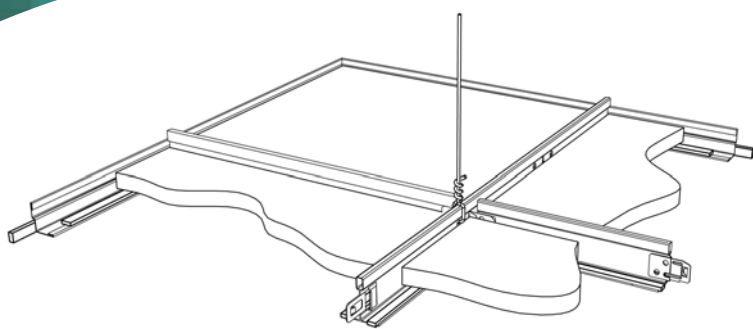


# BarrierSystems

PRODUCT GUIDE



CONTROLLED ENVIRONMENT  
09 22 26.23



**Chicago Metallic®**  
*Fast. Easy. Customer Focused.®*

# BarrierSystems

## BarrierGrid™ Suspension

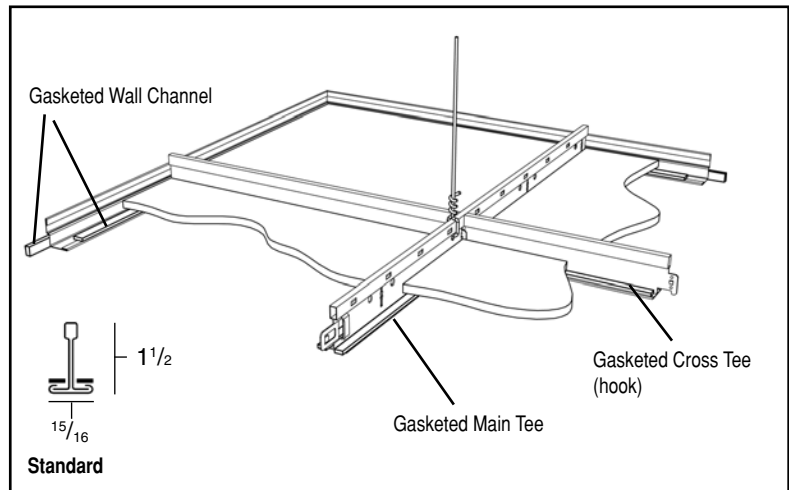
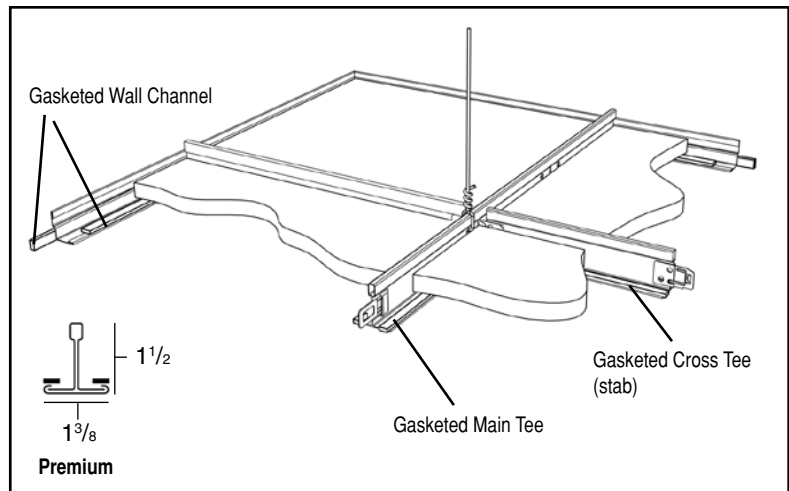
**Non-Fire Rated  
Double Web**

### Applications

Controlled environment facilities, semiconductor, pharmaceutical, aerospace, clean manufacturing areas, healthcare, food processing, precision instrument assembly rooms.

### Features

- Components and assemblies designed for use in ISO 14644-1 controlled environment facilities (previously Fed Standard 209E).
- Grid components with factory-applied gaskets restrict air movement between plenums and clean process work areas.
- Precision placement of gaskets on grid flanges eliminates voids at panel modules and speeds up installation.
- Demountable “hook” cross tees (standard system) allow large areas of ceiling to be opened easily.
- Butt cut cross tees keep all components in same plane improving appearance and sealing.
- Double gasketed aluminum wall angle and channel provide tight closures at perimeters and minimize the need for caulking.
- Aluminum caps on runners and tees improve corrosion resistance of grid system.



*Chicago Metallic suspension systems meet a Class A Flame Spread Rating*

**IMPORTANT!** A Metallurgist should be consulted regarding the suitability of this product for the environmental conditions in which it is being installed.

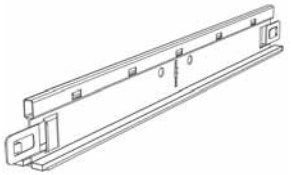
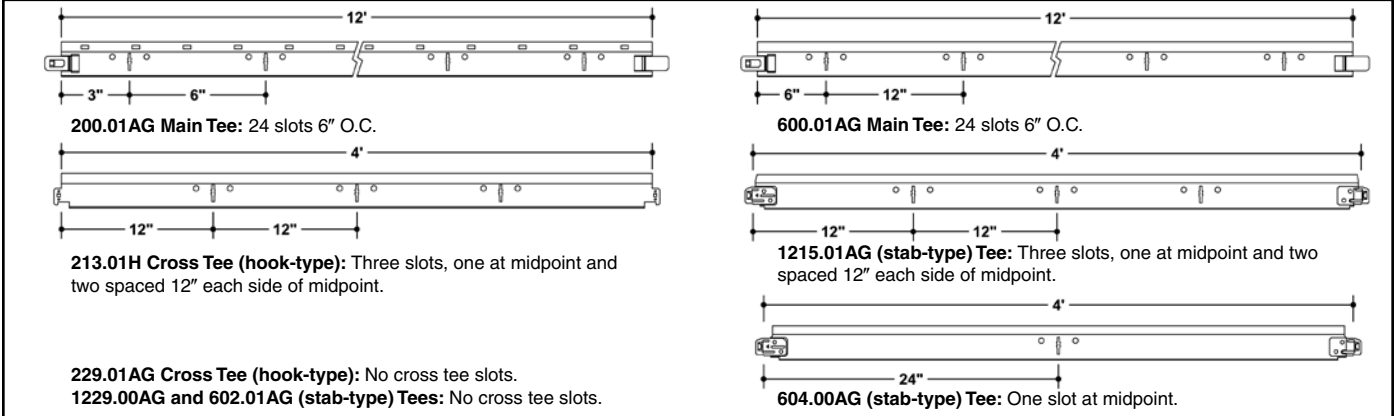


*Always up-to-date product information is available on the web*

**chicagometallic.com/barriergrid  
chicagometallic.com/barrierpan**

## Component Slotting and Hanger Hole Placement

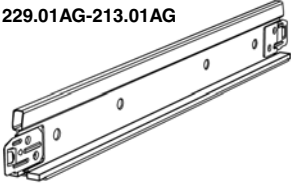
All overall lengths shown are nominal dimensions.



200.01AG



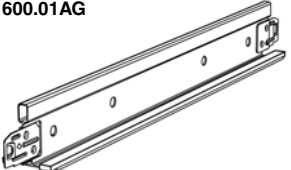
229.01AG-213.01AG



1229.01AG



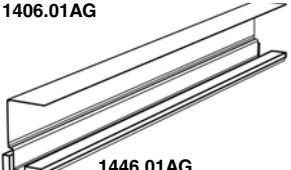
600.01AG



602.01AG / 604.01AG



1406.01AG



1446.01AG

Product Number	Dimensions			Feet	Per Carton Pieces	Weight
	Length	Height	Face			

### Standard 15/16" BarrierGrid

#### Main Tee

200.01AG	12'	1 1/2"	15/16"	300	25	93
----------	-----	--------	--------	-----	----	----

#### Cross Tees - Hook-type

229.01AG	2'	1 1/2"	15/16"	150	75	28
213.01AG	4'	1 1/2"	15/16"	200	50	42

#### Cross Tees - Stab-type

1229.01AG	2'	1 1/2"	15/16"	150	75	24
1215.01AG	4'	1 1/2"	15/16"	200	50	42

#### Wall Molding

1456.01AG	12'	1 1/8"	1"	180	15	17
-----------	-----	--------	----	-----	----	----

#### Wall Channel

1446.01AG	10'	1 5/8"	1"	120	12	52
-----------	-----	--------	----	-----	----	----

### Premium 1-3/8" BarrierGrid

#### Main Tee

600.01AG	12'	1 1/2"	15/16"	240	20	86
----------	-----	--------	--------	-----	----	----

#### Cross Tee - Stab-type

602.01AG	2'	1 1/2"	15/16"	80	40	29
604.01AG	4'	1 1/2"	15/16"	160	40	57

#### Wall Molding

1406.01AG	10'	1 1/8"	1"	150	15	52
-----------	-----	--------	----	-----	----	----

#### Wall Channel

1446.01AG	10'	1 5/8"	1"	120	12	52
-----------	-----	--------	----	-----	----	----

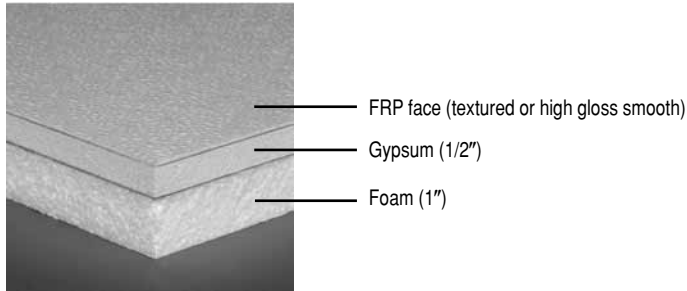
# BarrierSystems

## BarrierPan™ Panels

### Applications

For controlled environment facilities requiring durable, highly moisture resistant, low particulate surfaces. Use with  $1\frac{5}{16}$ " or  $1\frac{3}{8}$ " gasketed CMC BarrierGrid™. All components and assemblies designed for use in ISO 14644 Class 5 controlled environment facilities.

### BarrierPan™ I



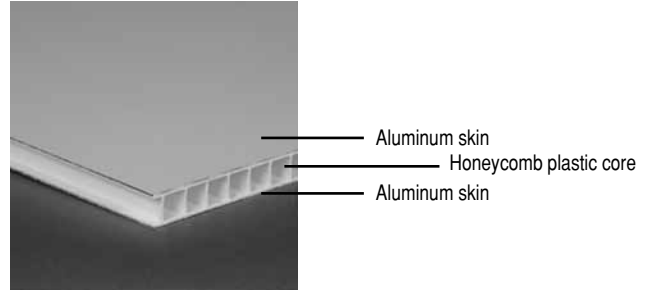
#### Features

- Textured or smooth high gloss FRP faced with 1/2" gypsum bonded to 1" foam.

#### Benefits

- USDA accepted.
- Withstands the rigors of frequent cleaning and offers exceptional control of air and particulate movement from the plenum.
- Ideal for areas requiring thermal control.
- R4 Insulation rating.

### BarrierPan™ II



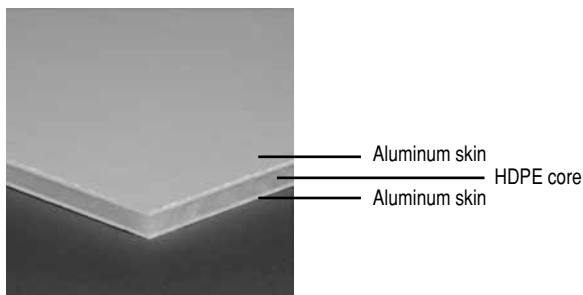
#### Features

- Aluminum skin bonded to honeycombed plastic core.

#### Benefits

- Reversible, non-directional.
- USDA accepted.
- Suitable for clean rooms that require ISO 5-8 certification.
- Protective peelcoat for ease of handling during installation.
- Withstands the rigors of frequent cleaning and offers exceptional control of air and particulate movement from the plenum.
- Excellent rigidity.

### BarrierPan™ III



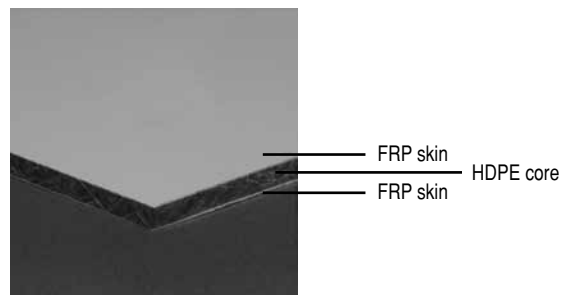
#### Features

- Aluminum skin with HDPE core.

#### Benefits

- Reversible, non-directional.
- USDA accepted.
- Suitable for clean rooms that require ISO 5-8 certification.
- Ideal for clean rooms requiring regular cleaning, moisture resistance.
- Excellent rigidity.

### BarrierPan™ IV



#### Features

- FRP skin with HDPE core.

#### Benefits

- Reversible, non-directional.
- USDA accepted.
- Suitable for clean rooms that require ISO 5-8 certification.
- Ideal for clean rooms requiring regular cleaning, moisture resistance.
- Excellent rigidity.

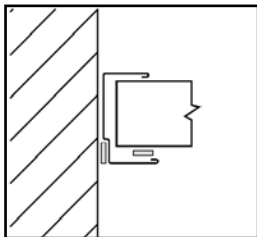
# Panels - BarrierPan

Product Number	Panel Size	Per Carton		
		Sq. Ft.	Pieces	Weight
<b>Lay-in Square Edge BarrierPan Panels — for 15/16" or 1-3/8" BarrierGrid™</b>				
<b>BarrierPan I – 1-1/2"</b>				
8310.01	24" x 24"	32	8	72
8310.01S	24" x 24"	32	8	72
8311.01	24" x 48"	32	4	72
8311.01S	24" x 48"	32	4	72
<b>BarrierPan II – 7/16"</b>				
8312.01	24" x 24"	32	8	24
8313.01	24" x 48"	32	4	24
<b>BarrierPan III – 1/4"</b>				
8314.01	24" x 24"	32	8	40
8315.01	24" x 48"	32	4	40
<b>BarrierPan IV – 1/4"</b>				
8316.01	24" x 24"	32	8	67
8317.01	24" x 48"	32	4	67

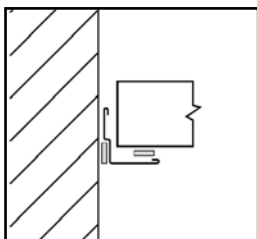
\* Custom sizes available as Special Order - Consult CMC.

## Wall Conditions

**BarrierPan I**

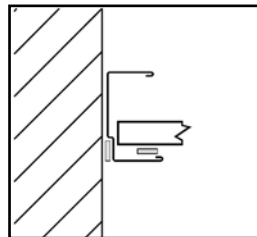


Panel and Wall Channel

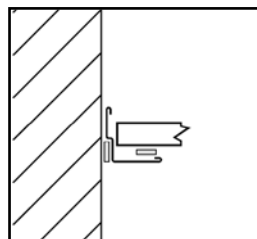


Panel and Wall Angle

**BarrierPan II**

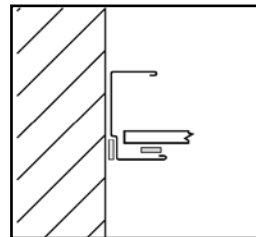


Panel and Wall Channel

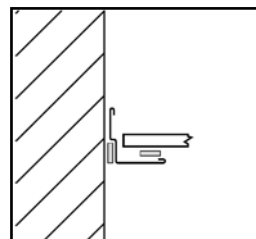


Panel and Wall Angle

**BarrierPan III**

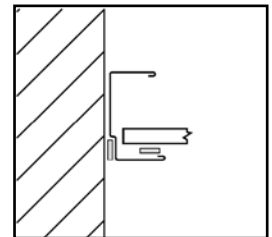


Panel and Wall Channel

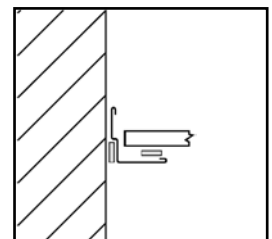


Panel and Wall Angle

**BarrierPan IV**



Panel and Wall Channel



Panel and Wall Angle

# Component Data - BarrierGrid

## Standard 15/16" Exposed Gasketed

Component Load Test Data (based on 1/360 span deflection)

ALLOWABLE LOAD per ASTM C635 <sup>■</sup>

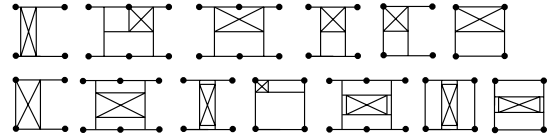
Main Tee	Length	Hanger Spacing								
		4'								
		5'								
		6'								
200	12'	Heavy Duty								
								8.9	5.6	
Cross Tee	Length	1'	20"	2'	30"	3'	4'	5'	6'	8'
1229	2'	33.0 <sup>▲</sup>								
229	2'	32.5 <sup>▲</sup>								
1215	4'	10.7								

<sup>■</sup>To convert data into lb/ft<sup>2</sup>, divide on center spacing of component into lb/ft.

<sup>▲</sup>Limited by safety factor of 2.

## Non-Fire Rated Assemblies

### Hanger Positions for Non-Fire Rated Situations



This illustrates hanger positions for single fixtures in a field. Provide extra hangers for tandem fixtures.

## Premium 1-3/8" Exposed Gasketed

Component Load Test Data (based on 1/360 span deflection)

ALLOWABLE LOAD per ASTM C635 <sup>■</sup>

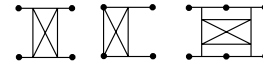
Main Tee	Length	Hanger Spacing								
		4'								
		5'								
		6'								
600	12'	Heavy Duty								
Cross Tee	Length	1'	20"	2'	30"	3'	4'	5'	6'	8'
602	2'	100.0 <sup>▲</sup>								
604	4'	18.6								

<sup>■</sup>To convert data into lb/ft<sup>2</sup>, divide on center spacing of component into lb/ft.

<sup>▲</sup>Limited by safety factor of 2.

## Non-Fire Rated Assemblies

### Hanger Positions for Non-Fire Rated Situations



This illustrates hanger positions for single fixtures in a field. Provide extra hangers for tandem fixtures.

# Comparison Matrix - Controlled Environment Facility Ceiling Panels

Mfg	Brand	Material Composition	Surface	Pressure Washable	Chemical Wash down	Removable Peel Skin Protectant	Thermal Performance Apps	Non-Magnetic Surface	Gloss Requirements	ISO 14644 Rating	Fire Rating	
Chicago Metallic	BarrierPan I Foam	FRP/Gyp/FRP	Smooth/Textured	Yes	Yes	Yes	Excellent	Yes	Low/Med	Class 5	Class C/A	
	Class A	BarrierPan II	Alum w/ Plastic Hollow core	Smooth reversible, non-directional aluminum		Yes	Limited	Yes	Good	Yes	High	Class 5
		BarrierPan III	Aluminum face with High Density Poly-Ethylene core(HDPE)	Smooth reversible, non-directional aluminum		Yes	Limited	Yes	Fair	Yes	High	Class 5
	Class C/A	BarrierPan IV	FRP face with High Density Poly-Ethylene core (HDPE)	Smooth reversible, non-directional FRP		Yes	Yes	Yes	Fair	Yes	Low/Med	Class 5
Armstrong	Cleanroom Mylar	Mineral fiber	Polyester film	No	No	No	Fair	Yes	Low	Class 5	Class C	
	Cleanroom Mylar	Mineral fiber	Polyester film	No	No	No	Fair	Yes	Low	Class 5	Class C	
	Cleanroom VL (Perforated)	Mineral fiber	Vinyl	No	No	No	Fair	Yes	Low	Class 5	Class C	
	Cleanroom VL (Non-perforated)	Mineral fiber	Vinyl	No	No	No	Fair	Yes	Low	Class 5	Class C	
USG	Clean Room Clima Plus	Mineral fiber	Vinyl	No	No	No	Fair	Yes	Low	NA	Class A	
	Clean Room Clima Plus	Mineral fiber	Vinyl	No	No	No	Fair	Yes	Low	NA	Class A	
	Sheetrock lay-in ceiling	Gypsum	Vinyl	Yes	No	No	Fair	Yes	Low	NA	Class A	
National Gypsum	Gridstone Cleanroom	Gypsum	Vinyl	Ltd.	No	No	Fair	Yes	Low	NA	Class A	
	Gridstone Cleanroom	Gypsum	Vinyl	Ltd.	No	No	Fair	Yes	Low	NA	Class A	
CertainTeed	Vinylshield C	Gypsum	Vinyl	Ltd.	No	No	Fair	Yes	Low	NA	Class A	
	Vinylshield C	Gypsum	Vinyl	Ltd.	No	No	Fair	Yes	Low	NA	Class A	
	Vinylshield C	Gypsum	Vinyl	Ltd.	No	No	Fair	Yes	Low	NA	Class A	
	Vinylshield C	Gypsum	Vinyl	Ltd.	No	No	Fair	Yes	Low	NA	Class A	

# Specification Data - BarrierGrid

Product information for integration into ceiling specification

suspension type		BarrierGrid™ Premium - 1 3/8"	BarrierGrid™ Standard - 15/16"
<b>material</b>	body	HD Galvanized	HD Galvanized
	cap	aluminum	aluminum
	angle	painted aluminum	painted aluminum
	channel	painted aluminum	painted aluminum
<b>size</b>	width	1 3/8"	15/16"
	height	1 1/2"	1 1/2"
<b>load rating</b>	ASTM <sup>1</sup>	heavy duty	heavy duty
<b>seismic</b>	stab-type cross tees	zones 3, 4 categories D, E, F	zones 3, 4 categories D, E, F
<b>warranty</b>	40 year limited	•	•
<b>sustainability</b>	Minimum 25% post consumer recycled content, 100% locally recyclable, global/regional manufacture	•	•

<sup>1</sup> Load rating calculated at L/360 per ASTM C-635.

# Specification Data - BarrierPan

Product information for integration into ceiling specification

panel type		I	II	III	IV
<b>material</b>	FRP face with 1/2" gypsum bonded to 1" foam	•			
	aluminum skin bonded to honeycombed plastic core		•		
	aluminum skin with HDPE core			•	
	FRP skin with HDPE core				•
<b>surface</b>	smooth (high gloss)	•	•	•	
	textured	•			
	textured (high gloss)				•
<b>size</b>	1-1/2": 2' x 2', 2' x 4'	•			
	7/16": 2' x 2', 2' x 4'		•		
	1/4": 2' x 2', 2' x 4'			•	•
<b>edge</b>	square	•	•	•	•
<b>indoor air quality</b>	0 voc's, 0 fiber release	•	•	•	•
<b>fire</b>	class C	•			•
	class A		•	•	
<b>insulation</b>	R = 4	•			
<b>classification</b>	ISO 14644 Class 5	•	•	•	•
<b>suspension</b>	15/16", 1-3/8"	•	•	•	•
<b>warranty</b>	one year limited	•	•	•	•
<b>sustainability</b>	75% recyclable, global manufacture				
	100% recyclable, global manufacture		•	•	•

# Specification

## Standard 15/16" BarrierGrid

### PART 1 - GENERAL

#### 1.01 Section Includes

Provide metal suspension system for lay-in acoustical panel ceiling.

#### 1.02 Related Sections

- A. Section 09 22 26 - Suspension Systems
- B. Section 09 54 00 - Specialty Ceilings
- C. Section 09 58 00 - Integrated Ceiling Assemblies
- D. Section 13 48 00 - Sound, Vibration, and Seismic Control
- E. Section 23 50 00 - Central Heating Equipment
- F. Section 26 50 00 - Lighting

#### 1.03 References

- A. American Society for Testing and Materials (ASTM)
  - 1. C635 - Standard Specification for the manufacture, performance, and testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
  - 2. C636 - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels.

#### 1.04 Submittals

- A. Product data sheets listing dimensions, load carrying capacity and standards compliance.
- B. 12 inch long samples of Main Tees and Cross Tees with integral couplings.

#### 1.05 Project Conditions

- A. Environmental Requirements:
  - 1. Verify weather tightness of area receiving suspension system prior to installation.
  - 2. Wet trades work to be thoroughly dry and complete prior to installation.
  - 3. Installation to begin only when temperature and humidity conditions closely approximate interior conditions which will exist when area is complete and occupied.
  - 4. Heating and air conditioning systems to be operating prior to, during, and after installation.

#### 1.06 Maintenance

Furnish additional material equal to \_\_\_\_\_ percent of ceiling area.

### PART 2 - PRODUCTS

#### 2.01 Manufacturers

Chicago Metallic double web Heavy duty non-fire rated ceiling suspension system.

#### 2.02 Suspension System Components

##### A. Main Tees:

- 1. Manufactured from commercial quality 0.020 inch thick HDG-30 steel, hot-dip galvanized steel, <sup>15</sup>/<sub>16</sub> inch wide by 1 1/2 inches high with factory punched cross tee slots, hanger holes, and integral bayonet-style end couplings.
- 2. Capped with aluminum capping affixed to <sup>15</sup>/<sub>16</sub> inch wide flange.
- 3. Coated with factory applied baked-on enamel paint from manufacturer's standard selection.

##### B. Cross Tees:

- 1. Manufactured from commercial quality (0.010) (0.015) steel <sup>15</sup>/<sub>16</sub> inch wide by 1 1/2 inch high by (24)(48) inches long with factory punched cross tee slots, hanger holes, and (Stab-in)(demountable hook) couplings.
- 2. Capped identical to main tees.
- 3. Finish identical to main tees.

##### C. Gasket Material:

- 1. Gasket must be machine applied within (.050) of the edge of the tee. Gasket must have a 1/8 inch overhang on all cross tees.
- 2. Gasket material is a closed cell PVC foam and is conformable to both smooth and irregular surfaces, sealing against water, moisture, dirt and air-infiltration when compressed 30%. PVC foam gasket resists UV oxidation, mildew and fungus.
- 3. Gasket properties include elastomeric construction, PVC foams adjust to thermal movement of mating structural elements without leaking and remain flexible.
- 4. Gasketing is dimensionally stable and will not drip, ooze, or run when under compression. Gasket remains flexible at low temperatures, has excellent chemical resistance and forms an acoustic seal.
- 5. Gasketing has an average density of 8 lb./cu. ft. and a compression deflection of 2 psi (per ASTM D-1667).

##### D. Perimeter Treatment Components:

- 1. Angle Moldings: Manufactured from commercial quality steel with aluminum capped hemmed edges finished identical to main tees and cross tees.
- 2. Channel Molding: Manufactured from commercial quality steel with aluminum capped hemmed edges finished identical to main tees and cross tees.

### PART 3 - EXECUTION

#### 3.01 Examination

Examine area receiving suspension system to identify conditions which will adversely affect installation. Do not begin installation until adverse conditions have been remedied.

#### 3.02 Installation

- A. Main Tees: Installed (36)(48)(60)(96) inches on center, by direct suspension from existing structure, with not less than 12 gage steel hanger wires, wrapped tightly 3 full turns, spaced (48)(60) inches on center along component length.
- B. Cross Tees:
  - 1. Installed perpendicular to main tees (12)(20)(24)(30)(48)(60)(72)(96)(120) inches on center to form \_\_\_\_\_ by \_\_\_\_\_ modules.
  - 2. Installed perpendicular to module forming cross tees (12)(20)(24)(30) inches on center to form \_\_\_\_\_ by \_\_\_\_\_ modules.
  - 3. Installed adjacent to each unsupported side of recessed fixtures.
- C. (Angle) (Channel) Moldings: Installed on vertical surfaces, intersecting suspension components by appropriate method in accordance with industry accepted practice.
- D. Additional Hanger Wires: Wrapped tightly 3 full turns to structure and components at locations where imposed loads could cause deflection exceeding 1/360 span.

#### 3.03 Repair

- A. Remove damaged components, replace with undamaged components. Clean with non-solvent based non-abrasive commercial cleaning solution.

## Premium 1-3/8" BarrierGrid

### PART 1 - GENERAL

#### 1.01 Section Includes

Provide metal suspension system for lay-in acoustical panel ceiling.

#### 1.02 Related Sections

- A. Section 09 22 26 - Suspension Systems
- B. Section 09 54 00 - Specialty Ceilings
- C. Section 09 58 00 - Integrated Ceiling Assemblies
- D. Section 13 48 00 - Sound, Vibration, and Seismic Control
- E. Section 23 50 00 - Central Heating Equipment
- F. Section 26 50 00 - Lighting

#### 1.03 References

- A. American Society for Testing and Materials (ASTM)
  - 1. C635 - Standard Specification for the manufacture, performance, and testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
  - 2. C636 - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels.

#### 1.04 Submittals

- A. Product data sheets listing dimensions, load carrying capacity and standards compliance.
- B. 12 inch long samples of Main Tees and Cross Tees with integral couplings.

#### 1.05 Project Conditions

- A. Environmental Requirements:
  - 1. Verify weather tightness of area receiving suspension system prior to installation.
  - 2. Wet trades work to be thoroughly dry and complete prior to installation.
  - 3. Installation to begin only when temperature and humidity conditions closely approximate interior conditions which will exist when area is complete and occupied.
  - 4. Heating and air conditioning systems to be operating prior to, during, and after installation.

#### 1.06 Maintenance

Furnish additional material equal to \_\_\_\_\_ percent of ceiling area.

### PART 2 - PRODUCTS

#### 2.01 Manufacturers

Chicago Metallic double web Heavy duty non-fire rated ceiling suspension system.

#### 2.02 Suspension System Components

- A. Main Tees:
  - 1. Manufactured from commercial quality 0.020 inch thick HDG-30 steel, hot-dip galvanized steel, 1<sup>3</sup>/<sub>8</sub> inch wide by 1<sup>1</sup>/<sub>2</sub> inches high with factory punched cross tee slots, hanger holes, and integral bayonet-style end couplings.
  - 2. Capped with aluminum capping affixed to 1<sup>3</sup>/<sub>8</sub> inch wide flange.
  - 3. Coated with factory applied baked-on enamel paint from manufacturer's standard selection.
- B. Cross Tees:
  - 1. Manufactured from commercial quality (0.010)(0.015) steel 1<sup>3</sup>/<sub>8</sub> inch wide by 1<sup>1</sup>/<sub>2</sub> inch high by (24)(48) inches long with factory punched cross tee slots, hanger holes, and Stab-in couplings.

- 2. Capped identical to main tees.
- 3. Finish identical to main tees.
- C. Gasket Material:
  - 1. Gasket must be machine applied within (.050) of the edge of the tee. Gasket must have a 1/8 inch overhang on all cross tees.
  - 2. Gasket material is a closed cell PVC foam and is conformable to both smooth and irregular surfaces, sealing against water, moisture, dirt and air-infiltration when compressed 30%. PVC foam gasket resists UV oxidation, mildew and fungus.
  - 3. Gasket properties include elastomeric construction, PVC foams adjust to thermal movement of mating structural elements without leaking and remain flexible.
  - 4. Gasketing is dimensionally stable and will not drip, ooze, or run when under compression. Gasket remains flexible at low temperatures, has excellent chemical resistance and forms an acoustic seal.
  - 5. Gasketing has an average density of 8 lb./cu. ft. and a compression deflection of 2 psi (per ASTM D-1667).
- D. Perimeter Treatment Components:
  - 1. Angle Moldings: Manufactured from commercial quality steel with aluminum capped hemmed edges finished identical to main tees and cross tees.
  - 2. Channel Molding: Manufactured from commercial quality steel with aluminum capped hemmed edges finished identical to main tees and cross tees.

### PART 3 - EXECUTION

#### 3.01 Examination

Examine area receiving suspension system to identify conditions which will adversely affect installation. Do not begin installation until adverse conditions have been remedied.

#### 3.02 Installation

- A. Main Tees: Installed (36)(48)(60)(96) inches on center, by direct suspension from existing structure, with not less than 12 gage steel hanger wires, wrapped tightly 3 full turns, spaced (48)(60) inches on center along component length.
- B. Cross Tees:
  - 1. Installed perpendicular to main tees (12)(20)(24)(30)(48)(60)(72)(96)(120) inches on center to form \_\_\_\_\_ by \_\_\_\_\_ modules.
  - 2. Installed perpendicular to module forming cross tees (12)(20)(24)(30) inches on center to form \_\_\_\_\_ by \_\_\_\_\_ modules.
  - 3. Installed adjacent to each unsupported side of recessed fixtures.
- C. (Angle) (Channel) Moldings: Installed on vertical surfaces, intersecting suspension components by appropriate method in accordance with industry accepted practice.
- D. Additional Hanger Wires: Wrapped tightly 3 full turns to structure and components at locations where imposed loads could cause deflection exceeding 1/360 span.
- E. HEPA Filters and light fixtures must be supported by 4 hanger wires. One on each corner of the fixture.

#### 3.03 Repair

- A. Remove damaged components, replace with undamaged components. Clean with non-solvent based non-abrasive commercial cleaning solution.

# Specification

## BarrierPan I

### PART 1 - GENERAL

#### 1.01 Scope

Furnish and install BarrierPan I FRP faced with 1/2 inch gypsum bonded to 1 inch foam ceiling panels by Chicago Metallic Corporation.

#### 1.02 References

- A. Section 09120 Ceiling Suspension Systems
- B. Section 09250 Gypsum Board
- C. Section 09545 Special Ceiling Surfaces
- D. Section 13020 Integrated Assemblies
- E. Section 13080 Sound, Vibration, and Seismic Control
- F. Section 15550 Heating, Ventilating, and Air Conditioning
- G. Section 16500 Lighting

#### 1.03 Standards

- A. American Society for Testing and Materials (ASTM)
  - 1. C 635 Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings.
  - 2. C 636 Installation of Metal Ceiling Suspension Systems.
  - 3. E 84 Surface Burning Characteristics.

#### 1.04 Submittals

- A. Product data: Manufacturers standard data sheets listing dimensions and details.
- B. Samples: Manufacturers standard samples including suspension, panels and colors.
- C. Shop Drawings: Reflected ceiling plan and elevation drawings indicating ceiling layouts, dimensions and perimeter conditions.

#### 1.04 Project Conditions

- A. Environmental Requirements
  - 1. Verify weathertightness of area prior to installation.
  - 2. Wet trades work to be thoroughly dry and complete prior to installation.
  - 3. Deliver materials in manufacturers original packaging, unopened and undamaged.
  - 4. Store materials in an enclosed dry location at room temperature and protect from soiling, damage, direct sunlight, moisture and humidity.

#### 1.08 Maintenance

- A. Furnish additional material equal to [ ]% of the ceiling system area.

### PART 2 - PRODUCTS

#### 2.01 Manufacturer

- A. BarrierPan I FRP faced with 1/2 inch gypsum bonded to 1 inch foam ceiling panels by Chicago Metallic Corporation, 4849 S. Austin Avenue, Chicago, IL 60638-1492. Phone: 800.323.7164 or 708.563.4600. Web: chicagometallic.com.

#### 2.02 Materials

- A. Panels: BarrierPan I FRP faced with 1/2 inch gypsum bonded to 1 inch foam ceiling panels to lay into [15/16 inch][1 3/8 inch] T-bar gasketed grid.
- B. Material: fire code gypsum board.
- C. Surface: USDA accepted 2 mil laminated fiberglass reinforced plastic (textured) (smooth) face.
- D. Nominal Size: (1 1/2 inch x 24 inch x 24 inch)(1 1/2 inch x 24 inch x 48 inch).
- E. Edge: square.
- F. Indoor Air Quality: voc not established, 0 fiber release.
- G. Fire: Class C per ASTM E 84.
- H. Classification type: type XX, pattern G per ASTM E 1264.
- I. Warranty: 1 year limited.
- J. Sustainability: 75% recycled content by weight.

### PART 3 - EXECUTION

#### 3.01 Examination

- A. Examine area receiving system to identify conditions which will adversely affect installation. Do not begin installation until adverse conditions have been remedied.

#### 3.02 Installation

- A. Refer to manufacturer's written installation instructions.
- B. Install lay in acoustical ceiling panels flush and level in suspension system.
- C. Install panels with hand protection to avoid soiling.
- D. Press panels from above to set into grids. Do not pull from face.
- E. Handle components to prevent damage.
- F. Clean adjacent surfaces and remove unused product and debris from site.
- G. After installation is completed, clean soiled surfaces of materials.
- H. Remove and reinstall improperly installed material.
- I. Remove damaged or discolored material, or material that cannot be properly cleaned, and install new material.

## BarrierPan II

### PART 1 - GENERAL

#### 1.01 Scope

Furnish and install BarrierPan II double face aluminum with honeycombed plastic core ceiling panels by Chicago Metallic Corporation.

#### 1.02 References

- A. Section 09120 Ceiling Suspension Systems
- B. Section 09250 Gypsum Board
- C. Section 09545 Special Ceiling Surfaces
- D. Section 13020 Integrated Assemblies
- E. Section 13080 Sound, Vibration, and Seismic Control
- F. Section 15550 Heating, Ventilating, and Air Conditioning
- G. Section 16500 Lighting

#### 1.03 Standards

- A. American Society for Testing and Materials (ASTM)
  - 1. C 635 Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings.
  - 2. C 636 Installation of Metal Ceiling Suspension Systems.
  - 3. E 84 Surface Burning Characteristics.

#### 1.04 Submittals

- A. Product data: Manufacturers standard data sheets listing dimensions and details.
- B. Samples: Manufacturers standard samples including suspension, panels and colors.
- C. Shop Drawings: Reflected ceiling plan and elevation drawings indicating ceiling layouts, dimensions and perimeter conditions.

#### 1.04 Project Conditions

- A. Environmental Requirements
  - 1. Verify weathertightness of area prior to installation.
  - 2. Wet trades work to be thoroughly dry and complete prior to installation.
  - 3. Deliver materials in manufacturers original packaging, unopened and undamaged.
  - 4. Store materials in an enclosed dry location at room temperature and protect from soiling, damage, direct sunlight, moisture and humidity.

#### 1.08 Maintenance

- A. Furnish additional material equal to [ ]% of the ceiling system area.

### PART 2 - PRODUCTS

#### 2.01 Manufacturer

- A. BarrierPan II double face aluminum with honeycombed plastic core ceiling panels by Chicago Metallic Corporation, 4849 S. Austin Avenue, Chicago, IL 60638-1492 Phone: 800.323.7164 or 708.563.4600. Web: chicagometallic.com.

#### 2.02 Materials

- A. Panels: BarrierPan II double face aluminum with honeycombed plastic core ceiling panels to lay into [15/16 inch][1 3/8 inch] T-bar gasketed grid.
- B. Material: fire code gypsum board.
- C. Surface: USDA accepted 2 mil laminated aluminum face.
- D. Nominal Size: (7/16 inch x 24 inch x 24 inch)(7/16 inch x 24 inch x 48 inch).
- E. Edge: square.
- F. Indoor Air Quality: voc not established, 0 fiber release.
- G. Fire: Class A per ASTM E 84.
- H. Classification type: ISO 14644 Class 5.
- I. Warranty: 1 year limited.
- J. Sustainability: 100% recycled content by weight.

### PART 3 - EXECUTION

#### 3.01 Examination

- A. Examine area receiving system to identify conditions which will adversely affect installation. Do not begin installation until adverse conditions have been remedied.

#### 3.02 Installation

- A. Refer to manufacturer's written installation instructions.
- B. Install lay in acoustical ceiling panels flush and level in suspension system.
- C. Install panels with hand protection to avoid soiling.
- D. Press panels from above to set into grids. Do not pull from face.
- E. Handle components to prevent damage.
- F. Clean adjacent surfaces and remove unused product and debris from site.
- G. After installation is completed, clean soiled surfaces of materials.
- H. Remove and reinstall improperly installed material.
- I. Remove damaged or discolored material, or material that cannot be properly cleaned, and install new material.

## BarrierPan III

### PART 1 - GENERAL

#### 1.01 Scope

Furnish and install BarrierPan III double face aluminum with HDPE core ceiling panels by Chicago Metallic Corporation.

#### 1.02 References

- A. Section 09120 Ceiling Suspension Systems
- B. Section 09250 Gypsum Board
- C. Section 09545 Special Ceiling Surfaces
- D. Section 13020 Integrated Assemblies
- E. Section 13080 Sound, Vibration, and Seismic Control
- F. Section 15550 Heating, Ventilating, and Air Conditioning
- G. Section 16500 Lighting

#### 1.03 Standards

- A. American Society for Testing and Materials (ASTM)
  - 1. C 635 Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings.
  - 2. C 636 Installation of Metal Ceiling Suspension Systems.
  - 3. E 84 Surface Burning Characteristics.

#### 1.04 Submittals

- A. Product data: Manufacturers standard data sheets listing dimensions and details.
- B. Samples: Manufacturers standard samples including suspension, panels and colors.
- C. Shop Drawings: Reflected ceiling plan and elevation drawings indicating ceiling layouts, dimensions and perimeter conditions.

#### 1.04 Project Conditions

- A. Environmental Requirements
  - 1. Verify weathertightness of area prior to installation.
  - 2. Wet trades work to be thoroughly dry and complete prior to installation.
  - 3. Deliver materials in manufacturers original packaging, unopened and undamaged.
  - 4. Store materials in an enclosed dry location at room temperature and protect from soiling, damage, direct sunlight, moisture and humidity.

#### 1.08 Maintenance

- A. Furnish additional material equal to [\_\_\_]% of the ceiling system area.

### PART 2 - PRODUCTS

#### 2.01 Manufacturer

- A. BarrierPan III double face aluminum with HDPE core ceiling panels by Chicago Metallic Corporation, 4849 South Austin Avenue, Chicago, IL 60638-1492. Phone: 800.323.7164 or 708.563.4600. Web: chicagometallic.com.

#### 2.02 Materials

- A. Panels: BarrierPan III double face aluminum with HDPE core ceiling panels to lay into [1<sup>5</sup>/<sub>16</sub> inch][1<sup>3</sup>/<sub>8</sub> inch] T-bar gasketed grid.
- B. Material: fire code gypsum board.
- C. Surface: USDA accepted aluminum face.
- D. Nominal Size: (1/4 inch x 24 inch x 24 inch)(1/4 inch x 24 inch x 48 inch).
- E. Edge: square.
- F. Indoor Air Quality: voc not established, 0 fiber release.
- G. Fire: Class A per ASTM E 84.
- H. Classification type: ISO 14644 Class 5.
- I. Warranty: 1 year limited.
- J. Sustainability: 100% recycled content by weight.

### PART 3 - EXECUTION

#### 3.01 Examination

- A. Examine area receiving system to identify conditions which will adversely affect installation. Do not begin installation until adverse conditions have been remedied.

#### 3.02 Installation

- A. Refer to manufacturer's written installation instructions.
- B. Install lay in acoustical ceiling panels flush and level in suspension system.
- C. Install panels with hand protection to avoid soiling.
- D. Press panels from above to set into grids. Do not pull from face.
- E. Handle components to prevent damage.
- F. Clean adjacent surfaces and remove unused product and debris from site.
- G. After installation is completed, clean soiled surfaces of materials.
- H. Remove and reinstall improperly installed material.
- I. Remove damaged or discolored material, or material that cannot be properly cleaned, and install new material.

## BarrierPan IV

### PART 1 - GENERAL

#### 1.01 Scope

Furnish and install BarrierPan IV double face FRP with HDPE core ceiling panels by Chicago Metallic Corporation.

#### 1.02 References

- A. Section 09120 Ceiling Suspension Systems
- B. Section 09250 Gypsum Board
- C. Section 09545 Special Ceiling Surfaces
- D. Section 13020 Integrated Assemblies
- E. Section 13080 Sound, Vibration, and Seismic Control
- F. Section 15550 Heating, Ventilating, and Air Conditioning
- G. Section 16500 Lighting

#### 1.03 Standards

- A. American Society for Testing and Materials (ASTM)
  - 1. C 635 Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings.
  - 2. C 636 Installation of Metal Ceiling Suspension Systems.
  - 3. E 84 Surface Burning Characteristics.

#### 1.04 Submittals

- A. Product data: Manufacturers standard data sheets listing dimensions and details.
- B. Samples: Manufacturers standard samples including suspension, panels and colors.
- C. Shop Drawings: Reflected ceiling plan and elevation drawings indicating ceiling layouts, dimensions and perimeter conditions.

#### 1.04 Project Conditions

- A. Environmental Requirements
  - 1. Verify weathertightness of area prior to installation.
  - 2. Wet trades work to be thoroughly dry and complete prior to installation.
  - 3. Deliver materials in manufacturers original packaging, unopened and undamaged.
  - 4. Store materials in an enclosed dry location at room temperature and protect from soiling, damage, direct sunlight, moisture and humidity.

#### 1.08 Maintenance

- A. Furnish additional material equal to [\_\_\_]% of the ceiling system area.

### PART 2 - PRODUCTS

#### 2.01 Manufacturer

- A. BarrierPan IV double face FRP with HDPE core ceiling panels by Chicago Metallic Corporation, 4849 South Austin Avenue, Chicago, IL 60638-1492. Phone: 800.323.7164 or 708.563.4600. Web: chicagometallic.com

#### 2.02 Materials

- A. Panels: BarrierPan IV double face FRP with HDPE core ceiling panels to lay into [15/16 inch][1-3/8 inch] t-bar gasketed grid.
- B. Material: fire code gypsum board.
- C. Surface: USDA accepted 2 mil FRP face.
- D. Nominal Size: (1/4 inch x 24 inch x 24 inch)(1/4 inch x 24 inch x 48 inch).
- E. Edge: square.
- F. Indoor Air Quality: voc not established, 0 fiber release.
- G. Fire: Class C per ASTM E 84.
- H. Classification type: ISO 14644 Class 5.
- I. Warranty: 1 year limited.
- J. Sustainability: 100% recycled content by weight.

### PART 3 - EXECUTION

#### 3.01 Examination

- A. Examine area receiving system to identify conditions which will adversely affect installation. Do not begin installation until adverse conditions have been remedied.

#### 3.02 Installation

- A. Refer to manufacturer's written installation instructions.
- B. Install lay in acoustical ceiling panels flush and level in suspension system.
- C. Install panels with hand protection to avoid soiling.
- D. Press panels from above to set into grids. Do not pull from face.
- E. Handle components to prevent damage.
- F. Clean adjacent surfaces and remove unused product and debris from site.
- G. After installation is completed, clean soiled surfaces of materials.
- H. Remove and reinstall improperly installed material.
- I. Remove damaged or discolored material, or material that cannot be properly cleaned, and install new material.

# General Conditions of Sale

## Order Acceptance

Whenever used herein, "Seller" shall refer to Chicago Metallic Corporation and "Purchaser" shall refer to the party ordering or purchasing products ("Products") from Seller. Seller's price list does not constitute an offer to sell Products listed therein, but is simply provided as a convenience to prospective Purchasers. Purchaser's order to Seller shall constitute an offer to Seller to purchase Products which offer Seller may accept at its sole discretion. Acceptance shall be by a writing containing these General Conditions of Sale ("Conditions"). Acceptance of Purchaser's order or any part of it by Seller is expressly made conditional on Purchaser's assent to these Conditions. Purchaser may vary these Conditions only with the written consent of Seller. Acceptance of Products by Purchaser or failure of Purchaser to object in writing to these Conditions within ten (10) days following delivery of Products to Purchaser shall constitute Purchaser's assent to these Conditions.

## Shipment and Delivery

Seller shall deliver Product F.O.B. place of shipment. Risk of loss to Product shall pass to Purchaser upon delivery to carrier at such place of shipment. Carrier acts as Purchaser's agent. Products shall be shipped as soon as practical, or as requested by Purchaser after order acceptance by Seller. However, delivery dates shall not be of the essence, but shall be regarded as Seller's best approximation of such delivery dates. Seller may arrange freight at the request of and on behalf of Purchaser. If applicable, freight will be charged according to the Seller's freight policy in effect at time of shipment. Such policy will be provided to Purchaser via its preferred communication method and is also available in Seller's price book or upon request. All taxes, tariffs, duties or similar charges paid by Seller imposed or levied by any governmental authority in connection with the purchase, shipment, import or export of Products purchased or in connection with the procuring of materials used therein may at Seller's sole option be added to the price of Products so affected. Additional shipping charges for Products paid by Seller such as destination, storage, labor and redelivery and special or extra expenses for handling air freight, bus or other shipments may also, at Seller's sole option, be added to the price of such Products.

## Payment

Payment for all Products shall be net cash due and payable in U.S. dollars within thirty (30) days following receipt by Purchaser of shipping documents for such Products by check or bank transfer to a bank account to be designated by Seller. If accounts are paid within ten (10) days following receipt by Purchaser of the corresponding shipping documents, Purchaser shall be entitled to a one percent (1%) discount from the price of Products only. If, in Seller's sole opinion, the financial condition of the Purchaser so warrants, Seller may require advance payments or satisfactory security. In the event that the Purchaser fails to make such advance payments or furnish such security upon Seller's request, delivery of Products may be suspended without further Seller obligation. Seller may, at Seller's sole option, require payment by means of an irrevocable letter of credit opened and confirmed by a bank or banks acceptable to Seller and upon terms and conditions acceptable to Seller.

## Limited Warranty

Seller warrants to Purchaser that Products will substantially conform in quantity and quality to Purchaser's order, as accepted by Seller, provided, however, that (1) Products are inspected by Purchaser upon arrival at place of destination and any and all nonconformities are noted on the bill of lading and all other delivery documents and are attested to in writing by carrier's representative (2) Purchaser furnishes Seller with written notice of such non-conformities within fifteen (15) days following arrival of non-conforming Products at the place of destination, (3) Purchaser holds nonconforming Products for Seller's inspection (4) non-conformities occurred prior to delivery by Seller of Products F.O.B. place of shipment, and (5) Purchaser does not alter, repair, use or attempt to alter or repair any non-conforming Products. This limited warranty is Seller's only and exclusive express warranty to Purchaser. Seller disclaims any and all implied warranties including without limitation any implied warranty of merchantability or fitness for a particular purpose. Purchaser's sole and

exclusive remedy against Seller shall be the replacement F.O.B. its plant or site, at Seller's option, of any Products which do not conform to Seller's limited warranty hereunder. No other remedy (including, without limitation, incidental or consequential damages for lost profits, lost sales, injury to persons or property or any other incidental or consequential loss) shall be available to Purchaser. Purchaser agrees to include in all contracts between Purchaser and subsequent owners or users of Products, and to bring to the attention of all Purchaser's customers of Products, the following warranty disclaimer: Chicago Metallic Corporation disclaims any and all warranties expressed or implied, including, without limitation, any implied warranty of merchantability or fitness for a particular purpose. Purchaser shall be excluded on behalf of Seller all remedies for damage or injury to Products persons or property. In the event that Purchaser fails to comply with the foregoing obligations, Purchaser shall indemnify Seller for any liability resulting from such non-compliance and shall otherwise hold Seller harmless.

## Returns

In order to return any Products to Seller, Purchaser must first obtain prior authorization for products eligible for return, and receive a Return Goods Authorization number from Seller's home office. All authorized returns are subject to a 20% restocking charge. Seller will only issue credit for Service Level "0" material received at the designated company facility with the Return Goods Authorization appearing on the material, and after being inspected and determined by Seller to be in resalable condition. Purchaser is solely responsible for arranging and prepaying for all return freight. Seller will not be responsible for any damage in transit on material returned at customer's request, and will not file freight claims on such damaged material. When these terms are met, seller will issue appropriate material credit less the restocking charge.

## Default, Termination and Suspension of Delivery

Seller reserves the right, among other remedies, either to cancel Purchaser's order or suspend further deliveries of Products thereunder in the event that (1) Purchaser fails to pay for any one shipment of Products when payment for such shipment becomes due; (2) Purchaser fails to make any advance payments or satisfactory security demanded by Seller pursuant to paragraph two of PAYMENTS section above; or (3) Purchaser fails or refuses to accept any delivery of Products ordered from Seller. Delivery of Products may be suspended in whole or in part in case of any event beyond Seller's control, including, but not limited to, explosion, fire, shortage of fuel, power or raw materials flood strike lockout, injunction, riot, insurrection, war, national emergency, government act, or act of God.

## Miscellaneous

No failure or delay on the part of Seller in exercising any right, power or privilege hereunder shall operate as a waiver thereof or of any other right, power or privilege hereunder nor shall any single or partial exercise of any such right power or privilege preclude any other right, power or privilege. The rights or remedies of Seller hereunder are cumulative and not exclusive of any rights or remedies which it may otherwise have. The parties hereto may correct stenographic and clerical errors without liability. Purchaser may not assign the order without the express written consent of Seller. All notices to be given hereunder by either party to the other party shall be dispatched by certified or registered mail return receipt requested addressed to the last known post office address of such other party. Any such notice shall be deemed received within five (5) days following any such dispatch if mailed from within the United States of America and ten (10) days if mailed from outside the United States of America. Either party may change its address by notice to the other party. These Conditions shall be governed by and interpreted in accordance with the laws of the State of Illinois, United States of America, and all disputes hereunder that cannot be amicably resolved by the parties thereto must be settled in a court of competent jurisdiction within the State of Illinois, United States of America. The provisions of these Conditions shall be severable one from the other so that should any provision be held legally unenforceable by a court of competent jurisdiction, the remaining provisions shall remain in effect.



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