

# ACOUSTICAL **CEILING SYSTEMS**

SECOND EDITION

# WHY CHOOSE USG?

About USG · USG Worldwide · USG Middle East

USG is the only manufacturer of mineral fiber tiles in the Middle East and complies with both international standards ASTM E1264 and EN 13964 for ceiling tile manufacturing.

USG famous DONN® grid suspension is manufactured locally and is certified to meet the most stringent national standards and to adhere with all relevant building codes and norms.

USG Middle East follows a strict quality policy that everything that is made and everything that is done must be as good as it can be. Quality means that all products are not just well-made but consistently well-made. Performance must be as promised every single time.

USG Middle East maintains a longstanding commitment with its employees, customers and communities to reduce environmental impact use recycled materials whenever feasible and eliminate manufacturing waste. USGME products contribute toward LEED® credits in different areas.

USG Middle East has a technical team offers technical support for Mega projects at no cost whenever it is required by the clients, consultants or contractors.

**USG is committed to provide innovative products  
& solutions to build your world**



Specialty  
Ceilings



Acoustical  
Panels



Logix Integrated  
Ceilings



Suspension  
Systems





# CEILING CATALOG

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# PRODUCT SELECTION

USG offers ceiling systems for every type of building area. You can find ceiling systems by industries or use purpose.

## RETAIL



## EDUCATION



## HOSPITALITY



## ADMINISTRATION



## PUBLIC HEALTH



## SPORT/ LEISURE



## PRODUCTION AREAS





# PRODUCT APPLICATION

Product Application Table

	Airports	banks	Boardrooms Conferences	Cinemas   Theaters	Computer Rooms	Factories   Workshop	Food Halls	Gymnasiums	Hospitals   Medical Centers	Laboratories   Cleanrooms	Wet Areas	Libraries	Light Industrial Construction	Lobbies   Receptions	Corridors	Offices	Open Plan Offices	Restaurants   Cafes	Retail	Schools	Service Stations	Shopping Centers	Showrooms   Exhibition
Chessboard					M	M							M		M				M		M		
Clean Room™							P		P	P	P												
Comet Line					M	M							M		M				M		M		
Cross Fissured					E	E						E			E				E		E	E	
Designer series					M	M							M	M		M			M		M		M
Favia						E	E					E	E		E	E			E		E	E	
Favia Acoustic				M	M	M	M	M							M	M			M	M			
Frost™	P	P	P	P								P		P		P	P				P		P
Glacier™	P	P	P	P								P		P		P		P					P
Halcyon™		P	P		P				P	P		P		P			P				P		P
Logix™, Sonata, Halcyon™ & Mars™	P	P	P	P					P			P		P		P	P						P
Mars™		P	P				P		P	P		P		P	P	P	P	P		P			P
Olympia II™		E			E							E	E	E	E	E		E	E			E	E
Olympia Micro™						M		M						M	M	M	MR	M	M	M		M	M
Omni						E							E		E	E			E		E	E	
Pedestal		MR			MR	MR						MR							MR		MR		MR
Perforated					M	M						M	M	M	M	M			M	M			
Plain													M			M		M	M			M	
Radar™	MR	E		E	E		P					E	E		E	E	MR	E	E	E		E	MR
Radar Ceramic			P											P									
Sandrift™		P	P	P			P	P	P	P		P		P		P		P					P
Sonata	P	P					E		E		E	P			P	P	P		P			P	P
Sparta					E							E	E			E		E	E			E	
Taiga Hygiene							MR		MR	MR								MR	MR				

**E** Economical    **M** Moderate    **MR** Mid-Range    **P** Premium

Products Selection

	Type	Form	Pattern	Texture	Fire Reaction	Fire Rated	Thermal Resistance (m2 k/w)		Washability	Abuse Resistance	Humidity Resistance(%RH)	Antibacterial
							15mm	19 25mm				
Chessboard	III	2	E,K	Scored	Class A			0.31				
Clean Room™	X	2	C,G,I	Smooth	Class A	Yes	0.23		Yes		95%	Inherent
Comet Line	III	2	E,K	Scored	Class A			0.31				
Cross Fissured	III	2	C,D	Medium	Class A	Yes	0.23	0.31			95%	
Designer series	iii	2	C,D,E,G,K	Scored	Class A			0.31				
Favia	III	2	D,E	Fine	Class A		0.23				95%	
Favia Acoustic	III	2	C,D,E	Fine	Class A		0.23	0.31			95%	
Frost™	III	4	E	Fine	Class A	Yes		0.33		Yes	95%	
Glacier™	III	4	F	Heavy	Class A	Yes		0.33		Yes	95%	
Halcyon™	XI	2	E,G	Fine	Class A			0.6/0.74	Yes		95%	Inherent
Logix™, Sonata, Halcyon™ & Mars™	IV,XII	1,2	E,G	Fine	Class A		0.23	0.31/0.6	Yes			Yes
Mars™	IV	1,2	E,G	Fine	Class A			0.31	Yes		95%	Yes
Olympia II™	III	2	E	Fine	Class A		0.23	0.31			95%	
Olympia Micro™	III	2	C,E	Fine	Class A	Yes	0.23	0.31			95%	
Omni	III	2	C,D,E	Medium	Class A	Yes	0.23	0.31	Yes		95%	
Pedestal	III	2	E,G	Smooth	Class A	Yes		0.31			95%	
Perforated	III	2	C,E	Fine	Class A		0.23	0.31	Yes		95%	
Plain	III	2	G	Smooth	Class A	Yes	0.23	0.31			95%	
Radar™	III	2	C,D,E	Fine	Class A	Yes	0.23	0.31		Yes	95%	
Radar Ceramic	XX	2	C,D,E	Fine	Class A	Yes	0.23	0.31		Yes	95%	Inherent
Sandrift™	III	4	Z	Medium	Class A	Yes		0.33			95%	
Sonata	IV	2	E,G	Fine	Class A			0.31	Yes		95%	Yes
Sparta	X	2	G	Smooth	Class A	Yes	0.23	0.31			95%	Inherent
Taiga Hygiene	III	2	G	Smooth	Class A		0.23	0.31			95%	Yes

# NORMS COMPLIANCE

USGME products are classified according to ASTM E1264 and are CE Marking per EN 13964. These norms aim for easy comparison between various types of Ceiling systems.

## ASTM E1264

USGME Ceiling products meet ASTM E1264 in:

### 1| Ceiling Types:

*Type III:* Mineral base with painted finish (Auratone)

*Type IV:* Mineral base with membrane-faced overlay (Sonata, Clean Room)

*Type X:* Mineral base with Plastic or Aluminum membrane- faced overlay, or both (Sparta)

*Type XII:* Glass fiber base with membrane-faced (Halcyon™)

*Type XIII:* Aluminum or Steel strip (Pan) with mineral or fiber glass fiber base backing (Celebration, Panz)

*Type XX:* Other types (Radar™ Ceramic, True™ Wood, Luminous ...)

### 2| Ceiling Forms For Mineral Base (1, 2, 4)

The Mineral Fiber Manufacturing process is composed from a combination of naturally occurring, processed and recycled materials in varying proportions depending upon the tile type: mineral wool, clay, perlite, cellulose and starch mixed together in a water based process before being cured by heat. They are then finished with either a water based paint, or laminated scrim and paint or decorative facing.

Three technologies allow considerable variation in the product's density and porosity which can be used to positively influence a wide range of technical performances of the finished products:

#### *Form 1:* Nodular (X-Technology)

"X" Technology is a unique manufacturing method which was developed and introduced to the market by USG in 1989. This technology produces ceiling panels with ClimaPlus™ for sag resistance and High NRC & Smooth Surface. ASTM E 1264, Type III, Form 1 or 2.

#### *Form 2:* Water felted

Wet-felted panels are typically mechanically Perforated and fissured. They are very dense and more economical than other types of ceiling panels.

#### *Form 4:* Cast or molded

Cast panels are naturally textured and provide a unique, integral color throughout the panel substrate with very good acoustical performance and enhanced extreme durability.

### 3 | Ceiling Patterns (C, D, E, F, G, I, K, Z)

C: Perforated, small holes

D: Fissured

E: Lightly textured

F: Heavily textured

G: Smooth

I: Embossed

K: Surface scored

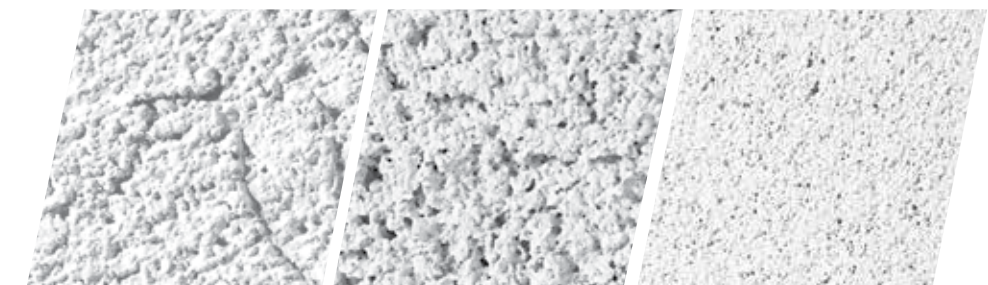
Z: Other Patterns (describe)

### Examples

a. Wet-felt technology ASTM E1264, Type III, Form 2 varying from Smooth, Fine to Medium Textures types of ceiling panels.



b. Cast molding technology ASTM E1264, Type III, Form 4 with special Textures from Fine, Medium to Heavy textures



c. X-technology for High NRC & Fine Surfaces ASTM E 1264, Type III, Form 1 or 2



### 4 | Flame Spread Classification

Classification	Flame Spread	Smoke Developed
Class A	0-25	0-50
Class B	26-75	
Class C	76-200	
Class D	201	

All USGME ceiling products have a Class A flame spread rating

### 5 | Additional Classification on

- Acoustical Ratings (NRC, CAC)
- Light Reflectance

USGME CEILING COMPLIANCE WITH ASTM STANDARDS

The following listings contain:

- Existing standard specifications that apply to USG Ceiling Systems like E1264, C635 & C645.
- Standards for application of USG Ceiling Systems like C636, C754 and E580.
- Standards for performance specifications and test method for various Ceiling proprieties.

ACOUSTICAL PANELS & TILES	PRODUCTS FAMILY	ASTM STANDARD																																														
			E1264	Acoustical Ceiling Classification	C423	NRC	E1414	CAC	E413	CAC Classification	E1477	LR	D3273	Mold Prevention	D3274	Mold Classification	E84	Surface Burning Characteristics	E119	Fire Resistance	D5116	Total VOC Emission	C518	Thermal Resistance	D2486	Scrubability	D4828	washability	C367	Sag/Friability	D1037	Durability	D5420	Impact Resistance	C635	Metal Grid Specs	C636	Grid Installation	C580	Grid with Seismic Restraint	C641	Wire Hangers						
	Fissured Family <sup>1</sup>	■	■	■	■	■	■	■					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■																		
	Plain Family <sup>2</sup>	■	■	■	■	■	■	■							■					■	■	■	■					■																				
	Olympia Micro™ ClimaPlus™	■	■	■	■	■	■	■							■		■		■	■	■	■	■	■				■																				
	Perforated	■	■	■	■	■	■	■							■				■	■	■	■	■	■				■																				
	Taiga Hygiene	■	■	■	■	■	■	■	■	■		■	■	■	■				■	■	■	■	■	■				■																				
	Laminated Sparta	■	■	■	■	■	■	■													■	■	■	■				■	■																			
	Sonata	■	■	■	■	■	■	■	■	■		■	■	■	■						■	■	■	■	■	■	■	■	■	■																		
	Clean Room™	■	■	■	■	■	■	■	■							■		■	■	■	■	■	■	■	■			■	■																			
	Radar™ Ceramic	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				■	■	■	■	■	■	■														
	Halcyon™	■	■	■	■	■	■	■							■							■	■	■	■	■	■	■	■																			
	Glacier™	■	■	■	■	■	■	■							■	■	■	■	■	■	■	■	■	■	■	■			■	■	■	■																
	Frost™	■	■	■	■	■	■	■							■	■	■	■	■	■	■	■	■	■	■	■			■	■	■	■																
	Sandrift™	■	■	■	■	■	■	■							■	■	■	■	■	■	■	■	■	■	■	■			■	■	■	■																
	Mars™ Clima Plus™	■	■	■	■	■	■	■	■	■	■	■	■	■	■							■	■	■	■	■	■	■	■	■																		
	Mars™ Clima plus™ High NRC	■	■	■	■	■	■	■	■	■	■	■	■	■	■							■	■	■	■	■	■	■	■	■																		
	Mars™ Clima Plus™	■	■	■	■	■	■	■	■	■	■	■	■	■	■							■	■	■	■	■	■	■	■	■																		
	Millenia™ Clima Plus™	■	■	■	■	■	■	■	■	■	■	■	■	■	■							■	■	■	■				■																			
	Eclipse™ Clima Plus	■	■	■	■	■	■	■	■	■	■	■	■	■	■					■	■	■	■	■	■				■																			
	Astro® Clima Plus	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				■																				
	SUSPENSION SYSTEM	DONN® Grid																																				■	■	■								
Supension Hangers																																															■	
SPECIALTY PANELS	Celebration			■																																												
	Panz			■				■																																								
	Curvatura																																															
	Compasso™																																															
	Billo™																	■																														
	Translucent™- Canopies	■														</																																

LEGEND: 1- Fissured Family includes the following patterns: · Cross Fissured · Omni · Radar™ · Favia (Europa) · Favia Acoustic · Face Cut  
2- Plain Family includes the following patterns: · Taiga™ · Olympia II™ · Comet Line · Chessboard · Pedestal · Face Cut

NORMS COMPLIANCE

CE Marking per EN 13964

The CE marking (an acronym for the French "Conformite Europeenne") certifies that a product has met EU health, safety, and environmental requirements, which ensure consumer safety. Manufacturers in the European Union (EU) and abroad must meet CE marking requirements where applicable in order to market their products in Europe.

The European Committee for Standardization (CEN) introduced the EN 13964 norm for suspended ceilings which has been mandatory since July 1, 2007. The norm aims to make it easier to compare suspended ceilings. To achieve this, it defines those product characteristics which can or must be declared on product labels and in product documentation.



The CE-marking at USGME covers the mandatory properties Reaction to Fire and Emission of Formaldehyde and criteria such as Sound Absorption and Sound Attenuation when relevant. All declared values have been tested and verified by independent and certified laboratories. Furthermore, our continuously audited Factory Production Control will always ensure that customers receive products that live up to the standards of the product performance declared on the CE marked label.

	Ceiling Tiles	Ceiling Grids	Ceiling System (tile + grid)
Mandatory to declare, tested in accordance with EN 13964	■ Reaction to fire ■ Emission of formaldehyde	■ Reaction to fire	■ Reaction to fire ■ Emission of formaldehyde
If declared, then tested in accordance with EN 13964 is mandatory	■ Sound absorption ■ Thermal conductivity ■ Flexural tensile strength ■ Durability (corrosion of metal tiles) ■ Shatter (only for brittle materials)	■ Load-bearing capacity ■ Durability (corrosion of metal grids) ■ And others...	■ Fire resistance ■ Sound insulation ■ Impact resistance
If declared, then tested in accordance with EN 13964 is recommended but not mandatory	■ Light reflection ■ Colour definition ■ Gloss definition		



# ACOUSTICAL CEILING SELECTOR

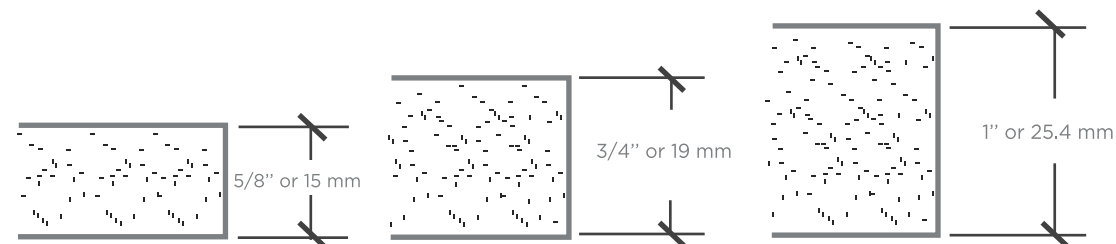
## I. Size

600 x 600 mm, 600 x 1200 mm, 300 x 1200mm, 300 x 1500 mm or 300 x 1800 and 600 x 1800 mm

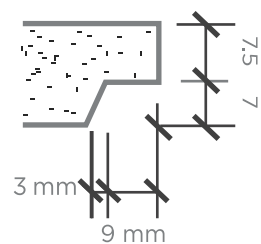
SIZE(mm)	METRIC MEASURES (mm)	IMPERIAL MEASURES (mm)
600*600	593 * 593	603 * 603
600*1200	593 * 1193	603 * 1213
300*1200	293 * 1193	297 * 1213
300*1500	293 * 1493	297 * 1517
300*1800	293 * 1793	297 * 1821
600*1800	593 * 1793	603 * 1821

## II. Edge Details

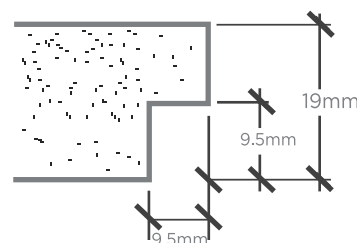
### SQ Edge 15



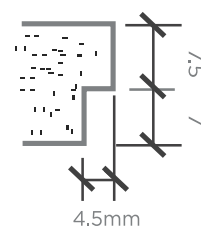
### SLT Edge 15



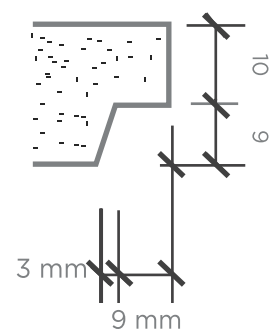
### SL Edge 19



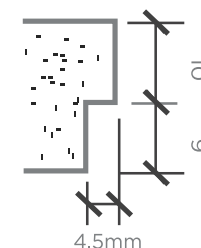
### FL Edge 15



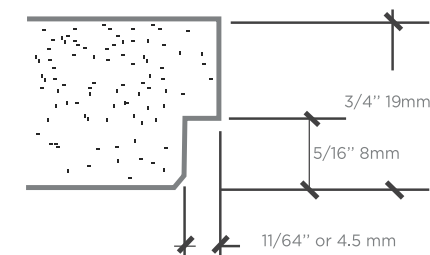
### SLT Edge 19



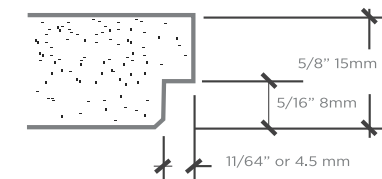
### FL Edge 19



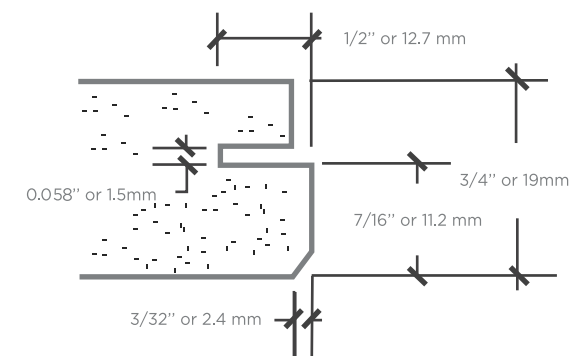
### FLB Edge 19



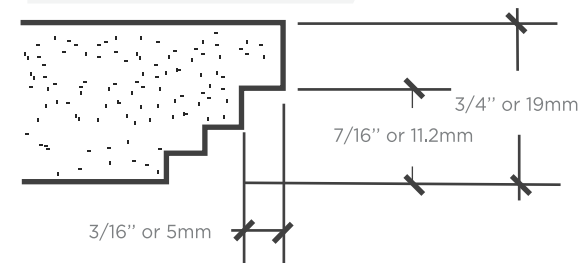
### FLB Edge 15



### Concealed BESK Edge



### Pedestal Edge



## III. Light Reflectance

It is a measure of the percentage of light which is reflected off of a given panel surface.

Typically, the whiter and the smoother the panel is, the higher LR value we have. Thus, this will:

- Enhance Indirect Lighting
- Reduce Energy Consumption
- Create Warm Luminous Aesthetics





# ACOUSTICAL PERFORMANCE

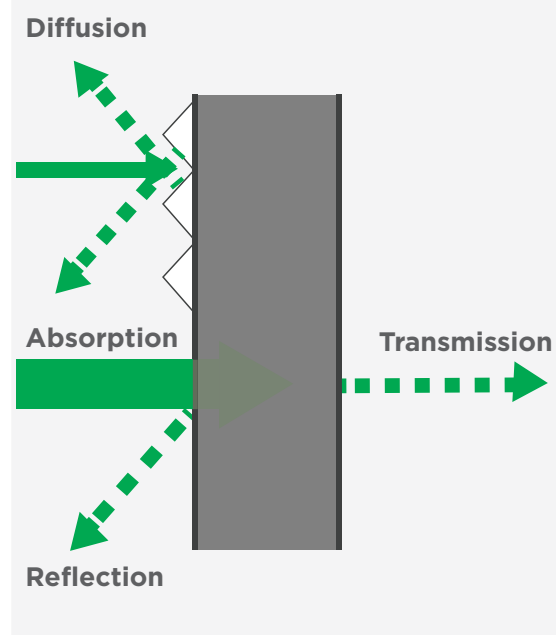
Ceilings are excellent places for sound absorbing materials as well as additional fire and thermal insulation. We have ideal acoustic solutions for different kind of ceilings depends on room sort for interiors, hygienic spaces or industrial spaces. A special room acoustic design is needed to create the suitable spaces for planned functions. There are basically two sound-related factors to be considered when designing a building:

- Choose quiet equipment (e.g. elevators, pumps, heating and ventilation equipment, etc.).
- Handle the sound in building by means of room acoustics and sound insulation.

**It is important not to confuse the terms 'sound insulation' and 'sound absorption'.**

## Reflection, sound absorption and sound insulation

Sound may be absorbed, transmitted or reflected. When a room boundary, such as a roof, floor or a wall, is hit by a sound wave, some of the sound energy will be reflected, some is absorbed within the material and some is transmitted through it, as illustrated by the figure.



The proportion which is reflected, absorbed or transmitted depends on the shape of the material or the construction hit by the sound wave, and the frequency of the sound. Based on this, three acoustical parameters can be defined.

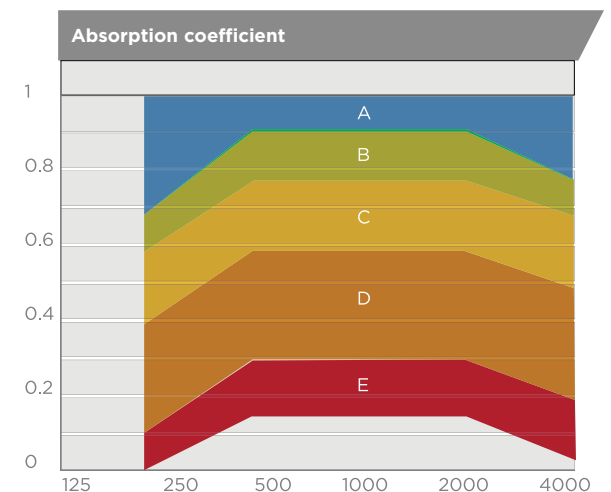
- Absorption coefficient,  $\alpha_w$  = (absorbed sound + transmitted sound)/(incident sound)
- Reflection coefficient,  $\alpha_R$  = (reflected sound)/(incident sound)
- Transmission coefficient,  $\alpha_T$  = (transmitted sound)/(incident sound)

The Sound Absorption Coefficient can be measured by two very different methods - the room method and the tube method. The room method is normally used for presenting product information (as in this catalog) and as input to calculation models. The measuring method follows an international standard designated EN ISO 354. The corresponding American standard is ASTM C 423 (measurements according to this often show slightly higher figures). The measurements are done in a large room with a diffuse sound field, i.e. the sound has evenly distributed angles of incidence against the test surface.

EN ISO 11654 is also used to classify the Sound Absorption materials based on the measured absorption curves to categories from A to E. Class A has the best ability to absorb sound, and E has the weakest. The installation method together with material properties have a great impact on the results. This classification system helps designers to compare and select the suitable absorption material(s) for different purposes.

$\alpha_w$  (Weighted Sound Absorption Coefficient) commonly used in Europe and it is the method which has been adopted as the norm for CE marking of suspended ceilings. It takes wide frequency based range of Sound Absorption coefficient values into a single number done using a curve fitting process.

$\alpha_w$	Sound Absorption Class
1.00-0.95-0.90	A
0.85-0.80	B
0.75-0.70-0.65-0.60	C
0.55-0.50-0.45-0.40-0.35-0.30	D
0.25-0.20-0.15	E
0.10-0.05-0.00	Not classified



The ASTM standard C423 specifies the NRC (Noise Reduction Coefficient) which is calculated as an average over the frequency ranges (250-2000 Hz) and centered at 250, 500, 1000 & 2000 Hz, rounded to the nearest 0.05.

The CAC (Ceiling Attenuation Class) is also a Single value for sound attenuation of a suspended ceiling between two rooms according to ASTM E 1414. This measurement takes only into account the sound transmission through the suspended ceiling.



Room to room sound transmission through the ceiling

Open Plan Office Articulation Class beyond a barrier

# ACOUSTICAL PERFORMANCE

In addition to reducing/increasing the sound level that occurs over distance, an absorbent ceiling will improve the function of screens and other screening furnishings. The degree to which a ceiling improves the effect of screens can be classified in an AC value (Articulation Class). Articulation Class (AC) is a single numerical rating used to identify the degree of transmitted speech intelligibility between office spaces. This rating is particularly useful for open plan offices. It is determined in accordance with ASTM E-1110. The higher the AC the better is the speech privacy in an open plan situation. For an office ceiling, the AC value should be at least 180. The derived value is a combination of the sound reflection /sound absorption characteristics of the acoustical product being tested in a prescribed assembly

Good acoustics cannot be achieved by optimizing one single parameter. It's a set of factors which need to be aligned to the purpose of the room. Most regulations and guidelines refer to 3 key aspects:

## 1- Sound pressure level:

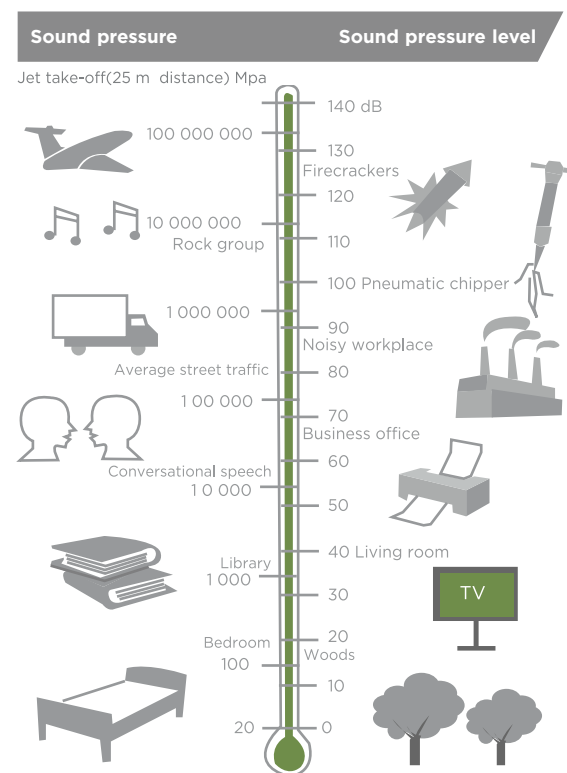
The human ear responds to sound pressure, which is measured in units of Pa (N/m<sup>2</sup>). The lowest sound pressure that an average ear can detect is about 0.00002 Pa, and the limit for pain is about 200 Pa. The experience of sound depends on

- The sound level
- The frequency
- The type of sound, if it is constant or intermittent
- If it is noise or nice music

## 2- Reverberation time:

How much echo is in the room? The reverberation time of a room characterizes how long acoustic energy remains in it. It is usually defined as the time for the acoustic intensity to decrease by a factor of one million (60 dB).

**Sound absorption is directly related to reverberation time:** in a small room or hall (volume <1000 m<sup>3</sup>) the empirical formula called the Sabine formula can be used to calculate the reverberation time. Absorption area of the room A is the sum of each surface area S multiplied by its absorption coefficient  $\alpha_w$ . For example, if the desired reverberation time in a classroom is 0.8 seconds and the dimensions of the classroom are 6 x 10 x 3 m and the intension is to use 45 m<sup>2</sup> of absorbing ceiling material, what then is the required absorption coefficient for the product?



### Sabine Formula for Reverberation Time:

$$T = 0.16 \times (V/A)$$

Where:

T = reverberation time, s  
V = volume of the space, m<sup>3</sup>

A = total room absorption =  $\sum \alpha_w S$ , m<sup>2</sup>

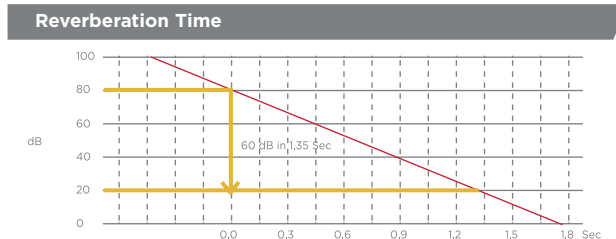
Where:

S = surface area of material

$\alpha_w$  = sound absorption coefficient

**Answer:**  $A = 0.16 \times V/T = 0.16 \times 180/0.8 = 36 \text{ m}^2 \times \alpha = 36/45 = 0.8$

It is generally agreed that acceptable reverberation times should be < 0.4 s for an all inclusive classroom and < 0.5 s for an open plan office. Reverberation time is dependent on the size and shape of the space and the amount, quality, and positioning of absorbing surfaces within the space. The more sound absorption in the room, the lower the reverberation time will be.



## 3-Materials & Room Acoustic Design

Rooms with reasonable amounts of sound absorptive finishes appear quieter and less frenetic than those with little or no sound absorptive treatment. Materials that provide high levels of sound absorption are generally lightweight, porous & thicker which is the direct opposite of the qualities required for sound reduction i.e. massive and impervious

OCTAVE BAND	125	250	500	1000	2000	4000
Concrete	0.02	0.02	0.02	0.02	0.03	0.04
Gypsum board on stud	0.2	0.15	0.1	0.08	0.05	0.05
Windows	0.35	0.25	0.18	0.12	0.07	0.04
50-mm mineral wool slab*	0.2	0.65	1.0	1.0	1.0	1.0
100-mm mineral wool slab*	0.45	0.9	1.0	1.0	1.0	1.0

\* with solid backing

■ The optimum reverberation time for a space depends on the size, materials and type of room. Every object placed within the enclosure can also affect this reverberation time, including people and their belongings.

■ Rooms for speech require a shorter reverberation time than for music. A longer reverberation time can make it difficult to understand speech. If, on the other hand, the reverberation time is too short, tonal balance and loudness may suffer.

■ In industrial halls with a volume exceeding approximately 1000 m<sup>3</sup>, the height is normally much less than both the length and the width of the hall. In this case, the height and the furnishing density have a considerable influence on the sound field. In such a hall, the sound field is generally not diffuse and it is therefore not useful to calculate the reverberation time by using the Sabine formula.

### Remark:

In case of repainting of USGME Mineral Fiber and in terms of sound absorption there will be a small loss, depending upon the tile face pattern (fissures, perforations, scrim etc), the paint type used, and the thickness of the applied coat(s). It is unlikely that the ceiling's sound reduction or attenuation performance will be adversely affected but if the spaces where the ceiling has to be repainted are acoustically critical, then laboratory testing to assess any possible differences in acoustic performance should be conducted on repainted samples.

It should be noted that the repainting of ceiling tiles could also adversely affect their other technical performance factors such as Fire Reaction, Sag, Light Reflectance ... and the implication of such possible changes needs to be considered. Finally it should be appreciated that the repainting of any tiles supplied by USGME will invalidate any warranty that was provided when the tiles were new.



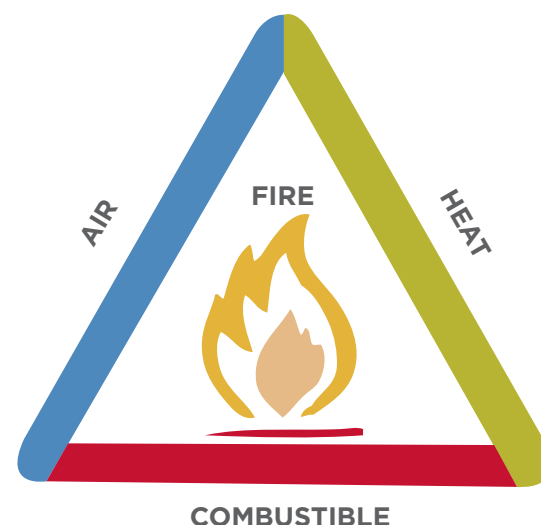
# FIRE SAFETY FOR CEILING

A fire is always a result of an ignition source (heat), oxygen (air) and the presence of a combustible material.

The ignition source is mostly caused by human acts, conscious or by accident. Oxygen is needed to keep the fire going. It is obvious that without combustible material a fire is impossible. To contribute to the prevention of the devastating effects of fires, two regulations apply to construction materials:

**Reaction to fire:** determines whether a material fuels a fire.

**Fire resistance:** indicates how well a building element (or a system) - for a stated period of time - can hold back fire and prevent it from penetrating from one room to another.



A material reaction to fire is defined by Euro classes A1 to F. Classification is based on the tendency of a material to avoid flashover or promote flashover. Flashover determination is based according to above Euro Class fire test methods. Non-combustible materials and products (A1 and A2) will not cause flashover. USGME Mineral Fiber products are classified in Euro class A2- s1, d0 (as per EN ISO 13501-1 classification), which means that they do not contribute to fire.

## Fire Reaction

### 1-The European system

#### Reaction to fire - Euroclass

The reaction to fire testing and classification system for linings and materials in Europe is called Euroclass.

#### Euro class fire test methods:

- Non-combustibility test EN ISO 1182
  - Gross calorific potential test EN ISO 1716
  - Single Burning Item test EN 13823
  - Ignitability test EN ISO 11925-2
- These test methods are referred to as "reaction to fire" tests and the purpose is to evaluate the contribution of products and materials to the early stages of a fire in terms of:
- Ignitability
  - Flame spread
  - Heat release
  - Smoke production
  - Occurrence of flaming droplets/particles

A2- 1      s1, 2      d0 3

1-Main class  
2- Smoke production  
3-Occurrence of flaming droplets/particles

EURO CLASS	EXAMPLE	SMOKE, INDEX	BURNING DROPLETS, INDEX
A1, A2	Stone wool, Mineral Wool, Gypsum board	s1 (least smoke)	d0 (no burning droplets)
B	Painted gypsum board	s2	d1
C	Gypsum board with wallpaper	s3	d2
D	Wood		
E	Fire-retardant EPS		
F	Non-tested materials, EPS		

## 2- The ASTM system

### Reaction to fire

In the US market products are tested and classified according to ASTM standards (American Society for Testing and Materials). Flame spread and smoke production on ceilings, are tested and evaluated according to ASTM E 84 "Surface Burning Characteristics of Building Materials". A smoke production index and flame spread index is then derived from the measurements that are taken.

Acoustic ceiling products are classified according to ASTM E 1264. Three fire classes are defined;

A (the best), B and C. The classes are equivalent to classes I, II and III, respectively, of various building code authorities. All USGME Acoustical Ceiling panels are of Class A. In addition for class A, USGME acoustical Ceiling products do not show evidence of continuous progressive combustion after the test flame has been extinguished.

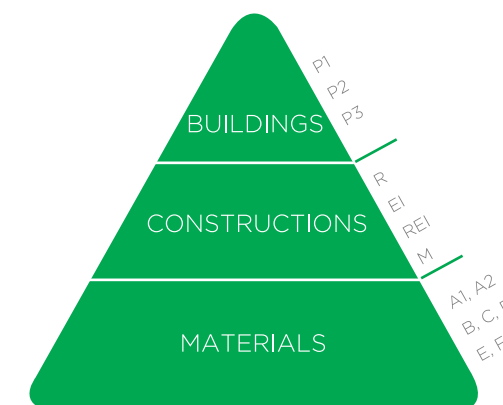
MAX ALLOWED INDEX CLASS	FLAME SPREAD	SMOKE DEVELOPMENT
A	25	50
B	75	-
C	200	-

## Fire Resistance

### 1- The European system

A performance benefit of choosing a suspended ceiling over an open plenum ceiling is an added extra margin of fire safety. The ceiling represents a significant percentage of a room's surfaces, and is critical to controlling the growth of a fire within a room or space.

The Fire Classification as per National Building Codes is not only related to the material type, but it involves the Fire Resistance for the construction system based on the building type, size, fire load and occupancy. Whereas products are classified using their reaction-to-fire behavior, **ROOFS, WALLS, FLOORS, CEILINGS** and also the building systems including air ducts and pipes are classified based on their fire resistance behavior.



The main classes used for the fire resistance classification of building elements are:

R = Load bearing capacity  
E = Integrity (ability to prevent leakage of flames and hot gases)  
I = Insulation (ability to reduce the heat transfer)

# FIRE SAFETY FOR CEILING

The classes are always combined with a time class expressed in minutes. These time classes could be from 15 up to 360 minutes in steps defined in the classification standard EN 13501-2. A separating and load bearing wall could for example be classified as REI 60, which means that it will retain its load bearing capacity as well as its fire separating function during 60 minutes of a fully developed fire. A non-load bearing element will only be given the classification EI or E combined with a time class. The latter case is for example relevant for special fire glazed partitions which will prevent the penetration of flames and hot gases but not provide insulation against heat.

A load bearing column, which is obviously not a separating element, can, accordingly, only have the fire resistance class R combined with a time class.

R	E	I	60
1	2	3	4

1 = Load bearing capacity  
2 = Integrity (ability to prevent leakage of flames and hot gases)  
3 = Insulation (ability to reduce the heat transfer)  
4 = Time class in minutes



## 2- The ASTM system

Fire separating elements, such as fire walls and floor structures, are tested and evaluated in accordance with ASTM E 119 "Fire Tests of Building Construction and Materials". ASTM E119 is an assembly test, not a product test carried out in full scale. This is the test method (UL) use for fire resistance rated assemblies. The test specimens are subjected to a heat exposure that corresponds to a fully developed fire. A UL fire resistant rated ceiling assembly provides a known, specified fire resistance period.

The Fire-Resistance Rating of a Ceiling Assembly (ANSI/UL 263 - ASTM E119 and NFPA 251) represents the degree to which (measured in hours) the entire assembly, not individual components, withstands fire and high temperatures. Specifically, it is an assembly's ability to prevent the spread of fire between spaces while retaining structural integrity.

*Two types of fire-rated construction assemblies pertain to acoustical ceiling systems:*

### Roof/Ceiling Assemblies:

Ceiling system, lighting, HVAC outlets and other penetrants through the ceiling, the plenum, roof support structure and roof assembly including deck, insulation and roofing system.

### Floor/Ceiling Assemblies

Ceiling system, lighting, HVAC outlets and other penetrants through the ceiling, the plenum, structural system, subfloor and finish floor

The Floor could be:

- Concrete Floor
- Wood Deck
- Mezzanine

Only Fire Code ceilings and Grid Types can be used in fire-rated assemblies. Individual components, such as ceiling panels or suspended grid systems, are not assigned fire resistance ratings. You can use only the specific type, size and minimum thickness of Fire Chief Ceilings or grid identified in each assembly. The Fire Chief Ceilings are specially formulated in a variety of textures to provide enhanced resistance against structural failure. The DXL Suspension Systems have patented expansion reliefs, to help maintain structural integrity of the ceiling.

### Remark:

To select the correct UL fire-rated assembly, please refer to [www.usgdesignstudio.com](http://www.usgdesignstudio.com) by:

- Establish the hourly rating needed to meet code requirements.
- Determine the existing or planned building elements, including structural, mechanical, electrical and finish materials, in the fire-rated assembly
- Determine which UL design numbers resemble your building
- Submit the chosen UL design to the code official for approval



## Certified buildings

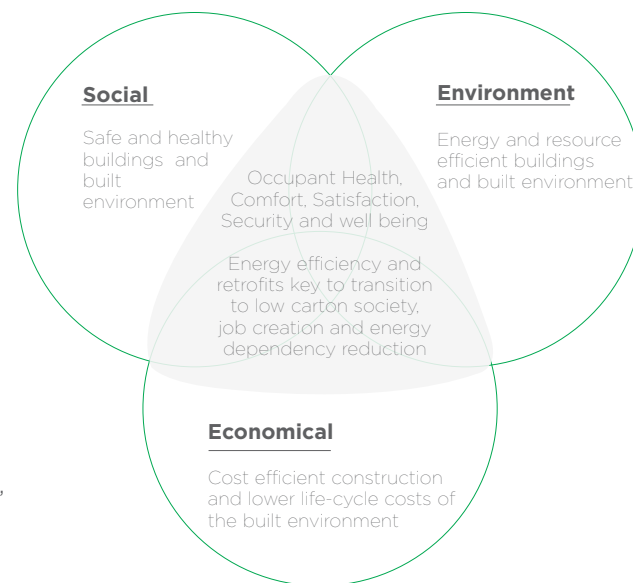
The Green Building certification systems are becoming important tools to encourage and reward social and environmental responsibility and over the last decade, there has been a rapid increase in the number of assessment methods, tools, labels and certificates. The Green Building systems are tools that encourage sustainable design and the use of local materials in the construction, operation and maintenance of buildings. Furthermore, specific requirements have been developed in order to protect the health and well-being of the building occupants.

Here is a brief overview of the most common rating tools:

SYSTEM	YEAR ESTABLISHED	COUNTRY OF ORIGIN	CERTIFIED LEVELS
BREEAM	1990	UK	Pass, Good, Very Good, Excellent, Outstanding
LEED	1998	USA	Certified, Silver, Gold, Platinum
HQE	2005	FRANCE	High, Performing, Very Performing
DGNB	2008	GERMANY	Bronze, Silver, Gold

Whether you are looking to make a more sustainable building or even have it certified through BREEAM, HQE, DGNB, LEED or another program, USGME products can help you achieve your goals. It is no longer enough for buildings to be simply “green”. In today’s world, buildings need to go beyond being simply “green” and become sustainable.

They should contribute to improving social and economic issues such as health, wellbeing, efficiency and life cycle costs. One of the most widely used systems for Green Building Ratings is LEED



## LEED Leadership in Energy and Environmental Design

LEED® is a guideline for building solutions established by the USGBC – Products or Companies are NOT “LEED certified”, however they can assist in obtaining LEED credit/points for a project. LEED certification provides independent, third-party verification that a building, home or community was designed and built using strategies aimed at achieving high performance in Five key areas of human and environmental health:

- Sustainable Site development
- Water Savings
- Energy Efficiency
- Materials Selection
- Indoor Environmental Quality

LEED provides building owners and operators with a framework for identifying and implementing practical and measurable green building design, construction, operations and maintenance solutions.

LEED requirements vary according to the use of the buildings:

- LEED for New Constructions and Major renovations (NC)
- LEED for Schools - New Constructions and Major renovations (Schools)
- LEED for Core and Shell Development (CSD)
- LEED for Commercial Interiors (CI)

As a member of the U.S. Green Building Council (USGBC), USG Ceilings is a leader in the effort to provide acoustical ceiling solutions that promote sustainable design. USG Ceilings contribute actively to sustainability by creating a comfortable acoustic environment, helping increase user productivity and wellbeing, and being highly durable.

USGME Ceilings’ manufacturing processes incorporate sustainable design criteria—from the product’s raw material content to how it’s handled through manufacturing and shipping, as well as through the product life cycle.

## LEED-NC, LEED-CS, LEED FOR SCHOOLS, LEED FOR HEALTHCARE AND LEED FOR RETAIL

(LEED for NC, CS, Schools, LEED for Canada: NC : LEED 2009 LEED for Healthcare: Healthcare Supplement LEED for Retail Supplement 2009)

CREDITS	DESCRIPTION	POSSIBLE POINTS				
		NC	CS	Schools	Healthcare	Retail
Energy & Atmosphere						
EA Prereq.2	Minimum Energy Performance	Req	Req	Req	Req	Req
EA1	Optimize Energy Performance	1-19	3-21	1-19	1-24	1-19
Materials & Resources						
MR 2	Construction Waste Management Sustainably Sourced Materials and products	1-2	1-2	1-2	1-2	1-2
MR3		NA	NA	NA	1-4	NA
MR4	Recycled Content Regional Materials Rapidly Renewable Materials	1-2	1-2	1-2	NA	1-2
MR5		1-2	1-2	1-2	NA	1-2
MR6		1	NA	1	NA	1
Indoor Environment Quality						
IEQ2	Acoustic Environment	NA	NA	NA	1-2	NA
IEQ prereq.3	Minimum Acoustical	NA	NA	Req	NA	NA
IEQ4	Performance	NA	NA	NA	1-4	1-4
IEQ4.6	Low-Emitting Materials	NA	NA	1	NA	NA
	Low-Emitting Materials-					
IEQ8.1	Ceiling and Wall System	1	1	1-3	2	1
IEQ9	Daylight and Views-Daylight	NA	NA	NA	NA	NA
	Enhanced Acoustical Performance					

Recycled Content

USG acoustical ceiling panels contain mineral wool derived from slag, a byproduct of steelmaking, reducing the need to mine and process raw materials and minimizing landfill waste. Many panels also contain recycled paper. Binders are derived from corn and wheat starch, which are renewable agricultural resources. The metal in many of our specialty ceiling and drywall suspension systems includes recycled content. Aluminum offers additional benefits in that it can be fully re-purposed by re-melting and salvaging the metal.

USG ceilings = High Recycled Content (HRC)

The Total Recycled Content includes Post-Consumer & Post-Industrial materials:

(Post-Consumer & Post-Industrial) Per Federal Trade Commission Environmental Marketing Guides. Recycled-content products may contain some pre-consumer waste, some post-consumer waste or both. A product does not have to contain 100 percent recovered materials to be considered "recycled," but the higher the percentage of recycled content, the greater the amount of waste that is diverted from disposal.

We use Weighted Recycled Content to refer to the value defined for LEED MR4 as Post-Consumer content + 1/2 Pre-Consumer (Post-Industrial) content.

■ Post-Industrial (Pre-Consumer) Materials are generated by manufacturers and processors, and may consist of scrap, trimmings and other by-products that were never used in the consumer market. Post-Industrial and Pre-Consumer are one in the same under the USGBC LEED® rating systems.

■ Post-Consumer Material is an end product that has completed its life cycle as a consumer item and would otherwise have been disposed of as a solid waste. Post-consumer materials include recyclables collected in commercial and residential recycling programs, such as office paper, cardboard, aluminum cans, plastics and metals.

■ TVOC (Total Volatile Organic Compound) emission measured per ASTM D 5116, State of Washington allows for 500 ug/m³ (50 ppb).

■ CHPS (Collaborative for High Performance Schools) follow EPA Section 01350 for VOC emission and determination on PASS.

■ Formaldehyde Emissions measured during CHPS testing per Section 01350, for most products CHPS allows 13.5 ppb (Formaldehyde concentration 9 µg/m³).

■ LR (Light Reflectance) tested per ASTM C1477

■ NRC (Noise Reduction Coefficient) tested per ASTM C423

■ CAC (Ceiling Attenuation Class) tested per ASTM 1414

■ Zero emissions Is defined as the quantity less than test chamber background concentrations as required by Section 3.8.4.2 of the "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers, Supersedes previous versions of small-scale environmental chamber testing portion of California Specification 01350, July 15, 2004." Section 3.8.4.3 states " Background concentrations in the empty chamber ventilated at 1.0 air changes per hour shall not exceed 2 g/m³ for any individual VOC, and 25 g/m³ for TVOC."

RELATED USGBC LEED for NC Credits	MR 4.1 & 4.2				EA 1 & EQ 8	EQ Pre 3' & EQ 9¹			EQ 3.2 & EQ 4			MR6	EQ 10¹	MR 5.1/5.2	
PRODUCT FAMILY	Post Consumer		Pre-Consumer		LR	NRC	CAC	Density KG/m³		VOC Content or CHPS	Formaldehyde & VOC Emissions	Rapid Renew	Mold Prevention	Raw Materials (% by wt.) / Percent Compliance for Materials extracted, harvested, or recovered and manufactured locally	% Compliance
	Class A	FC	Class A	FC				Class A	FC						
Fissured Family ⁴	20.0%	6%	12%	40.0%	0.84-0.87	0.5²/0.6³	35-39	240	320	Pass	Low	75%	*	Wet Felt Products manufactured at Dammam, Saudi Arabia. Mineral Wool (Pre-consumer %) from China / USA. Perlite 20-50% (over 500 miles); Recycled Paper (Post – consumer %, Local); Starch (Rapid renewable%; local); and Clay (over 500 miles) 2 – 12%; Embodied Energy 14.6 MJ/kg	26%/13%
Plain Family ⁵	20.0%	N/A	12%	N/A	0.88-0.89	0.15	31-35	240	N/A	Pass	Low	8.0%	*		26.0%
Olympia Micro™ ClimaPlus™	17.0%	6%	22%	40.0%	0.89	0.6²/0.65³	35-39	240	320	Pass	Low	75%	*		24%/13%
Perforated	20.0%	N/A	12%	N/A	0.88	0.5²/0.6³	35-37	240	N/A	Pass	Low	8.0%	*		26.0%
Taiga Hygiene	20.0%	N/A	12%	N/A	0.88	0.15	31-35	240	N/A	Pass	Low	8.0%	YES		26.0%
Laminated Sparta	20.0%	N/A	12%	N/A	0.85	0.15	36	240	N/A	No	Zero	8.0%	N/A		26.0%
Sonata	25%	N/A	80%	N/A	0.88	0.7	37-40	240	N/A	Pass	Low	75%	YES		11.5%
Clean Room™	N/A	6%	N/A	40.0%	0.79	0.15	37	N/A	320	No	N/A	70%	N/A		13.0%
Radar™ Ceramic	N/A	0.0%	N/A	45.0%	0.85	0.4	39	N/A	550	Pass/Zero	Low	2.5%	N/A		2.5%
Halcyon™	39.0%	N/A	1%	N/A	0.88	0.85²/0.95²/1*	24-25	72	N/A	No	N/A	0.0%	N/A		65%
Glacier™	0%	0%	71%	71%	0.7	0.65	35	375	390	Pass/Zero	Zero	12.5%	N/A	Cast Products manufactured at Walworth, WI, USA. Mineral Wool (Pre-consumer %) made on site. Class A panels 10% Plaster of Paris from East Chicago, IN. Starch (Rapid renewable%), and FC panels Clay 14%	0%
Frost™	0%	0%	71%	71%	0.85	0.55 - 0.7	36-40	425	440	Pass/Zero	Zero	12.5%	N/A		0%
Sandrift™	0%	0%	71%	71%	0.83	0.55 - 0.7	38	425	440	Pass/Zero	Zero	12.5%	N/A	X-Technology, manufactured at Cloquet, MN, USA. Mineral Wool (Pre-consumer %) from Red Wing, MN. 5% Polymer Emulsion. Starch (Rapid renewable%), and FC panels Clay 20%	0%
Mars™ Clima Plus™	0%	N/A	75.2%	N/A	0.89	0.7	35	260	N/A	Pass	Low	3%	YES		0%
Mars™ Clima Plus™ High NRC	0%	N/A	77%	N/A	0.89	0.8	35	260	N/A	Pass	Low	3%	YES		0%
Mars™ Clima Plus™ Health Care	0%	N/A	77%	N/A	0.89	0.7 - 0.8	35	260	N/A	Pass	Low	3%	YES		0%
Millenia™ Clima Plus™	0%	N/A	75%	N/A	0.87	0.7 - 0.75	35	275	N/A	Pass	Low	1-3.5%	YES		0%
Eclipse™ Clima Plus™	0%	0%	77%	62%	0.86	0.6 - 0.7	35	250	310	Pass	Low	1-3%	YES	Manufactured at Dammam, Saudi Arabia.	0%
Astro® Clima Plus™	0%	0%	65%	68%	0.86	0.5 - 0.55	35	220	285	Pass	Low	3.5%	YES		0%
DONN® Brand Hot Dip Galvanized Steel Suspension System	25 to 50%	N/A	6 to 8%	N/A									*		N/A
Celebration	68%	N/A	22%	N/A		0.65								US Aluminum, Oakville, ON	0%
Panz	68%	N/A	22%	N/A		0.65								US Aluminum, Oakville, ON	0%
Curvatura	68%	N/A	22%	N/A		N/A								US Aluminum, Oakville, ON	0%
Compasso™	68%	N/A	22%	N/A		N/A								US Aluminum, Oakville, ON	0%
Billo™	0%	N/A	0%	N/A		N/A								US Aluminum, Oakville, ON	0%
Translucent™	0%	N/A	0%	N/A		N/A								US Aluminum, Oakville, ON	0%
TOPO™	0%	N/A	0%	N/A		N/A								US Aluminum, Oakville, ON	0%
Geometrix	68%	N/A	22%	N/A		N/A								US Aluminum, Oakville, ON	0%
Paraline	68%	N/A	22%	N/A		N/A								US Aluminum, Oakville, ON	0%
Libretto™	68%	N/A	22%	N/A		N/A								US Aluminum, Oakville, ON	0%
True™ Wood⁷	0%	N/A	97%	N/A		0.35 - 0.7		770			Zero			St. Augustine, Florida, USA	0%

LEGEND: 1 - For Schools Credit only 2 - For 15mm 3 - For 19mm 4 - Fissured Family include the following patterns: - Cross Fissured - Omni - Radar™ - Favia (Europa) - Favia Acoustic - Plateau (Aurora) - Face Cut

5 - Plain Family include the following patterns: - Taiga - Olympia II™ - Comet Line - Chessboard - Pedestal - Face Cut 6 - For 25mm 7 - MR Credit 7 compliance: Certified Wood \* - Available upon request

Sustainability

The Brundtland commission defined sustainability in 1987 as “Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

In line with current understanding, this definition contains environmental, social and economic aspects of human activities in a global context.

Environmental aspects would include, for example, efficiency of use of primary and other resources, pollution, waste and recycling. Social aspects concern, for example, the well-being of employees, health and safety, contributions to society at large, corporate citizenship and the long-term viability of business. The economic aspects are exemplified by profitability, efficiency, stakeholder added value and ROI.

Requirements for sustainable building are:

- Efficient use of energy
- Minimization of emissions
- Utilization of production waste and recycling
- Ascertaining the service life
- Flexibility

Sustainable consumption means that resource efficiency will continue to be a main driver in developing our operations. The outcome for our customers is less embodied energy and ground-, water- and air emissions in our products - and a cleaner and healthier environment.

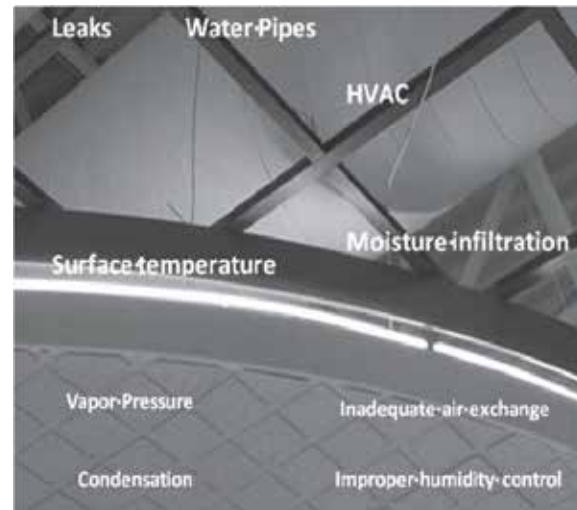


# MOLD PREVENTION

## No growth of micro-organisms

Excessive humidity and moisture in a building can promote the development of microorganisms such as mold or bacteria and cause allergic reactions, respiratory illness or skin problems.

USG address the issue of mold and microbial growth by providing acoustical ceiling tiles treated with a USG-patented antimicrobial treatment that provides broad spectrum control for mold/mildew.



## You control moisture. We help control mold.

### USG's position on ASTM D3273 and ASTM C473

In the absence of specific tests for the broad category of construction products, the industry uses ASTM C473 and D3273. ASTM C473 measures water absorption of panels as a percentage of weight. ASTM D3273 measures resistance to mold growth on the surface of interior coatings rather than building materials. These test results do not represent definitive installed performance in specific project conditions. Products are being classified out of this test per ASTM D3274 where Rate 10 is designated for No Growth of Mold after 4 weeks Incubation. Special Products for Health Care application like Taiga Hygiene & Sonata comes directly with Mold Prevention application per ASTM D3273.

USG is actively working with academic and industry testing leaders to develop a new test method with conditions that more closely approximate real-life conditions. At present, no general European standard exists to measure the development of microorganisms in and on construction materials.

## Products alone cannot control moisture or prevent mold.

All products become susceptible to mold growth under unfavorable conditions. The EPA has found that mold will grow even on stainless steel, glass and all surfaces, given the right conditions.

In addition to mold growth, it is now important to install products that have low impact on Indoor Air Quality on other term on Comfort and Health.



# ENVIRONMENTAL AIR QUALITY

## Health and Comfort

People spend about 90 % of their time indoors. Therefore, from the viewpoint of health, the quality of indoor air is even more important than outdoor air. A good indoor climate reduces the number of illnesses and sick building syndrome symptoms, and improves occupants comfort and productivity. A good Indoor climate is therefore one of the most important goals of design and construction.



## Indoor Air Quality

The Indoor Air Quality is affected equally by heating, ventilation and air conditioning, construction engineering, the quality of construction work, building materials as well as the operation and maintenance of the building. USGME Ceiling panels do not contain asbestos, carcinogens, mutagens or substances toxic to reproduction. It is important to identify the indoor-related time value, which is the time it takes from the installation of a product until the emission of ammonia, formaldehyde, VOC (Volatile Organic Compounds) and particles to decay below specified levels. This is based on odour and mucous irritation thresholds for eyes and the upper respiratory passage as well as standard room considerations. USGME products are classified to have low impact on indoor air quality. Even when installed in a fully furnished room with very little fresh air, the concentrations of VOCs and Formaldehyde are well below acceptable levels.

*All USGME products are classified as E1 products which guarantee that the products are below the lowest EU requirement for Formaldehyde emission.*

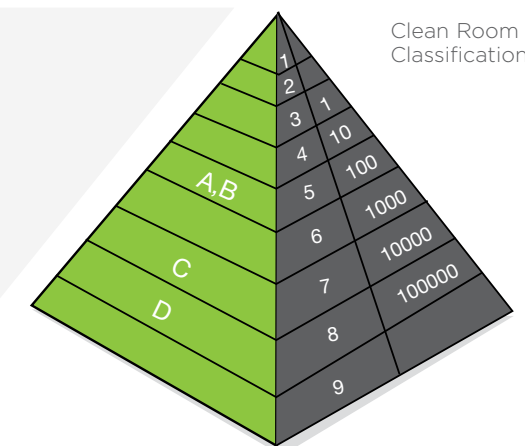
Many USG ceiling panels help to support healthy environments with reduced Volatile Organic Compound (VOC) emissions: Ceiling with Little or No Formaldehyde Requirements as per CHPS (Collaborative For High Performance Schools)

- Zero VOC Emission for All CAST Ceilings (level<2mg or 1.6 ppb)
- Low-Emitting Ceilings (level < 9 µg/m³)
- Meets minimum Standards (state of Washington Level < 50 ppb)

## Cleanliness

The dust particles can also impact on the health of people and be critical in special industries in the pharmaceutical, electronics and food industries and in certain hospital environments.

The international EN ISO 14644-1 standard (classes 1 to 9) is used for the classification of air cleanliness. This is the official standard, but the US Federal standard 209E (classes 1 to 100 000) is also widely spread.



## Clean Room™ Classification

FED STD 209D/209E		ISO 14644-1	Industry Application Areas		
English	Metric	ISO Class			
-	-	1			
-	-	2			
1	M1.5	3	Micro-electronics		
10	M2.5	4			
100	M3.5	5		Pharmaceutical	
1,000	M4.5	6			
10,000	M5.5	7			
100,000	M6.5	8		Electronics and Food	
-	-	9			Automotive and Space

A selective number of USGME products are certified class ISO 5 meeting the requirement of demanding clean rooms in regard to particle emissions.

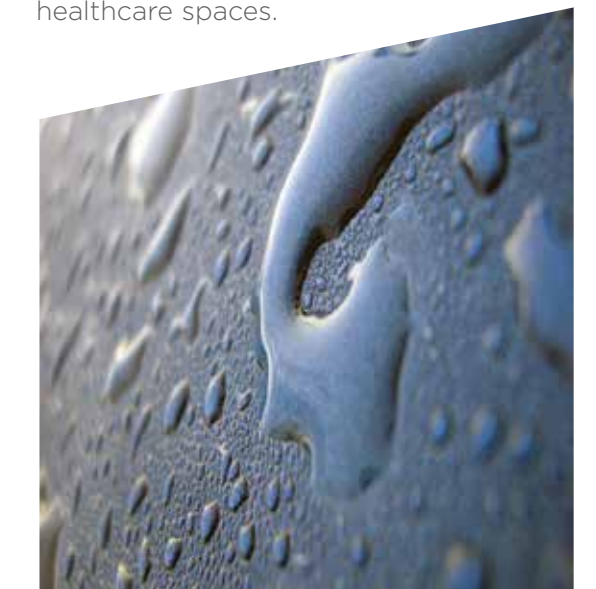
## Water Shield

In its continuous improvement, USGME offers an invention in mineral fiber ceiling tiles.

Normally, the ceiling tiles have a tendency to stain when in contact with water due to condensation on pipes and duct work above the ceiling. The condensate can drip into the backside of the ceiling tiles and migrate to the visible side of the tile. The water droplets can leach tannin from recycled materials and other cellulosic based materials and staining agent from the paint surface of the tile.

USG's new invention provides an economical solution to minimize water stains at the visible face of the panel. This invention creates a barrier to water droplets at the backside of the panel allowing the droplet to evaporate before it can migrate through the panel. This treatment provides a Water Shield to mineral fiber tiles in a practical and cost effective way.

Mars™ & Halcyon™ for Health Care application features with Water repellent membrane on it's finished surface for more durable and safety with common disinfectants. It Exceeds FGI guidelines for healthcare applications and meets USDA/FSIS guidelines for use in food-processing areas. It Achieve FDA standards for being smooth, durable and easily cleanable- all of which can enhance the indoor environmental quality of your healthcare spaces.





# THERMAL RESISTANCE

## THERMAL RESISTANCE

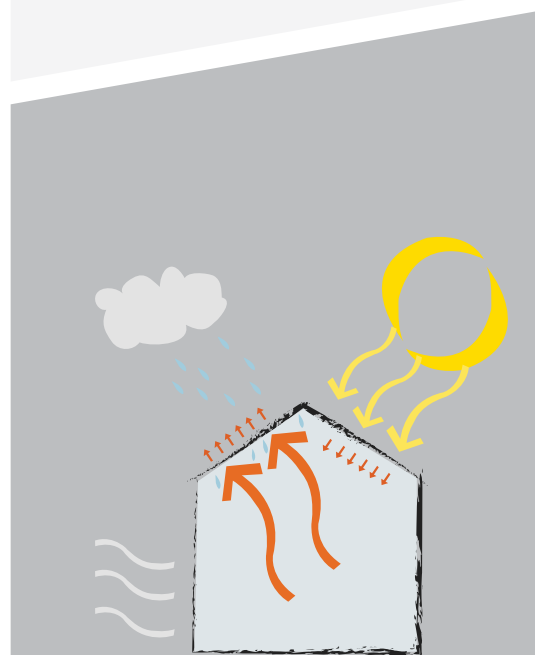
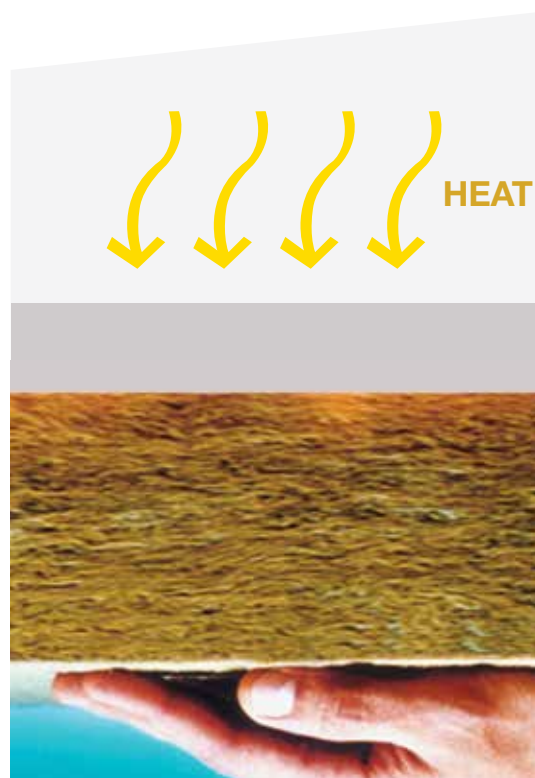
The Thermal Resistance is the resistance of a material or assembly to the flow of heat. For insulating purposes, high "R" values are the most desirable. The R-value as measured at an average temperature of 24°C(75°F) is listed for each panel. The R Value of our ceiling panels is a combination of Thermal Conductivity, measured according to norm EN12667 & ASTM C518 and the thickness of the material.

It is calculated as follows:  $R = T / \lambda$ , where  $\lambda$  is the Thermal Conductivity of a material & T Thickness in meter and is expressed in m²KW.

The thermal conductivity of our Mineral Fiber Materials wet felted is  $\lambda = 0.064$  W/mK and 0.034 W/mK for our Fiber Glass base materials. The smaller the  $\lambda$ -value, the better the thermal insulation of the material is.

The U value (Thermal Transmittance) is the reverse of R value (Thermal Resistance). However, U is usually done for a whole system to evaluate the heat loss and should not be taken for a single component.

So, USGME Ceiling is not only being seen for its Acoustical & Fire properties, it contributes in the total thermal insulation solution of the space taking into account building physics (e.g. condensation, avoiding thermal bridges, etc). The benefit of the intrinsic thermal insulation capacity of Slag Wool & Fiber Glass base material, as a major component of USGME ceiling tiles, can be used efficiently when shopping malls are built over parking garages as well as in flat-roof buildings or in old buildings with cold cellars.





# SPECIALTY CEILING

Because it is one of the most visible architectural features in a space, Specialty ceiling plays a critical role in the overall aesthetic of any project. It defines its identity, and imprints long lasting impression.

## Metal Systems



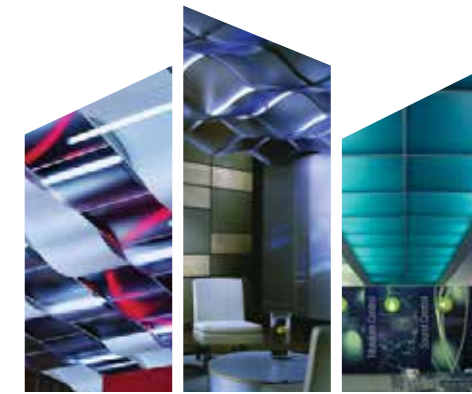
Paraline Pixels Libretto™ Compasso™ Compasso Slim Curvatura

## Metal Panels



Panz Celebration Wood Tones Geometrix™

## Luminous Panels & Systems



Billo™ Topo™ Translucents™

## Wood Panel



True™ Wood

## Acoustical Panel & Cast Gypsum Systems



Quadro Cadre Renditions Animation Renditions Boundaries Renditions Custom

# SPECIALTY CEILING



CURVATURA



TRANSLUCENT  
CANOPIES



COMPASSO™



CELEBRATION  
PANELS AND  
PLANKS



TOPO™-3D



BILLO™



GEOMETRIX™



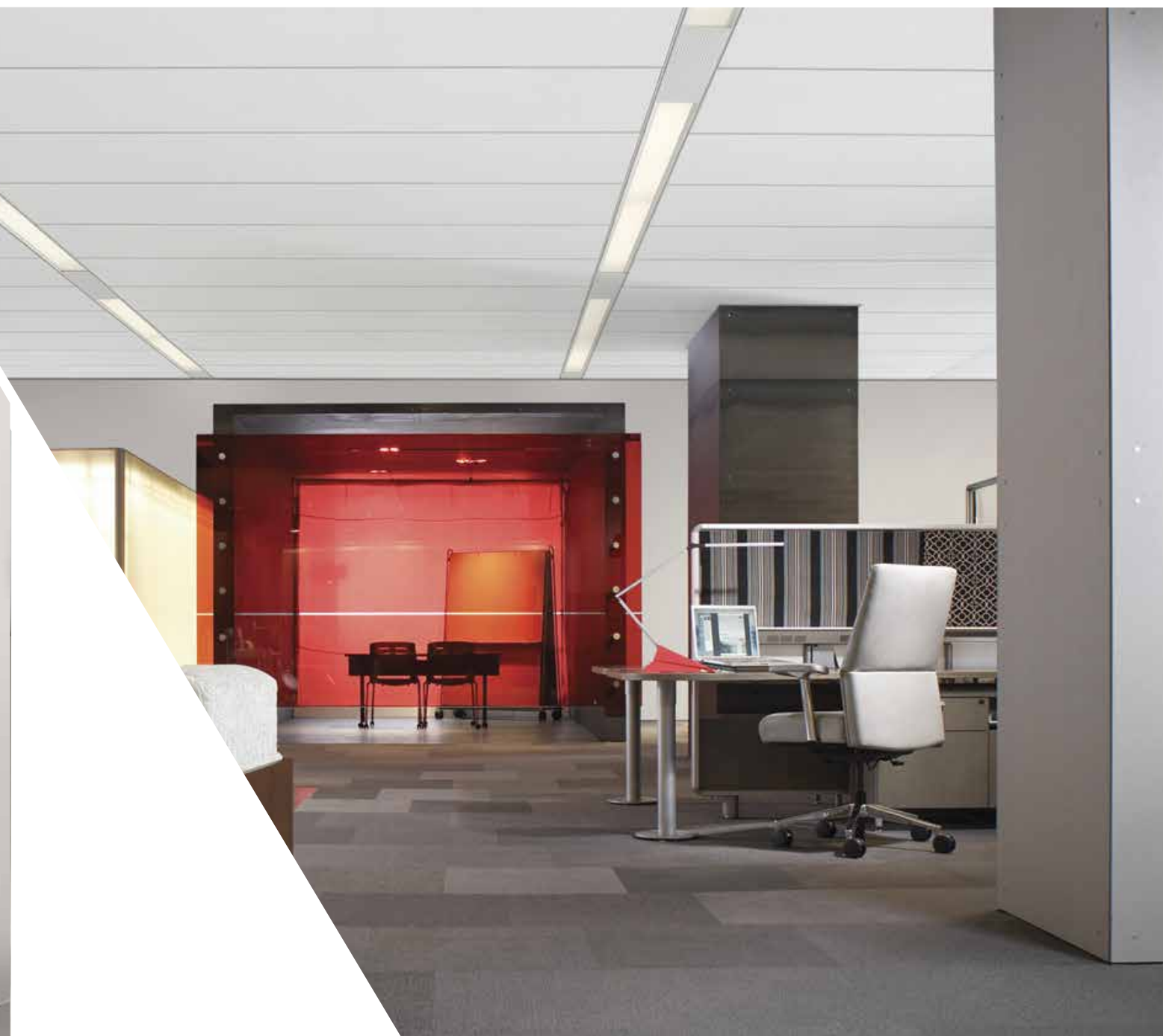
LIBRETTO™  
GRIDLESS SYSTEM

Billo™ is almost similar to Topo™, but can be installed with DONN® suspension systems. It consists of curved polycarbonate Lexan panels.



## LOGIX™ Integrated Ceiling Systems

Introducing the revolutionary LOGIX™ Integrated Ceiling systems. Where aesthetics and performance come together to transform acoustical ceilings into a tailored design element that integrates overhead functions, systems and components. Designed to maximize lighting, acoustics and energy savings, LOGIX™ flexibility in layouts and configurations gives everyone from the architect to the designer, from the contractor to construction crew, the freedom and coordination they've always wanted. So you can create, explore, experiment, and express a vision that is uniquely your own.



### MODERN DESIGN MEETS FORWARD THINKING

Revolutionary LOGIX™ Integrated Ceiling Systems combine the best of aesthetics and performance by transforming the ceiling plane into a dramatic design element. Giving you the freedom to create elegant, modern and sophisticated ceilings that match your vision without the constraints of traditional acoustical ceiling designs.

For more information, visit [usg.com/logix](http://usg.com/logix)

LOGIX™ Integrated Ceiling Systems: USG™ Drywall Suspension System (Left)  
MARS™ Planks with CLIMAPLUS™ Superior Performance/  
DONN® CENTRICITEE™ DXT™ Suspension System (Right)

# CHESSBOARD



### STANDARD SPECIFICATION Features & Benefits:

- Fine non directional Face Cut panels with 529 squares
- Shallow geometric square or linear face cuts disguise the grid for a monolithic appearance
- Scored with one face style and smooth surface without any Perforation
- Low sound absorption, ideal where increase room reverberation is desired
- Mid-range sound attenuation, ideal for general commercial construction
- Easy to trim and install

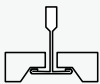
### Applications:

- Schools
- Corridors
- Waiting Rooms
- Leisure
- General Offices
- Retail Stores



ITEM	SIZE	EDGE DETAIL	NRC	CAC	LR	RECYCLED CONTENT	VOC EMISSION	COST
CHSR669	600*600*19	SLT	0.3	35	83%	32%	Low	\$\$
CHSR229	610*610*19							

DX /DXL SLT  
Edge



## Part 2- PRODUCT

### Product Specification Details | Acoustical Ceilings | 09 51 13

#### 2.1 GENERAL

Provide Acoustical Ceiling Material manufactured to meet requirements of this specification in accordance with ASTM E 1264 and EN 13964.

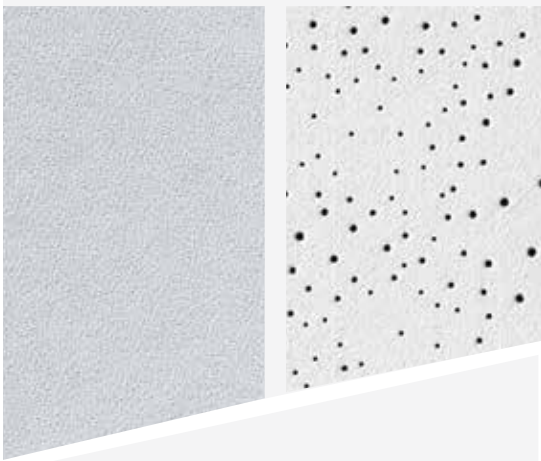
#### 2.2 MATERIALS

Acoustical Ceiling Units:

1. Type III, Form 2, Pattern [E] [K]
2. Fine non-directional face cut panel
3. Size 19 mm thick x [600 x 600]
4. Edge Detail Reveal (SLT)
5. Noise Reduction Coefficient (NRC) [0.3]
6. Ceiling Attenuation Class (CAC) [35]
7. Light Reflectance Coefficient (LR) 0.83
8. Recycled Content [32%]
9. Color White similar to RAL 9010
10. Surface Burning Characteristics per ASTM E 84 Class A, Flame Spread: 5, Smoke development: 20
11. Thermal Resistance:  $0.31 \text{ m}^2 \text{ }^\circ\text{K/W}$  - R 1.8 (19mm)
12. Humidity Resistance Maximum 95% RH / 40°C for Clima Plus
13. Weight: 4.5kg/m<sup>2</sup>
14. Mold Prevention application available upon request per ASTM D3273-1, Rate 10 per D3274
15. Relevant LEED Credit: EA Credit 1 | MR Credit 4| MR Credit 5 | MR Credit 6 | IEQ Credit 3 | IEQ Credit 3.2 | IEQ Credit 4.6 | IEQ Credit 8.1 | IEQ Credit 9
16. Manufacturer, subject to compliance with USGME terms and Conditions
17. Product Name [Chessboard]



# CLEAN ROOM™



### STANDARD SPECIFICATION Features & Benefits:

- Have an embossed, vinyl-laminated face with sealed back and edges for use in Class 100 (cross reference to Class 5 per ISO 14644-1) or 10M-100M clean rooms as per Federal standard 209E for Classification by Airborne particles
- Made with Fire code base materials to meet life safety codes
- Available in un-perforated finish for Kitchen & food preparation areas and perforated to meet acoustical requirements in hospitals
- Classified HRC panels (High Recycled Content) which is greater than 50%
- Required to be used with CE grid (gasketed tee flanges) for Operating theaters & MRI rooms
- Certified USDA/FSIS biobased product requirements for food processing areas where Clean Room™ has achieved both Bio-Preferred initiatives: Federal Procurement Preference and Certified Product Labeling
- Cleanroom classified, meets Federal Spec. 209E for non-perforated "Clean Room™ and work station Requirements, controlled environment"
- Washable, scrubbable resistance
- High humidity resistant and anti-mold, mildew growth

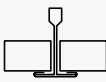
### Applications:

- Sterile rooms
- Laboratories
- Food/ beverage processing (non-perforated only)
- Emergency rooms
- Toilet/Wet rooms
- Operating/MRI rooms

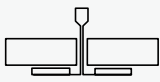


ITEM		SIZE	EDGE DETAIL	NRC	CAC	LR	RECYCLED CONTENT	VOC EMISSION	COST
CLX665		600*600*15	SQ	0.15	37	80%	52%	N/A	\$\$\$\$
CLX225		610*610*15							
56060		610*610*15	SQ	0.55	35	79%	52%	N/A	\$\$\$\$
56090		610*1210*15							

DX/DXL SQ  
Edge



CE SQ  
Edge



## Part 2- PRODUCT

### Product Specification Details | Acoustical Ceilings | 09 51 13

#### 2.1 GENERAL

Provide Acoustical Ceiling Material manufactured to meet requirements of this specification in accordance with ASTM E 1264 and EN 13964.

#### 2.2 MATERIALS

Acoustical Ceiling Units:

1. Type X, Pattern [C] [G] [I]
2. Embossed Vinyl-faced with field cut-edges sealed with white latex paint
3. Size 15mm thick x [600 x 600]
4. Edge Detail Trim (Square)
5. Noise Reduction Coefficient (NRC) [0.15] [0.55]
6. Ceiling Attenuation Class (CAC) [35-37]
7. Light Reflectance Coefficient (LR) 0.8
8. Recycled Content [52%]
9. Color White similar to RAL 9010
10. Surface Burning Characteristics per ASTM E 84 Class A, Flame Spread: 5, Smoke development: 20
11. Underwriters Laboratories Inc. Fire-Resistance (ASTM E 119) ANSI/UL 263 Time-Rated Assembly [3hrs] [G213]
12. Thermal Resistance: 0.23 m<sup>2</sup> °K/W - R 1.3 (15mm)
13. Humidity Resistance Maximum 95% RH / 40°C
14. Weight: 5.25 kg/m<sup>2</sup>
15. Mold Prevention: Inherent to Mold/Mildew growth
16. Relevant LEED Credit: EA Credit 1 | MR Credit 4 | MR Credit 5 | MR Credit 6 | IEQ Credit 3 | IEQ Credit 3.2 | IEQ Credit 4.6 | IEQ Credit 8.1 | IEQ Credit 9
17. Manufacturer, subject to compliance with USGME terms and Conditions
18. Product Name [Clean Room™]

# COMET LINE

## STANDARD SPECIFICATION Features & Benefits:

- Fine directional Face Cut panels
- Shallow linear face cuts that enable the creation of subtle shadow effect
- Scored with one face style 23 lines and smooth surface without any Perforation
- Low sound absorption, ideal where increased room reverberation is desired
- Easy to trim and install

## Applications:

- Schools
- Corridors
- Waiting Rooms
- Theaters
- General Offices
- Retail stores



ITEM	SIZE	EDGE DETAIL	NRC	CAC	LR	RECYCLED CONTENT	VOC EMISSION	COST
CSR669	600*600*19	SLT	0.3	35	83%	32%	Low	\$\$
CSR229	610*610*19							

DX/ DXL  
SLT Edge



## Part 2- PRODUCT

### Product Specification Details | Acoustical Ceilings | 09 51 13

#### 2.1 GENERAL

Provide Acoustical Ceiling Material manufactured to meet requirements of this specification in accordance with ASTM E 1264 and EN 13964.

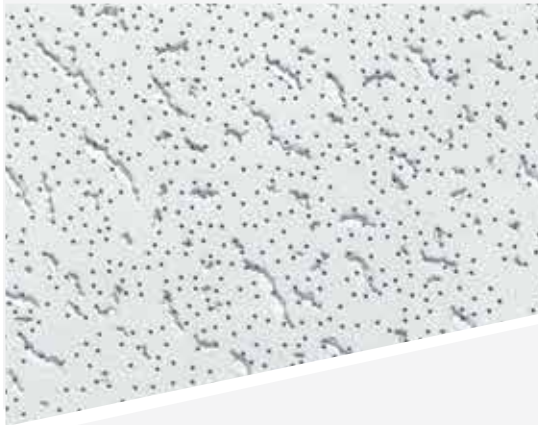
#### 2.2 MATERIALS

Acoustical Ceiling Units:

1. Type III, Form 2, Pattern [E] [K]
2. Accessible acoustical ceiling system with fine directional face cut panels
3. Size 19mm thick x [600 x 600]
4. Edge Detail Reveal (SLT)
5. Noise Reduction Coefficient (NRC) [0.3]
6. Ceiling Attenuation Class (CAC) [35]
7. Light Reflectance Coefficient (LR) 0.83
8. Recycled Content [32%]
9. Color White similar to RAL 9010
10. Surface Burning Characteristics per ASTM E 84 Class A, Flame Spread: 5, Smoke development: 20
11. Thermal Resistance:  $0.31 \text{ m}^2 \text{ }^\circ\text{K/W}$  - R 1.8 (19mm)
12. Humidity Resistance Maximum 95% RH / 40°C for Clima Plus
13. Weight:  $4.5 \text{ kg/m}^2$
14. Mold Prevention application available upon request per ASTM D3273-1, Rate 10 per D3274
15. Relevant LEED Credit: EA Credit 1 | MR Credit 4 | MR Credit 5 | MR Credit 6 | IEQ Credit 3 | IEQ Credit 3.2 | IEQ Credit 4.6 | IEQ Credit 8.1 | IEQ Credit 9
16. Manufacturer, subject to compliance with USGME terms and Conditions
17. Product Name [Comet Line]



# CROSS FISSURED



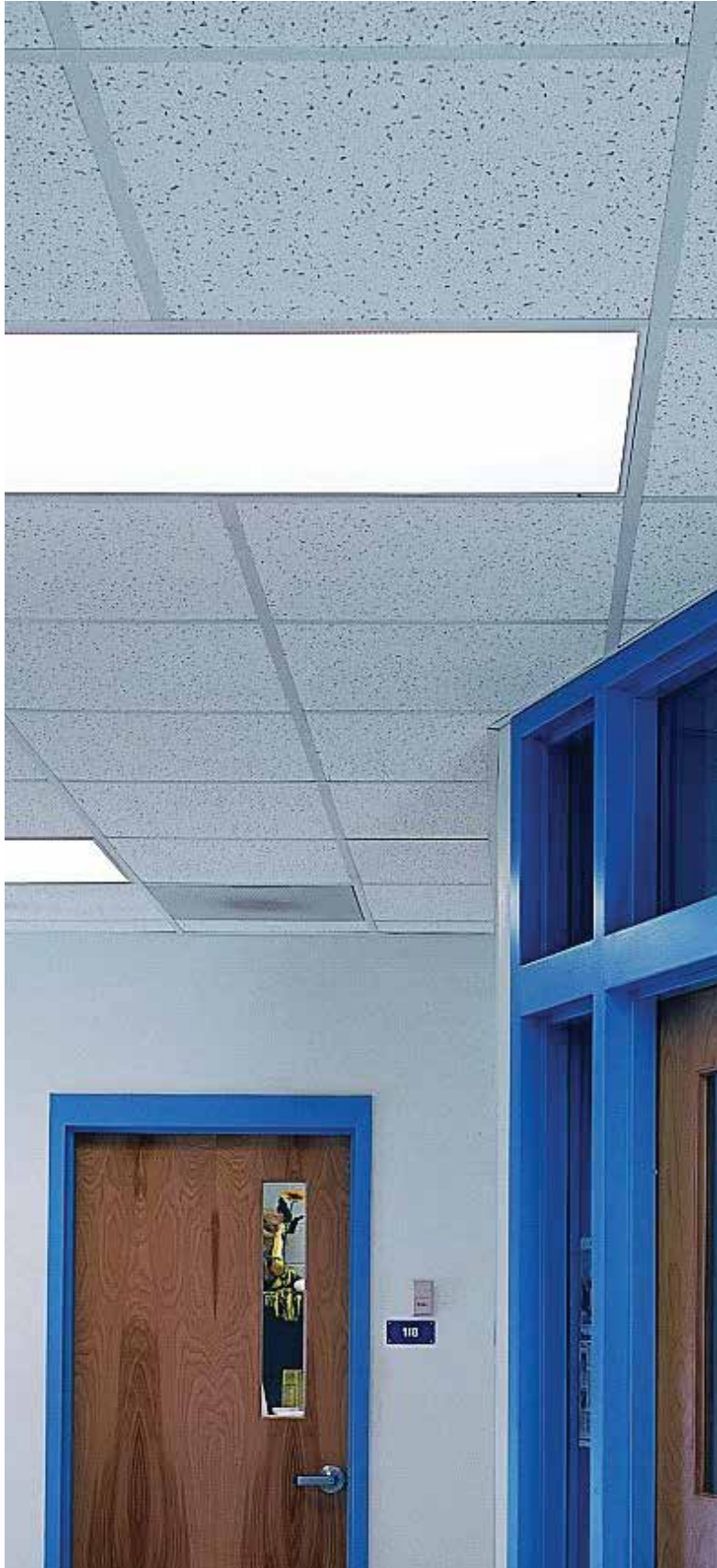
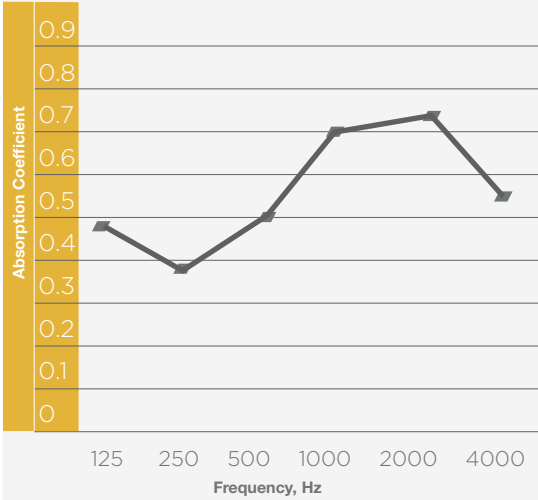
### STANDARD SPECIFICATION Features & Benefits:

- Economical, all-purpose ceiling pattern available in various panel sizes
- Directionally fissured panels excellent choice for large ceiling areas
- Mid-range sound absorption and sound attenuation which make it ideal for Schools, Corridors and general commercial stores
- Available in 19mm Thickness for NRC value 0.6
- Optional FIRECODE™ formulation designed to meet life safety codes
- Meets the emission test criteria as low emitting per standards established by the Collaborative for High-Performance Schools (CHPS) and following ASTM D5116 testing method

### Features & Benefits:

- Education
- Corridors/Hallways
- Mass Merchandisers
- Convenience Stores
- Offices
- Warehouse

### Cross Fissured Sound Absorption - 19mm



ITEM	SIZE	EDGE DETAIL	NRC	CAC	LR	RECYCLED CONTENT	VOC EMISSION	COST
CFS665	600*600*15	SQ	0.5	35	82%	32%	Low	\$
CFS225	610*610*15							
CFSR665	600*600*15	SLT	0.5	35	82%	32%	Low	\$
CFSR225	610*610*15							
CFC625	600*1200*15	SQ	0.5	35	82%	32%	Low	\$
CFC245	610*1210*15							
CFX665	600*600*15	SQ	0.5	35	82%	46%	Low	\$\$
CFX225	610*610*15							
CFS669	600*600*19	SQ	0.6	37	82%	32%	Low	\$\$
CFS229	610*610*19							
CFX669	600*600*19	SQ	0.6	37	82%	32%	Low	\$\$\$
CFX229	610*610*19							

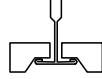
DX/DXL SQ  
Edge



DXT SQ  
Edge



DX/DXL SLT  
Edge



## Part 2- PRODUCT

### Product Specification Details | Acoustical Ceilings | 09 51 13

#### 2.1 GENERAL

Provide Acoustical Ceiling Material manufactured to meet requirements of this specification in accordance with ASTM E 1264 and EN 13964.

#### 2.2 MATERIALS

Acoustical Ceiling Units:

1. Type III, Form 2, Pattern [C] [D]
2. Directional fissured wet-felted
3. Size 15,19 mm thick x [600 x 600] [600 x 1,200]
4. Edge Detail Trim (Square), Reveal (SLT)
5. Noise Reduction Coefficient (NRC) [0.5] [0.6]
6. Ceiling Attenuation Class (CAC) [35] [37]
7. Light Reflectance Coefficient (LR) 0.82
8. Recycled Content [32%] [46%]
9. Color White similar to RAL 9010
10. Surface Burning Characteristics per ASTM E 84 Class A, Flame Spread: 5, Smoke development: 20
11. Reaction to Fire: Euroclass A2-s1,d0 in accordance with EN-13501-1
12. Thermal Resistance: 0.23 m<sup>2</sup> °K/W - R 1.3 (15mm), 0.31 m<sup>2</sup> °K/W - R 1.8 (19mm)
13. Humidity Resistance Maximum 95% RH / 40°C
14. Weight: 3.55 kg/m<sup>2</sup> (Regular / ClimaPlus) 15mm, 5 kg/m<sup>2</sup> (Fire code) 15mm, 4.5 kg/m<sup>2</sup> (Regular / ClimaPlus) 19mm, 6.85 kg/m<sup>2</sup> (Fire code) 19mm
15. Mold Prevention application available upon request per ASTM D3273-1, Rate 10 per D3274
16. Relevant LEED Credit: EA Credit 1 | MR Credit 4| MR Credit 5 | MR Credit 6 | IEQ Credit 3 | IEQ Credit 3.2 | IEQ Credit 4.6 | IEQ Credit 8.1 | IEQ Credit 9
17. Manufacturer, subject to compliance with USG terms and Conditions
18. Product Name [Cross Fissured]

# DESIGNER SERIES



## STANDARD SPECIFICATION Features & Benefits:

- 360 ° non directional pattern with a fresh, clean appearance offers fast, economical installation
- Shallow geometric square face cuts disguise the grid for a monolithic appearance, thus making it appear part of the overall ceiling design
- Face Scores create illusion of a smaller-scaled ceiling system
- Available into 4 different face style ranging from smooth to textured surfaces
- Low to Mid-range sound attenuation, ideal for general commercial construction
- Fire resistant system options, for life safety and protection of property
- Easy to trim and install

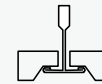
## Applications:

- Reception
- Shopping Centers
- Waiting Rooms
- Café/Restaurants
- General Offices
- Luxury Retail stores



ITEM	SIZE	EDGE DETAIL	NRC	CAC	LR	RECYCLED CONTENT	VOC EMISSION	COST
QCFSR669	600*600*19	SLT	0.15	35	83%	32%	Low	\$\$\$
QCFSR229	610*610*19							
QPSR669	600*600*19	SLT	0.15	35	83%	32%	Low	\$\$\$
QPSR229	610*610*19							
QBCR669	600*600*19	SLT	0.15	37	83%	32%	Low	\$\$\$
QBCR229	610*610*19							
QBCR669 (36/15)	600*600*19	SLT	0.15	35	83%	32%	Low	\$\$\$\$
QBCR229 (36/15)	610*610*19							
QOLPCR669 (36/15)	600*600*19	SLT	0.65	37	88%	39%	Low	\$\$\$\$
QOLPCR229 (36/15)	610*610*19							
QRDCR669 (36/15)	600*600*19	SLT	0.6	35	84%	32%	Low	\$\$\$\$
QRDCR229 (36/15)	610*610*19							
QRDCR669 (81/5)	600*600*19	SLT	0.6	35	84%	32%	Low	\$\$\$\$
QRDCR229 (81/5)	610*610*19							

DX/DXL SLT  
Edge



## Part 2- PRODUCT

### Product Specification Details | Acoustical Ceilings | 09 51 13

#### 2.1 GENERAL

Provide Acoustical Ceiling Material manufactured to meet requirements of this specification in accordance with ASTM E 1264 and EN 13964.

#### 2.2 MATERIALS

Acoustical Ceiling Units:

1. Type III, Form 2, Pattern [C] [D] [E] [G] [K]
2. Fine non-directional fissured panel
3. Size 19mm thick x [600 x 600]
4. Edge Detail Trim (Square), Reveal (SLT)
5. Noise Reduction Coefficient (NRC) [0.15] [0.65]
6. Ceiling Attenuation Class (CAC) [35] [37]
7. Light Reflectance Coefficient (LR) 0.83, 0.88
8. Recycled Content [32-39%]
9. Color White similar to RAL 9010
10. Surface Burning Characteristics per ASTM E 84 Class A, Flame Spread: 5, Smoke development: 20
11. Thermal Resistance: 0.31 m<sup>2</sup> °K/W - R 1.8 (19mm)
12. Humidity Resistance Maximum 95% RH / 40°C for Clima Plus
13. Weight: 4.5 – 5 kg/m<sup>2</sup>
14. Mold Prevention application available upon request per ASTM D3273-1, Rate 10 per D3274
15. Relevant LEED Credit: EA Credit 1 | MR Credit 4| MR Credit 5 | MR Credit 6 | IEQ Credit 3 | IEQ Credit 3.2 | IEQ Credit 4.6 | IEQ Credit 8.1 | IEQ Credit 916. Manufacturer, subject to compliance with USGME terms and Conditions
17. Product Name [Design Series]





## STANDARD SPECIFICATION Features & Benefits:

- Finest Fissuring pattern among USGME product portfolio
- Elegant non directional pattern for a fresh, clean and white appearance
- Economical series ideal for Retail Business and general commercial stores
- High light reflectance ceilings that can reduce the light fixtures needed and maintaining good indoor environmental air-quality
- Meets the emission test criteria as low emitting per standards established by the Collaborative for High-Performance Schools (CHPS) and following ASTM D5116 testing method

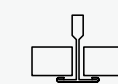
## Applications:

- Groceries
- Corridors/Hallways
- Basements
- Administration Offices
- Rest Areas
- Cafeterias
- Warehouse

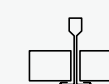


ITEM	SIZE	EDGE DETAIL	NRC	CAC	LR	RECYCLED CONTENT	VOC EMISSION	COST
FNS665	600*600*15	SQ	0.25	35	85%	32%	Low	\$
FNS225	610*610*15							
FNSR665	600*600*15	SLT	0.25	35	85%	32%	Low	\$
FNSR225	610*610*15							

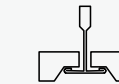
DX/DXL  
SQ Edge



DXT SQ  
Edge



DX/DXL SLT  
Edge



## Part 2- PRODUCT

### Product Specification Details | Acoustical Ceilings | 09 51 13

#### 2.1 GENERAL

Provide Acoustical Ceiling Material manufactured to meet requirements of this specification in accordance with ASTM E 1264 and EN 13964.

#### 2.2 MATERIALS

Acoustical Ceiling Units:

1. Type III, Form 2, Pattern [D] [E]
2. Fine non-directional Fine fissured panel
3. Size 15 mm thick x [600 x 600]
4. Edge Detail Trim (Square), Reveal (SLT)
5. Noise Reduction Coefficient (NRC) [0.25]
6. Ceiling Attenuation Class (CAC) [35]
7. Light Reflectance Coefficient (LR) 0.85
8. Recycled Content [32%]
9. Color White similar to RAL 9010
10. Surface Burning Characteristics per ASTM E 84 Class A, Flame Spread: 5, Smoke development: 20
11. Thermal Resistance:  $0.23 \text{ m}^2 \text{ }^\circ\text{K/W}$  - R 1.3 (15mm)
12. Weight:  $3.55 \text{ kg/m}^2$  (Regular) 15mm
13. Mold Prevention application available upon request per ASTM D3273-1, Rate 10 per D3274
14. Relevant LEED Credit: EA Credit 1 | MR Credit 4 | MR Credit 5 | MR Credit 6 | IEQ Credit 3 | IEQ Credit 3.2 | IEQ Credit 4.6 | IEQ Credit 8.1 | IEQ Credit 9
15. Manufacturer, subject to compliance with USGME terms and Conditions
16. Product Name [Favia]
- Reaction to Fire: Euroclass A2-s1,d0 in accordance with EN-13501-1

# FAVIA ACOUSTIC



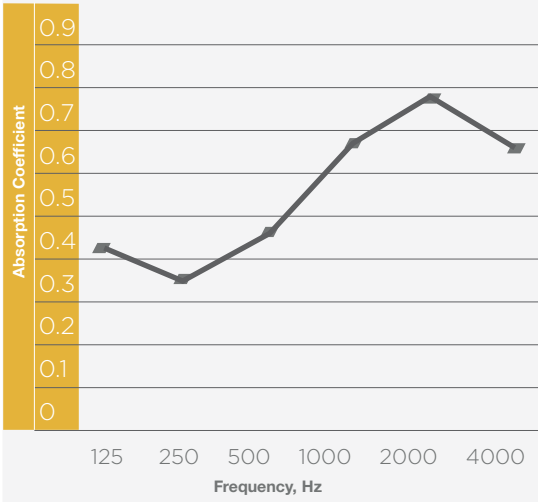
### STANDARD SPECIFICATION Features & Benefits:

- Micro-Fissured non directional pattern for a cleaner, whiter appearance
- Elegant light-textured panels with high Light reflectance
- Mid-range sound absorption and sound attenuation which make it ideal for Schools, Corridors and general commercial stores
- Available in 19mm Thickness for NRC value 0.6
- Meets the emission test criteria as low emitting per standards established by the Collaborative for High-Performance Schools (CHPS) and following ASTM D5116 testing method

### Applications:

- Education
- Corridors/Hallways
- Grocery Stores
- Administration Offices
- Restaurants
- Warehouse

### Favia Acoustic Sound Absorption - 19 mm:



ITEM	SIZE	EDGE DETAIL	NRC	CAC	LR	RECYCLED CONTENT	VOC EMISSION	COST
FAS665	600*600*15	SQ	0.5	35	85%	32%	Low	\$
FAS225	610*610*15							
FASR665	600*600*15	SLT	0.5	35	85%	32%	Low	\$
FASR225	610*610*15							
FAS669	600*600*19	SQ	0.6	37	85%	32%	Low	\$\$
FAS229	610*610*19							
FASR669	600*600*19	SLT	0.6	37	85%	32%	Low	\$\$
FASR229	610*610*19							

DX/DXL  
SQ Edge



DXT SQ  
Edge



DX/DXL SLT  
Edge



## Part 2- PRODUCT

### Product Specification Details | Acoustical Ceilings | 09 51 13

#### 2.1 GENERAL

Provide Acoustical Ceiling Material manufactured to meet requirements of this specification in accordance with ASTM E 1264 and EN 13964.

#### 2.2 MATERIALS

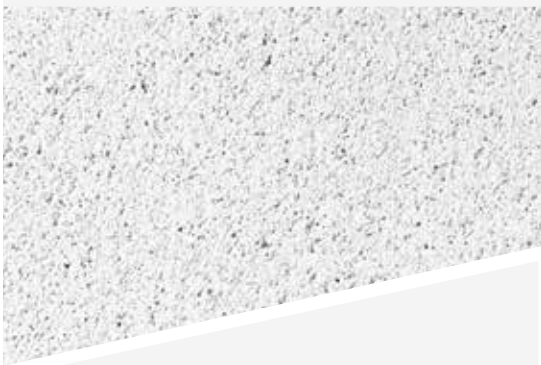
Acoustical Ceiling Units:

1. Type III, Form 2, Pattern [C] [D] [E]
2. Fine non-directional fissured panel
3. Size 15,19 mm thick x [600 x 600]
4. Edge Detail Trim (Square), Reveal (SLT)
5. Noise Reduction Coefficient (NRC) [0.5] [0.6]
6. Ceiling Attenuation Class (CAC) [35] [37]
7. Light Reflectance Coefficient (LR) 0.85
8. Recycled Content [32%]
9. Color White similar to RAL 9010
10. Surface Burning Characteristics per ASTM E 84 Class A, Flame Spread: 5, Smoke development: 20
11. Thermal Resistance: 0.23 m<sup>2</sup> °K/W - R 1.3 (15mm), 0.31 m<sup>2</sup> °K/W - R 1.8 (19mm)
12. Weight: 3.55 kg/m<sup>2</sup> (Regular) 15mm, 4.5 kg/m<sup>2</sup> (Regular) 19mm
13. Mold Prevention application available upon request per ASTM D3273-1, Rate 10 per D3274
14. Relevant LEED Credit: EA Credit 1 | MR Credit 4 | MR Credit 5 | MR Credit 6 | IEQ Credit 3 | IEQ Credit 3.2 | IEQ Credit 4.6 | IEQ Credit 8.1 | IEQ Credit 9
15. Manufacturer, subject to compliance with USGME terms and Conditions
16. Product Name [Favia Acoustic]



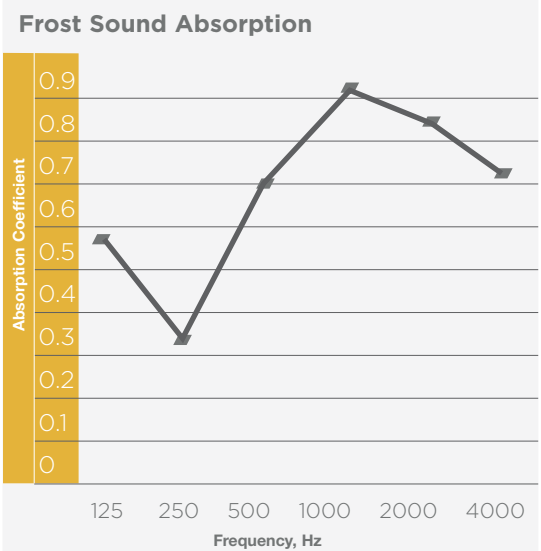
# FROST™

[ IMPORTED ]



**STANDARD SPECIFICATION Features & Benefits:**

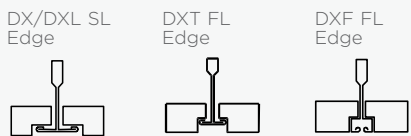
- Manufactured in CAST process that creates natural, subtle texture variation which is a distinguishing feature of these products
- Delicate surface texture for a soft, light look
- Fine Textured and nearly to times more impact-resistant than typical fine-textured ceiling panels (ASTM C367)
- Exclusive Clear and Integral color masks nicks and scratches
- Excellent for critical lighting applications for Frost™ High Light Reflectance (0.88)
- Excellent Combination of High NRC 0.7 (absorption) and High CAC up to 40 (privacy) for use in mixed (open plan/closed plan) office design
- HRC (High Recycled Content) for optimized recycled content formulations to help maximize LEED recycled content contribution
- Available in Reveal Beveled Edge panels, high humidity resistance up to 95%RH and in Fire Code Formulation for life safety and protection of property
- Zero VOC emissions exceeds the most stringent air quality standards
- Paper backing acts as a sound barrier and resists air filtration for cleaner panels



**Applications:**

- Healthcare – HIPAA Requirements
- Schools – ANSI S12.60 Classroom guidelines
- Government Projects – ACOE performance requirements
- Open or Closed Plan offices
- Mixed Office Design
- Media Centers/Libraries

ITEM		SIZE	EDGE DETAIL	NRC	CAC	LR	RECYCLED CONTENT	VOC EMISSION	COST
418	Paper-Back	610*610*19	FL	0.7	38/40	83%	71%	Zero	\$\$\$
490	Paper-Back	610*610*19	SLB	0.7	35	88%	71%	Zero	\$\$\$



## Part 2- PRODUCT

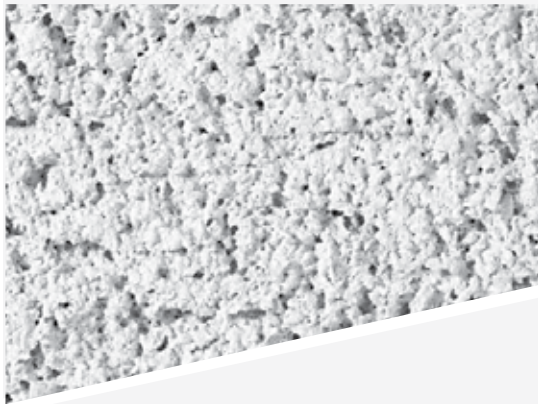
### Product Specification Details | Acoustical Ceilings | 09 51 13

- 2.1 GENERAL**
- Provide Acoustical Ceiling Material manufactured to meet requirements of this specification in accordance with ASTM E 1264.
- 2.2 MATERIALS**
- Acoustical Ceiling Units:
1. Type III, Form 4, Pattern [E]
  2. Fine textured panels
  3. Size 19 mm thick x [610 x 610]
  4. Edge Detail Reveal (SL) (FL)
  5. Noise Reduction Coefficient (NRC) [0.7]
  6. Ceiling Attenuation Class (CAC) [35] - [38] - [40]
  7. Light Reflectance Coefficient (LR) up to 0.88
  8. Recycled Content [71%]
  9. Color White similar to RAL 9010
  10. Surface Burning Characteristics per ASTM E 84 Class A, Flame Spread:25, Smoke development:50
  11. Underwriters Laboratories Inc. Fire-Resistance (ASTM E 119) ANSI/UL 263 Time-Rated Assembly [2hrs] [G228]
  12. Thermal Resistance: R 1.7 (Class A), R 1.1 (Fire Code)
  13. Humidity Resistance Maximum 95% RH / 40°C Clima Plus
  14. Weight: 8 kg/m² (Class A), 8.65 kg/m² (Fire code)
  15. Mold Prevention application per ASTM D3273-1, Rate 10 per D3274
  16. VOC Class: Zero emission per CHPS Collaborative for High-Performance Schools
  17. Relevant LEED Credit: EA Credit 1 | MR Credit 4| MR Credit 5 | MR Credit 6 | IEQ Credit 3 | IEQ Credit 3.2 | IEQ Credit 4.6 | IEQ Credit 8.1 | IEQ Credit 9
  18. Manufacturer, subject to compliance with USG terms and Conditions
  19. Product Name [Frost™]



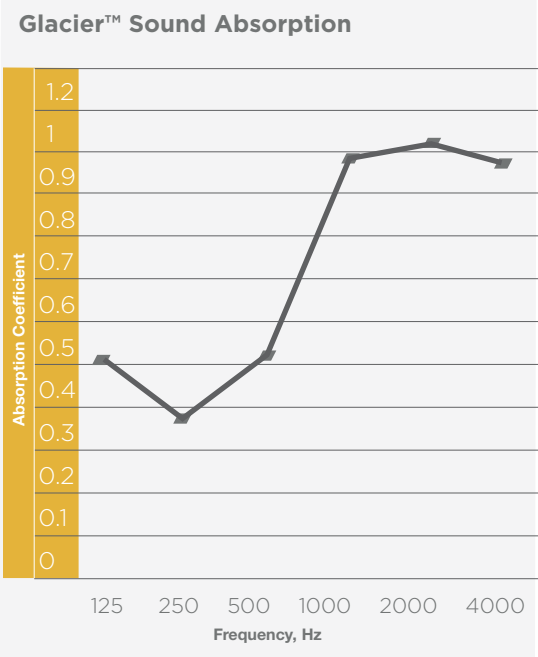
# GLACIER™

[ IMPORTED ]



**STANDARD SPECIFICATION Features & Benefits:**

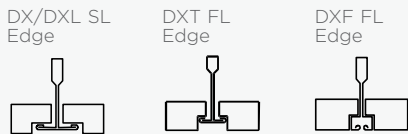
- Manufactured in CAST process for a durable surface that resist scrapes commonly caused by accessing ceiling plenum
- Heavily textured panels with rich surface details variation which is a distinguishing feature of these products
- Integral color masks nicks and scratches and enhances lifelong panel appearance
- HRC (High Recycled Content) for optimized recycled content formulations to help maximize LEED recycled content contribution
- Available in 300 x 300mm panel with DONN® Brand DX/DXL concealed suspension system to create a monolithic ceiling surface
- Available also in Fire Code Formulation for life safety and protection of property
- Zero VOC emissions exceeds the most stringent air quality standards
- All panels are backed with Aluminum foil which acts as a sound barrier and resists air filtration for cleaner panels



**Features & Benefits:**

- Libraries
- Restaurant
- Hospitality
- Airport

ITEM		SIZE	EDGE DETAIL	NRC	CAC	LR	RECYCLED CONTENT	VOC EMISSION	COST
715		610*610*19	SL	0.65	35	70%	70%	Zero	\$\$\$
708		610*610*19	FL	0.65	35	70%	71%	Zero	\$\$\$



## Part 2- PRODUCT

### Product Specification Details | Acoustical Ceilings | 09 51 13

- 2.1 GENERAL**
- Provide Acoustical Ceiling Material manufactured to meet requirements of this specification in accordance with ASTM E 1264.
- 2.2 MATERIALS**
- Acoustical Ceiling Units:
1. Type III, Form 4, Pattern [F]
  2. Heavy textured panels
  3. Size 19 mm thick x [300 x 300] , [600 x 600]
  4. Edge Detail Reveal (SL) (FL) (SESK)
  5. Noise Reduction Coefficient (NRC) [0.65]
  6. Ceiling Attenuation Class (CAC) [35]
  7. Light Reflectance Coefficient (LR) up to 0.7
  8. Recycled Content [71%]
  9. Available in various Color
  10. Surface Burning Characteristics per ASTM E 84 Class A, Flame Spread:25, Smoke development:50
  11. Underwriters Laboratories Inc. Fire-Resistance (ASTM E 119) ANSI/UL 263 Time-Rated Assembly [2hrs] [G228]
  12. Thermal Resistance: R 1.7 (Class A), R 1.3 (Fire Code)
  13. Weight: 7 kg/m² (Class A), 7.5 kg/m² (Fire code)
  14. VOC Class: Zero emission per CHPS Collaborative for High-Performance Schools
  15. Relevant LEED Credit: EA Credit 1 | MR Credit 4| MR Credit 5 | MR Credit 6 | IEQ Credit 3 | IEQ Credit 3.2 | IEQ Credit 4.6 | IEQ Credit 8.1 | IEQ Credit 9
  16. Manufacturer, subject to compliance with USG terms and Conditions
  17. Product Name [Glacier™]



# HALCYON™



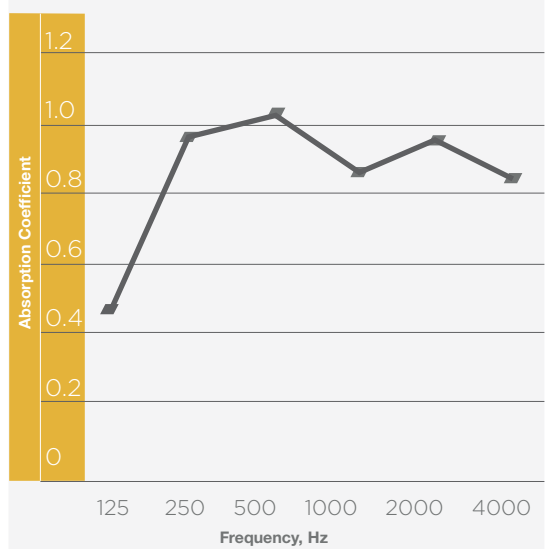
## STANDARD SPECIFICATION Features & Benefits:

- Fiber Glass substrate with monolithic visual reducing installation time
- Exceptional Sound Absorption with NRC values up to 1
- High Light Reflectance (LR-0.88) reduces light fixtures & Energy use
- Washable & Scrubbable finish
- Impact & Scratch Resistant
- Available in Plank Sizes compatible with Logix Integrated Ceiling System

## Applications:

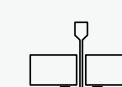
- Health Care
- Open-plan Areas
- Offices with indirect lighting
- Waiting Rooms, Nurses stations
- Media Rooms
- Receptions & Lobby Areas
- Libraries
- Convention halls and concourses

## Halcyon™ Sound Absorption - 19 mm:

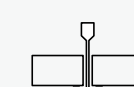


ITEM		SIZE	EDGE DETAIL	NRC	CAC	LR	RECYCLED CONTENT	VOC EMISSION	COST
HC665		600*600*15	SQ	0.85	20	89%	40%	N/A	\$\$\$
HC225		610*610*15	SQ						
HC669		600*600*19	SQ	0.95	24	89%	40%	N/A	\$\$\$\$
HC229		610*610*19	SQ						
HC629		600*1200*19	SQ	0.95	24	89%	40%	N/A	\$\$\$\$
HC249		610*1210*19	SQ						
HC6625		600*600*25	SQ	1	25	89%	40%	N/A	\$\$\$\$
HC2225		610*610*25	SQ						
HC6225		600*1200*25	SQ	1	25	89%	40%	N/A	\$\$\$\$
HC2425		610*1210*25	SQ						
98223		610*610*25	SL	0.95	20	88%	43%	N/A	\$\$\$\$
88225		610*610*25	SL	0.9	30	88%	43%	N/A	\$\$\$\$
Foil-Back									
99223		610*610*38	SL	1	25	88%	51%	N/A	\$\$\$\$
98225		610*610*25	FL	0.95	20	88%	43%	N/A	\$\$\$\$
88227		610*610*25	FL	0.9	30	88%	43%	N/A	\$\$\$\$
Foil-Back									
99225		610*610*38	FL	1	25	88%	51%	N/A	\$\$\$\$

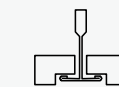
DX/DXL SQ  
Edge



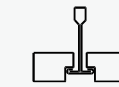
DXT  
SQ Edge



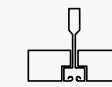
DX/DXL SL  
Edge



DXT FL  
Edge



DXF FL  
Edge



## Part 2- PRODUCT

### Product Specification Details | Acoustical Ceilings | 09 51 13

#### 2.1 GENERAL

Provide Acoustical Ceiling Material manufactured to meet requirements of this specification in accordance with ASTM E 1264.

#### 2.2 MATERIALS

Acoustical Ceiling Units:

1. Type XII, Form 2, Pattern [E] [G]
2. Fiber Glass Substrate finished with Painted Fiber Glass scrim
3. Size 15, 19, 25, 38 mm thick x [600 x 600] [600 x 1,200] [300 x 1,200] [300 x 1,500] [600 x 1,500]
4. Edge Detail Trim (Square), Reveal (SL)(FL)
5. Noise Reduction Coefficient (NRC) [0.85][0.95][1]
6. Ceiling Attenuation Class (CAC) [24-25]
7. Light Reflectance Coefficient (LR) 0.89
8. Recycled Content [40%]
9. Color White similar to RAL 9010
10. Surface Burning Characteristics per ASTM E84 Class A, Flame Spread:25, Smoke development: 15
11. Thermal Resistance: 0.6 m<sup>2</sup> °K/W - R 3.5 (19mm), 0.74 m<sup>2</sup> °K/W - R 4.2 (25mm)
12. Humidity Resistance Maximum 95% RH / 40°C, Clima Plus

13. Weight: 1.7 kg/m<sup>2</sup> for 15mm, 2.1 kg/m<sup>2</sup> for 19mm, 2.4 kg/m<sup>2</sup> for 25mm and 3.4 Kg/m<sup>2</sup> for 38mm
14. Mold Prevention: Fiberglass substrate is inherently resistant to the growth of mold and mildew
15. Washability / Scrubbability: Exceeds 1000 Wash/Scrub Cycles without surface break or the extent of abrasion per ASTM D4828 & D2486
16. Relevant LEED Credit: EA Credit 1 | MR Credit 4| MR Credit 5 | MR Credit 6 | IEQ Credit 3 | IEQ Credit 3.2 | IEQ Credit 4.6 | IEQ Credit 8.1 | IEQ Credit 9
17. Manufacturer, subject to compliance with USGME terms and Conditions
18. Product Name [Halcyon™]

# LOGIX™

[ SONATA | HALCYON™ | MARS™ ]  
PLANKS



## STANDARD SPECIFICATION Features & Benefits:

- Turn your ceiling's lighting and utilities into stunning design elements by integrating them into your ceiling plan with this system
- Monolithic, structured ceiling visual using standard components, available in Mineral Fiber (Sonata & Mars™), Fiber Glass (Halcyon™), Metal Substrate (Panz™) and Wood
- Designed to be compatible with a wide selection of 4", 6" and 12" utilities and in various module size
- Exceptional Sound Absorption with NRC values up to 1 for Thick Halcyon products
- High light-reflective finish reduces light fixtures and energy use
- Washable & Scrubbable finish
- Impact & Scratch Resistant
- The Logix system is available in two Configurations:
  - Logix Linear positions bands between main tees
  - Logix Basic (or perpendicular) channels intersect main tees.

## Applications:

- Open-plan Offices
- Space with indirect lighting or natural Lighting
- Conference Rooms
- Media centers and Libraries
- Receptions & Lobby Areas
- Airport



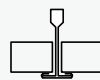
LOGIX LINEAR



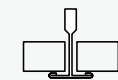
LOGIX BASIC

	ITEM		SIZE	EDGE DETAIL	NRC	CAC	LR	RECYCLED CONTENT	VOC EMISSION	COST
SONATA™ PLANKS	SC359		300*1500*19	SQ	0.7	37	89%	83%	Low	\$\$\$\$
	SC159		310*1510*19							
	SC689		600*1800*19	SQ	0.7	37	89%	83%	Low	\$\$\$\$
	SC289		610*1810*19							
HALCYON™ PLANKS	HC359		300*1500*19	SQ	0.95	24	89%	40%	N/A	\$\$\$\$
	HC159		310*1510*19							
	HC689		600*1800*19	SQ	0.95	24	89%	40%	N/A	\$\$\$\$
	HC289		610*1810*19							
	99268		610*1810*25	SL	0.95	20	88%	41%	N/A	\$\$\$\$
	99269		610*2410*25							
	98348		610*1810*25	FL	0.95	20	88%	41%	N/A	\$\$\$\$
MARS™ PLANKS	98197		610*2410*25							
	86221		610*1510*19	SQ	0.7	35	89%	77%	Low	\$\$\$\$
	86350		610*1510*22		0.8					
	86161		610*1510*19	SLT	0.7	35	89%	77%	Low	\$\$\$\$
	89650		610*1510*22		0.8					
	88984		610*1510*19	FLB	0.7	35	89%	77%	Low	\$\$\$\$
	89550		610*1510*22		0.8					

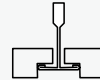
DXT SQ  
Edge



DX/DXL SQ  
Edge



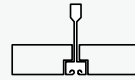
DX/DXL SL  
Edge



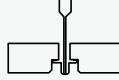
DXT FL  
Edge



DXF FL  
Edge



DXI-FLB  
Edge



## Part 2- PRODUCT

### Product Specification Details | Acoustical Ceilings | 09 51 13

#### 2.1 GENERAL

Provide Acoustical Ceiling Material manufactured to meet requirements of this specification in accordance with ASTM E 1264.

#### 2.2 MATERIALS

Acoustical Ceiling Units:

1. Type IV, XII, Form 1&2, Pattern [E] [G]
2. Mineral or Fiber Glass Substrate finished with Painted Fiber Glass scrim
3. Size 19, 22, 25 mm thick x [300 x 1,500] [600 x 1,500] [600 x 1,800] [600 x 2,400]
4. Edge Detail Trim (Square), Reveal (SL)(FL)
5. Noise Reduction Coefficient (NRC) [0.7][0.85] [0.95][1]
6. Ceiling Attenuation Class (CAC) [20-24] [35-37]
7. Light Reflectance Coefficient (LR) [0.88 - 0.89]
8. Recycled Content [40%] [77%] [83%]
9. Color White similar to RAL 9010
10. Surface Burning Characteristics per ASTM E84 Class A, Flame Spread:25, Smoke development: 50
11. Thermal Resistance: Mars™ R 2.2; Halcyon™ 0.6 m² °K/W - R 3.5 (19mm), 0.74 m² °K/W - R 4.2 (25mm)

12. Humidity Resistance Maximum 95% RH / 40°C, Clima Plus
13. Weight: Mars™ 5.2 kg/m² (19mm), 6 kg/m² (22mm) Halcyon™ 1.7 kg/m² for 15mm, 2.1 kg/m² for 19mm, 2.4 kg/m² for 25mm
14. Mold Prevention: Fiberglass substrate is inherently resistant to the growth of mold and mildew
15. Washability / Scrubbability: Exceeds 1000 Wash/Scrub Cycles without surface break or the extent of abrasion per ASTM D4828 & D2486
16. Relevant LEED Credit: EA Credit 1 | MR Credit 4| MR Credit 5 | MR Credit 6 | IEQ Credit 3 | IEQ Credit 3.2 | IEQ Credit 4.6 | IEQ Credit 8.1 | IEQ Credit 9
17. Manufacturer, subject to compliance with USG terms and Conditions
18. Product Name [LOGIX Planks]

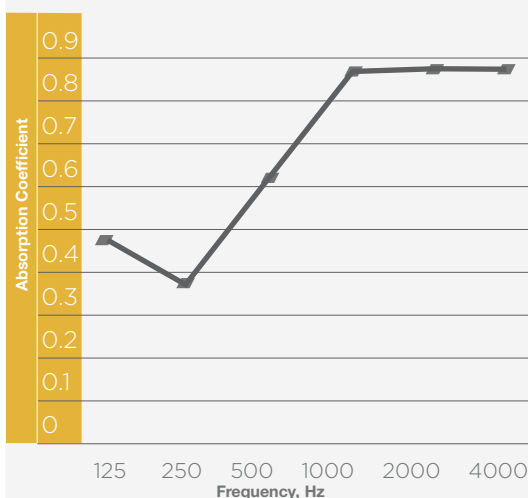


# MARS™ [IMPORTED]

## STANDARD SPECIFICATION Features & Benefits:

- Due to numerous properties, it is convenient for multiple usage in Health Care application and Open Plan Offices
- Non-directional, monolithic visual which reduces installation time and offers Industry's highest light reflectance LR 0.89 to reduce light fixtures and energy use as a part of Indirect lighting
- Washable and scrubbable finish resistance, impact and scratch resistant for a durable and cleanable surface
- Mars Health Care features with Water repellent membrane designed to be durable and safe with common disinfectants
- Available in High NRC formulation up to 0.8 and in optimized recycled content formulations to help maximize LEED recycled content contribution
- Acoustics and cleanability exceed FGI guidelines for healthcare applications and Achieves FDA standards for smoothness, durability and cleanability. It assists also in addressing HIPPA standards for sound control in health care facilities
- Clima Plus 30-year lifetime system warranty against visible sag, mold and mildew
- Meets USDA/FSIS guidelines for use in food processing areas
- Available in Plank size, FLB edges compatible with Logix Integrated Ceiling System

## Mars Sound Absorption

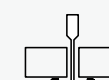


## Applications:

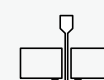
- Healthcare: Patient Rooms, Treatment rooms, Nurses' station, Waiting Rooms, Laboratories, Corridors, Lavatories & Restrooms, Kitchen/food preparation area
- Executive Offices and Conference rooms
- Reception areas and Lobbies
- Classrooms
- Corridors
- Dining rooms, kitchens and food-prep areas

	ITEM		SIZE	EDGE DETAIL	NRC	CAC	LR	RECYCLED CONTENT	VOC EMISSION	COST
MARS™ HIGH NRC	86185	☂	610*610*19	SQ	0.7	35	89%	76%	Low	\$\$\$\$
	88185		610*1210*19							
	86785	☂	610*610*19	SLT	0.7	35	89%	76%	Low	\$\$\$\$
	88785		610*1210*19							
	86985	☂	610*610*19	FLB	0.7	35	89%	76%	Low	\$\$\$\$
	88985		610*1210*19							
	86100	☂	610*610*22	SQ	0.8	35	89%	77%	Low	\$\$\$\$
	86300		610*1210*22							
	87200	☂	610*610*22	SLT	0.8	35	89%	77%	Low	\$\$\$\$
	89600		610*1210*22							
PLANKS	87100	☂	610*610*22	FLB	0.8	35	89%	77%	Low	\$\$\$\$
	89500		610*1210*22							
	86221	☂	610*1510*19	SQ	0.7	35	89%	77%	Low	\$\$\$\$
	86350		610*1510*22		0.8					
	86161	☂	610*1510*19	SLT	0.7	35	89%	77%	Low	\$\$\$\$
	89650		610*1510*22		0.8					
	88984	☂	610*1510*19	FLB	0.7	35	89%	77%	Low	\$\$\$\$
	89550		610*1510*22		0.8					

DX/DXL SQ  
Edge



DXT SQ  
Edge



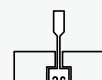
DX/DXL SLT  
Edge



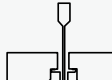
DXT FL  
Edge



DXF FL  
Edge



DXI-FLB  
Edge



## Part 2- PRODUCT

### Product Specification Details | Acoustical Ceilings | 09 51 13

#### 2.1 GENERAL

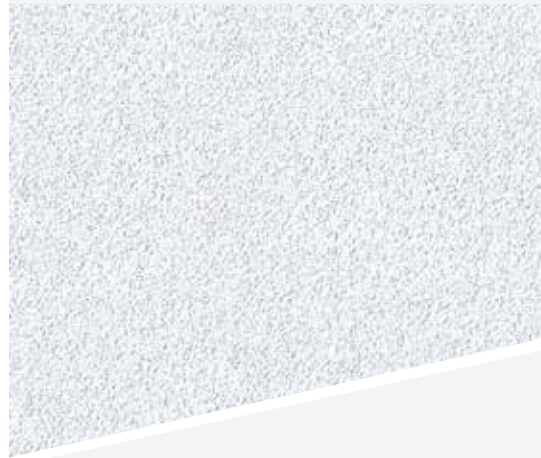
Provide Acoustical Ceiling Material manufactured to meet requirements of this specification in accordance with ASTM E 1264

#### 2.2 MATERIALS

Acoustical Ceiling Units:

1. Type IV, Form 1&2, Pattern [E] [G]
2. Mineral Fiber Substrate manufactured in wet Felted and X Technologies and finished with Painted Fiber Glass scrim
3. Size 19,22 mm thick x [600 x 600] [600 x 1,200] [600 x 1,500] [600 x 1,800]
4. Edge Detail Trim (Square), Reveal (SLT) (FLB)
5. Noise Reduction Coefficient (NRC) [0.7] [0.8]
6. Ceiling Attenuation Class (CAC) [35]
7. Light Reflectance Coefficient (LR) 0.89
8. Recycled Content [up to 80.5% for HRC]
9. Color White similar to RAL 9010
10. Surface Burning Characteristics per ASTM E84 Class A, Flame Spread:25, Smoke development:50
11. Thermal Resistance: R 2.2
12. Humidity Resistance Maximum 95% RH / 40°C
13. Weight: 5.2 kg/m<sup>2</sup> (19mm), 6 kg/m<sup>2</sup> (22mm)
14. Mold Prevention application per ASTM D3273-1, Rate 10 per D3274
15. Washability / Scrubbability: Exceeds 1000 Wash/Scrub Cycles without surface break or the extent of abrasion per ASTM D4828 & D2486
16. Available in water repellency on the finished surface for Healthcare applications under [Mars Healthcare]
17. Relevant LEED Credit: EA Credit 1 | MR Credit 4| MR Credit 5 | MR Credit 6 | IEQ Credit 3 | IEQ Credit 3.2 | IEQ Credit 4.6 | IEQ Credit 8.1 | IEQ Credit 9
18. Manufacturer, subject to compliance with USG terms and Conditions
19. Product Name [Mars]

# OLYMPIA II™



## STANDARD SPECIFICATION Features & Benefits:

- Finely granulated surface texture
- High light reflectance finish (LR-0.89) reduces light fixtures and energy use
- Economical, non-directional pattern reduces installation time and waste
- Fire resistant system options, for life safety and protection of property
- Available also in Clima Plus Formulation for 95% Humidity Resistance and various Plank Sizes

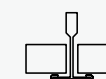
## Applications:

- Reception
- Commercial Stores
- Libraries
- Banks
- Fitness Rooms
- Corridors/Stairwell
- Waiting Area
- Nursery
- Retail Stores

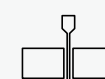


ITEM	SIZE	EDGE DETAIL	NRC	CAC	LR	RECYCLED CONTENT	VOC EMISSION	COST
OLS665N	600*600*15	SQ	0.15	33	89%	32%	Low	\$
OLS225N	610*610*15							
OLSR665N	600*600*15							
OLSR225N	610*610*15	SLT	0.15	33	89%	32%	Low	\$
OLSRF665N	600*600*15	FL	0.15	33	89%	32%	Low	\$
OLSRF225N	610*610*15							
OLC665N	600*600*15	SQ	0.15	33	89%	39%	Low	\$
OLC225N	610*610*15							
OLC625N	600*1200*15	SQ	0.15	33	89%	39%	Low	\$
OLC245N	610*1210*15							
OLCR665N	600*600*15	SLT	0.15	33	89%	39%	Low	\$
OLCR225N	610*610*15							
OLCRF665N	600*600*15	FL	0.15	33	89%	39%	Low	\$
OLCRF225N	610*610*15							
OLX665N	600*600*15	SQ	0.15	35	89%	46%	Low	\$\$
OLX225N	610*610*15							
PLANKS	OLC325N	SQ	0.15	35	89%	39%	Low	\$\$\$
	OLC145N							
	OLCR325N	SLT	0.15	35	89%	39%	Low	\$\$\$
	OLCR145N							
PLANKS	OLCRF325N	FL	0.15	35	89%	39%	Low	\$\$\$
	OLCRF145N							
PLANKS	OLS669N	SQ	0.15	35	89%	32%	Low	\$\$\$
	OLS229N							
	OLSR669N							
	OLSR229N	SLT	0.15	35	89%	32%	Low	\$\$\$
	OLSRF669N							
	OLSRF229N	FL	0.15	35	89%	32%	Low	\$\$\$
	OLC669N							
	OLC229N	SQ	0.15	35	89%	39%	Low	\$\$\$
	OLC629N							
	OLC249N	SLT	0.15	35	89%	39%	Low	\$\$\$
	OLCR629N							
	OLCR245N	SLT	0.15	35	89%	39%	Low	\$\$\$
PLANKS	OLCRF629N							
	OLCRF249N	FL	0.15	35	89%	39%	Low	\$\$\$
	OLC359N							
	OLC159N	SQ	0.15	35	89%	39%	Low	\$\$\$\$

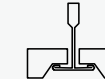
DX/DXL  
SQ Edge



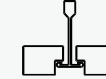
DXT SQ  
Edge



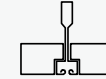
DX/DXL SLT  
Edge



DXT FL  
Edge



DXF FL  
Edge





Part 2- PRODUCT

Product Specification Details | Acoustical Ceilings | 09 51 13

2.1 GENERAL

Provide Acoustical Ceiling Material manufactured to meet requirements of this specification in accordance with ASTM E 1264 and EN 13964.

2.2 MATERIALS

Acoustical Ceiling Units:

1. Type III, Form 2, Pattern [E]

2. Fine sand textured panels

3. Size 15, 19 mm thick x [600 x 600] [600 x 1,200] [300 x 1,200] [300 x 1,500]

4. Edge Detail Trim (Square), Reveal (SLT) (FL)

5. Noise Reduction Coefficient (NRC) [0.15]

6. Ceiling Attenuation Class (CAC) [33] - [35]

7. Light Reflectance Coefficient (LR) 0.89

8. Recycled Content [32 - 46%]

9. Color White similar to RAL 9010

10. Surface Burning Characteristics per ASTM E 84 Class A, Flame Spread: 5, Smoke development: 20

Reaction to Fire: Euroclass A2-s1,d0 in accordance with EN-13501-1

11. Underwriters Laboratories Inc. Fire-Resistance (ASTM E 119) ANSI/UL 263 Time-Rated Assembly [2hrs] [G203]
12. Thermal Resistance: 0.23 m<sup>2</sup> °K/W - R 1.3 (15mm), 0.31 m<sup>2</sup> °K/W - R 1.8 (19mm)

13. Humidity Resistance Maximum 95% RH / 40°C for Clima Plus

14. Weight: 3.85 kg/m<sup>2</sup> (Regular / ClimaPlus) 15mm, 5.25 kg/m<sup>2</sup> (Fire code) 15mm, 4.85 kg/m<sup>2</sup> (Regular / ClimaPlus) 19mm, 7.15 kg/m<sup>2</sup> (Fire code) 19mm

15. Mold Prevention application available upon request per ASTM D3273-1, Rate 10 per D3274

16. Relevant LEED Credit: EA Credit 1 | MR Credit 4| MR Credit 5 | MR Credit 6 | IEQ Credit 3 | IEQ Credit 3.2 | IEQ Credit 4.6 | IEQ Credit 8.1 | IEQ Credit 9

17. Manufacturer, subject to compliance with USGME terms and Conditions

18. Product Name [Olympia II™]



# OLYMPIA MICRO™

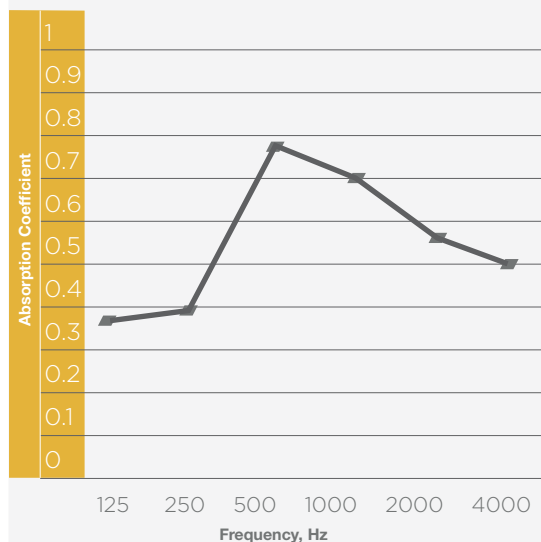


## STANDARD SPECIFICATION

### Features & Benefits:

- Offers a balance of acoustic performance, fire reaction, fire resistance, 95% Humidity Resistance and 89% Light Reflectance
- Light granulated surface texture with virtually invisible micro-perforation for a smoother look than standard perforations that improve sound absorption
- High light reflectance finish (LR-0.89) reduces light fixtures and energy use
- Fire resistant system options, for life safety and protection of property
- Available in HRC (High Recycled Content) for optimized recycled content formulations to help maximize LEED recycled content contribution
- Available also in Clima Plus Formulation for 95% Humidity Resistance and for various edge details
- Ideal solutions for classroom and general teaching conditions
- Treated when requested on panels face and back surfaces with a patented, broad-spectrum antimicrobial standard formulation that inhibit mold growth

### Olympia Micro™ Sound Absorption:

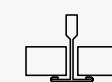


### Applications:

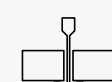
- Classrooms
- Libraries
- Corridors/Stairwell
- Reception and Lobby areas
- Cafeteria/Restaurant
- Sports hall
- General Offices
- Shopping Centers

ITEM	SIZE	EDGE DETAIL	NRC	CAC	LR	RECYCLED CONTENT	VOC EMISSION	COST
OLPS665N	600*600*15	SQ	0.6	35	89%	32%	Low	\$
OLPS225N	610*610*15							
OLPSR665N	600*600*15							
OLPSR225N	610*610*15							
OLPSRF665N	600*600*15	FL	0.6	35	89%	32%	Low	\$
OLPSRF225N	610*610*15							
OLPC665N	600*600*15							
OLPC225N	610*610*15							
OLPC625N	600*1200*15	SQ	0.6	35	89%	39%	Low	\$
OLPC245N	610*1210*15							
OLPCR665N	600*600*15							
OLPCR225N	610*610*15							
OLPCR665N	600*600*15	SLT	0.6	35	89%	39%	Low	\$
OLPCR225N	610*610*15							
OLPCR665N	600*600*15							
OLPCR225N	610*610*15							
OLPCR665N	600*600*15	FL	0.6	35	89%	39%	Low	\$
OLPCR225N	610*610*15							
OLPCR665N	600*600*15							
OLPCR225N	610*610*15							
OLPX665N	600*600*15	SQ	0.6	35	89%	46%	Low	\$\$
OLPX225N	610*610*15							
OLPX625N	600*1200*15							
OLPX245N	610*1210*15							
PLANKS	OLPC325N	SQ	0.6	35	89%	39%	Low	\$\$\$
	OLPC145N							
	OLPCR325N							
	OLPCR145N							
	OLPCR325N							
	OLPCR325N	SLT	0.6	35	89%	39%	Low	\$\$\$
	OLPCR145N							
	OLPCR325N							
	OLPCR145N							
	OLPCR325N							
	OLPCR325N	FL	0.6	35	89%	39%	Low	\$\$\$
	OLPCR145N							
	OLPCR325N							
	OLPCR145N							
	OLPCR325N							
	OLPS669N	SQ	0.65	37	89%	32%	Low	\$\$\$
	OLPS229N							
	OLPSR669N							
	OLPSR229N							
	OLPSR669N							
	OLPSR229N	FL	0.65	37	89%	32%	Low	\$\$\$
	OLPSR669N							
	OLPSR229N							
	OLPSR669N							
	OLPSR229N							
	OLPC669N	SQ	0.65	37	89%	82%	Low	\$\$\$
	OLPC229N							
	OLPCR669N							
	OLPCR229N							
	OLPCR669N							
	OLPCR229N	SLT	0.65	37	89%	82%	Low	\$\$\$
	OLPCR669N							
	OLPCR229N							
	OLPCR669N							
	OLPCR229N							
	OLPCR669N	FL	0.65	37	89%	82%	Low	\$\$\$
	OLPCR229N							
	OLPCR669N							
	OLPCR229N							
	OLPCR669N							
	OLPC629N	SLT	0.65	37	89%	82%	Low	\$\$\$
	OLPC249N							
	OLPCR629N							
	OLPCR245N							
	OLPCR629N							
	OLPCR245N	SLT	0.65	37	89%	82%	Low	\$\$\$
	OLPCR629N							
	OLPCR245N							
	OLPCR629N							
	OLPCR245N							
	OLPCR629N	FL	0.65	37	89%	82%	Low	\$\$\$
	OLPCR249N							
	OLPCR629N							
	OLPCR249N							
	OLPCR629N							
PLANKS	OLPC329N	SQ	0.65	35	89%	82%	Low	\$\$\$
	OLPC349N							
	OLPCR329N							
	OLPCR349N							
	OLPCR329N							
	OLPCR329N	SLT	0.65	35	89%	82%	Low	\$\$\$
	OLPCR349N							
	OLPCR329N							
	OLPCR349N							
	OLPCR329N							
	OLPCR329N	FL	0.65	35	89%	82%	Low	\$\$\$
	OLPCR349N							
	OLPCR329N							
	OLPCR349N							
	OLPCR329N							

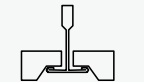
DX/DXL  
SQ Edge



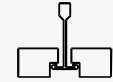
DXT SQ  
Edge



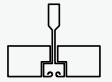
DX/DXL SLT  
Edge



DXT FL  
Edge



DXF FL  
Edge





Part 2- PRODUCT

Product Specification Details | Acoustical Ceilings | 09 51 13

2.1 GENERAL

Provide Acoustical Ceiling Material manufactured to meet requirements of this specification in accordance with ASTM E 1264 and EN 13964.

2.2 MATERIALS

Acoustical Ceiling Units:

1. Type III, Form 2, Pattern [C] [E]

2. Fine sand textured panels

3. Size 15, 19 mm thick x [600 x 600] [600 x 1,200] [300 x 1,200]

4. Edge Detail Trim (Square), Reveal (SLT) (FL)

5. Noise Reduction Coefficient (NRC) [0.6] [0.65]

6. Ceiling Attenuation Class (CAC) [35] - [37]

7. Light Reflectance Coefficient (LR) 0.89

8. Recycled Content [up to 82%]

9. Color White similar to RAL 9010

10. Surface Burning Characteristics per ASTM E 84 Class A, Flame Spread: 5, Smoke development: 20

Reaction to Fire: Euroclass A2-s1,d0 in accordance with EN-13501-1

11. Underwriters Laboratories Inc. Fire-Resistance (ASTM E 119) ANSI/UL 263 Time-Rated Assembly [2hrs] [G203]
12. Thermal Resistance: 0.23 m<sup>2</sup> °K/W - R 1.3 (15mm), 0.31 m<sup>2</sup> °K/W - R 1.8 (19mm)

13. Humidity Resistance Maximum 95% RH / 40°C for Clima Plus

14. Weight: 3.85 kg/m<sup>2</sup> (Regular / ClimaPlus) 15mm, 5.25 kg/m<sup>2</sup> (Fire code) 15mm, 4.85 kg/m<sup>2</sup> (Regular / ClimaPlus) 19mm, 7.15 kg/m<sup>2</sup> (Fire code) 19mm

15. Mold Prevention application available upon request per ASTM D3273-1, Rate 10 per D3274

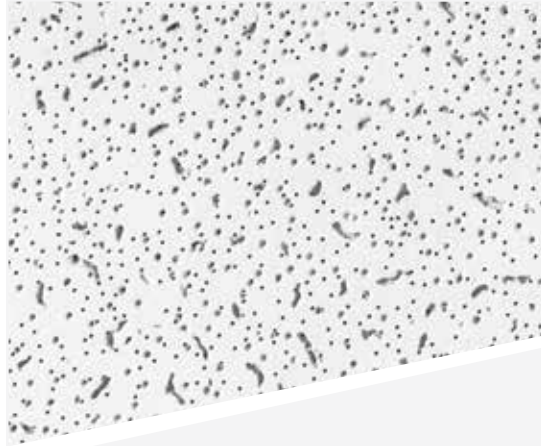
16. Relevant LEED Credit: EA Credit 1 | MR Credit 4| MR Credit 5 | MR Credit 6 | IEQ Credit 3 | IEQ Credit 3.2 | IEQ Credit 4.6 | IEQ Credit 8.1 | IEQ Credit 9

17. Manufacturer, subject to compliance with USGME terms and Conditions

18. Product Name [Olympia Micro™]







#### STANDARD SPECIFICATION Features & Benefits:

- It provides a very economical cost with a wide variety of panel option to meet various application
- Medium-textured panels that feature a unique, non-directional pattern with a fresh, clean appearance offers fast, efficient installation
- Optional FIRECODE™ formulation designed to meet life safety codes
- Available in Washable paint for easy maintenance using soft brush or vacuum to clean the surface
- Mid-range sound absorption and sound attenuation which make it ideal for general commercial stores

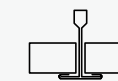
#### Applications:

- Grocery Stores
- Corridors/Hallways
- Warehouses
- Mechanical Rooms
- Stairways/Elevator Shafts



ITEM	SIZE	EDGE DETAIL	NRC	CAC	LR	RECYCLED CONTENT	VOC EMISSION	COST
OMS665	600*600*15	SQ	0.5	35	82%	32%	Low	\$
OMS225	610*610*15							
OMSR665	600*600*15	SLT	0.5	35	82%	32%	Low	\$
OMSR225	610*610*15							
OMC625W	600*1200*15	SQ	0.5	35	82%	32%	Low	\$\$
OMC245W	610*1210*15							
OMX665	600*600*15	SQ	0.5	35	82%	46%	Low	\$\$
OMX225	610*610*15							
OMS669	600*600*19	SQ	0.6	37	82%	32%	Low	\$\$
OMS229	610*610*19							
OMX669	600*600*19	SQ	0.6	37	82%	32%	Low	\$\$\$
OMX229	610*610*19							

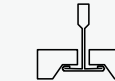
DX/DXL SQ  
Edge



DXT  
SQ Edge



DX/DXL SLT  
Edge



## Part 2- PRODUCT

### Product Specification Details | Acoustical Ceilings | 09 51 13

#### 2.1 GENERAL

Provide Acoustical Ceiling Material manufactured to meet requirements of this specification in accordance with ASTM E 1264 and EN 13964.

#### 2.2 MATERIALS

Acoustical Ceiling Units:

- Type III, Form 2, Pattern [C] [D] [E]
- Fine non-directional fissured panel
- Size 15,19 mm thick x [600 x 600] [600 x 1,200]
- Edge Detail Trim (Square), Reveal (SLT)
- Noise Reduction Coefficient (NRC) [0.5] [0.6]
- Ceiling Attenuation Class (CAC) [35] [37]
- Light Reflectance Coefficient (LR) 0.82
- Recycled Content [32%] [46%]
- Color White similar to RAL 9010
- Surface Burning Characteristics per ASTM E 84 Class A, Flame Spread: 5, Smoke development: 20
- Reaction to Fire: Euroclass A2-s1,d0 in accordance with EN-13501-1
- Underwriters Laboratories Inc. Fire-Resistance (ASTM E 119) ANSI/UL 263 Time-Rated Assembly [2hrs] [G203]
- Thermal Resistance: 0.23 m<sup>2</sup> °K/W - R 1.3 (15mm), 0.31 m<sup>2</sup> °K/W - R 1.8 (19mm)
- Humidity Resistance Maximum 95% RH / 40°C
- Weight: 3.55 kg/m<sup>2</sup> (Regular / ClimaPlus) 15mm, 5 kg/m<sup>2</sup> (Fire code) 15mm, 4.5 kg/m<sup>2</sup> (Regular / ClimaPlus) 19mm, 6.85 kg/m<sup>2</sup> (Fire code) 19mm
- Washability / Scrubbability: Exceeds 1000 Wash/Scrub Cycles without surface break or the extent of abrasion per ASTM D4828 & D2486
- Mold Prevention application available upon request per ASTM D3273-1, Rate 10 per D3274
- Relevant LEED Credit: EA Credit 1 | MR Credit 4 | MR Credit 5 | MR Credit 6 | IEQ Credit 3 | IEQ Credit 3.2 | IEQ Credit 4.6 | IEQ Credit 8.1 | IEQ Credit 9
- Manufacturer, subject to compliance with USGME terms and Conditions
- Product Name [Omni]



# PEDESTAL



## STANDARD SPECIFICATION Features & Benefits:

- Triple stepped face cuts adds depth and proportion to the ceiling
- Pedestals I, the look of 600 x 600 mm tiles
- Contemporary non perforated plain or textured
- Mid-range sound attenuation, ideal for general commercial construction
- Easy to install and cut
- Clean look for a rich looking ceiling

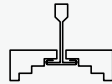
## Applications:

- Education
- Healthcare
- Hotels
- Leisure
- Office
- Retail



ITEM		SIZE	EDGE DETAIL	NRC	CAC	LR	RECYCLED CONTENT	VOC EMISSION	COST
DP1C669		600*600*19	ILT	0.15	35	86%	32%	Low	\$\$
DP1C229		610*610*19							
DP1OLCRI669		600*600*19	ILT	0.15	35	88%	39%	Low	\$\$\$
DP1OLCRI229		610*610*19							

DXT  
PE/SLT Edge 3/4"



## Part 2- PRODUCT

### Product Specification Details | Acoustical Ceilings | 09 51 13

#### 2.1 GENERAL

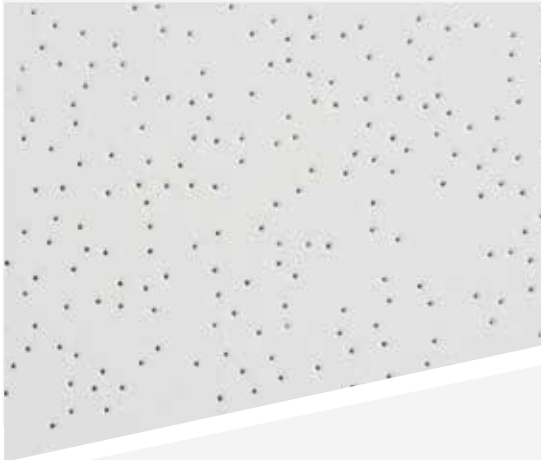
Provide Acoustical Ceiling Material manufactured to meet requirements of this specification in accordance with ASTM E 1264 and EM 13964

#### 2.2 MATERIALS

Acoustical Ceiling Units:

1. Type III, Form 2, Pattern [E] [G]
2. Plain textured stepped face cut
3. Panels Size 19mm thick x [600 x 600]
4. Edge Detail Reveal (ILT)
5. Noise Reduction Coefficient (NRC) [0.15]
6. Ceiling Attenuation Class (CAC) [35]
7. Light Reflectance Coefficient (LR) [0.86] [0.88]
8. Recycled Content [32-39%]
9. Color White similar to RAL 9010
10. Flame Spread Classification (ASTM E 84) Class A, Flame Spread: 5, Smoke development: 20  
Reaction to Fire: Euroclass A2-s1,d0 in accordance with EN-13501-1
11. Thermal Resistance: 0.31 m<sup>2</sup> °K/W - R 1.8 (19mm)
12. Humidity Resistance Maximum 95% RH / 40°C for Clima Plus
13. Weight: 4.5 kg/m<sup>2</sup>
14. Mold Prevention application available upon request per ASTM D3273-1, Rate 10 per D3274
15. Relevant LEED Credit: EA Credit 1 | MR Credit 4 | MR Credit 5 | MR Credit 6 | IEQ Credit 3 | IEQ Credit 3.2 | IEQ Credit 4.6 | IEQ Credit 8.1 | IEQ Credit 9
16. Manufacturer, subject to compliance with USGME terms and Conditions
17. Product Name [Pedestal]

# PERFORATED



## STANDARD SPECIFICATION

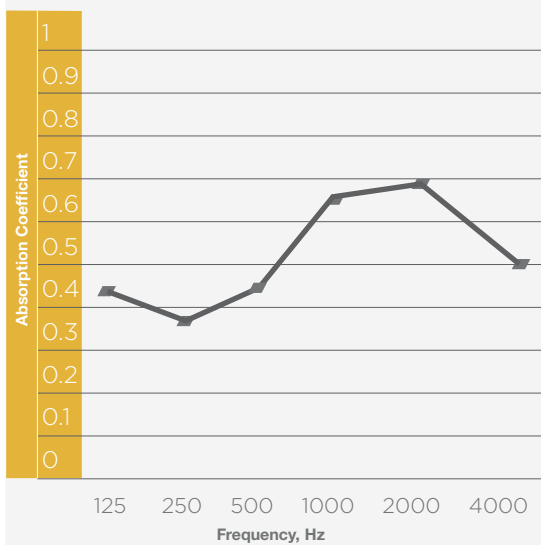
### Features & Benefits:

- Offered in Standard Pin Perforation for Ideal Mid-range sound absorption & sound Attenuation which provides balance to room acoustics
- Excellent for general commercial construction & Health Care
- Maximum economy and design simplicity
- Could be available in Washable & Hygienic Paint upon request

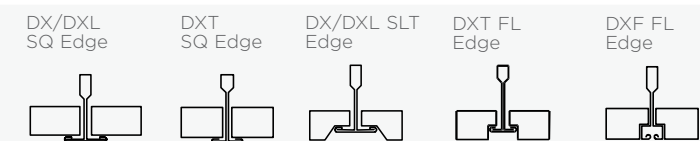
### Applications:

- Schools
- Healthcare
- Corridors
- Lobby areas
- Offices
- Retail Stores

### Perforated Sound Absorption - 19 mm:



ITEM	SIZE	EDGE DETAIL	NRC	CAC	LR	RECYCLED CONTENT	VOC EMISSION	COST
PS665	600*600*15	SQ	0.5	35	86%	32%	Low	\$
PS225	610*610*15							
PSR665	600*600*15	SLT	0.5	35	86%	32%	Low	\$
PSR225	610*610*15							
PSRF665	600*600*15	FL	0.5	35	86%	32%	Low	\$
PSRF225	610*610*15							
PC665	600*600*15	SQ	0.5	35	86%	32%	Low	\$
PC225	610*610*15							
PCR665	600*600*15	SLT	0.5	35	86%	32%	Low	\$
PCR225	610*610*15							
PCRF665	600*600*15	FL	0.5	35	86%	32%	Low	\$
PCRF225	610*610*15							
PS669	600*600*19	SQ	0.55	37	86%	32%	Low	\$
PS229	610*610*19							
PSR669	600*600*19	SLT	0.55	37	86%	32%	Low	\$
PSR229	610*610*19							



## Part 2- PRODUCT

### Product Specification Details | Acoustical Ceilings | 09 51 13

#### 2.1 GENERAL

Provide Acoustical Ceiling Material manufactured to meet requirements of this specification in accordance with ASTM E 1264 and EN 13964.

#### 2.2 MATERIALS

Acoustical Ceiling Units:

- Type III, Form 2, Pattern [C] [E]
- Accessible acoustical ceiling system with pin perforated panels
- Size 15, 19mm thick x [600 x 600] [600 x 1,200]
- Edge Detail Trim (Square), Reveal (SLT) (FL)
- Noise Reduction Coefficient (NRC) [0.5] [0.55]
- Ceiling Attenuation Class (CAC) [35]-[37]
- Light Reflectance Coefficient (LR) 0.86
- Recycled Content [32%]
- Color White similar to RAL 9010
- Surface Burning Characteristics per ASTM E 84 Class A, Flame Spread: 5, Smoke development: 20
- Reaction to Fire: Euroclass A2-s1,d0 in accordance with EN-13501-1
- Thermal Resistance: : 0.23 m<sup>2</sup> °K/W - R 1.3 (15mm), 0.31 m<sup>2</sup> °K/W - R 1.8 (19mm)
- Humidity Resistance Maximum 95% RH / 40°C for Clima Plus
- Weight: 3.55 kg/m<sup>2</sup> (Regular / ClimaPlus) 15mm, 4.5 kg/m<sup>2</sup> (Regular / ClimaPlus) 19mm
- Mold Prevention application available upon request per ASTM D3273-1, Rate 10 per D3274
- Relevant LEED Credit: EA Credit 1 | MR Credit 4| MR Credit 5 | MR Credit 6 | IEQ Credit 3 | IEQ Credit 3.2 | IEQ Credit 4.6 | IEQ Credit 8.1 | IEQ Credit 9
- Manufacturer, subject to compliance with USGME terms and Conditions
- Product Name [Perforated, Athena™]



# PLAIN

## STANDARD SPECIFICATION Features & Benefits:

- Panels are smoothed Plain for exceptional monolithic look
- Taiga or Plain panels were developed to meet with today's trend for cleaner finishes with high light reflectance at 86% to improve day lighting which result in energy cost savings and increased comfort level
- Low sound absorption, ideal where increased room reverberation is desired
- High humidity resistant in ClimaPlus, suitable for applications with intermittent heating and cooling.

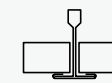
## Applications:

- Reception Areas showrooms and Lounges
- Shops
- Supermarkets/ Department
- Luxury Retail Stores
- General Offices
- Municipal buildings

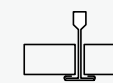


ITEM	SIZE	EDGE DETAIL	NRC	CAC	LR	RECYCLED CONTENT	VOC EMISSION	COST
BS665 BS225	600*600*15 610*610*15	SQ	0.15	33	86%	32%	Low	\$\$
BSR665 BSR225	600*600*15 610*610*15	SLT	0.15	33	86%	32%	Low	\$\$
BSRF665 BSRF225	600*600*15 610*610*15	FL	0.15	33	86%	32%	Low	\$\$
BS669 BS229	600*600*19 610*610*19	SQ	0.15	36	86%	32%	Low	\$\$\$
BSR669 BSR229	600*600*19 610*610*19	SLT	0.15	36	86%	32%	Low	\$\$\$

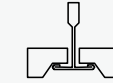
DX/DXL SQ  
Edge



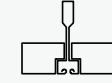
DXT  
SQ Edge



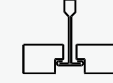
DX/DXL SLT  
Edge



DXF FL  
Edge



DXT FL  
Edge



## Part 2- PRODUCT

### Product Specification Details | Acoustical Ceilings | 09 51 13

#### 2.1 GENERAL

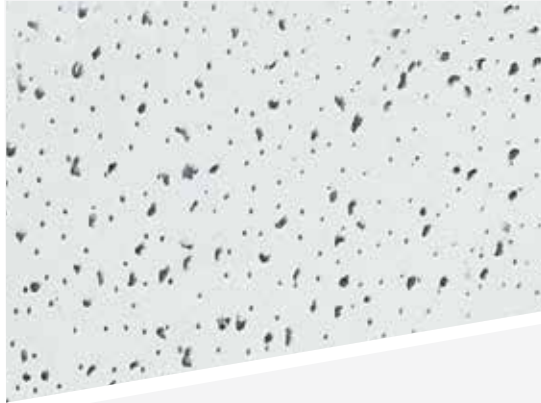
Provide Acoustical Ceiling Material manufactured to meet requirements of this specification in accordance with ASTM E 1264 and EN 13964.

#### 2.2 MATERIALS

Acoustical Ceiling Units:

1. Type III, Form 2, Pattern [G]
2. Factory Applied Vinyl Latex Paint Plain Finish
3. Size 15, 19mm thick x [600 x 600] [600 x 1,200]
4. Edge Detail Trim (Square), Reveal (SLT) (FL)
5. Noise Reduction Coefficient (NRC) [0.15]
6. Ceiling Attenuation Class (CAC) [33-36]
7. Light Reflectance Coefficient (LR) 0.86
8. Recycled Content [32%]
9. Color White similar to RAL 9010
10. Surface Burning Characteristics per ASTM E 84 Class A, Flame Spread: 5, Smoke development: 20
11. Thermal Resistance: 0.23 m<sup>2</sup> °K/W - R 1.3 (15mm), 0.31 m<sup>2</sup> °K/W - R 1.8 (19mm)
12. Humidity Resistance Maximum 95% RH / 40°C for Clima Plus
13. Weight: 3.5 kg/m<sup>2</sup> 15mm, 4.5 kg/m<sup>2</sup> 19mm
14. Relevant LEED Credit: EA Credit 1 | MR Credit 4 | MR Credit 5 | MR Credit 6 | IEQ Credit 3 | IEQ Credit 3.2 | IEQ Credit 4.6 | IEQ Credit 8.1 | IEQ Credit 9
15. Manufacturer, subject to compliance with USGME terms and Conditions
16. Product Name [Plain]

# RADAR™



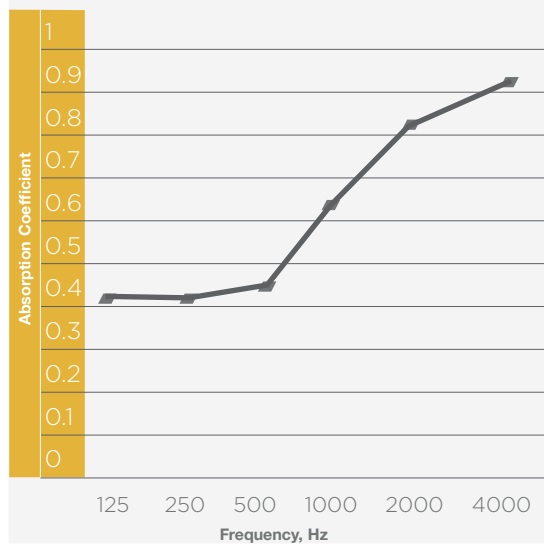
## STANDARD SPECIFICATION Features & Benefits:

- 360 ° non directional pattern with a fresh, clean appearance offers fast, efficient installation
- Economical for all purpose ceiling pattern offered in many sizes
- Ideal for a balancing of sound absorption that provides balance to room acoustics and sound attenuation that is ideal for general commercial construction
- Fire resistant system options, for life safety and protection of property
- Available in 22mm for High NRC & High CAC panels
- Available also in Washable Paint, Plank Sizes

## Applications:

- Education
- Corridors
- Nurses office
- Cafeterias
- Libraries
- Open Office Plans
- Retail Stores

## Radar™ Sound Absorption - 19 mm:



ITEM	SIZE	EDGE DETAIL	NRC	CAC	LR	RECYCLED CONTENT	VOC EMISSION	COST
RDS665	600*600*15							
RDS225	610*610*15	SQ	0.5	35	85%	32%	Low	\$
RDSR665	600*600*15							
RDSR225	610*610*15	SLT	0.5	35	85%	32%	Low	\$
RDSRF665	600*600*15							
RDSRF225	610*610*15	FL	0.5	35	85%	32%	Low	\$
RDC665	600*600*15							
RDC225	610*610*15	SQ	0.5	35	85%	32%	Low	\$
RDC625	600*1200*15							
RDC245	610*1210*15	SQ	0.5	35	85%	32%	Low	\$
RDCR665	600*600*15							
RDCR225	610*610*15	SLT	0.5	35	85%	32%	Low	\$
RDCRF665	600*600*15							
RDCRF225	610*610*15	FL	0.5	35	85%	32%	Low	\$
RDX665	600*600*15							
RDX225	610*610*15	SQ	0.5	35	85%	46%	Low	\$\$
RDX625	600*1200*15							
RDX245	610*1210*15	SQ	0.5	35	85%	46%	Low	\$\$
PLANKS								
RDC325	300*1200*15							
RDC145	310*1210*15	SQ	0.5	35	85%	32%	Low	\$ \$
RDCR325	300*1200*15							
RDCR145	310*1210*15	SLT	0.5	35	85%	32%	Low	\$ \$
RDCRF325	300*1200*15							
RDCRF145	310*1210*15	FL	0.5	35	85%	32%	Low	\$ \$
RDS669	600*600*19							
RDS229	610*610*19	SQ	0.6	37	85%	32%	Low	\$\$\$
RDSR669	600*600*19							
RDSR229	610*610*19	SLT	0.6	37	85%	32%	Low	\$\$\$
RDC669	600*600*19							
RDC229	610*610*19	SQ	0.6	37	85%	32%	Low	\$\$\$
RDCR669	600*600*19							
RDCR229	610*610*19	SLT	0.6	37	85%	32%	Low	\$\$\$
PLANKS								
RDC329	300*1200*19							
RDC149	310*1210*19	SQ	0.6	37	85%	32%	Low	\$\$\$
RDCR329	300*1200*19							
RDCR149	310*1210*19	SLT	0.6	37	85%	32%	Low	\$\$\$
RDCRF329	300*1200*19							
RDCRF149	310*1210*19	FL	0.6	37	85%	32%	Low	\$\$\$
RDC669W	600*600*19							
RDC229W	610*610*19	SLT	0.6	37	85%	32%	Low	\$\$\$
RDCR669W	600*600*19							
RDCR229W	610*610*19	SLT	0.6	37	85%	32%	Low	\$\$\$
RDC6622	600*600*22							
RDC2222	610*610*22	SQ	0.7	40	85%	32%	Low	\$\$\$
RDCR6622	600*600*22							
RDCR2222	610*610*22	SLT	0.7	40	85%	32%	Low	\$\$\$
<div>DX/DXL SQ Edge</div> <div>DXT SQ Edge</div> <div>DX/DXL SLT Edge</div> <div>DXT FL Edge</div> <div>DXF FL Edge</div>								



**Part 2- PRODUCT**

**Product Specification Details | Acoustical Ceilings | 09 51 13**

**2.1 GENERAL**

Provide Acoustical Ceiling Material manufactured to meet requirements of this specification in accordance with ASTM E 1264 and EN 13964.

**2.2 MATERIALS**

1. Type III, Form 2, Pattern [C] [D] [E]

2. Fine non-directional fissured panel

3. Size 15, 19, 22mm thick x [600 x 600] [600 x 1,200] [300 x 1,200]

4. Edge Detail Trim (Square), Reveal (SLT) (FL)

5. Noise Reduction Coefficient (NRC) [0.5] [0.60] [0.70]

6. Ceiling Attenuation Class (CAC) [35]-[37]-[40]

7. Light Reflectance Coefficient (LR) 0.85

8. Recycled Content [32%] [46%]

9. Color White similar to RAL 9010

10. Surface Burning Characteristics per ASTM E 84 Class A, Flame Spread: 5, Smoke development: 20 Reaction to Fire: Euroclass A2-s1,d0 in accordance with EN-13501-1

11. Underwriters Laboratories Inc. Fire-Resistance (ASTM E 119) ANSI/UL 263 Time-Rated Assembly [2hrs] [G203]
12. Thermal Resistance: 0.23 m<sup>2</sup> °K/W - R 1.3 (15mm), 0.31 m<sup>2</sup> °K/W - R 1.8 (19mm), R - 1.9 (19mm High NRC)

13. Humidity Resistance Maximum 95% RH / 40°C for Clima Plus

14. Weight: 3.55 kg/m<sup>2</sup> (Regular / ClimaPlus) 15mm, 5 kg/m<sup>2</sup> (Fire code) 15mm, 4.5 kg/m<sup>2</sup> (Regular / ClimaPlus) 19mm, 6.85 kg/m<sup>2</sup> (Fire code) 19mm

15. Mold Prevention application available upon request per ASTM D3273-1, Rate 10 per D3274

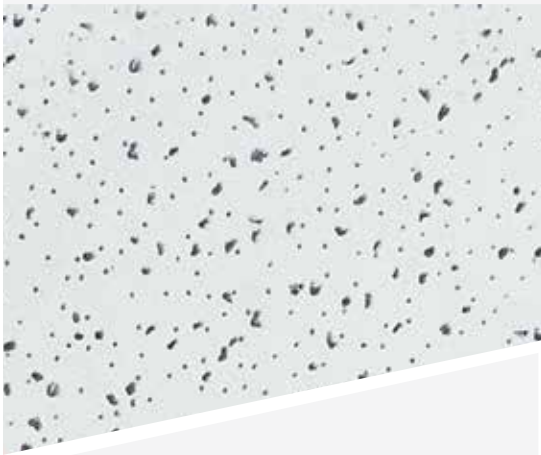
16. Relevant LEED Credit: EA Credit 1 | MR Credit 4| MR Credit 5 | MR Credit 6 | IEQ Credit 3 | IEQ Credit 3.2 | IEQ Credit 4.6 | IEQ Credit 8.1 | IEQ Credit 9

17. Manufacturer, subject to compliance with USGME terms and Conditions

18. Product Name [Radar™]



RADAR™  
CERAMIC



**STANDARD SPECIFICATION  
Features & Benefits:**

- 100% Ceramic Bonded Mineral Fiber
- Ensure Durability and considered the highest Environmental Resistant Panel
- Withstands high heat, ultra high humidity, corrosive chemical fumes and steam
- Ideally in live steam to withstand applications such as saunas and steam rooms
- Provides high Sound attenuation due to it's high density, for room to room privacy
- Humidity resistance up to 100%RH, 40°C without visible sag and in Fire code formulation
- Meets U.S. Coast Guard standards and can be used in high-humidity marine applications.
- 360 ° non directional pattern with a fresh, clean appearance offers fast, efficient installation
- Installed with DONN® ZXLA Aluminum corrosion-resistant grid system

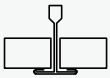
**Applications:**

- Pools and shower areas
- Exterior soffits
- Parking Garages
- Saunas and steam rooms
- Food preparation areas
- Laboratories



ITEM		SIZE	EDGE DETAIL	NRC	CAC	LR	RECYCLED CONTENT	VOC EMISSION	COST
RDX665		600*600*15	SQ	0.4	40	83%	46%	N/A%	\$\$\$\$
RDX225		610*610*15							

DX/DXL SQ  
Edge



DXT  
SQ Edge



**Part 2- PRODUCT**

**Product Specification Details | Acoustical Ceilings | 09 51 13**

**2.1 GENERAL**

Provide Acoustical Ceiling Material manufactured to meet requirements of this specification in accordance with ASTM E 1264 and EN 13964.

**2.2 MATERIALS**

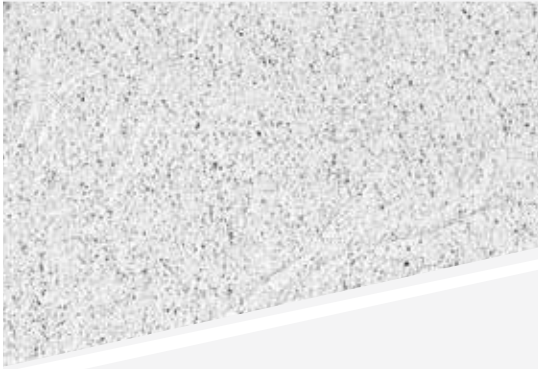
Acoustical Ceiling Units:

1. Type XX, Form 2, Pattern [C] [D] [E]
2. Water Felted Ceramic Bonded Mineral fiber non-directional fissured panel
3. Size 15mm thick x [600 x 600]
4. Edge Detail Trim (Square)
5. Noise Reduction Coefficient (NRC) [0.4]
6. Ceiling Attenuation Class (CAC) [40]
7. Light Reflectance Coefficient (LR) 0.83
8. Recycled Content [46%]
9. Color White similar to RAL 9010
10. Surface Burning Characteristics per ASTM E 84 Class A, Flame Spread: 5, Smoke development: 20
11. Underwriters Laboratories Inc. Fire-Resistance (ASTM E 119) ANSI/UL 263 Time-Rated Assembly [2hrs] [G202]
12. Thermal Resistance: 0.23 m<sup>2</sup> °K/W - R 1.3 (15mm)
13. Humidity Resistance Maximum 100% RH / 40°C
14. Weight: 7.8 kg/m<sup>2</sup>
15. Inert to Mold Growth
16. Relevant LEED Credit: EA Credit 1 | MR Credit 4 | MR Credit 5 | MR Credit 6 | IEQ Credit 3 | IEQ Credit 3.2 | IEQ Credit 4.6 | IEQ Credit 8.1 | IEQ Credit 9
17. Manufacturer, subject to compliance with USGME terms and Conditions
18. Product Name [Radar™ Ceramic]



# SANDRIFT™

[IMPORTED]

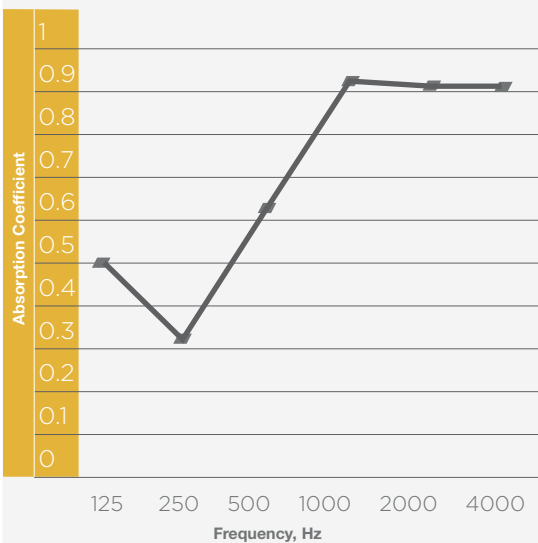


## STANDARD SPECIFICATION

### Features & Benefits:

- Casted Panels with a durable surface that resist scrapes commonly caused by accessing ceiling plenum
- Soft, rolling texture of drifting sand
- Embossed texture that replicates the natural beauty of drifting snow, ideal for use with up lighting or strong side lighting to accentuate the textured design
- Combination of High sound absorption and High sound attenuation when laminated with Paper back surface for effective reduction of unwanted noise and excellent privacy
- HRC (High Recycled Content) for optimized recycled content formulations to help maximize LEED recycled content contribution
- Available strictly in Clima Plus for 95%RH resistance and Reveal Edge panels and in Firecode formulation
- Aluminum foil or paper backing acts as a sound barrier and resists air filtration for cleaner panels
- Classified as zero-emitting per standards established by the Collaborative for High-Performance Schools (CHPS), following California Specification 01350 testing methods

### Sandrift™ Sound Absorption



### Applications:

- Conference and Lobby areas
- Department Stores
- Entertainment and Gaming
- Executive Offices
- Cafeteria/Restaurant

ITEM		SIZE	EDGE DETAIL	NRC	CAC	LR	RECYCLED CONTENT	VOC EMISSION	COST
808	Paper-Back	610*610*19	SL	0.7	38	83%	71%	Zero	\$\$\$
809	Paper-Back	610*610*19	FL	0.7	38	83%	71%	Zero	\$\$\$
815	Foil-Back	610*610*19	SL	0.55	35	83%	70%	Zero	\$\$\$

DX/DXL SL  
Edge

DXT FL  
Edge

DXF FL  
Edge

## Part 2- PRODUCT

### Product Specification Details | Acoustical Ceilings | 09 51 13

#### 2.1 GENERAL

Provide Acoustical Ceiling Material manufactured to meet requirements of this specification in accordance with ASTM E 1264.

#### 2.2 MATERIALS

Acoustical Ceiling Units:

- Type III, Form 4, Pattern [Z]
- Fine textured panels
- Size 19 mm thick x [600 x 600]
- Edge Detail Reveal (SL) (FL)
- Noise Reduction Coefficient (NRC) [0.55] [0.7]
- Ceiling Attenuation Class (CAC) [35] - [38]
- Light Reflectance Coefficient (LR) 0.83
- Recycled Content [71%]
- Color White similar to RAL 9010
- Surface Burning Characteristics per ASTM E 84 Class A, Flame Spread:25, Smoke development:50
- Underwriters Laboratories Inc. Fire-Resistance (ASTM E 119) ANSI/UL 263 Time-Rated Assembly [2hrs] [G228]
- Thermal Resistance: R 1.7 (Class A), R 1.3 (Fire Code)
- Humidity Resistance Maximum 95% RH / 40°C Clima Plus
- Weight: 8 kg/m<sup>2</sup> (Class A), 8.35 kg/m<sup>2</sup> (Fire code)
- Mold Prevention application per ASTM D3273-1, Rate 10 per D3274
- VOC Class: Zero emission per CHPS Collaborative for High-Performance Schools
- Relevant LEED Credit: EA Credit 1 | MR Credit 4| MR Credit 5 | MR Credit 6 | IEQ Credit 3 | IEQ Credit 3.2 | IEQ Credit 4.6 | IEQ Credit 8.1 | IEQ Credit 9
- Manufacturer, subject to compliance with USG terms and Conditions
- Product Name [Sandrift™]

# SONATA



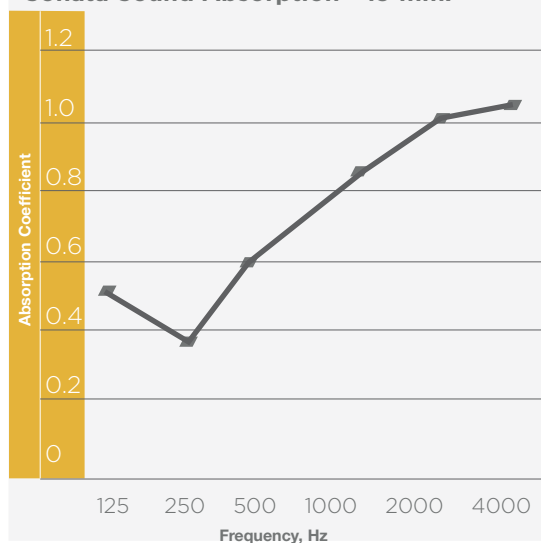
## STANDARD SPECIFICATION Features & Benefits:

- Fine, monolithic texture Industry's highest light reflectance LR 0.89 reduces light fixtures and energy use is part of Indirect lighting
- High Impact and scratch resistance, durable and cleanable surface
- Available in High NRC formulation and in optimized recycled content formulations to help maximize LEED recycled content contribution
- ClimaPlus type with antimicrobial treatment is suitable for healthcare application
- Available for water repellency application on both Top and back surfaces
- Available in Plank size, FLB edges compatible with Logix Integrated Ceiling System

## Applications:

- Healthcare
- Executive Offices and Conference rooms
- Reception areas and Lobbies
- Classrooms
- Corridors
- Dining rooms, kitchens and food-prep areas

## Sonata Sound Absorption - 19 mm:

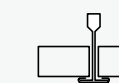


ITEM		SIZE	EDGE DETAIL	NRC	CAC	LR	RECYCLED CONTENT	VOC EMISSION	COST
SC669	☂	600*600*19	SQ	0.7	37	89%	83%	Low	\$\$\$\$
SC229	☂	610*610*19							
SCR669	☂	600*600*19	SLT	0.7	37	89%	83%	Low	\$\$\$\$
SCR229	☂	610*610*19							
SCRF669	☂	600*600*19	FL	0.7	37	89%	83%	Low	\$\$\$\$
SCRF229	☂	610*610*19							
SC629	☂	600*1200*19	SQ	0.7	37	89%	83%	Low	\$\$\$\$
SC249	☂	610*1210*19							
SCR629	☂	600*1200*19	SLT	0.7	37	89%	83%	Low	\$\$\$\$
SCR249	☂	610*1210*19							
SCRF629	☂	600*1200*19	FL	0.7	37	89%	83%	Low	\$\$\$\$
SCRF249	☂	610*1210*19							

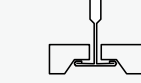
DX/DXL SQ  
Edge



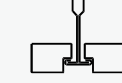
DXT  
SQ Edge



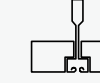
DX/DXL SLT  
Edge



DXT FL  
Edge



DXF FL  
Edge



## Part 2- PRODUCT

### Product Specification Details | Acoustical Ceilings | 09 51 13

#### 2.1 GENERAL

Provide Acoustical Ceiling Material manufactured to meet requirements of this specification in accordance with ASTM E 1264 and EN 13964.

#### 2.2 MATERIALS

Acoustical Ceiling Units:

1. Type IV, Form 2, Pattern [E] [G]
2. Mineral Fiber Substrate manufactured in wet Felted Technology and finished with Painted Fiber Glass scrim
3. Size 19,22 mm thick x [600 x 600] [600 x 1,200] [300 x 1,200] [300 x 1,500]
4. Edge Detail Trim (Square), Reveal (SLT) (FL)
5. Noise Reduction Coefficient (NRC) [0.7]
6. Ceiling Attenuation Class (CAC) [37]
7. Light Reflectance Coefficient (LR) 0.89
8. Recycled Content [up to 83%]
9. Color White similar to RAL 9010
10. Surface Burning Characteristics per ASTM E84 Class A, Flame Spread:20, Smoke development:50 Reaction to Fire: Euroclass A2-s1,d0 in accordance with EN-13501-1
11. Thermal Resistance: 0.31 m<sup>2</sup> °K/W - R 1.8 (19mm)
12. Humidity Resistance Maximum 95% RH / 40°C
13. Weight: 5 kg/m<sup>2</sup>
14. Mold Prevention application per ASTM D3273-1, Rate 10 per D3274
15. Washability / Scrubbability: Exceeds 1000 Wash/Scrub Cycles without surface break or the extent of abrasion per ASTM D4828 & D2486
16. Available in Water Repellency on Top & Back surface for Health Care application up to 5 Hours under [Sonata Health Care]
17. Relevant LEED Credit: EA Credit 1 | MR Credit 4 | MR Credit 5 | MR Credit 6 | IEQ Credit 3 | IEQ Credit 3.2 | IEQ Credit 4.6 | IEQ Credit 8.1 | IEQ Credit 9
18. Manufacturer, subject to compliance with USGME terms and Conditions
19. Product Name [Sonata]



# SPARTA

Plain White

Star Plus

## STANDARD SPECIFICATION Features & Benefits:

- Laminated Washable Vinyl facing for easy maintenance
- Available only in Plain facings with smooth appearance for Plain White pattern and light texture for Star Plus pattern
- Ultra high humidity resistant and sag resistance ensures durability in standard or extreme environmental conditions. May be installed early in the building program
- It comes with Aluminum Foil backing which acts as a vapor barrier and resists breathing so panel stays cleaner longer
- Scrub resistant. Dirt marks are easy to remove
- Scuff and scratch resistant, for longer life
- Very suitable for Health Care applications
- Economical and easy to trim and install

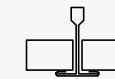
## Applications:

- Healthcare / Laboratories
- Leisure/ IT Room
- Toilet/Wet Areas
- Department Stores
- Retail Showrooms

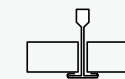


ITEM	SIZE	EDGE DETAIL	NRC	CAC	LR	RECYCLED CONTENT	VOC EMISSION	COST
LSP665	600*600*15	SQ	0.15	35	84%	32%	Low	\$
LSP225	610*610*15	SQ	0.15	35	84%	32%	Low	\$
LPW665	600*600*15	SQ	0.15	35	84%	32%	Low	\$
LPW225	610*610*15	SQ	0.15	35	84%	32%	Low	\$
LSP669	600*600*19	SQ	0.15	36	84%	32%	Low	\$\$
LSP229	610*610*19	SQ	0.15	36	84%	32%	Low	\$\$
LPW669	600*600*19	SQ	0.15	36	84%	32%	Low	\$\$
LPW229	610*610*19	SQ	0.15	36	84%	32%	Low	\$\$

DX/DXL SQ  
Edge



DXT  
SQ Edge



## Part 2- PRODUCT

### Product Specification Details | Acoustical Ceilings | 09 51 13

#### 2.1 GENERAL

Provide Acoustical Ceiling Material manufactured to meet requirements of this specification in accordance with ASTM E 1264.

#### 2.2 MATERIALS

Acoustical Ceiling Units:

1. Type X, Pattern [G]
2. Smooth and textured laminated panels
3. Size 15, 19mm thick x [600 x 600]
4. Edge Detail Trim (Square)
5. Noise Reduction Coefficient (NRC) [0.15]
6. Ceiling Attenuation Class (CAC) [35] [36]
7. Light Reflectance Coefficient (LR) 0.84
8. Recycled Content [32%]
9. Color White similar to RAL 9010
10. Surface Burning Characteristics per ASTM E84, Class A, Flame Spread: 20, Smoke Development: 35
- 11 Thermal Resistance: 0.23 m<sup>2</sup> °K/W - R 1.3 (15mm), 0.31 m<sup>2</sup> °K/W - R 1.8 (19mm)
12. Humidity Resistance Maximum 95% RH / 40°C
13. Weight: 3.5 kg/m<sup>2</sup> 15mm, 4.5 kg/m<sup>2</sup> 19mm
14. Mold Prevention: Inherent to Mold/Mildew growth
15. Relevant LEED Credit: EA Credit 1 | MR Credit 4 | MR Credit 5 | MR Credit 6 | IEQ Credit 3 | IEQ Credit 3.2 | IEQ Credit 4.6 | IEQ Credit 8.1 | IEQ Credit 9
16. Manufacturer, subject to compliance with USGME terms and Conditions
17. Product Name [Sparta]

# TAIGA HYGIENE



## STANDARD SPECIFICATION Features & Benefits:

- Panels are offered in smoothed Plain and are suitable for healthcare application.
- Taiga Hygiene has been developed to meet the most stringent demand on hygiene and clean ability
- All Taiga Hygiene items have a special fungicide treatment in the core and on the finished painted surface to enhance the resistance to growth of micro-organisms and ensure regular clean ability. It contains a broad-spectrum antimicrobial additive on the face and the back of the panel that provides resistance against the growth of mold and mildew.
- High light reflectance performance 86%
- High humidity resistant in ClimaPlus, suitable for applications with intermittent heating and Cooling

## Applications:

- Healthcare
- Consulting/Patient/treatment Rooms
- Clinics / Laboratories
- Schools
- General Offices

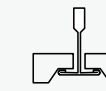


ITEM	SIZE	EDGE DETAIL	NRC	CAC	LR	RECYCLED CONTENT	VOC EMISSION	COST
NA4107M-ME	600*600*15	SQ	0.15	33	86%	32%	Low	\$\$
NA4107M-IM	610*610*15							
NB4107M-ME	600*600*15	SLT	0.15	33	86%	32%	Low	\$\$
NB4107M-IM	610*610*15							
NA4997M-ME	600*600*19	SQ	0.15	36	86%	32%	Low	\$\$\$
NA4997M-IM	610*610*19							
NB4997M-ME	600*600*19	SLT	0.15	36	86%	32%	Low	\$\$\$
NB4997M-IM	610*610*19							

DX/DXL SQ  
Edge



DX/DXL SLT  
Edge



## Part 2- PRODUCT

### Product Specification Details | Acoustical Ceilings | 09 51 13

#### 2.1 GENERAL

Provide Acoustical Ceiling Material manufactured to meet requirements of this specification in accordance with ASTM E 1264 and EN 13964.

#### 2.2 MATERIALS

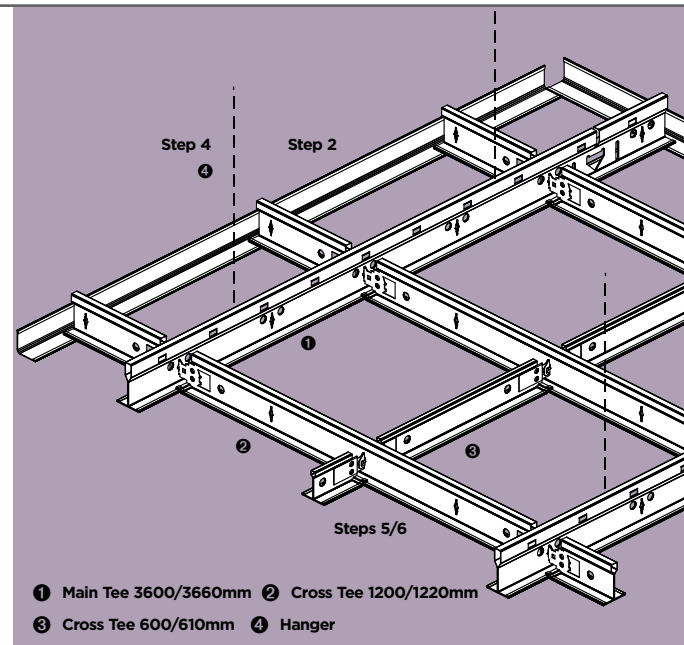
Acoustical Ceiling Units:

1. Type III, Form 2, Pattern [G]
2. Plain finish panels
3. Size 15, 19mm thick x [600 x 600]
4. Edge Detail Trim (Square), Reveal (SLT)
5. Noise Reduction Coefficient (NRC) [0.15]
6. Ceiling Attenuation Class (CAC) [33 - 36]
7. Light Reflectance Coefficient (LR) 0.86
8. Recycled Content [32%]
9. Color White similar to RAL 9010
10. Surface Burning Characteristics per ASTM E 84 Class A, Flame Spread: 5, Smoke development: 20
11. Reaction to Fire: Euroclass A2-s1,d0 in accordance with EN-13501-1
11. Thermal Resistance: 0.23 m<sup>2</sup> °K/W - R 1.3 (15mm), 0.31 m<sup>2</sup> °K/W - R 1.8 (19mm)
12. Humidity Resistance Maximum 95% RH / 40°C for Clima Plus
13. Weight: 3.5 kg/m<sup>2</sup> 15mm, 4.5 kg/m<sup>2</sup> 19mm
14. Mold Prevention application per ASTM D3273-1, Rate 10 per D3274
15. Washability / Scrubbability: Exceeds 1000 Wash/Scrub Cycles without surface break or the extent of abrasion per ASTM D4828 & D2486
16. Relevant LEED Credit: EA Credit 1 | MR Credit 4 | MR Credit 5 | MR Credit 6 | IEQ Credit 3 EQ Credit 3.2 | IEQ Credit 4.6 | IEQ Credit 8.1
17. Manufacturer, subject to compliance with USGME terms and Conditions
18. Product Name [Taiga Hygiene]



# INSTALLING A DONN® GRID SYSTEM

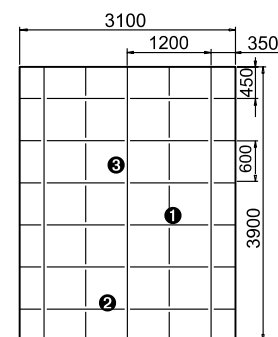
The appearance of a suspended acoustical ceiling is dependent both on the materials used and on the quality of the installation. USG manufactures components to meet BS8290 & BS EN 13964, assuring that the material, structural and quality standards are as prescribed. Installation must meet BS8290, assuring proper level and secure attachment as prescribed. Good construction conditions are very important when successfully installing a suspended ceiling. It is recommended that the temperature and humidity range be 14 – 25°C and max. 75% relative humidity. Store materials in a protected area, store tiles on the job at least 3 days prior to installation.



## Step 1

**Measuring and planning are key first steps in the installation process.**

Measurement and placement of the tees will be on centre (o.c.), meaning from the centre of one to the centre of the next. Planning starts with a drawing of the room that shows all walls, including bays, alcoves beams and stairwells. Note which direction the joists (if any) are running, or if architectural drawings necessitate working in one direction or another. Determine the lines for main runners and cross tees in such a way that the tiles that about the wall are at least half a tile (300mm).

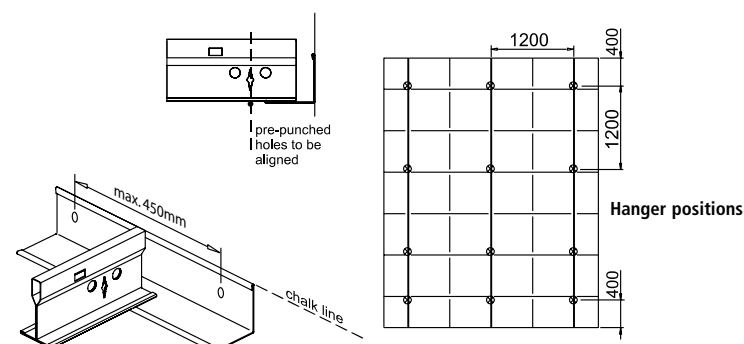


1 Main Tee 3600/3660mm 2 Cross Tee 1200/1220mm  
3 Cross Tee 600/610mm

## Step 2

**Mark the desired ceiling height (maintaining at least 70mm clearance below the lowest duct, pipe or beam.)**

Measure and mark the walls at all corners above the installation level (= add the height of the wall angle to the desired ceiling height.) Snap a chalk line and test for level. Measuring down from joists or up from the floor is not recommended, since neither may be level. Install wall angle with top edge of angle at the chalk line, spacing appropriate fixings 450mm o.c. or closer. Cut and mitre outside and inside angles at 45°, fitting them snugly together. Alternatively, simply butt angles at corner (as in system illustration).



## Step 3

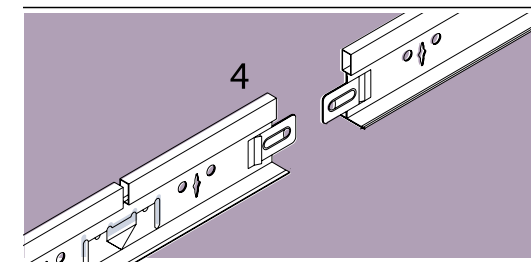
**To confirm level, stretch a string until taut along the positions which the main tee will occupy.**

Inserting a nail between the wall and the wall angle at marked locations serves as a good anchor for this purpose. Stretch another string across the room where the first row of cross tees will be located. This identifies where the first prepunched slots need to fall. Check to be sure the cross tee string is at 90° to the main tee string via the 3-4-5 method. Install the hangers at 1200mm o.c. above the lines of the main runners. Fix to the structure above using appropriate plugs, screws or other devices.

## Step 4

**Attach the main runners to the hangers.**

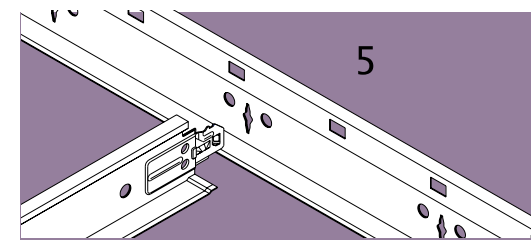
In each row, trim the main tee so that the cross-tee slot will line up with the cross-tee string. Mount main tees, resting the cut end of the main tee on the wall angle. The cut end of the main runner should be about 5mm away from the wall.



## Step 5

**Install cross tees, assuring that they are adequately connected to main tees (they "click" in place when properly seated).**

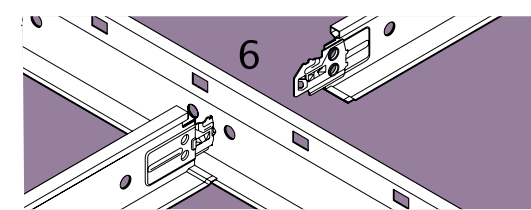
Where two cross tees intersect in the same slot, insert second cross-tee end to the left of the first. Where a cross-tee is installed without an opposing cross-tee, a nail should be slipped into the opening of the cross-tee clip to maintain the pull-out value for the cross-tee.



## Step 6

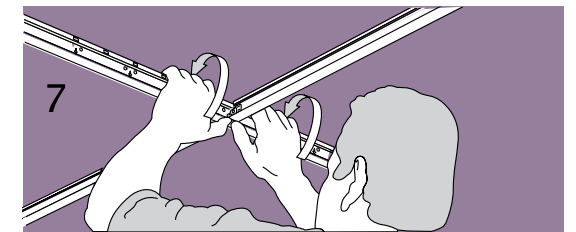
**Lay in panels, beginning at one corner and completing row by row.**

Tilt each panel up through the opening and lower it to rest squarely on all four tees.



## Step 7

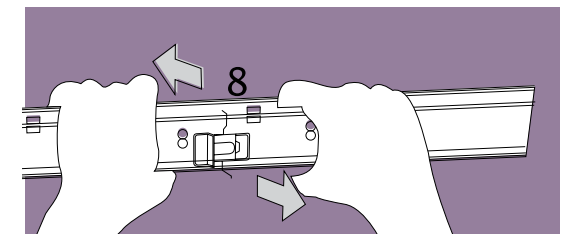
**Removal as easy as installation.** Just grasp the main tee with one thumb under the main tee-cross tee connection and, pushing up with the thumb, give the main tee a quick, short twist. That's all it takes – no tools needed. The strong clip means that the grid can be reinstalled straightaway with no tearing or bending of the clip.



## Step 8

**Main tee demounting**

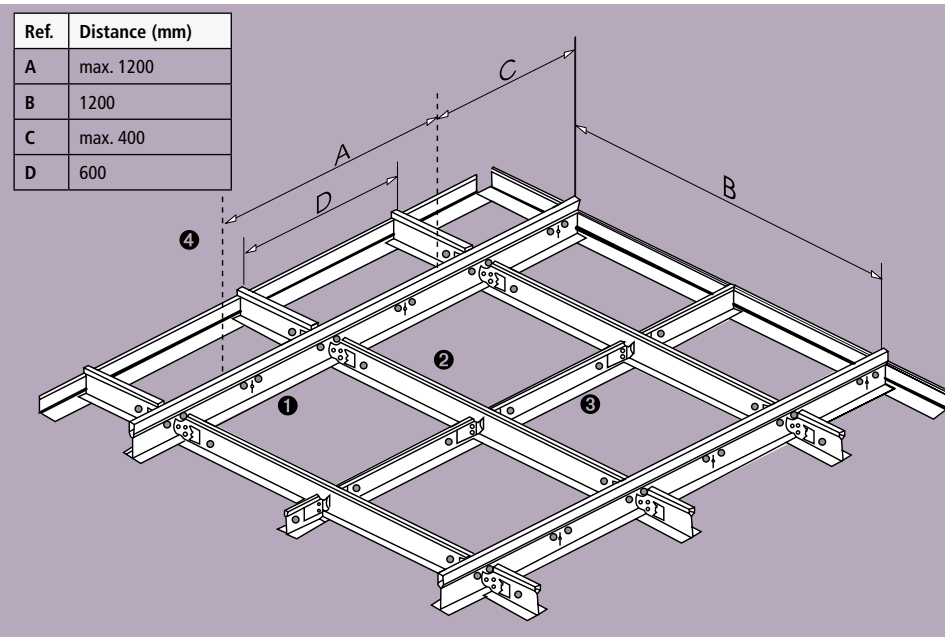
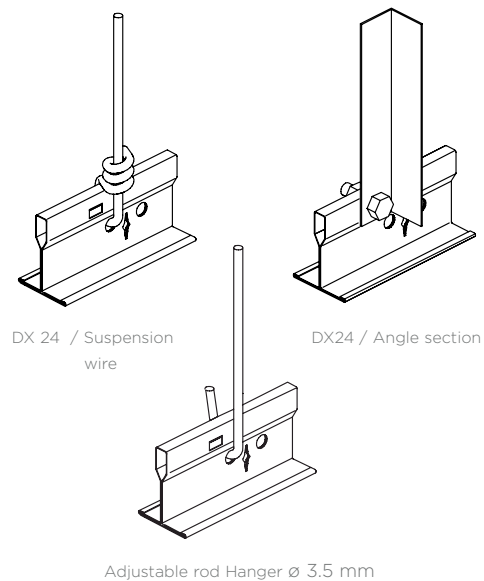
Using a straight shearing motion, push with your left hand and pull with your right hand to disconnect the main runner splice. Note: do not twist the splice during the removal procedure



## Other installation tips

- A** Cut tees with aviation snips, first the stem and then the flanges.
- B** Cut mineral fibre panels with utility knife and straight edge, cutting the face first. Cut panels should be at least 15mm larger than the opening.
- C** To install panels around obstructions, draw their exact locations on the panels and cut out. Then cut the panel in two parts through the largest section of the cut-out to enable fitting.
- D** To trim for Shadowline edge, use a utility knife to cut the panel, first at the face, then from the edge, to the same depth as Shadowline. If windows, stairwells, etc., extend above the ceiling plane, build suitable valances and attach wall angle.

# DONN® EXPOSED GRID



## Materials

All USG suspension systems feature a body and cap made of hot-dip galvanized steel. To ensure that the cap remains attractive and rust-free for long term, manufacturing includes an exclusive four-step coating process that outperforms the competition in paint adhesion and corrosion resistance, as proven by industry-standard salt spray tests conducted by an independent laboratory. For our extreme environments we offer our grid system, with hot-dipped galvanized steel body and painted aluminum cap for additional corrosion and humidity resistance.

## Product Information

Nr	Description	Item reference Metric	Item reference Imperial
1	Main Runner	DX3600LD	DX3660LD
2	Long Cross Tee	DX1200LM	DX1220LM
3	Short Cross Tee	DX600LM	DX610LM
4	Wall Angle	MT3600-MS3600	
6	Hanger	35RHXXXX	

## Quantity

Linear meter required per square meter  
For construction layouts use the following formulas to calculate linear meters (LM) per square meter (m²)

■ Main tee  
(1/ Main Tee centres)  
eg. if MT at 1200mm centres  $\frac{1}{1.2} = 0.83\text{LM/m}^2$

■ Cross tee  
(1/ Cross Tee centres)  
eg. if CT at 600mm centres  $\frac{1}{0.60} = 1.67\text{LM/m}^2$

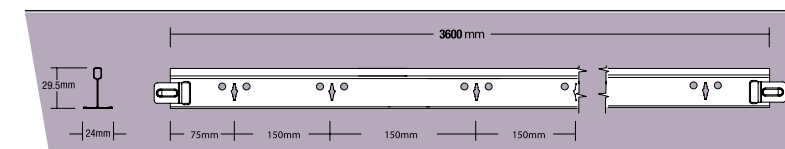
Note: These calculations do not allow for wastage, damage or irregularities but are intended as an informative guideline to assist with the calculation of product required for a given area (in m²)

## System characteristics:

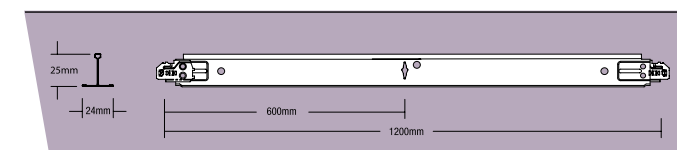
- Exposed 24mm system
- The most widely used grid system in the world
- Safe, fast and simple to install & easily accessible
- Maximum economy and design simplicity
- Cross-tees with override-ends resist twisting and give professionally finished look with no exposed steel edges
- Patented QUICK-RELEASE TM clip design: demountable without tools
- Compatible with square edge and SLB edge ceiling tiles
- Audible Click means you know when tees are connected
- Exceed load compliance specifications as per ASTM C 635
- Available in metric and imperial sizes

# DONN® DX24 LIGHT DUTY

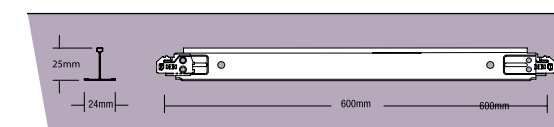
## Main Runner DX3600LD



## Long Cross Tee DX1200LM



## Short Cross Tee DX600LM



## Maximum allowed weight of tiles per m² of ceiling

Hanger distance (mm)	Module			
	Main runner at 1200mm		Main runner at 600mm	
	600 x 600	600 x 1200	600 x 600	600 x 1200
800	20.90	21.20	-	-
1000	20.90	21.20	41.90	42.90
1200	10.50	10.50	20.90	20.90
1500	4.10	4.20	8.70	8.90
<p>Note: The load per m² must be distributed uniformly (no point loads) over the ceiling area. After loading, the deflection of any grid component will remain within the maximum deflection per span as stated in BS: 8290: 1991, provided the grid layout is as presented in the sketch.</p> <p>Please consult USG for other layouts, load or hanger distance.</p>				

## Specification DONN® DX24-LD

Grid shall be DONN® DX24 exposed grid system, hot dipped galvanized steel 'T' section with pre-painted capping. Table width 24mm. To suit variable module sizes, most typically 600 x 600mm and 1200 x 600mm. Main runners: 29.5 x 24mm, ref DX3600LD shall be normally spaced at 1200mm centres and suspended from the structure or soffit using pre-straightened 2mm diameter HDG steel wire hangers, or adjustable rod hanger Ø 35 mm, ref 35 RHXXXX at typically 1200mm centres. First hanger shall be no more than 450mm from the perimeter. Main runners joined end on by means of the integral splice. Splice connections shall be supported within 150mm with a hanger, and shall be staggered across the ceiling area.

Cross tees: 1200mm cross tees, 25 x 24mm ref DX1200LM, shall be installed perpendicular between the main runners at 600mm centres to form a 1200 x 600mm module. If applicable, 600mm cross tees, 25 x 24mm ref DX600LM, shall be installed perpendicular between the 1200mm cross tees to form a 600 x 600mm module. All cross tees feature a 'joggled' end detail.

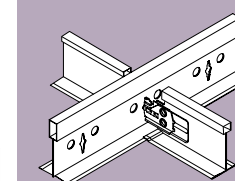
Perimeter trims: 22mm x 19.5mm / 19 x 9 x 9 x 19mm painted HDG steel angle trim, ref MT3600/MS3600, fixed to perimeter wall using fixings appropriate to the structure at maximum 450mm centres. Corners shall normally be finished with a lapped or butt joint.

## Tile edge supported



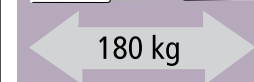
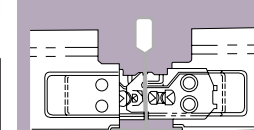
## Cross section

Main tee and cross tee connection.



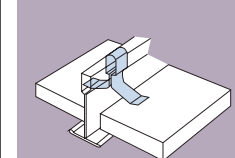
## Clip to Clip Security

Clip to Clip Connection



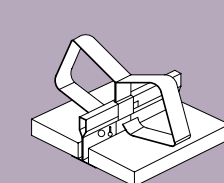
## Hold Down Clip

Partition head fixing using revoc clips with DX24.



## Spring clip

Spring clip application.



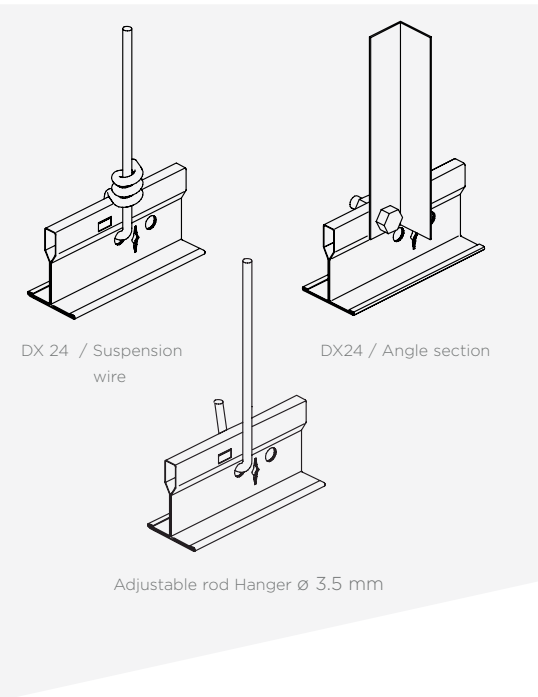
**Hangers - Seismic Application:** Shall be from pre straightened 2mm diameter HDG steel wire, ref DSW2. Hangers shall be fixed through holes in stalk or bulb of main runner and wrapped around itself a minimum of 3 times. Alternatively, hangers can be formed from 25 x 25mm HDG steel angle section, or Ø 35mm adjustable rod hanger, fixed to main runners using appropriate self drilling screws or nut and bolt fixings. Hangers shall be normally spaced at 1200mm centres although alternative spacings are acceptable provided maximum loadings stated above are not exceeded. Hangers to be fixed to structure or soffit using fixings appropriate to the structure or soffit.

**Hold down clips:** Where applicable, these shall be non removable type clips. These generally will only be required in certain fire protecting assemblies or where there is a risk of tile uplift. Where fitted, these should be applied to all grid members at a rate of 1 clip per 600mm of tile edge.



# DONN® DX24

## INTERMEDIATE DUTY



### Materials

All USG suspension systems feature a body and cap made of hot-dip galvanized steel. To ensure that the cap remains attractive and rust-free for long term, manufacturing includes an exclusive four-step coating process that outperforms the competition in paint adhesion and corrosion resistance, as proven by industry-standard salt spray tests conducted by an independent laboratory. For our extreme environments we offer our grid system, with hot-dipped galvanized steel body and painted aluminum cap for additional corrosion and humidity resistance.

### Quantity

Linear meter required per square meter  
For construction layouts use the following formulas to calculate linear meters (LM) per square meter (m2)

#### ■ Main tee

(1/ Main Tee centres)

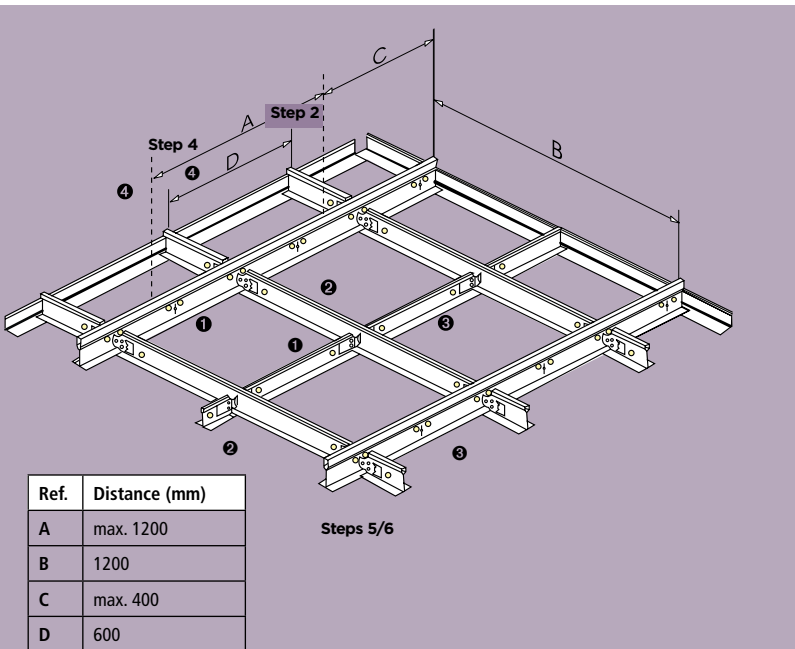
eg. if MT at 1200mm centres  $\frac{1}{1.2} = 0.83\text{LM/m}^2$

#### ■ Cross tee

(1/ Cross Tee centres)

eg. if CT at 600mm centres  $\frac{1}{0.60} = 1.67\text{LM/m}^2$

Note: These calculations do not allow for wastage, damage or irregularities but are intended as an informative guideline to assist with the calculation of product required for a given area ( in m<sup>2</sup>)



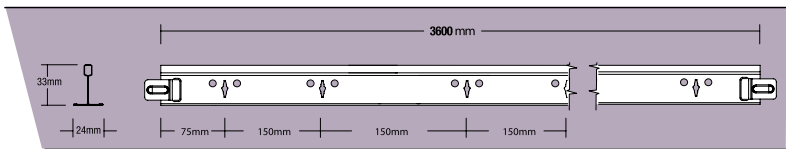
### Product Information

Nr	Description	Item reference	
		Metric	Imperial
1	Main Runner	DX3600IM	DX3660IM
2	Long Cross Tee	DX1200LM	DX1220LM
3	Short Cross Tee	DX600LM	DX610LM
4	Wall Angle	MT3600-MS3600	
5	Hanger	35RHXXXX	

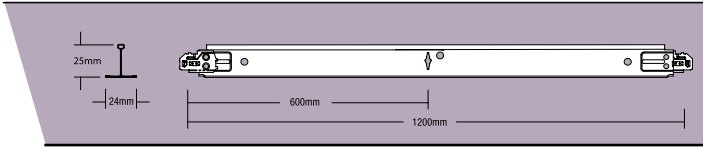
### System characteristics:

- Exposed 24mm system
- The most widely used grid system in the world
- Safe, fast and simple to install & easily accessible
- Maximum economy and design simplicity
- Cross-tees with override-ends resist twisting and give professionally finished look with no exposed steel edges
- Patented QUICK-RELEASE™ clip design: demountable without tools
- Compatible with square edge and SLB edge ceiling tiles
- Audible Click means you know when tees are connected
- Exceed load compliance specifications as per ASTM C 635
- Available in metric and imperial sizes

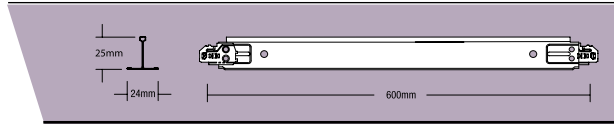
### Main Runner DX3600IM



### Long Cross Tee DX1200LM



### Short Cross Tee DX600LM



Maximum allowed weight of tiles per m<sup>2</sup> of ceiling

Hanger distance (mm)	Module			
	Main runner at 1200mm		Main runner at 600mm	
600 x 600	600 x 600	600 x 1200	600 x 600	600 x 1200
800	23.2	23.5	-	-
1000	23.2	23.5	46.5	47.6
1200	11.6	11.6	23.2	23.4
1500	4.5	4.6	9.7	9.9
Note: The load per m <sup>2</sup> must be distributed uniformly (no point loads) over the ceiling area. After loading, the deflection of any grid component will remain within the maximum deflection per span as stated in BS: 8290: 1991, provided the grid layout is as presented in the sketch.				
Please consult USG for other layouts, load or hanger distance.				

### Specification DONN® DX24-IM

Grid shall be DONN® DX24 exposed grid system, hot dipped galvanised steel ' T ' section with pre-painted capping. Table width 24mm. To suit variable module sizes, most typically 600 x 600mm and 1200 x 600mm. Main runners: 33 x 24mm, ref DX3600IM shall be normally spaced at 1200mm centres and suspended from the structure or soffit using pre-straightened 2mm diameter HDG steel wire hangers, ref on adjustable rod hanger ø 3.5 , ref 35 RHXXX at typically 1200mm centres. First hanger shall be no more than 450mm from the perimeter. Main runners joined end on by means of the integral splice. Splice connections shall be supported within 150mm with a hanger, and shall be staggered across the ceiling area.

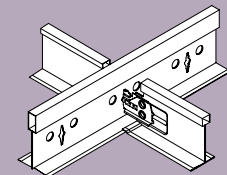
**Cross tees:** 1200mm cross tees, 25 x 24mm ref DX1200LM, shall be installed perpendicular between the main runners at 600mm centres to form a 1200 x 600mm module. If applicable, 600mm cross tees, 25 x 24mm ref DX600LM, shall be installed perpendicular between the 1200mm cross tees to form a 600 x 600mm module. All cross tees feature a 'joggled' end detail.

### Tile edge supported



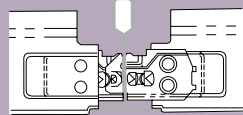
### Cross section

Main tee and cross tee connection.



### Clip to Clip Security

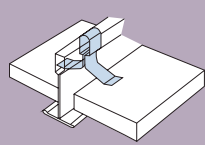
Clip to Clip Connection



180 kg

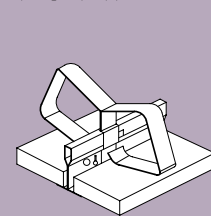
### Hold Down Clip

Partition head fixing using revoc clips with DX24.



### Spring clip

Spring clip application.

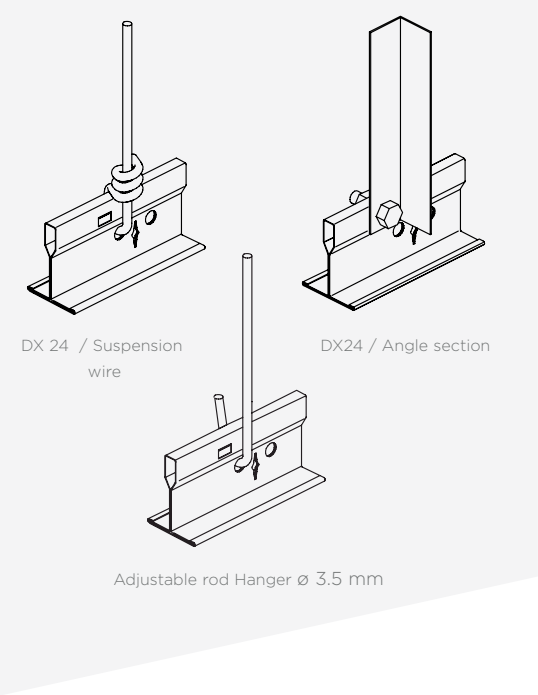


**Perimeter trims:** 22mm x 19.5mm /19 x 9 x 9 x 19mm painted HDG steel angle trim, ref MT3600/MS3600, fixed to perimeter wall using fixings appropriate to the structure at maximum 450mm centres. Corners shall normally be finished with a lapped or butt joint.

**Hangers - Seismic Application:** Shall be from pre straightened 2mm diameter galvanized wire hanger, ref 35RHXXXX. Hangers shall be fixed through holes in stalk or bulb of main runner and wrapped around itself a minimum of 3 times. Alternatively, hangers can be formed from 25 x 25mm HDG steel angle section, on 35 ø mm adjustable rod hanger fixed to main runners using appropriate self drilling screws or nut and bolt fixings. Hangers shall be normally spaced at 1200mm centres although alternative spacings are acceptable provided maximum loadings stated above are not exceeded. Hangers to be fixed to structure or soffit using fixings appropriate to the structure or soffit.

**Hold down clips:** Where applicable, these shall be non removable type clips. These generally will only be required in certain fire protecting assemblies or where there is a risk of tile uplift. Where fitted, these should be applied to all grid members at a rate of 1 clip per 600mm of tile edge.

# DONN® DX24 HEAVY DUTY - STANDARD



## Materials

All USG suspension systems feature a body and cap made of hot-dip galvanized steel. To ensure that the cap remains attractive and rust-free for long term, manufacturing includes an exclusive four-step coating process that outperforms the competition in paint adhesion and corrosion resistance, as proven by industry-standard salt spray tests conducted by an independent laboratory. For our extreme environments we offer our grid system, with hot-dipped galvanized steel body and painted aluminum cap for additional corrosion and humidity resistance.

## Quantity

Linear meter required per square meter  
For construction layouts use the following formulas to calculate linear meters (LM) per square meter (m<sup>2</sup>)

### ■ Main tee

(1/ Main Tee centres)

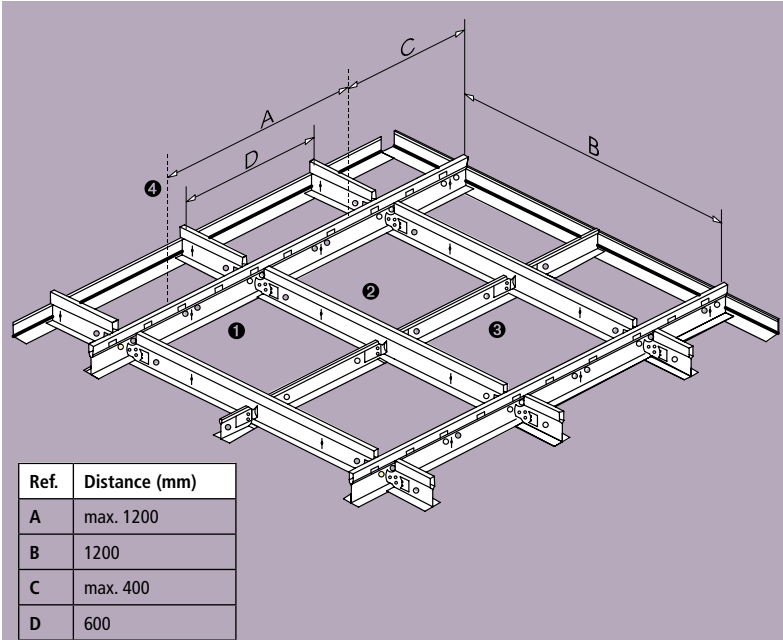
eg. if MT at 1200mm centres  $\frac{1}{1.2} = 0.83\text{LM/m}^2$

### ■ Cross tee

(1/ Cross Tee centres)

eg. if CT at 600mm centres  $\frac{1}{0.60} = 1.67\text{LM/m}^2$

Note: These calculations do not allow for wastage, damage or irregularities but are intended as an informative guideline to assist with the calculation of product required for a given area ( in m<sup>2</sup>)



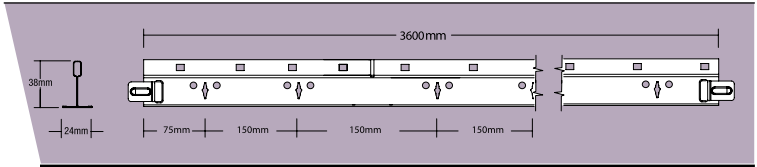
## Product Information

Nr	Description	Item reference	
		Metric	Imperial
1	Main Runner	DX3600H	DX3660H30
2	Long Cross Tee	DX1200H30 / DX1200 LM	DX1220H30 / DX 1220LM
3	Short Cross Tee	DX600H30 / DX600LM	DX610H30 / DX610LM
4	Wall Angle	MT3600-MS3600	
5	Hanger	35RHXXXX	

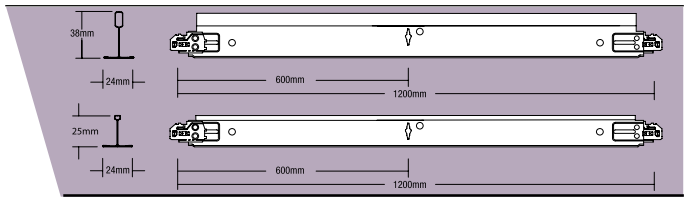
## System characteristics:

- Exposed 24mm system
- The most widely used grid system in the world
- Safe, fast and simple to install & easily accessible
- Maximum economy and design simplicity
- Cross-tees with override-ends resist twisting and give professionally finished look with no exposed steel edges
- Patented QUICK-RELEASE TM clip design: demountable without tools
- Compatible with square edge and SLB edge ceiling tiles
- Audible Click means you know when tees are connected
- Exceed load compliance specifications as per ASTM C635
- Available in metric and imperial size

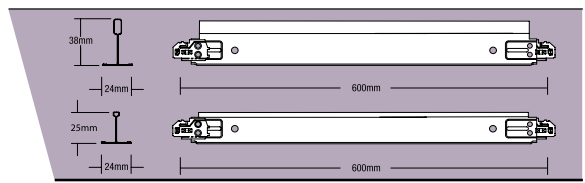
## Main Runner DX3600H



## Long Cross Tee DX1200H30 / DX1200LM



## Short Cross Tee DX600H30 / DX 600LM



## Maximum allowed weight of tiles per m<sup>2</sup> of ceiling

Hanger distance (mm)	Module			
	Main runner at 1200mm		Main runner at 600mm	
800	23.2	23.5	-	-
1000	23.2	23.5	46.8	48.6
1200	12.3	12.4	24.6	25.2
1500	4.5	4.6	9.7	9.9
Note: The load per m <sup>2</sup> must be distributed uniformly (no point loads) over the ceiling area. After loading, the deflection of any grid component will remain within the maximum deflection per span as stated in BS: 8290: 1991, provided the grid layout is as presented in the sketch.				
Please consult USG for other layouts, load or hanger distance.				

## Specification DONN® DX24-H

Grid shall be DONN® DX24 exposed grid system, hot dipped galvanized steel ' T ' section with pre painted capping. Table width 24mm. To suit variable module sizes, most typically 600 x 600mm and 1200 x 600mm. Main runners: 38 x 24mm, ref DX3600H shall be normally spaced at 1200mm centres and suspended from the structure or soffit using pre-straightened 2mm diameter HDG steel wire hangers, at typically 1200mm centres. First hanger shall be no more than 450mm from the perimeter. Main runners joined end on by means of the integral splice. Splice connections shall be supported within 150mm with a hanger, and shall be staggered across the ceiling area.

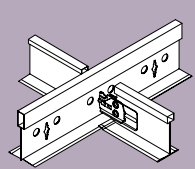
**Cross tees:** 1200mm cross tees, 38 x 24mm ref DX 1200H30 and 25 x 24mm ref DX1200LM, shall be installed perpendicular between the main runners at 600 mm centres to form a 1200 x 600mm module. If applicable, 600mm cross tees, 25 x 24mm ref DX600LM and 38 x24mm ref DX600H30, shall be installed perpendicular between the 1200mm cross tees to form a 600 x 600mm module. All cross tees feature a 'joggled' end detail.

## Tile edge supported



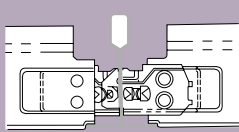
## Cross section

Main tee and cross tee connection.



## Clip to Clip Security

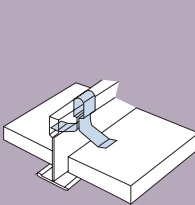
Clip to Clip Connection



180 kg

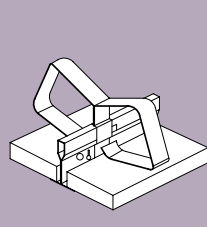
## DX24 / revoe clip

Partition head fixing using revoe clips with DX24.



## Spring clip

Spring clip application.



**Perimeter trims:** 22mm x 19.5mm/19x9x9x19mm painted HDG steel angle trim, ref MT3600/MS3600, fixed to perimeter wall using fixings appropriate to the structure at maximum 450mm centres. Corners shall normally be finished with a lapped or but joint.

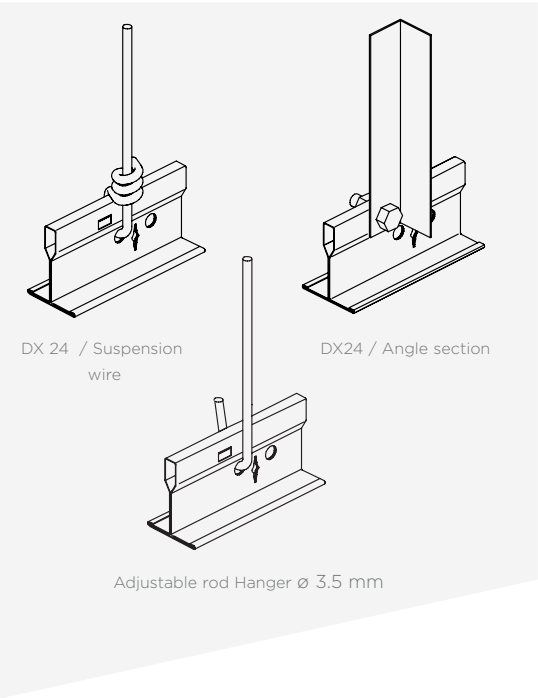
**Hangers - Seismic Application:** Shall be from pre straightened 2mm diameter HDG steel wire, ref 35RHXXXX. Hangers shall be fixed through holes in stalk or bulb of main runner and wrapped around itself a minimum of 3 times. Alternatively, hangers can be formed from  $\varnothing$  3.5mm adjustable rod hanger on 25 x 25mm HDG steel angle section, ref DGA5, fixed to main runners using appropriate self drilling screws or nut and bolt fixings. Hangers shall be normally spaced at 1200mm centres although alternative spacings are acceptable provided maximum loadings stated above are not exceeded. Hangers to be fixed to structure or soffit using fixings appropriate to the structure or soffit.

**Hold down clips:** Where applicable, these shall be non removable type clips. These generally will only be required in certain fire protecting assemblies or where there is a risk of tile uplift. Where fitted, these should be applied to all grid members at a rate of 1 clip per 600mm of tile edge.



# DONN® DXL24

## HEAVY DUTY - FIRE RATED



### Materials

All USG suspension systems feature a body and cap made of hot-dip galvanized steel. To ensure that the cap remains attractive and rust-free for long term, manufacturing includes an exclusive four-step coating process that outperforms the competition in paint adhesion and corrosion resistance, as proven by industry-standard salt spray tests conducted by an independent laboratory. For our extreme environments we offer our grid system, with hot-dipped galvanized steel body and painted aluminum cap for additional corrosion and humidity resistance.

### Quantity

Linear meter required per square meter  
For construction layouts use the following formulas to calculate linear meters (LM) per square meter (m<sup>2</sup>)

#### ■ Main tee

(1/ Main Tee centres)

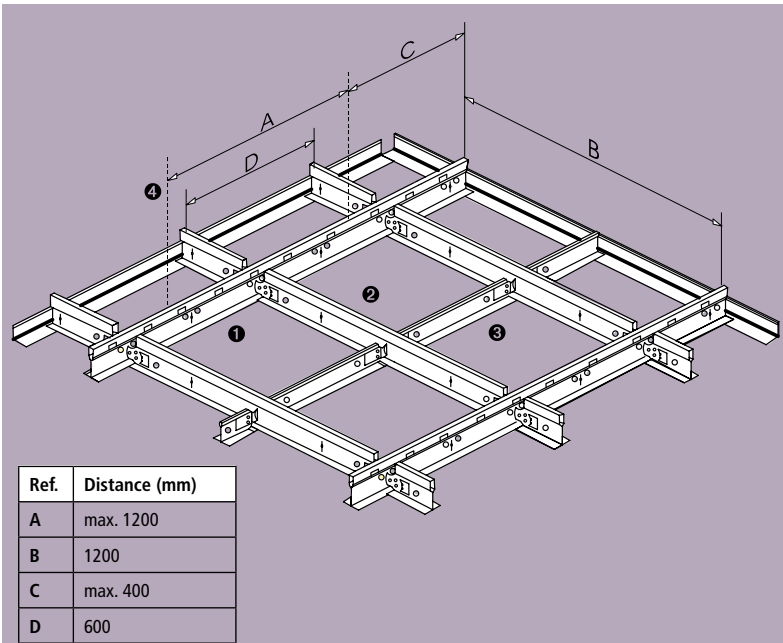
eg. if MT at 1200mm centres  $\frac{1}{1.2} = 0.83\text{LM/m}^2$

#### ■ Cross tee

(1/ Cross Tee centres)

eg. if CT at 600mm centres  $\frac{1}{0.60} = 1.67\text{LM/m}^2$

Note: These calculations do not allow for wastage, damage or irregularities but are intended as an informative guideline to assist with the calculation of product required for a given area ( in m<sup>2</sup>)



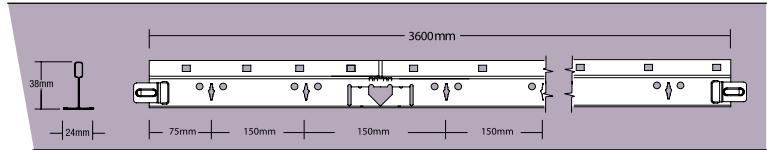
### Product Information

Nr	Description	Item reference	
		Metric	Imperial
1	Main Runner	DXL3600	DXL3660
2	Long Cross Tee	DX1200H30	DX1220H30
3	Short Cross Tee	DX600H30	DX610H30
4	Wall Angle	MT3600 - MS3600	
5	Hanger	35RHXXXX	

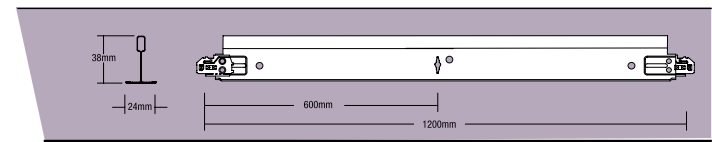
### System characteristics:

- Exposed 24mm system
- The most widely used grid system in the world
- Safe, fast and simple to install & easily accessible
- Maximum economy and design simplicity
- Cross-tees with override-ends resist twisting and give professionally finished look with no exposed steel edges
- Patented QUICK-RELEASE TM clip design: demountable without tools
- Compatible with square edge and SLB edge ceiling tiles
- Audible Click means you know when tees are connected
- Exceed load compliance specifications as per ASTM C635
- Available in metric and imperial size

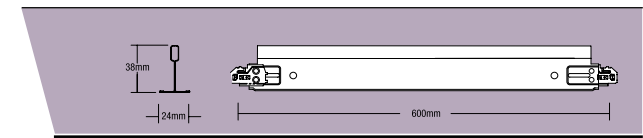
### Main Runner DXL3600



### Long Cross Tee DX1200H30



### Short Cross Tee DX600H30



### Maximum allowed weight of tiles per m<sup>2</sup> of ceiling

Hanger distance (mm)	Module			
	Main runner at 1200mm		Main runner at 600mm	
600 x 600	600 x 600	600 x 1200	600 x 600	600 x 1200
800	23.7	23.9	-	-
1000	23.7	23.9	55.9	56.3
1200	12.8	12.9	26.3	26.6
1500	4.6	4.8	10	10.3
Note: The load per m <sup>2</sup> must be distributed uniformly (no point loads) over the ceiling area. After loading, the deflection of any grid component will remain within the maximum deflection per span as stated in BS: 8290: 1991, provided the grid layout is as presented in the sketch.				
Please consult USG for other layouts, load or hanger distance.				

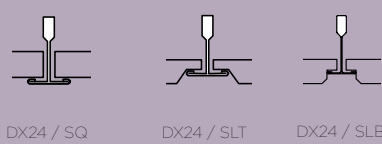
### Specification DONN® DXL24

Grid shall be DONN® DX24 exposed grid system, hot dipped galvanised steel ' T ' section with pre-painted capping. Table width 24mm. To suit variable module sizes, most typically 600 x 600mm and 1200 x 600mm. Main runners: 38 x 24mm, ref DXL3600 shall be normally spaced at 1200mm centres and suspended from the structure or soffit using pre-straightened 2mm diameter HDG steel wire hangers, at typically 1200mm centres. First hanger shall be no more than 450mm from the perimeter. Main runners joined end on by means of the integral splice. Splice connections shall be supported within 150mm with a hanger, and shall be staggered across the ceiling area.

**Cross tees:** 1200mm cross tees, 38 x 24mm ref DX1200H30, shall be installed perpendicular between the main runners at 600mm centres to form a 1200 x 600mm module. If applicable, 600mm cross tees, 38 x 24mm ref DX600H30 shall be installed perpendicular between the 1200mm cross tees to form a 600 x 600mm module.

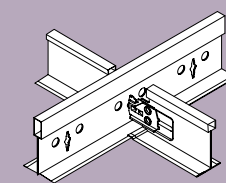
All cross tees feature a 'joggled' end detail.

### Tile edge supported



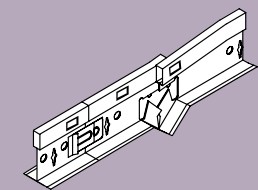
### Cross section

Main tee and cross tee connection.



### Fire protection

DX main tees are designed to expand at the fire lance in the event of a fire (shown here). This maintains the structural integrity of the ceiling and holds tiles in place.

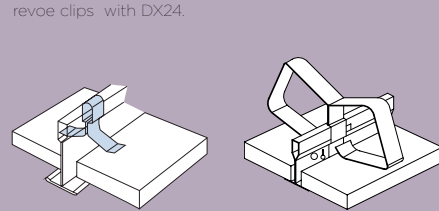


### Hold Down Clip

Partition head fixing using revolve clips with DX24.

### Spring clip

Spring clip application.

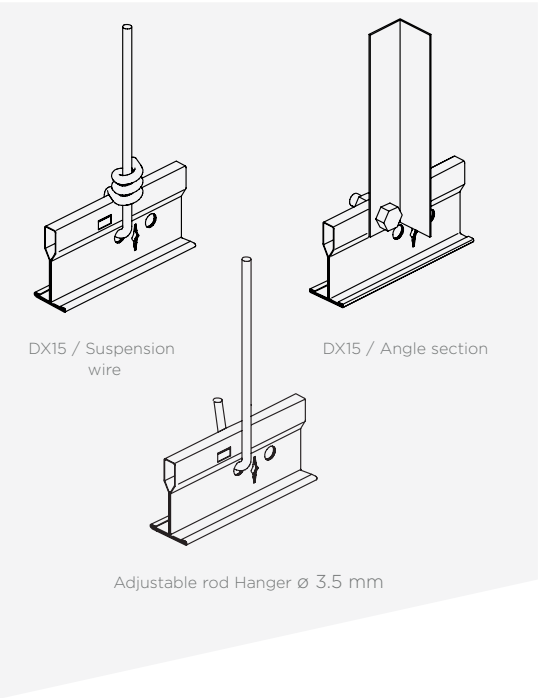


**Perimeter trims:** 22mm x 19.5mm/19x9x9x19mm painted HDG steel angle trim, ref MT3600/MS3600, fixed to perimeter wall using fixings appropriate to the structure at maximum 450mm centres. Corners shall normally be finished with a lapped or butt joint.

**Hangers - Seismic Application:** Shall be from pre straightened 2mm diameter HDG steel wire, ref 35RHXXXX. Hangers shall be fixed through holes in stalk or bulb of main runner and wrapped around itself a minimum of 3 times. Alternatively, hangers can be formed from ø 3.5mm adjustable rod hanger on 25 x 25mm HDG steel angle section, fixed to main runners using appropriate self drilling screws or nut and bolt fixings. Hangers shall be normally spaced at 1200mm centres although alternative spacings are acceptable provided maximum loadings stated above are not exceeded. Hangers to be fixed to structure or soffit using fixings appropriate to the structure or soffit.

**Hold down clips:** Where applicable, these shall be non removable type clips. These generally will only be required in certain fire protecting assemblies or where there is a risk of tile uplift. Where fitted, these should be applied to all grid members at a rate of 1 clip per 600mm of tile edge.

# DONN® DX15 CENTRICITEE



### Materials

All USG suspension systems feature a body and cap made of hot-dip galvanized steel. To ensure that the cap remains attractive and rust-free for long term, manufacturing includes an exclusive four-step coating process that outperforms the competition in paint adhesion and corrosion resistance, as proven by industry-standard salt spray tests conducted by an independent laboratory. For our extreme environments we offer our grid system, with hot-dipped galvanized steel body and painted aluminum cap for additional corrosion and humidity resistance.

### Quantity

Linear meter required per square meter  
For construction layouts use the following formulas to calculate linear meters (LM) per square meter (m<sup>2</sup>)

#### ■ Main tee

(1/ Main Tee centres)

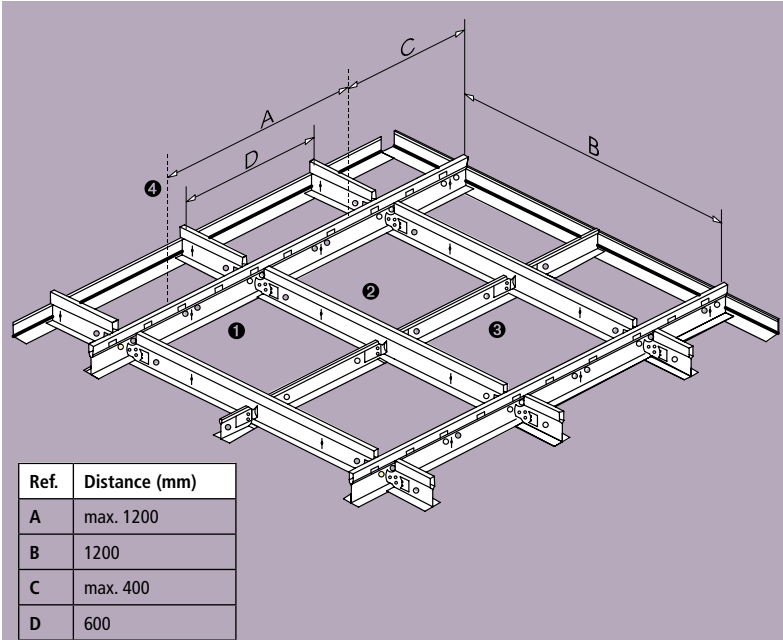
eg. if MT at 1200mm centres  $\frac{1}{1.2} = 0.83\text{LM/m}^2$

#### ■ Cross tee

(1/ Cross Tee centres)

eg. if CT at 600mm centres  $\frac{1}{0.6} = 1.67\text{LM/m}^2$

Note: These calculations do not allow for wastage, damage or irregularities but are intended as an informative guideline to assist with the calculation of product required for a given area (in m<sup>2</sup>)



Ref.	Distance (mm)
A	max. 1200
B	1200
C	max. 400
D	600

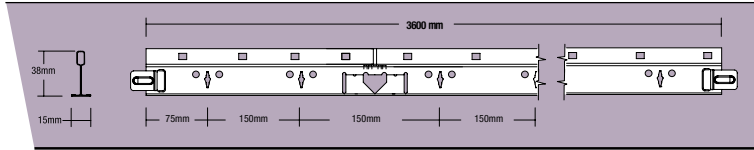
### Product Information

Nr	Description	Item reference	
		Metric	Imperial
1	Main Runner	DXT15-3600M	DXT15-3660IM
2	Long Cross Tee	DXT15-1200M	DXT15-1220IM
3	Short Cross Tee	DXT15-600M	DXT15-610IM
4	Wall Angle	M93600-MS3600	
5	Hanger	35RHXXXX	

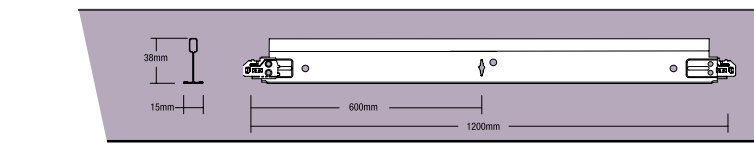
### System characteristics:

- Exposed 15mm system
- Narrow table grid for subtle visual effect
- Cross-tees with override-ends resist twisting and give professionally finished look with no exposed steel edges
- Patented QUICK-RELEASE™ clip design: easy to remove without tools
- Safe, fast and simple to install and easily accessible
- Standard joggled (overriding) cross tee system
- Suitable for FLB edge and most "face cut design" ceiling tiles
- Designed for fire rated ceilings
- Lay-on Cross Tees resist twist and gapping • Audible Click means you know when tees are connected
- Exceed load compliance specifications as per ASTM C635
- Available in metric in imperial size

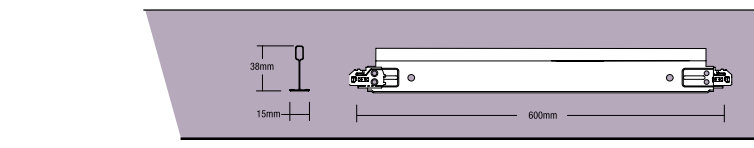
### Main Runner DXT15-3600M



### Long Cross Tee DXT15-1200M



### Short Cross Tee DXT15-600M



### Maximum allowed weight of tiles per m<sup>2</sup> of ceiling

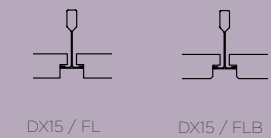
Hanger distance (mm)	Module			
	Main runner at 1200mm		Main runner at 600mm	
800	600 x 600	600 x 1200	600 x 600	600 x 1200
1000	24.0	24.2	-	-
1200	24.0	24.2	54.0	54.2
1500	12.4	12.5	25.5	25.7
1500	4.5	4.7	9.8	10.0
Note: The load per m <sup>2</sup> must be distributed uniformly (no point loads) over the ceiling area. After loading, the deflection of any grid component will remain within the maximum deflection per span as stated in BS: 8290: 1991, provided the grid layout is as presented in the sketch.				
Please consult USG for other layouts, load or hanger distance.				

### Specification DONN® DXLT15

Grid shall be DONN® DX24 exposed grid system, hot dipped galvanised steel 'T' section with pre-painted capping. Table width 24mm. To suit variable module sizes, most typically 600 x 600mm and 1200 x 600mm. Main runners: 38 x 15mm, ref DXT15-3600M shall be normally spaced at 1200mm centres and suspended from the structure or soffit using pre-straightened 2mm diameter HDG steel wire hangers, at typically 1200mm centres. First hanger shall be no more than 450mm from the perimeter. Main runners joined end on by means of the integral splice. Splice connections shall be supported within 150mm with a hanger, and shall be staggered across the ceiling area.

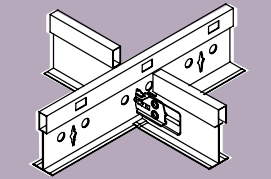
**Cross tees:** 1200mm cross tees, 38 x 15mm ref DXT15-1200M, shall be installed perpendicular between the main runners at 600mm centres to form a 1200 x 600mm module. If applicable, 600mm cross tees, 38 x 15mm ref DXT15-600M shall be installed perpendicular between the 1200mm cross tees to form a 600 x 600mm module. All cross tees feature a 'joggled' end detail.

### Tile edge supported



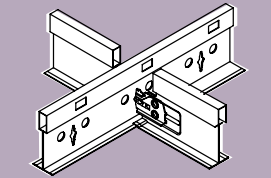
### Cross section (joggled)

Main tee and cross tee connection.



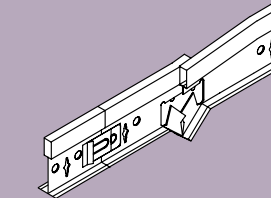
### Cross section (butt cut)

Main tee and cross tee connection.



### Fire protection

DX main tees are designed to expand at the fire lance in the event of a fire (shown here). This maintains the structural integrity of the ceiling and holds tiles in place.



**Perimeter trims:** 15mm x 24 mm/19x9x9x19mm painted HDG steel angle trim, ref M93600/MS3600, fixed to perimeter wall using fixings appropriate to the structure at maximum 450mm centres. Corners shall normally be finished with a lapped or butt joint.

**Hangers - Seismic Application:** Shall be from pre straightened 2mm diameter HDG steel wire, ref 35RHXXXX. Hangers shall be fixed through holes in stalk or bulb of main runner and wrapped around itself a minimum of 3 times. Alternatively, hangers can be formed from 25 x 25mm HDG steel angle section, on ø 3.5mm adjustable rod hanger fixed to main runners using appropriate self drilling screws or nut and bolt fixings. Hangers shall be normally spaced at 1200mm centres although alternative spacings are acceptable provided maximum loadings stated above are not exceeded. Hangers to be fixed to structure or soffit using fixings appropriate to the structure or soffit.

**Hold down clips:** Where applicable, these shall be non removable type clips. These generally will only be required in certain fire protecting assemblies or where there is a risk of tile uplift. Where fitted, these should be applied to all grid members at a rate of 1 clip per 600mm of tile edge.

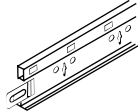

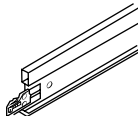

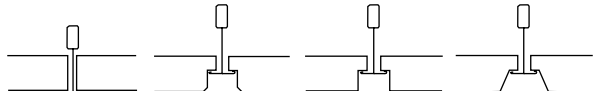
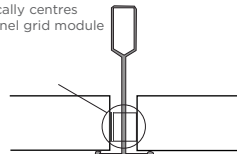


# DONN® EXPOSED GRID

DONN®  
CENTRICITEE  
15mm  
EXPOSED  
GRID



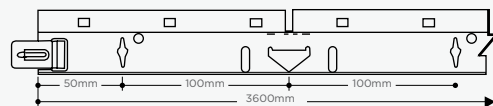
15mm Tee  
System

	<b>MAIN TEE</b>	 Deep	Main Tee-Centricitee Heavy Duty- Fire Rated	38mm	3600/3660mm	0.38mm	A,B,C,D
	<b>CROSS TEE</b>	 Deep	Cross Tee (Heavy) Cross Tee ( Heavy)	38mm 38mm	1200mm 600mm	0.30mm	A,B,C,D
	<b>A</b> Square Edge (SQ) <sup>2</sup>	<b>B</b> Fineline Bevel Edge (FLB)	<b>C</b> Fineline (FL)	<b>D</b> Interline Tapered (ILT)	Patented self centering device in cross tees automatically centres ceiling panel grid module		
<b>USG Panel Edge Detail</b>							

## Fire Rated Option

DONN® DXT15 is available only as a Fire Rated option providing protection up to 1 hour, subject to assembly design

## Main Tee (Fire Rated)

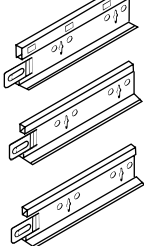







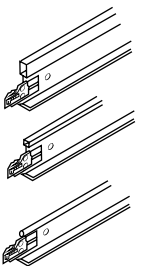












# DONN® EXPOSED GRID

DONN® DX  
24mm  
EXPOSED GRID



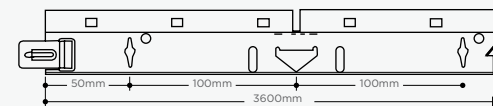
24mm Tee  
System

	MAIN TEE		Deep	Heavy-Standard	38mm	3600/3660mm	0.30mm	A,B,C,D
			Fire Rated		38mm		0.38mm	A,B,C,D
			Medium	Intermediate Duty	33mm	3600/3660mm	0.30mm	A,B,C,D
			Shallow	Light Duty	29.5 mm	3600/3660mm	0.30mm	A,B,C,D
	CROSS TEE		Deep	Fire Rated	38mm	1200/1220mm	0.30mm	A,B,C,D
			Fire Rated		38mm	600/610mm		A,B,C,D
			Medium	Intermediate Duty	33mm	1200/1220mm	0.30mm	A,B,C,D
			Intermediate Duty		33mm	600/610mm		A,B,C,D
			Shallow	Light Duty	25.5mm	1200/1220mm	0.30mm	A,B,C,D
			Light Duty		25.5mm	600/610mm		A,B,C,D
		A	B		C		D	
		Square Edge (SQ)	Shadowline Tapered (SLT)		Shadowline (SL)		Shadowline Bevel (SLB)	
USG Panel Edge Detail								

## Fire Rated Option

DONN® DXL is available as a Fire Rated option providing protection up to 1 hour, subject to a assembly design

## Main Tee (Fire Rated)



Ceiling Mass - Kg/m2

Use of Maximum Allowable Gross Ceiling Weight Charts:

- Determine the maximum allowable ceiling weight for the chosen Main Tee and hanger spacings from Graph.
- Determine the maximum allowable ceiling weight for the chosen Cross Tee spacing from table.
- The maximum allowable gross weight is the lower of the values from step 1 and 2.
- Note that any heavy lighting, or other mechanical fixtures should be independently supported.
- Siesmic considerations for in-plane loads may take precedence in determining the required section (refer USG Representative for details).

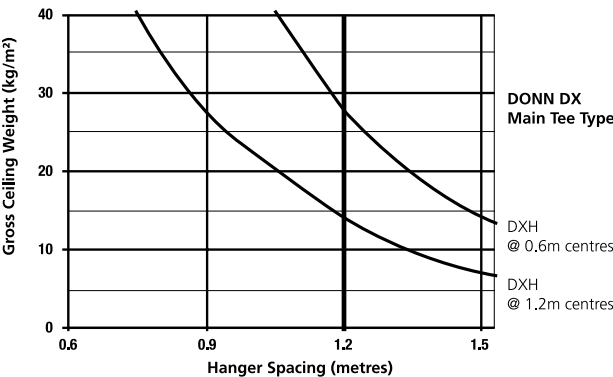
Cross Tees

DONN DX Cross Tee Type	Cross Tee Spacing (m)	
	0,6	1,2
DX600L M	40,0	29,5
DX1200H 30	28,0	14,0
DX1200L M	9,8	4,9

NOTES:

- Values are based on simple span tests in accordance with recognised International Standard ASTM C635. Higher values can often be attained by allowing for the effect of continuous spans, the actual increase being subject to span arrangements. Please contact USG Interiors for guidance.
- For cross-nogged configurations e.g.: where a 1200x600 mm panel runs parallel with the main tee, the spacing values should be used as for 1200x1200mm module.
- Where main tees are at 1200mm centres, creating a 600x600mm configuration does not significantly increase load carrying limits.

Main tees



Uniform Loads - kg/lm (linear metre)

Uniform loads are loads that are transferred evenly along a given tee. The maximum load is the combined load on both sides of the tee.  
Example:  
A 1200 x 600 light fitting weighing 12,6 kg applies a load of 3,5 kg/lm  
(1,2 + 0,6 + 1,2 + 0,6 = 3,6 lm  
therefore 12,6 kg / 3,6 lm = 3,5 kg/lm)  
A 1200 x 600 ceiling panel weighing 3,6 kg applies a load of 1 kg /lm  
The combined load of light and ceiling panel is 4,5 kg/lm.  
The maximum allowable uniform load is the lesser of either main or cross tee values.

DONN DX Component	Uniform Load kg/lm
<b>Main Tee</b>	
DX3600H	16,8
DX3600IM	11,6
<b>Cross Tee</b>	
DX600LM	35,4
DX1200LM	16,7
DX1200LM	5,9

\* Hanger spacing @ 1,2m centres

Point Loads - kg

Point loads are loads that transfer to a tee at a single point (or several points) over a very small area. The weakest point is assumed to be mid span. main tees are based on a 1200mm span.  
The maximum allowable point load is the lesser of either main or cross tee values.

DONN DX Component	Point Load kg
<b>Main Tee</b>	
DX3600H	7,9
DX3600IM*	7,0
<b>Cross Tee</b>	
DX600LM	13,2
DX1200LM	7,9
DX1200LM	4,1

\* Hanger spacing @ 1,2m centres

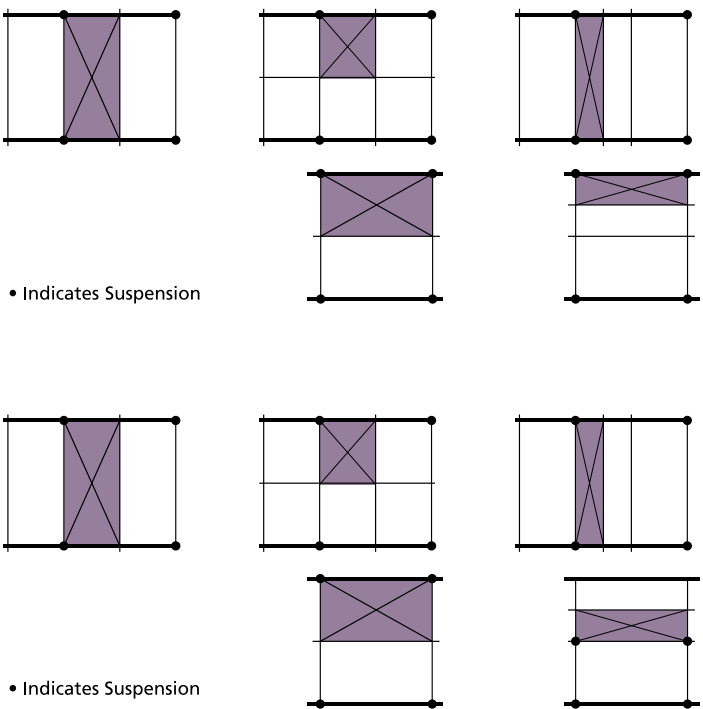
Lighting Installation DONN® DX 24mm Exposed Grid

DONN® DX

As worldwide leaders in acoustical ceiling systems, USG Interior works with the major lighting manufacturers to ensure system compatibility is maintained. The following guidelines are designed to assist in the correct specification and installation of light fittings in USG's DONN® Exposed Grid and acoustical ceiling systems.

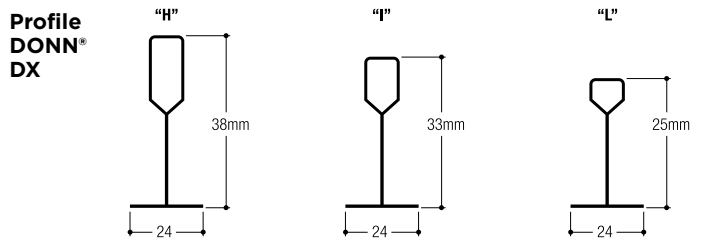
Luminaire Positioning

- Typical recessed pan fitting arrangements are shown below. Main Tees at 1200mm centres are shown horizontal, with suspension at 1200mm centres.
- Refer to Loadings (page 108) for maximum allowable point loads, uniform loads and gross ceiling loads depending on type of luminaire and DONN® grid selected.
  - Where luminaire weight exceeds point or uniform load maximums consider:  
a) A higher specifications DONN® grid option if applicable (refer to Loadings page 108 this brochure to ensure compliance).  
b) Independent support from structure.  
c) Additional suspension points as shown below, or similar.



DONN® Grid Profiles

When recessed pan fittings use the top of the DONN® tee bulb for support, use the same height tee profiles for even support.

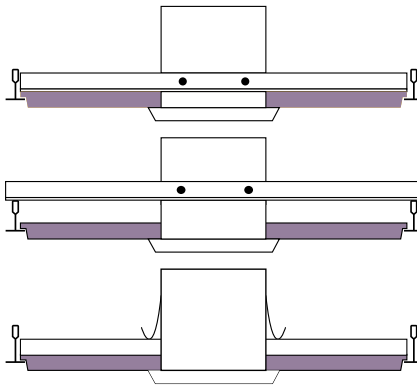


Ceiling panel Mounted Fittings

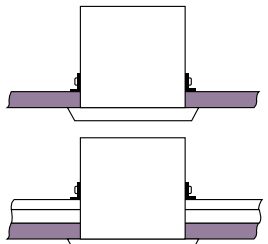
Light fittings mounted through USG acoustical ceiling panels shall not rely on the ceiling panel for support. Their weight shall be transferred back to the grid by:

- a) Simple supports across the back of the ceiling panel.
- b) Simple supports onto the top of the tee bulb.
- c) An additional rigid panel across the back of the ceiling panel.

Side Elevation



End Elevation



NB: This method will affect the acoustic properties of the ceiling panel



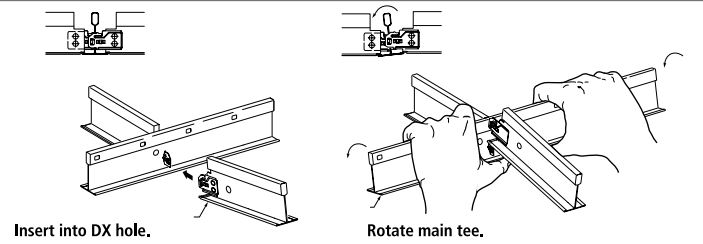
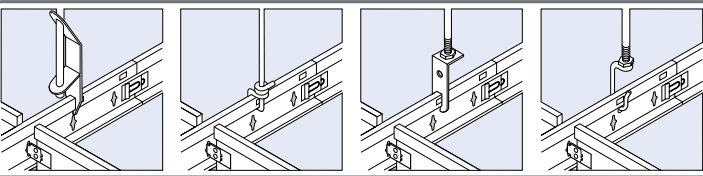
# GRID EDGE DETAILS

DONN® DX is the most widely specified grid in Middle East. It includes a wide range of profiles and colours and is fully compatible with all USG ceiling tiles as well as most third party brands. Precision design and quality manufacturing ensure both structural and aesthetic integrity in all ceiling designs.

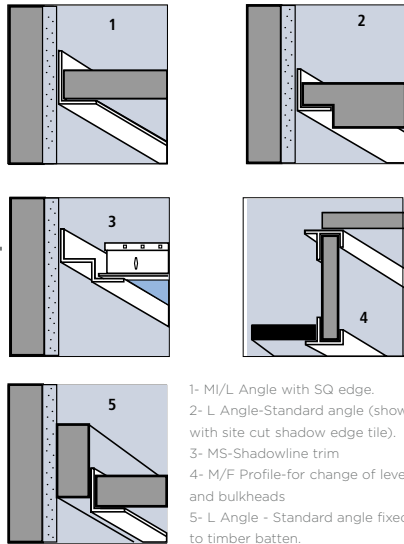
USG offers the following suspension system and edge details options. Select a suspension system and match it with a corresponding panel edge details, or vice versa, to assure proper system fit and assembly

Grid system	Edge detail	Square (SQ)	Shadowline Tapered (SLT)	Shadowline (SL)	Fineline (FL)	Pedestal	Shiplap	BESK	Designer (FL)
DONN DX24 DONN DX24K DONN DX24 Espace									
DONN DX15									
DONN Meridian DXM									
DONN Fineline DXF									
DONN Concealed T, Z									
DONN Concealed C, L									
DONN DX35 DONN DXE35 Espace									
DONN DP									

## Grid suspension options



DONN DX is fast and simple to install. The Quick Release Clip makes it easy to remove for access and maintenance. No tools are required.



- 1- Mi/L Angle with SQ edge.
- 2- L Angle-Standard angle (shown with site cut shadow edge tile).
- 3- MS-Shadowline trim
- 4- M/F Profile-for change of level and bulkheads
- 5- L Angle - Standard angle fixed to timber batten.

## System performance

USG ceiling systems should be installed in accordance with recommendations described within this catalogue and the DONN® grid application guide. System performance following any substitution of materials or compromises in assembly cannot be guaranteed and may result in failure under critical conditions. Reference should be made to BS 8290 1991 Suspended Ceilings parts 1, 2 and 3, and the European Standard for Suspended Ceilings BS EN 13964:2004.

## Site storage and handling

Storage on site should be as short as possible with environmental conditions as near as possible to those specified for occupancy (see below). Any storage area should be secure and fully protected from the weather with cartons stored on a clean, dry base. Cartons of material should never be rolled, dropped or slid, and under no circumstances used as a workbase or substitute for ladders, scaffolding, etc.

## Pattern direction

With directional face patterns, such as Glacier™ and Sandrift™, the orientation of pattern relative to light sources should be carefully considered for desired visual effect, and specified and installed accordingly. Variations in colour and fissure size in Glacier™ and Sandrift™ ceiling tiles will be of little consequence within a single production batch. However, minor variations can occur from time to time, and projects should be planned so that all material for continuous ceiling space is ordered and delivered from the same production batch. Some USG tiles are marked with a directional arrow on the back and should always be installed with this in alignment to ensure total consistency of pattern and paint shade in a Production batch.

## Overlaid material

Wherever possible, overlaid material such as insulation, should not be laid directly on the back of the ceiling membrane, as this will compromise the fire resistant properties of the ceilings. In normal conditions (BS 8290), overlaid material should not exceed 3.6kg/m2 weight. For high humidity environments, overlaid installation shall be limited to 1.2 kg/m2.

## Installation/environmental conditions

For applications with normal controlled environmental conditions, products with 70% RH/29°C or better are suitable. Installation should only take place under ambient conditions after residual moisture from concrete and plaster has dissipated. The recommended relative humidity should not exceed 70% RH within a temperature range 65-85°F, 18-29°C for installation and occupancy.

Once ceiling installation has commenced, it is essential that RH% and temperature be maintained at acceptable levels by heating the building if necessary. Dry heating should be employed and paraffin or gas heaters avoided. These recommendations should still be applied between completion of contract and the occupation of the building. Unoccupied buildings with uncontrolled atmospheres may have a wide temperature range during a 24 hour period which could lead to an unacceptable change in dimension stability of the ceiling panels, causing excessive sag.

For applications with intermittent heating and cooling systems, products with 90%RH/32°C or better are recommended. (See Humidity selector, page 15.) For applications with uncontrolled environmental conditions, natural ventilation systems or in humid areas such as washrooms, kitchens or wet process areas, products with 95-99%RH/40°C or better are recommended. (See Humidity selector, page 15.) Radar Ceramic™ and Sonatone ceiling panels perform especially well in areas such as swimming pools, where the ceiling may be subject to unusually high levels of humidity up to 100% RH and chemical attack. They should be installed with USG DONN® Corrosion Resistant ceiling grid and appropriate hangers to resist corrosion.

**All USG tiles should be protected from sustained direct contact with water except the treated one as water shield.**

## Maintenance and cleaning

General cleaning of dust and loose dirt may be easily achieved using a soft brush or vacuum cleaner. Soiled panels can be cleaned with an art gum eraser or dampened cloth or sponge containing as little water as possible.

Clean Room™ tiles can be wet wiped on a regular basis without damage.

Panels should never be soaked or immersed in water.

Cleaning can also be carried out by specialist contractors using proprietary methods and chemicals. It is strongly recommended that a trial area be cleaned to ensure that there is no detrimental effect on the ceiling panel or grid.

## Re-decoration

It should be noted that a new paint finish may compromise the Surface Spread of Flame classification and acoustic absorption for that panel.

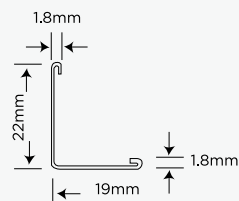
Please consult the USG Technical Services Department for expert advice and recommendations.

## Custom products

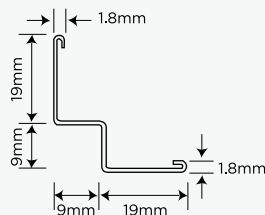
In addition to a wide standard range, USG can satisfy specifiers' needs for non-standard, specialised ceilings. Please talk to your local USG representative to arrange production of your specific ideas.

# WALL ANGLES System Components Construction Details

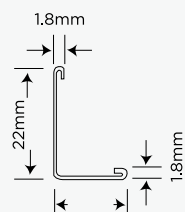
## STANDARD Pre-Painted Steel ( MT3600)



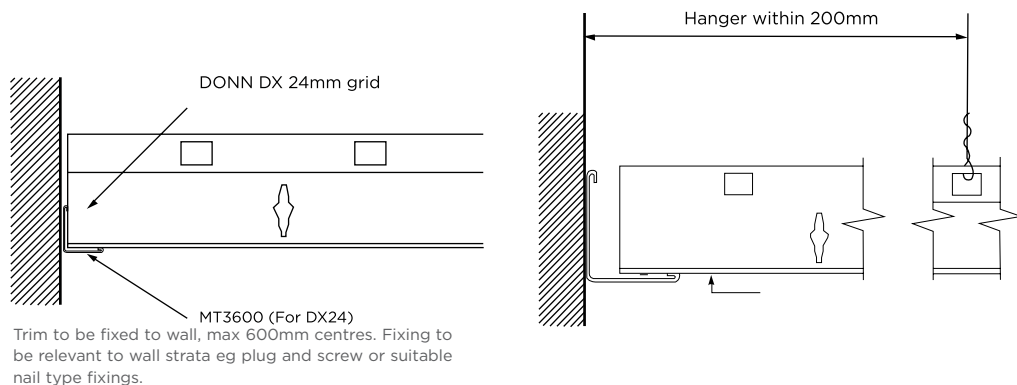
## SHADOWLINE Pre-Painted Steel ( MS3600)



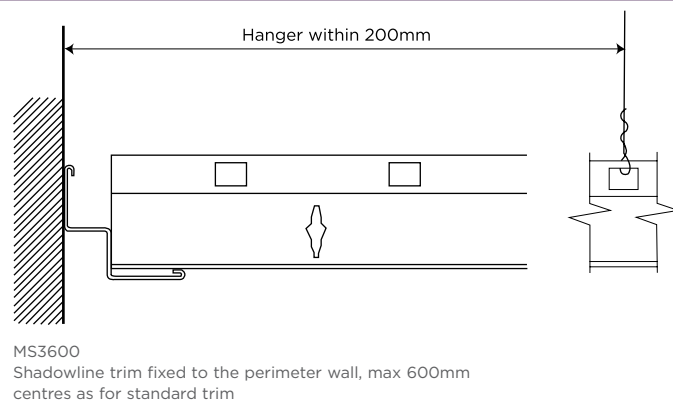
## CENTRICITEE Pre-Painted Steel ( M9-3600)



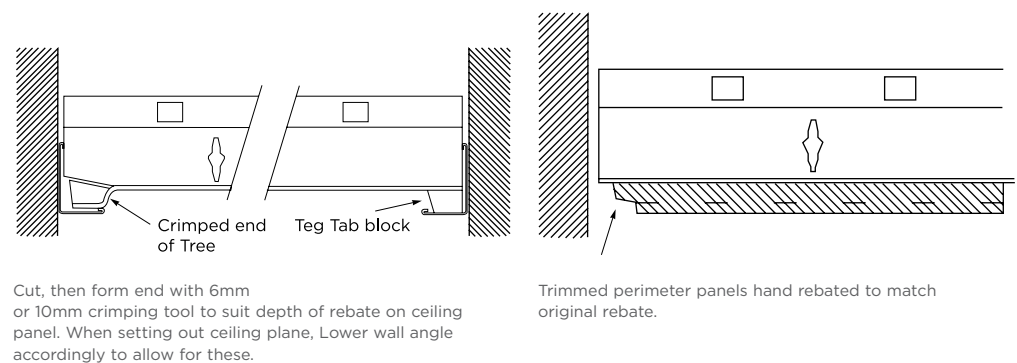
## STANDARD



## SHADOWLINE



## SHADOWLINE



# Guide Specification 09120

## Part 2 – Products | 2.01 System Description

Acoustical ceiling suspension system[s] conforming to ASTM C635 supplied by USG Middle East Products, 2nd industrial city of Dammam, Saudi Arabia.

## 2.02 Materials

- Web (Body) material: Hot Dipped Galvanized (HDG) steel to ASTM A635/A635M.
- Cap material: Pre-painted Galvanized Steel or Aluminium
- Finish on exposed cap surface:
  - Standard Painted finishes: DONN® Weiss white 10 - White- Blanc 137. Gloss level to be 15% +/- 5%.
- Suspension system[s]:
  - Non-rated 15/16" (24mm) exposed two directional suspension system,
    - USG DONN® DX24 intermediate duty system
    - USG DONN® DX24 Heavy duty System
    - Module size to be 600x 600mm; 610 x 610mm; 600 x 1,200mm; 610 x 1,220mm; 750 x 1500mm; 762.5 x 1,525mm
  - Fire-rated 15/16" (24mm) exposed two directional suspension system certified and tested according to UL 263.
    - USG DONN® DXL24, Heavy Duty-fire Rated System
    - Module size to be 600x 600mm; 610 x 610mm; 600 x 1,200mm; 610 x 1,220mm; 750 x 1500mm; 762.5 x 1,525mm
  - Fire-rated 9/16" (15mm) exposed two directional suspension system certified and tested according to UL 263.
    - USG DONN® DXLT15 Centricitee, Heavy Duty fire rated systems.
    - USG DONN® DXLF Fineline, Heavy Duty fire rated systems
    - Module size to be 600x 600mm; 610 x 610mm; 600 x 1,200mm; 610 x 1,220mm; 750 x 1500mm; 762.5 x 1,525mm
  - 15/16" (24mm) DONN® DX/DXL Concealed suspension system.
- Main runner: 1.5" (38mm) high inverted tee section of double web and cap design. Integral and reversible splice detail located at each end. Convenience holes located in the rectangular top bulb on 2.25" centers and include fire expansion notch for fire-rated main runners. Main runner length to be:
  - 3600mm with cross tee and hanger holes 75mm from each end and 150mm on centre.
  - 3660mm with cross tee and hanger holes 76.25mm from each end and 152.5mm on centre.
- Cross Tee:
  - 1.5" (38mm) high inverted tee section of double web and cap design.
  - 1.3" (33mm) intermediate inverted tee section of double web and cap design.
  - 1.0" (25mm) Shallow inverted tee section of double web and cap design.
  - End detail to be stepped override design to resist twisting and provide an aesthetic hairline joint. End detail to include integral locking device for straight-in insertion and removal. Cross tee length to be:
    - 1200mm with cross tee and hanger holes at mid point
    - 1200mm with cross tee and hanger holes at mid point
    - 600 and 610mm short cross Tees
- Angle Moldings:
  - Wall Angle size 22 x 19 x 3600mm long with finish on exposed surface
  - Wall Angle size 24 x 14 x 3600mm long with finish on exposed surface
  - Shadowline size 19 x 9 x 9 x 19 x 3600mm long with finish on exposed surface
- Accessories:
  - Hanger wire. No. 12 gauge (2.7mm) galvanized, soft annealed, mild steel wire with a yield load not less than 3 times the specified (unfactored or working) design load.



# DONN® Suspension System

## Seismic Solutions

### Categories D, E, and F Category C

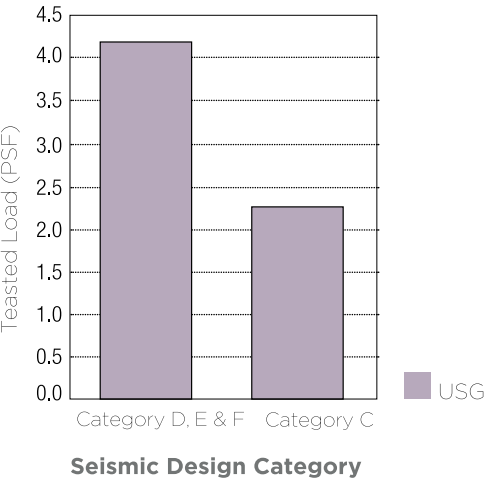
Since 1957 DONN® brand suspension systems have set the standard, using the strongest gauge steel to produce the tightest systems available with the greatest lateral and torsional stiffness. Building on this commitment to quality, USG teamed with the University at Buffalo (SUNY), the Department of Civil, Structural and Environmental Engineering – Structural Engineering and Earthquake Simulation Laboratory (SEESL) and the Earthquake Engineering Research Center (EERC) University of California, Berkeley to conduct full-scale seismic testing to evaluate and qualify the seismic performance of these systems. This testing proved that DONN® suspension systems provide a superior code-compliant solution to meeting International Building Code (IBC) requirements, including installations in Categories D, E and F, and Category C. USG is the only manufacturer to team with two separate earthquake engineering laboratories to qualify the performance of our systems. When seismic requirements are a critical design issue, architects, contractors and building officials can rely on DONN® suspension systems to:

- Meet or exceed all national code requirements with 7/8" wall molding.
- Fulfill requirements for IBC seismic design categories C, D, E, and F.
- Provide evidence of compliance (and greatly exceed) ICC Evaluation Service, Inc. (ICC-ES) AC156 and AC368 requirements.
- Offer an aesthetically attractive option to traditional 2" angle molding.
- Provide approved solutions certified with the maximum sq. ft. weights accommodating complete ceilings systems.
- Offer compliant systems tested and verified by two separate earthquake engineering laboratories.
- Offer a seismic clip laboratory-tested to greatly exceed all structural requirements including tension, compression and tee fallout.

### Seismic Qualification / Specifications

Seismic testing typically focuses primarily on the suspension system itself. Any ceiling panel can be installed in the test assembly regardless of how little it weighs, and components such as light fixtures and air handling equipment are usually excluded. In practical application, however, the suspension system must support and carry the weight of a fully functional ceiling system, including ceiling panels that can weigh as much as 2 lb./sq. ft. Therefore, USG tested suspension systems with weights commensurate with those found in real-world installations, including light fixtures and air handling equipment, using a wide variety of the ceiling panels that USG offers. Full-scale testing performed at the University at Buffalo (SUNY) the department of Civil, Structural and Environmental Engineering – Structural Engineering and Earthquake Simulation Laboratory (SEESL) and the Earthquake Engineering Research Center (EERC) University of California, Berkeley certifies that USG IBC-compliant assemblies are able to accommodate loads commensurate with those found in real-world installations.

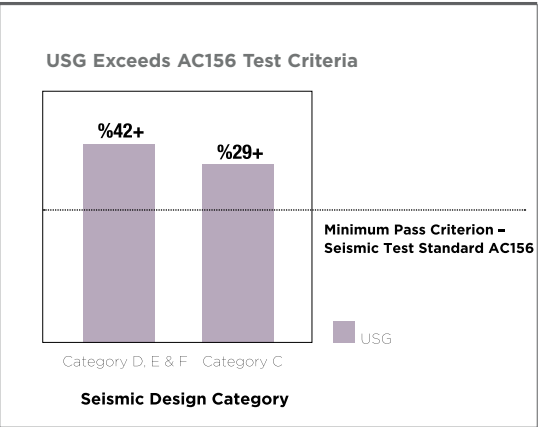
### Maximum Ceiling System Weight Tested



The USG figures presented are based on full-scale testing and evaluation performed at the University at Buffalo (SUNY) the department of Civil, Structural and Environmental Engineering – Structural Engineering and Earthquake Simulation Laboratory (SEESL) and the Earthquake Engineering Research Center (EERC) University of California, Berkeley. Comparative data obtained from public sources includes ICC-ES Reports, product literature and Web sites.

### Testing

A complete range of USG ceiling systems was subjected to various levels of earthquake acceleration levels for the purpose of seismic qualification. The experimental studies were performed in the University at Buffalo (SUNY) the department of Civil, Structural and Environmental Engineering – Structural Engineering and Earthquake Simulation Laboratory (SEESL) and the Earthquake Engineering Research Center (EERC) University of California, Berkeley using an earthquake simulator. System performance was certified to tolerate forces in seismic Categories D, E and F that exceeded the minimum pass criterion of AC156 and AC368 by 42%.



### Testing per ICC Evaluation Service, Inc. (ICC-ES) AC156 and AC368:

SYSTEM DESIGN	Seismic Design Category	Maximum Ceiling System Weight Tested	Allowed Suspension System Load Carrying Capacity	Test Result
System DXL-H	D, E, F	2.50 lbs./sq.ft.	Heavy Duty	Passed
System DXL-I-C	C	2.27 lbs./sq.ft.	Intermediate Duty	Passed

With these certified IBC-compliant assemblies, USG is the only manufacturer to offer:

- A seismic system that exceeds the minimum pass criterion of AC156 and AC368 by more than 42%.
- Seismic-system weights commensurate with typical ceiling systems.
- A seismic clip laboratory-tested to greatly exceed all structural and seismic requirements including tension, compression and tee fallout.
- Compliant systems tested and verified by two separate earthquake engineering laboratories.

### Code Approval

Testing and evaluation performed at the University at Buffalo (SUNY), the Department of Civil, Structural and Environmental Engineering – Structural Engineering and Earthquake Simulation Laboratory (SEESL) and the Earthquake Engineering Research Center (EERC) University of California, Berkeley qualify the performance of these systems according to the AC156 – Seismic Qualification Specification, and AC368 – Acceptance Criteria for Suspended Ceiling Framing Systems. Several alternative materials, designs and methods of construction were evaluated and tested. Results of this investigation indicate that these tested alternative designs are at least the equivalent of that prescribed in the code for quality, strength, effectiveness, fire resistance, durability and safety. The data and test results presented provide technical evidence on which a code official can base approval. Construction details for these systems are shown on the following pages.

# DONN® Suspension System

## Seismic Solutions

### Categories D, E, and F Category C

#### Seismic Test Results

	System DXL-H	System DXL-I-C
Seismic Category	D, E, F	C
Suspension System	DONN® double-web, galvanized steel meeting or hot-dipped exceeding ASTM C635	DONN® double-web, hot-dipped galvanized steel meeting or exceeding ASTM C635
Duty rating	Heavy Duty	Intermediate Duty
Wall molding	7/8"	7/8"
Seismic Clip	ASM7	ASM7
Shake Table	Six degrees of freedom	Six degrees of freedom
Test Protocol	Simulated earthquake	Simulated earthquake
Qualification	AC156 and AC368	AC156 and AC368
Result	Passed	Passed
Minimum Acceleration Requirement	Exceeds by 42%	Exceeds by 29%
Two Adjacent Floating Sides - With Gap	Fastener attachment to tee through slot optional), no fastener through wall molding	Fastener attachment to tee through slot optional), no fastener through wall molding
Two Adjacent Fixed Sides - Tight, No Gap	Fastener attachment to tee (optional), one fastener through wall molding (optional)	Fastener attachment to tee (optional), one fastener through wall molding (optional)
Perimeter Wires	Yes	No
Stabilizer Bars	No	No
System Weight	2.50 lbs./sq.ft.	2.27 lbs./sq.ft.

Convenience holes located in the tee bulb may be used for any and all hanger wires. Load tests performed on 12-gauge hanger wires through convenience holes found the failure to be in excess of 400 lbs. This far exceeds the required 200 lbs. The performance of DONN® seismic systems is based on the specific combination of superior components, and design and installation methods shown. Components from other manufacturers were not evaluated, and their use or any mixed use is not recommended.

#### Systems Summary

	Category D,E,F	
	Alternate Seismic Application	Standard Seismic Application
	DXL-H	
	Heavy Duty DXL-H System 7/8" Molding	Heavy Duty System 2" Molding
Suspension System Duty Rating	Heavy	Heavy
Wall Molding	7/8"	2"
Seismic Clip	ASM7	None
Two Adjacent Floating Sides - With Gap	ACM7 seismic clip with fastener attachment to tee through slot (optional), and no fastener through wall molding	No attachment of tee to molding
Two Adjacent Fixed Sides - Tight, No Gap	ACM7 seismic clip with fastener attachment to tee (optional), and one fastener through wall molding (optional)	Pop-rivet attachment of tee to molding
Perimeter Hanger Wires	Yes	Yes
Stabilizer Bars	None	Yes

	Category C	
	Alternate Seismic Application	Standard Seismic Application
	DXL-I-C	
	Intermediate Duty System 7/8" Molding	Intermediate Duty System 7/8" Molding, Stabilizer Bars
Suspension System Duty Rating	Intermediate	Intermediate
Wall Molding	7/8"	2"
Seismic Clip	ACM7	None( unless utilized in lieu of stabilizer bar)
Floating Sides - 3/8" Gap	ACM7 seismic clip with fastener attachment to tee through slot (optional), and one fastener through wall molding and one fastener through wall molding (optional)	No attachment of tee to molding
Perimeter Hanger Wires	None	None
Stabilizer Bars	None	Yes

All main DONN® suspension systems - DX\*/DXL™, Finline® DXF™, Finline® 1/8 DXFF™, Centricitee™ DXT™/DXLT™, CE™, DXW™, DXLA™, and ZXLA™ - include the code-compliant intermediate-duty and heavy-duty main tees for Seismic Design Categories C, D, E, and F.

For ceiling areas exceeding 2,500 ft.2 (232 m2), a seismic separation joint may be required. See SC2496 for information on seismic separation joints.

The performance of DONN® seismic systems is based on the specific combination of superior components, and design and installation methods shown. Components from other manufacturers were not evaluated, and their use or any mixed use is not recommended.

Convenience holes located in the tee bulb may be used for any and all hanger wires.



# DONN® Suspension System

## Seismic Solutions

### Categories D, E, and F

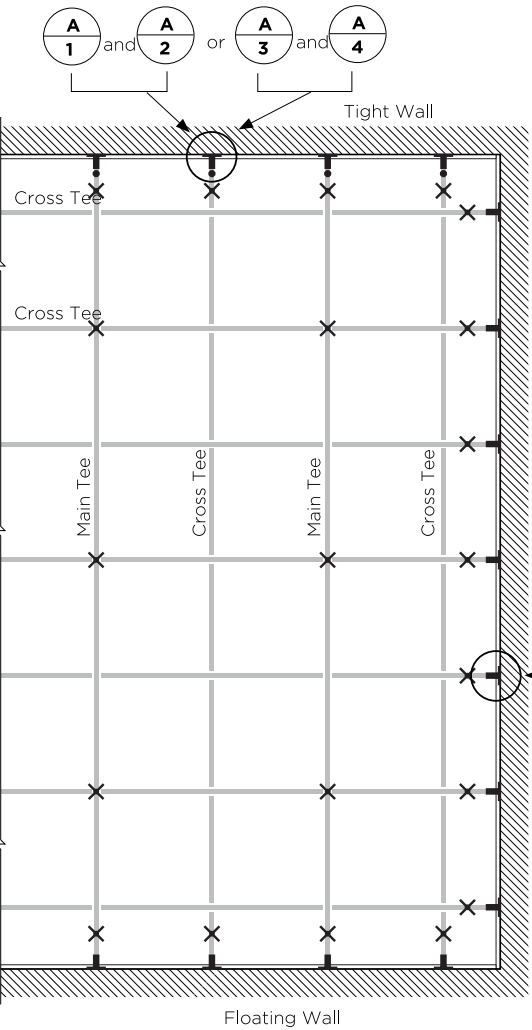
### Alternate Seismic Application

### Heavy Duty DXL-H System 7/8" Molding

#### System Summary

Suspension System Duty Rating	Heavy
Wall Molding	7/8"
Seismic Clip	ASM7
Two Adjacent Floating Sides - With Gap	3/4"- gap; ACM7 seismic clip with fastener attachment to tee through slot (optional), and no fastener through wall molding.
Two Adjacent Fixed Sides - Tight, No Gap	Tight, no gap; ACM7 seismic clip with fastener attachment to tee (optional), and one fastener through wall molding (optional)
Perimeter Hanger Wires	Yes
Stabilizer Bars	None

#### Construction Details



- ✕ 12-gauge hanger wire
- ⌒ ACM7 seismic clip
- ⌒ ACM7 seismic clip or riveted

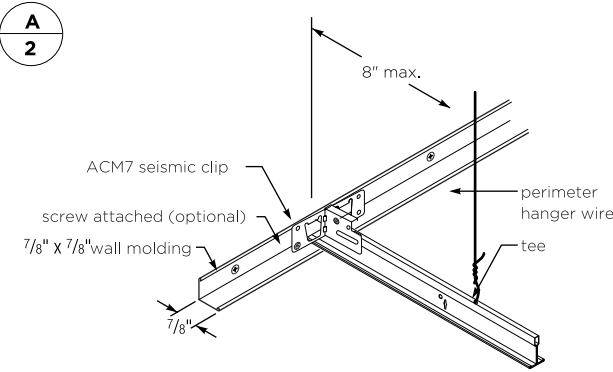
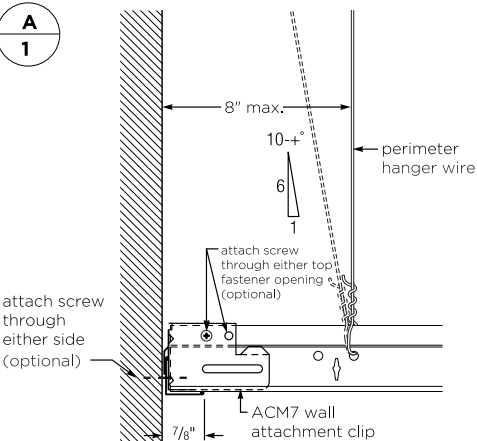
All main DONN® suspension systems - DX/DXL, Fineline DXF, Fineline 1/8 DXFF, Centricitee DXT/DXLT, CE, DXW, DXLA, and ZXLA - include the codecompliant and heavy-duty main tees for Seismic Design Categories D, E, and F.

For ceiling areas exceeding 2,500 ft.2 (232 m2), a seismic separation joint may be required. See SC2496 for information on seismic separation joints.

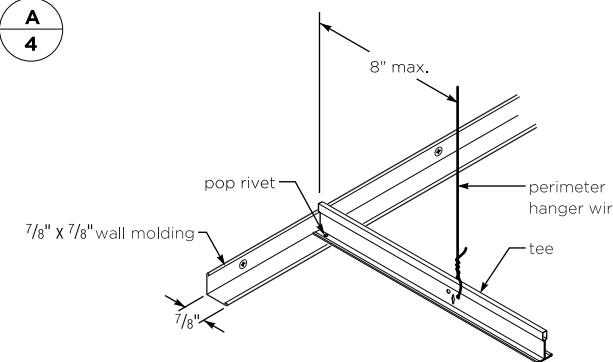
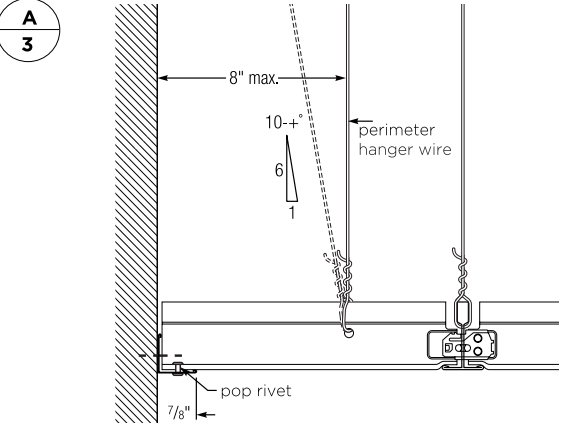
The performance of DONN® seismic systems is based on the specific combination of superior components, and design and installation methods shown. Components from other manufacturers were not evaluated, and their use or any mixed use is not recommended.

Convenience holes located in the tee bulb may be used for any and all hanger wires.

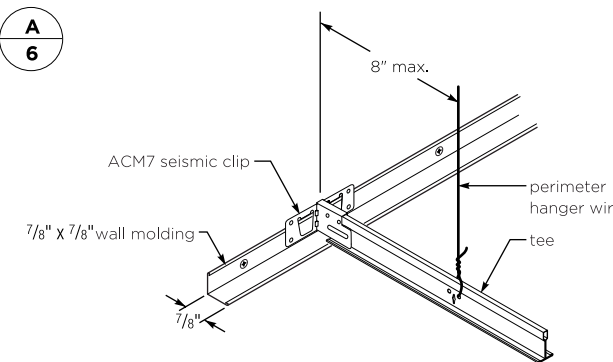
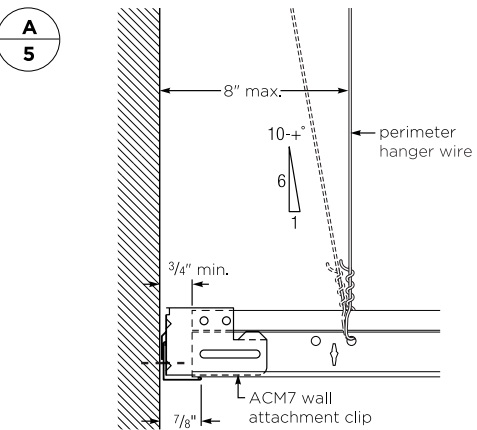
#### ACM7 Clip, Tight Wall



#### Tee Rivet, Tight Wall



#### ACM7 Clip, Tight Wall

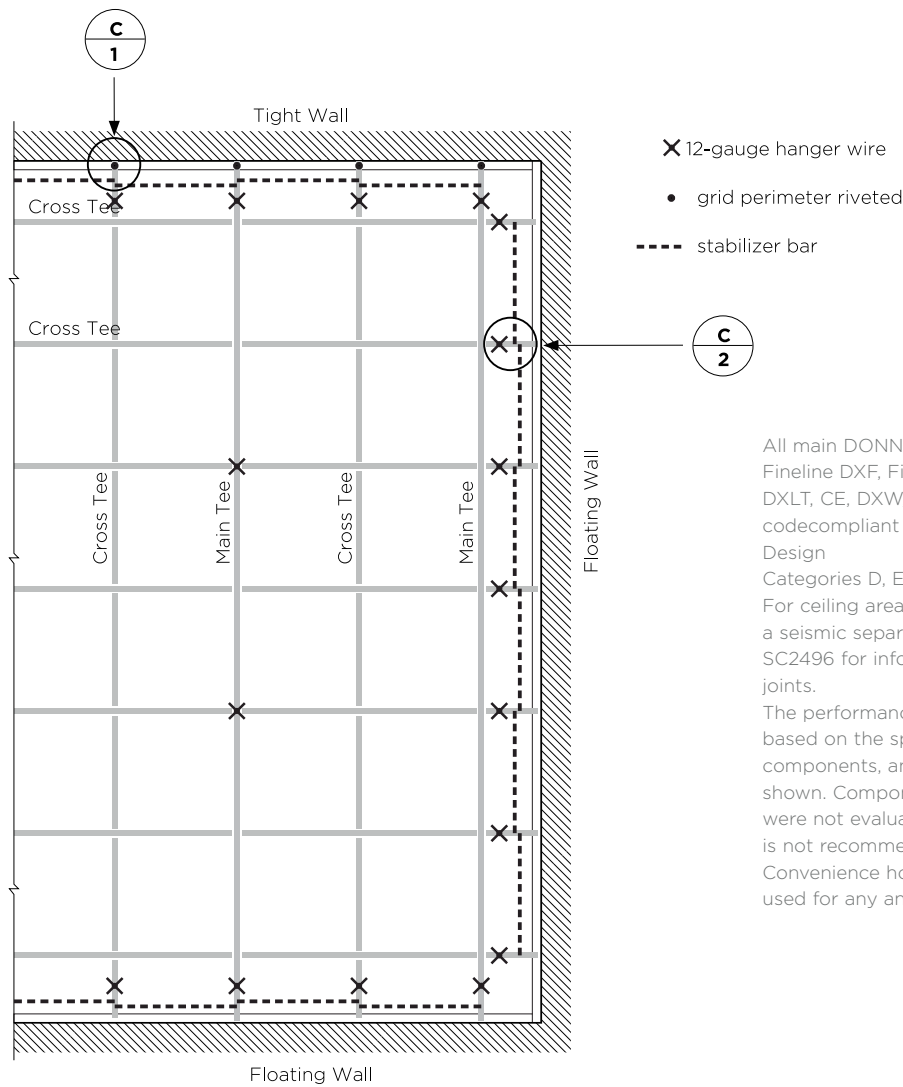


## Categories D, E, and F Standard Seismic Application Heavy Duty System 2" Molding

## System Summary

<b>Suspension System Duty Rating</b>	Heavy
<b>Wall Molding</b>	2"
<b>Seismic Clip</b>	None (unless utilized in lieu of stabilizer bars)
<b>Two Adjacent Floating Sides - With Gap</b>	3/4"- gap; no attachment of tee to molding
<b>Two Adjacent Fixed Sides - Tight, No Gap</b>	Tight, no gap; pop-rivet attachment of tee to molding
<b>Perimeter Hanger Wires</b>	Yes
<b>Stabilizer Bars</b>	Yes

## Construction Details



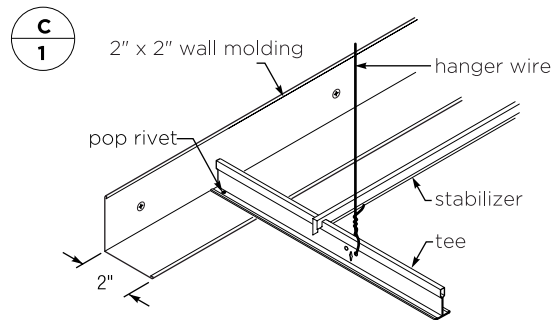
All main DONN® suspension systems – DX/DXL, Finline DXF, Finline 1/8 DXFF, Centricitee DXT/DXLT, CE, DXW, DXLA, and ZXLA – include the codecompliant heavy-duty main tees for Seismic Design Categories D, E, and F.

For ceiling areas exceeding 2,500 ft.<sup>2</sup> (232 m<sup>2</sup>), a seismic separation joint may be required. See SC2496 for information on seismic separation joints.

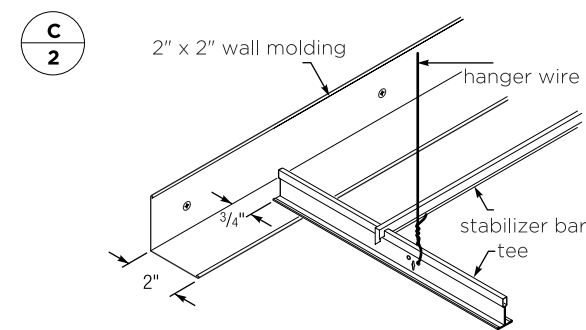
The performance of DONN® seismic systems is based on the specific combination of superior components, and design and installation methods shown. Components from other manufacturers were not evaluated, and their use or any mixed use is not recommended.

Convenience holes located in the tee bulb may be used for any and all hanger wires.

## Pop Rivet, Tight Wall



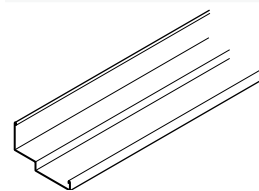
### Tee Unattached, Floating Wall



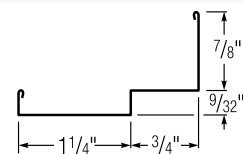
## 2" Seismic Shadow Molding

With a 3/4" reveal located by the wall to disguise its width, 2" shadow molding provides an aesthetically pleasing option to traditional 2" seismic molding. Designed for use with 15/16" exposed DONN® DX/DXL suspension systems, this seismic shadow molding meets or exceeds all national code requirements and fulfills requirements for Seismic Design Categories D, E, and F.

## MS274 Profile

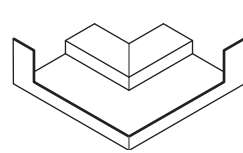
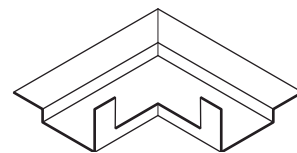


## Profile



Preformed corners are available, eliminating the need to miter this molding.

## Inside Corner Molding      Outside Corner Molding



For more information about the MS274 2" seismic shadow molding, see Seismic Mold data sheet (AC3184) or Ceiling Systems catalog (SC2000).



Category C

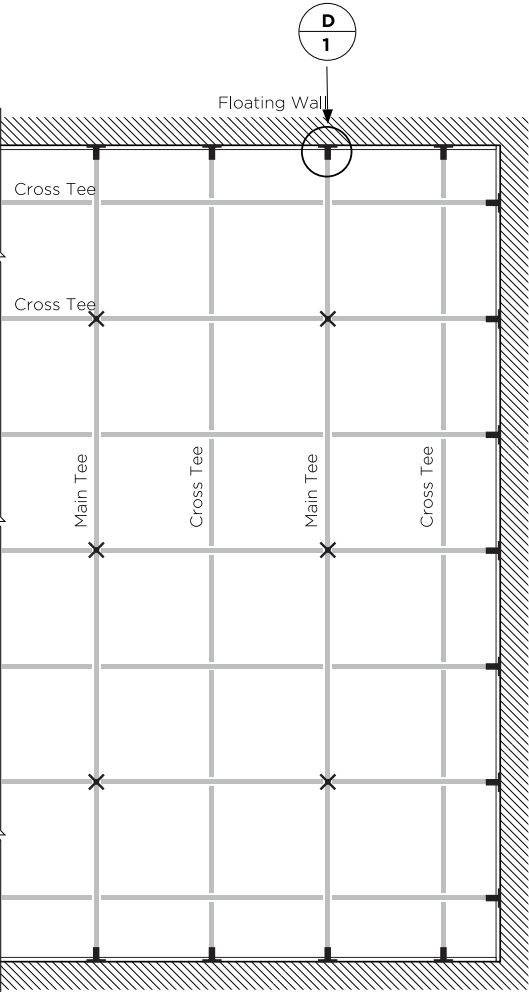
Alternate Seismic Application

Intermediate Duty DXL-I-C System 7/8" Molding

System Summary

Suspension System Duty Rating	Intermediate
Wall Molding	7/8"
Seismic Clip	ACM7
Two Adjacent Floating Sides - With Gap	ACM7 seismic clip with fastener attachment to tee through slot (optional), and one fastener through wall molding (optional).
Two Adjacent Fixed Sides - Tight, No Gap	Tight, no gap; pop-rivet attachment of tee to molding
Perimeter Hanger Wires	None
Stabilizer Bars	None

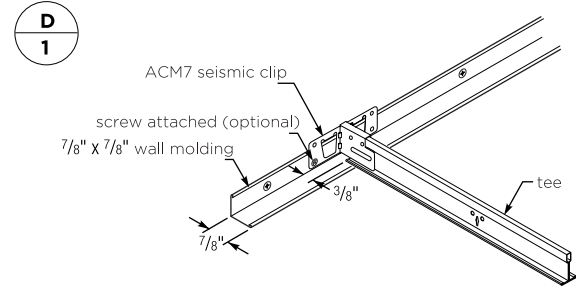
Construction Details



- X 12-gauge hanger wire
- T ACM7 seismic clip

All main DONN® suspension systems - DX/DXL, Fineline DXF, Fineline 1/8 DXFF, Centricitee DXT/DXLT, CE, DXW, DXLA, and ZXLA - include the codecompliant intermediate-duty main tees for Seismic Design Categories A, B and C. The performance of DONN® seismic systems is based on the specific combination of superior components, and design and installation methods shown. Components from other manufacturers were not evaluated, and their use or any mixed use is not recommended. Convenience holes located in the tee bulb may be used for any and all hanger wires. Alternate Seismic Application

ACM 7 Clip, Floating Walls



Category C

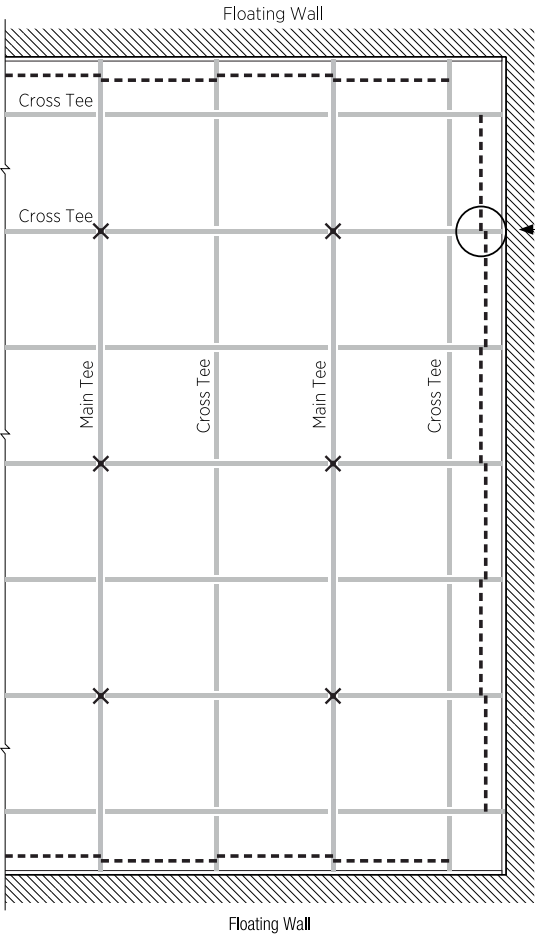
Standard Seismic Application

Intermediate Duty System 7/8" Molding, Stabilizer Bars

System Summary

Suspension System Duty Rating	Intermediate
Wall Molding	7/8"
Seismic Clip	None
Floating Sides	3/8" gap; no attachment of tee to molding
Perimeter Hanger Wires	None
Stabilizer Bars	Yes

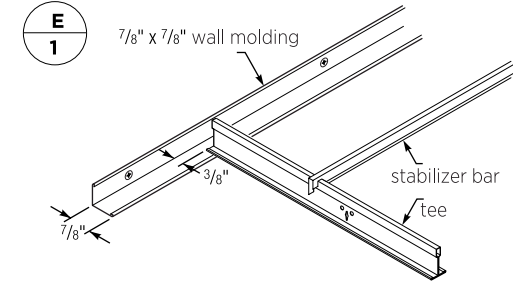
Construction Details



- X 12-gauge hanger wire
- stabilizer bar

All main DONN® suspension systems - DX/DXL, Fineline DXF, Fineline 1/8 DXFF, Centricitee DXT/DXLT, CE, DXW, DXLA, and ZXLA - include the codecompliant intermediate-duty main tees for Seismic Design Categories A, B and C. The performance of DONN® seismic systems is based on the specific combination of superior components, and design and installation methods shown. Components from other manufacturers were not evaluated, and their use or any mixed use is not recommended. Convenience holes located in the tee bulb may be used for any and all hanger wires. Standard Seismic Application

Tee Unattached, Floating Wall





## USGME TERMS & CONDITIONS

### DELIVERY AND STORAGE OF MATERIALS

**A.** All materials shall be delivered in their original unopened packages and stored in an enclosed shelter providing protection from damage and exposure to the elements. Never Open the cartons and keep the boards in standing position. This will boost the possibility of warpage of the tile.

**B.** Storage:

1. Panels: Storage time of materials at the job site should be as short as possible, and environmental conditions should be as near as possible to those specified for occupancy (see no. Environmental Conditions below). Excess humidity during storage can cause expansion of material and possible warp, sag, or poor fit after installation. Chemical changes in the mat and/or coatings can be aggravated by excess humidity and cause discoloration during storage, even in unopened cartons. Cartons should be removed from pallets and stringers to prevent distortion of material. Long-term (6- 12 months) storage under uncontrolled environmental conditions should be avoided.

2. Suspension System: Store in manner that will prevent warping, scratches, or damage of any kind.

**C.** Handling: Handle in such manner to ensure against racking, distortion, or physical damage of any kind.

**D.** Damaged or deteriorated materials should be removed from the premises. Immediately before installation, to stabilize tile and panels, store them at a location where temperature and humidity conditions duplicate those ambient during installation and anticipated for occupancy. In this case, refer to USG Complaint Handling document and contact with the appropriate USG personnel should be made within three days of receiving the material (signed delivery documentation)

### ENVIRONMENTAL CONDITIONS

**A.** Installation of acoustical panels shall not begin until building is enclosed, permanent heating and cooling equipment is in operation, and residual moisture from plaster, concrete, or terrazzo work has dissipated.

**B.** Do not use ceiling panels in extreme or continuous high humidity, or areas exposed directly to weather or water. Ceiling panels are sized and designed for use within the standard occupancy range of temperature and humidity, 65-85 °F (18-29 °C), no more than 70% RH

(relative humidity). Humidity can greatly affect product dimensional stability and sag resistance. Sag can become noticeable during periods of high humidity lasting only a few hours. CLIMAPLUS ceilings if used with DONN® Brand Suspension Systems, can withstand temperatures from 60-104 °F (32-40 °C) and relative humidity up to 95%-100% RH. See USGME for specific Warranty information.

**C.** Allow time for dimensional changes in ceiling panels stored at temperature/humidity conditions well outside of those recommended for service. With increases in temperature/humidity, these products expand (up to 1/64 in./ft. (4.3 mm/m) at 85 °F (29 °C)/90% RH) and may not fit into a fixed grid. Conversely, with decreases, these products will be undersize, but expand to normal when standard ambient conditions return.

**D.** For some pattern edge details, if perimeter panels must be cut smaller, the cut edge must be field-rabbited, or the wall angle must be lowered by (1/4") (3/8") (Reveal Depth).

**E.** Formaldehyde & VOC Classification, as tested per ASTM D5116 and according to standards established by the Collaborative for High-Performance Schools (CHPS), the California Office of Environmental Health Hazard Assessment (OEHHA), and the USGBC LEED for Schools.

Products are classified as zero- or low-emitting for formaldehyde and VOC emissions as defined:

**a. "Zero-Emitting"**

Materials producing concentration levels below the test-chamber background level specified by the "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers," including 2004 addendum. Section 3.8.4.3 states, "Background concentrations in the empty chamber ventilated at 1.0 air changes per hour shall not exceed 2 µg m-3 (1.6 ppb) for any individual VOC, including formaldehyde" and all VOCs with chronic inhalation Reference Exposure Levels adopted by California EPA COEHHA for Proposition 65 chemicals.



# USGME TERMS & CONDITIONS

## **b. "Low-Emitting"**

1. Materials passing CHPS requirements as established in the "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers," including 2004 addendum. In addition, these products produce formaldehyde concentration levels below 9 µg m-3 & contribute no more than one-half of the chronic inhalation Reference Exposure Level adopted by California EPA COEHHA for all other VOCs identified by Proposition 65.

2. Must be tested by independent lab per these standards along with product submittals.

a. Documentation of laboratory test must indicate products and item number if test results differ for other facility manufacturing location for supplied products.

## **QUALITY ASSURANCE**

**A.** Single Source Responsibility: To obtain combined warranty for the DONN® Brand suspension system and the acoustical panel, color match or ceiling panel and suspension system compatibility, all acoustical panel and suspension system components shall be produced and supplied by one manufacturer. Materials supplied by more than one manufacturer are not acceptable.

**B.** Subcontractor qualifications: Installer shall have successful experience in the installation of suspended ceiling systems on projects with requirements similar to requirements specified.

**C.** Requirements of regulatory agencies: Codes and regulations of authorities having jurisdiction.

**D.** Source quality control:

1. Test reports: Manufacturer will provide test certification for minimum requirements as tested in accordance with applicable industry standards and/or to meet performance standards specified by various agencies.

2. Changes from system: System performance following any substitution of materials or change in assembly design must be certified by the manufacturer.

## **PROJECT CONDITIONS**

**A.** Existing conditions: (include specific alteration work requirements for project).

**B.** Environmental requirements for interior installation: Building shall be enclosed with windows and exterior doors in place and glazed, and roof watertight before installation of ceiling system and related ceiling components. Climatic Condition Range for panels used on this project are as follows:

1. ClimaPlus Ceilings: 60-90°F (16-29°C) with a max 95% RH. CLIMAPLUS ceilings used with DONN® Brand Suspension Systems can be used when building is not enclosed and in higher temperature, relative-humidity range.

**C.** Coordination with other work:

1. General: Coordinate with other work supported by or penetrating through the ceiling, including mechanical and electrical work and partition systems.

2. Mechanical work: Ductwork above ceiling shall be completed and permanent heating and cooling systems operating to climate conditions prior to installation of ceiling components.

3. Electrical work: Installation of conduit above ceiling shall be complete before installation of ceiling components.

4. Fire protection work: Fire protection lines and/or equipment occurring above ceiling shall be completed and tested before ceiling components are installed.

**D.** Protection:

1. Personnel: Follow good safety and industrial hygiene practices during handling and installing of all products and systems, with personnel to take necessary precautions and wear appropriate personal protective equipment as needed. Read material safety data sheets and related literature for important information on products before installation. Contractor to be solely responsible for all personal safety issues during and subsequent to installation; architect, specifier, owner, and manufacturer will rely on contractor's performance in such regard.

2. Protect completed work above ceiling system from damage during installation of ceiling components.

## **INSPECTION**

**A.** Examine areas to receive ceiling panels for conditions that will adversely affect installation. Provide written report of discrepancies.

**B.** Do not start work until unsatisfactory conditions are corrected.

**C.** Work to be concealed: Verify work above ceiling is completed and installed in manner that will not affect layout and installation of ceiling panels.

**D.** Beginning of installation shall signify acceptance of conditions in areas to receive ceiling panels.

## **ENVIRONMENTAL CONDITIONS**

**A.** Installation of acoustical panels shall not begin until building is enclosed, permanent heating and cooling equipment is in operation, and residual moisture from plaster, concrete, or terrazzo work has dissipated.

**B.** Do not use ceiling panels in extreme or continuous high humidity, or areas exposed directly to weather or water. Ceiling panels are sized and designed for use within the standard occupancy range of temperature and humidity, 65-85 °F (18-29 °C), no more than 70% RH

## **PREPARATION**

Field dimensions must be verified prior to installation.

## **INSTALLATION**

**A.** Standard reference: Install ceiling panels and suspension system, including necessary hangers, grillage, splines, and other supporting hardware, in accordance with ASTM C636, 2006 IBC (2007 CBC), CISCA Ceiling Systems Handbook, (UL Design) and any applicable code requirement.

**B.** Manufacturer's reference: Install ceiling panels in exposed grid systems, supported on all edges, in accordance with manufacturer's warranty.

**C.** Drawing reference: Install ceiling panels in accordance with approved shop drawings.

**D.** Hanger Wires:

1. Spacing: Space hanger wires on main tees not more than 48 inches o.c. a maximum of 48" o.c., attaching hangers directly to the structure above, or as required to support loads.

2. Limitations: Do not support wires from mechanical and/or electrical equipment, piping or other equipment occurring above ceiling.

**E.** Ceiling Perimeter: Install edge moldings (2" minimum) and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.

1. Tee ends shall be tied together with DONN® Brand Stabilizer Bars or other approved means to prevent the tees from spreading apart.

2. Mechanically attach the terminal ends of the ceiling suspension members to the perimeter molding of two adjoining walls using pop-rivets or other approved means.

3. Maintain a 3/4" clearance between the opposite ends of the suspension members and the wall. The unattached ends of the suspension members shall rest upon and be free to slide perpendicularly to the perimeter molding.

**F.** Alternate Perimeter Attachment: When approved by local code officials install 7/8" edge molding with ACM7 Seismic Clip - Install per USG literature AC3235.

**G.** Accessories: Install accessories as applicable to meet project requirements.

**H.** Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical tiles.

**I.** Install suspension system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.

**J.** Install acoustical tiles in coordination with suspension system.

1. Fit adjoining tile to form flush, tight joints. Scribe and cut tile for accurate fit at borders and around penetrations through tile.

2. Remove and replace any damaged tiles.

**K.** Lighting Fixtures:

1. All light fixtures shall be mechanically attached to the suspension system per NEC 410-16 (two per fixture unless the fixture is independently supported).

2. Support of rigid lay-in (Type G) or can light fixtures:

a. Each fixture less than 10 lbs. shall have a single wire (wire may be slack) attached from the fixture to structure.

## USGME TERMS & CONDITIONS

- b. Each fixture that weighs between 10 and 56 lbs. shall have two wires (wires may be slack) attached at diagonal corners of the fixture to structure.
- c. Each fixture greater than 56 lbs. shall be directly supported to structure by approved hangers.
- d. Pendant light fixtures shall be directly supported from structure with 9-gauge wire (or approved alternative).

### **L. Air Terminals:**

- 1. Air terminals less than 20 lbs. shall be positively attached to the suspension system
  - 2. Air terminals that weigh between 20 and 56 lbs. shall be mechanically attached to the suspension system. Two slack wires shall be attached from the housing to structure.
  - 3. Air terminals in excess of 56 lbs. shall be directly supported to structure by approved hangers.
- M. Sprinkler heads and other penetrations shall have 3/8" clearance on all sides.

### **CLEANING**

**A. Suspension System:** Remove panel material and perform any necessary cleaning maintenance with non-solvent based commercial cleaner.

**B** Immediately remove any corrosive substances or chemicals that would attack painted finishes (i.e. wallpaper adhesives).

**C.** Touch up all minor scratches and spots, as acceptable, or replace damaged sections when touch-up is not permitted.

**D. Painting:** Repainting of suspension member shall be with a high-quality solvent base enamel paint and applied as recommended by paint manufacturer. Ceiling panels may be touched-up by spraying a thinned, non-bridging vinyl-acrylic flat wall paint. The type of paint selected and the method of application can alter the acoustical performance and fire ratings of any acoustical product. Therefore, USGME cannot guarantee that the field-painted panels will match the published performance.

**E.** Removal of debris: Remove all debris resulting from work of this section.







## ENVIRONMENTAL STATEMENT



### ENVIRONMENTAL STATEMENT

Recycling is only a part of the story. Careful production methods are good for the environment and increase efficiency. Our practices include:

#### ■ Using clean fuels (NG)

■ **Treating and recycling water** (Saving of 300 m<sup>3</sup> daily at USGME)

■ **Reducing waste** (Recycling): Waste from the production line and panels chipped or broken during processing are returned to the manufacturing cycle, keeping them out of landfills

■ **Offering specialized ceiling panels:** High-durability acoustical panels extend the useful life of ceilings and reduce operating and replacement costs. Panels with high light reflectance can enhance indirect lighting, reducing the number of light fixtures needed and lowering energy consumption

#### ■ Recycling old ceiling panels

■ **Product life cycle:** USG's commitment to health, safety and environmental responsibility is evident at every stage in the life cycle chain.

USGME has been granted to ISO 14000 certificate. This indicates that environmental aspects such as emissions into the air, waste handling, utilization of natural resources and energy efficiency are paid attention to at USGME and the environmental impacts of production are constantly improved. In addition to ISO 14000 certification, USGME is working to prove the environmental profile of USGME products by acquiring EPD (Environmental Product Declaration) to its Ceiling family range.

### GREEN FACTS:

■ More than 70% of manufacturing waste is recycled into ceiling products

■ The majority of the Ceilings product offering contains 50% recycled content or higher

■ USGME mineral fiber ceiling panels incorporate steel mill slag waste as well as post-consumer waste such as newspapers

■ USGME has an Environmental certificate for its facility in Dammam for compliance with PME (Presidency of Metrology and Environment) according to Local regulations

■ All USGME panels feature low VOC emission and comply with the Collaborative for High Performance Schools (CHPS) standards

■ Many USGME ceiling products reflect light and work well in architectural designs that promote day lighting; reductions in lighting density made possible by such designs can result in energy savings and greenhouse gas reduction

# PACKAGING FOR CEILING SYSTEM

THICKNESS	FAMILY TYPE/SIZE	NUMBER OF TILES PER CARTON PCS/CTN	M² PER CARTON M²/CTN	NUMBER OF BOXES / PER PALLET CTN/PALLET	M² PER PALLET M²/PALLET	BOX WEIGHT KG/CTN	PALLET WEIGHT KG/PALLET
12 mm	STD 600*600mm	16	5.76	52	299.52	21.6	1,123.26
	STD 610*610mm	16	5.95	52	309.5	22.3	1,160.64
15 mm	STD/C+ 600*600mm	12	4.32	56	241.92	15.3	856.80
	STD/C+ 610*610mm	12	4.46	56	249.98	15.8	884.57
	C+ 600*1200mm	8	5.76	40	230.40	20.4	816.00
	C+ 610*1220mm	8	5.95	40	238.08	21.1	842.92
	Olympia™ STD/C+ 600*600mm	12	4.32	56	241.92	16.7	932.40
	Olympia™ STD/C+ 610*610mm	12	4.46	56	249.98	17.2	962.62
	Olympia™ C+ 600*1200mm	8	5.76	40	230.40	22.2	888.00
	Olympia™ C+ 610*1220mm	8	5.95	40	238.08	22.9	917.29
	Fire Chief 600*600mm	12	4.32	48	207.36	21.7	1,041.60
	Fire Chief 600*610mm	12	4.46	48	214.27	22.4	1,075.36
	Olympia™ Fire Chief 600*600mm	12	4.32	48	207.36	22.8	1,094.40
	Olympia™ Fire Chief 600*610mm	12	4.46	48	214.27	23.5	1,129.87
	Fire Chief 600*1200mm	8	5.76	40	230.40	28.9	1,157.33
	Fire Chief 600*1220mm	8	5.95	40	238.08	29.9	1,195.51
	Olympia™ Fire Chief 600*1200mm	8	5.76	40	230.40	30.4	1,216.00
	Olympia™ Fire Chief 610*1220mm	8	5.95	40	238.08	31.4	1,256.53
	Plank 300*1200mm	16	5.76	40	230.40	20.9	836.00
	Plank 310*1220mm	16	5.95	40	238.08	21.6	863.58
	Plank Olympia™ 300*1200mm	16	5.76	40	230.40	22.2	888.00
	Plank Olympia™ 310*1220mm	16	5.95	40	238.08	22.9	917.29
19 mm	STD/C+ 600*600mm	10	3.60	52	187.20	16.0	832.00
	STD/C+ 610*610mm	10	3.72	52	193.44	16.5	859.73
	C+ 600*1200mm	6	4.32	40	172.80	19.2	768.00
	C+ 610*1220mm	6	4.46	40	178.56	19.8	793.60
	Olympia™ STD/C+ 600*600mm	10	3.60	52	187.20	17.6	912.60
	Olympia™ STD/C+ 610*610mm	10	3.72	52	193.44	18.1	943.02
	Olympia™ C+ 600*1200mm	6	4.32	40	172.80	20.9	834.00
	Olympia™ C+ 610*1220mm	6	4.46	40	178.56	21.5	861.80
	Fire Chief 600*600mm	10	3.60	40	144.00	24.7	986.00
	Fire Chief 600*610mm	10	3.72	40	148.80	25.5	1,018.87
	Olympia™ Fire Chief 600*600mm	10	3.60	40	144.00	25.7	1,026.00
	Olympia™ Fire Chief 600*610mm	10	3.72	40	148.80	26.5	1,060.20
	Fire Chief 600*1200mm	6	4.32	40	172.80	29.6	1,183.20
	Fire Chief 600*1220mm	6	4.46	40	178.56	30.6	1,222.64
	Olympia™ Fire Chief 600*1200mm	6	4.32	40	172.80	30.8	1,231.20
	Olympia™ Fire Chief 610*1220mm	6	4.46	40	178.56	31.8	1,272.24
	Halcyon™ 600*600mm	10	3.60	40	144.00	7.5	300.00
	Halcyon™ 600*610mm	10	3.72	40	148.80	7.8	310.00
	Halcyon™ 600*1200mm	6	4.32	40	172.80	9.0	360.00
	Halcyon™ 610*1220mm	6	4.46	40	178.56	9.3	372.00
	Plank 300*1200mm	12	4.32	40	172.80	19.2	768.00
	Plank 310*1220mm	12	4.46	40	178.56	19.8	793.60
	Plank Olympia™ 300*1200mm	12	4.32	40	172.80	21.1	842.40
	Plank Olympia™ 310*1220mm	12	4.46	40	178.56	21.8	870.48
	Plank Sonata/Oly 300*1500mm	12	5.40	30	162.00	26.6	796.50
	Plank Sonata/Oly 310*1520mm	12	5.56	30	166.90	27.4	820.57
	Plank Sonata/Oly 600*1500mm	6	5.40	30	162.00	26.6	796.50
	Plank Sonata/Oly 610*1520mm	6	5.56	30	166.90	27.4	820.57

THICKNESS	FAMILY TYPE/SIZE	NUMBER OF TILES PER CARTON PCS/CTN	M² PER CARTON M²/CTN	NUMBER OF BOXES / PER PALLET CTN/PALLET	M² PER PALLET M²/PALLET	BOX WEIGHT KG/CTN	PALLET WEIGHT KG/PALLET
22 mm	STD/C+ 600*600mm	8	2.88	40	115.20	18.5	741.89
	STD/C+ 610*610mm	8	2.98	40	119.04	19.2	766.62
	C+ 600*1200mm	6	4.32	40	172.80	27.8	1,112.83
	C+ 610*1220mm	6	4.46	40	178.56	28.7	1,149.93
	Olympia™ STD/C+ 600*600mm	8	2.88	40	115.20	19.5	781.89
	Olympia™ STD/C+ 610*610mm	8	2.98	40	119.04	20.2	807.95
	Olympia™ C+ 600*1200mm	6	4.32	40	172.80	29.3	1,172.83
	Olympia™ C+ 610*1220mm	6	4.46	40	178.56	30.3	1,211.93
25 mm	Halcyon™ 600*600mm	8	2.88	40	115.20	6.9	276.00
	Halcyon™ 610*610mm	8	2.98	40	119.04	7.1	285.20
	Halcyon™ 600*1200mm	4	2.88	40	115.2	10.4	414.00
	Halcyon™ 610*1220mm	4	2.98	40	119.04	10.7	427.80

	ITEM CODE	NUMBER OF PIECES PER CARTON PCS/Ctn
MAIN TEES	801DX3600H	25
	801DX3600IM	25
	801DX3660H30	25
	801DX3660IM	25
	801DXL3600	25
	801DXL3660	25
	801DXT15-3600M	20
	801DXT15-3660IM	20
WALL ANGLES	802M9-3600	40
	802MS3600	50
	802MT3600	40
LONG CROSS TEES ( 4 FT)	803DX1200H30	50
	803DX1200LM	75
	803DX1220H30	50
	803DX1220LM	75
	803DXT15-1200M	60
	803DXT15-1220IM	60
SHORT CROSS TEES ( 2 FT)	804DX600H30	50
	804DX600LM	75
	804DX610H30	50
	804DX610LM	75
	804DXT15-600M	60
	804DXT15-610IM	60





# WARRANTIES AND LIMITATIONS

USGME Ltd (“USG Middle East”) following combinations of ceiling system products, as installed in the building nominated overleaf, carry a lifetime warranty from the date of installation (“Warranty Period”). Lifetime is defined as the useful life of the ceiling system up to a maximum of 30 years. USG acoustical panel only or USG DONN® grid only, carry a 15 year warranty from date of installation.

## WHAT PRODUCTS ARE COVERED ?

This Warranty covers any of the following standard sizes 1200 x 600, 1200 x 300 and 600 x 600 mm combinations of:

USG CLEAN ROOM™ ClimaPlus	USG RADAR™ ClimaPlus	
USG SPARTA	USG RADAR™ Hi NRC ClimaPlus	
USG FROST™ ClimaPlus	USG RADAR Ceramic™	
USG HALCYON™ ClimaPlus	USG CROSS FISSURED ClimaPlus	
USG MARS™ ClimaPlus	USG PERFORATED ClimaPlus /	USG DONN® DX 24 mm Exposed Grid
USG SONATA ClimaPlus	USG PEDESTAL ClimaPlus /	USG DONN® Centricitee 15 mm Exposed Grid
USG OLYMPIA Micro™ ClimaPlus	USG SANDRIFT™ ClimaPlus /	USG DONN® Wall Angles
USG OLYMPIA II™ ClimaPlus	USG TAIGA HYGIENE ClimaPlus	

## WHAT DOES THIS WARRANTY COVER ?

This Warranty covers the owner (and subsequent owners) of the building nominated overleaf in which the products are installed for the Warranty Period.

Product defects caused by faulty materials, manufacturing workmanship and failure to meet product specifications issued by USG Middle East in effect at the time of installation.

The nominated ceiling panels shall withstand normal climatic conditions including high temperature and humidity without visible sagging, warping or shrinking, or delamination of finished surfaces, provided that the panels are installed in normal occupancy conditions for which they are intended and within current environmental conditions of the product.

## What Will USGME Do ?

USG Middle East at our election will replace or repair the defective product or, refund or credit an amount equal to the purchase price of the defective products and transportation net of all taxes, charges or other levies paid. This constitutes USG Middle East's entire liability.

## WHAT DOES THIS WARRANTY NOT COVER?

This Warranty does not cover defects arising from a failure to comply with USGME's printed Guidelines, Limitations, Specifications, Installation Instructions and Standards, before, during and after installation. In particular the Warranty does not cover damage to the products arising from:

- Abnormal climatic conditions outside the products specification.
- Exterior applications.
- Chemical fumes\*, corrosive substances, freezing temperatures or vibration.
- Ceiling panels used to support any other materials or fixtures such as lights, air conditioning grilles, insulation (which are above maximum backloading limitations), signs etc.
- Ceiling panels installed on furring strips, or if nails, staples or adhesives have been used in the installation process.
- Damage by fire, water (including condensation) or other elements of nature or act of God.
- Accidents, abuse, neglect deterioration by chemical action, damage during shipment, storage, installation or used for purposes other than for which they were designed.
- Other components in the ceiling systems not manufactured by USG Interiors such as hanger wires, fasteners, accessories.
- Alteration or removal of products without the prior approval of USG Interiors or attempts to repair any defective products.

\*Radar Ceramic™ ClimaPlus will withstand corrosive chemical fumes

## ALSO THIS WARRANTY DOES NOT COVER:

- Costs of removal or installation of products
- Cost of removal of damaged or installed faulty product
- Any direct, indirect or consequential damage or loss of any nature

## IF YOU HAVE A PROBLEM?

USG Middle East will only accept claims in writing made in accordance with this warranty, and

- within the Warranty Period, and
  - within 30 (thirty) days from the date the problem was, or by reasonable inspection should have been, discovered, and
  - with proof of installation (to assist, fill out details below)
- You must keep any products that are alleged to be defective for our inspection and you must not attempt to alter, repair or remove these products.

## OTHER LEGAL RIGHTS:

This Warranty is not part of a contract between USG Middle East and the building owner. USGME shall not be bound by any unauthorised warranty given by the seller of the products or the contractor. It does not exclude, limit, restrict or modify the rights and remedies available to the building owner, or the liability of the seller or contractor, under any statute or other laws in respect of the products and, in particular, when the goods are supplied to the final Consumer

## PROJECT DETAILS:

NAME : .....

ADDRESS: .....

.....

COUNTRY: .....

OWNER : .....

LIFETIME / 15 YEAR CEILING SYSTEM WARRANTY

PRODUCT :  
Panel : USG 00 x 00 x 1 mm ..... m<sup>2</sup>

Grid : USG DONN® 00 x 00 mm .....m<sup>2</sup>

DATE OF INSTALLATION: ..... 201 .....

## CEILING SYSTEMS CONTRACTOR:

NAME : .....

ADDRESS: .....

SIGNATURE: .....

TITLE : .....

DATE : .....

## WARRANTY COPIES:

☐ BUILDING OWNER

☐ CEILING CONTRACTOR

☐ USG MIDDLE EAST

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USG reserves the right to change specifications or design and supply products which may differ from those described and illustrated without notice and without liability. All weights and measures are nominal.

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