.28" (+7.0mm)	-0.02" (-0.5mm) +0.16" (+4.0mm)	0 +0.35" (+9.0mm)
24 5/8" (625mm) < b ≤ 49 3/16" (1250mm)	-0.02" (-0.5mm) +0.02" (+0.5mm)	0 +0.4" (+10.0mm)	-0.02" (-0.5mm) +0.06" (+1.5mm)	0 +0.51" (+13.0mm)	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.

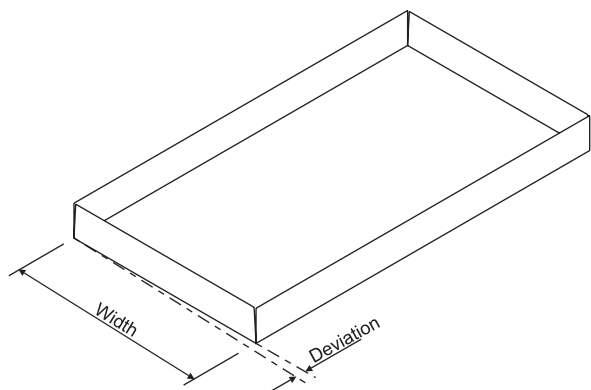
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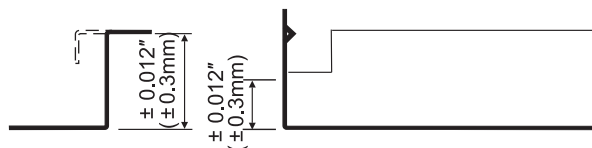
## 4.3 Angularity

of the long edge in relation to the short widths up to 24 5/8" (625 mm)  $\pm 0.02"$  ( $\pm 0.5$  mm)  
 widths from 24 5/8" to 49 3/16" (625 mm to 1250 mm)  $\pm 0.024"$  ( $\pm 0.6$  mm)



## 4.4 Height of upstand

$\pm 0.012"$  ( $\pm 0.3$  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

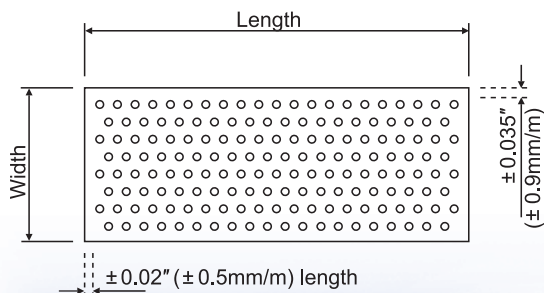
Choice of visible perforation pattern depends on architectural and acoustical requirements. See specifications of the manufacturer for designations of the various patterns. The unperforated border depends on the perforation pattern and may be different at the long and short edge. Indication of the perforation 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  $\pm 0.035"$  ( $\pm 0.9$  mm)

### 4.5.2 Deviation in length

from unperforated border on short edges  $\pm 0.02"$  ( $\pm 0.5$  mm/m) length of element  
 for lengths  $\leq 1.0$  m  $\pm 0.02"$  ( $\pm 0.5$  mm)



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## 5. Surface finishes

### 5.1 Measurement of color 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 color 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 colors 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 color

#### 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 color 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 colors the  $\Delta E$  differences may be greater than 1.0; here color 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 colors also apply to color 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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