Technical Guide

FrameAll® Drywall Grid System



Hanging & Framing Flat Ceilings

Armstrong® World Industries

Flat-out Better

FrameAll® Drywall Grid

FrameAll® Drywall Grid eliminates the labor-intensive cutting, tying, and spacing of track and channel framing. Our systems are engineered with rout locations and cross tees to maintain precise module spacing. Main beams have 51 routs, 8" O.C. and varying cross tee lengths to accommodate diffusers and fixtures of all types without field modifications or accessories.

The FrameAll Drywall Grid family of products is manufactured to meet or exceed ASTM Standards and code requirements. They are engineered to carry 7-14+ lbs per square foot and to provide faster, easier, better alternatives to stud and track construction.

The vertical load carrying capacity for main beam and cross tee members is determined in accordance with ASTM test method E3090. Suspended ceiling systems constructed of screw-attached gypsum board panels may be installed in accordance with ASTM C1858 and are exempt from code prescribed requirements of acoustical or lay-in panel ceilings. This standard practice is limited to framing that supports a single level ceiling and is surrounded by, and attached to, laterally braced walls or soffits.



Flat Drywall Grid Installation

Code Compliance You Can Trust

Meets:

- ASTM C1858
- ASTM C635
- ASTM C645
- ASTM C754
- ASTM C840
- ASTM E3090
- ICC Evaluation Service Report ESR-1289
- City of LA – RR 25348
- IBC categories D, E, and F single layer drywall ceilings are exempt from lateral force bracing requirements, regardless of room size
- Miami-Dade County, Florida wind uplift – NOA No. 19-0911.08 – 03/17/2021
- Miami-Dade County, Florida impact testing – NOA No. 19-0911.02 – 10/07/2020
- Consult local codes for specific requirements



Table of Contents

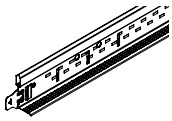
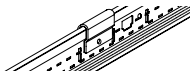
Code Compliance	2
Performance	2-3
Components	4
Moldings/Transition Moldings	5-6
Axiom® Trim	7-8
Axiom Building Perimeter System	9
Rout Locations	10-11
Accessories	12-13
System Framing	14
Type F Fixtures	15
Suspended Drywall Grid System	16-18
Wire Loading	19
Trapeze Supported Solutions	20
Multi-Layer Ceilings	21
Exterior Wind Load Data	22
UL® Fire Resistive	23-26
Seismic Drywall Grid Installations	27
Load Data	28
Sound Control	29
Assemblies	30-31
Estimating	32

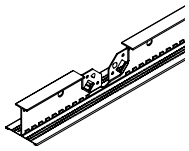
Performance

- PeakForm® profile increases strength and stability for improved performance during installation
- XL® (staked-on end detail) cross tees provide secure locked connection; fast and easy to install
- SuperLock™ main beam clip is engineered for a strong, secure connection and fast accurate alignment confirmed with an audible click; easy to remove and relocate
- Knurled Ridges on cross tees for speed of screw insertion during board installation
- ScrewStop™ reverse hem prevents screw spin off on 1-1/2" wide face
- Rotary-stitched – Greater torsional strength and stability
- 1-1/2" wide face main beams and cross tees – Easy installation of screw-applied gypsum wallboard
- G40 hot-dipped galvanized coating – Corrosion resistance per ASTM C645
- G90 hot-dipped galvanized coating – Superior corrosion resistance for exterior applications per ASTM A653
- Heavy-duty load rating – Minimum 16 Lbs/LF on main beams
- Fire Rated – Applicable to 25 UL® Fire Resistant designs (D501, D502, G523, G524, G527, G528, G529, G553, J502, L502, L508, L513, L515, L525, L526, L529, L564, P501, P506, P507, P508, P509, P510, P513, P514, P516)
- Wind uplift and impact-tested; Engineered assemblies available for up to 172 MPH for Miami Dade/Broward County, Florida
- Cross tee spacing: 16" or 24" O.C. for 5/8" drywall 16" O.C. for 1/2" drywall
- Sourced and manufactured in the USA

Components

Main Beams

Perspective	Item No.	Length	Height	Pcs./Ctn.	Ln. Ft./Ctn.	Load Test Data (lbs./ln. ft.) L/240 Simple Span 24"	L/240 Simple Span 36"	L/240 Simple Span 48"	L/360 Simple Span 24"	L/360 Simple Span 36"	L/360 Simple Span 48"
	HD8906 HD8906G90 HD8906HRC	144"	1-11/16"	12	144	120.0	48.95	28.14	95.5	43.19	18.66
	HD8906IIC	144"	1-11/16"	12	144	120.0	48.95	28.14	95.5	43.19	18.66
	HD890610	120"	1-11/16"	12	120	120	48.95	28.14	95.5	43.19	18.66
	SP135 (G90 Stucco)	135"	1-11/16"	12	135	139.85	52.59	28.71	95.5	43.19	18.66

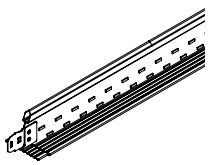
Perspective	Item No.	Description	Length	Height	Packaging Pcs./Ctn.	Packaging Ln. Ft./Ctn.	Load Test Data (lbs./ln. ft.) L/240 Simple Span 36"	L/240 Simple Span 48"	L/360 Simple Span 36"	L/360 Simple Span 48"
	SSLU2424	L Soffit Upturn 24 × 24"	48"	1-1/4"	12	48	47.5	20.5	32	13.7
	SSLU4824	L Soffit Upturn 48 × 24"	72"	1-1/4"	12	72	47.5	20.5	32	13.7
	SSLU3636	L Soffit Upturn 36 × 36"	72"	1-1/4"	12	72	47.5	20.5	32	13.7
	SSLD2424	L Soffit Downturn 24 × 24"	48"	1-1/4"	12	48	47.5	20.5	32	13.7
new	SSLU1836	L Soffit Upturn 18 × 36"	54"	1-1/4"	12	54	47.5	20.5	32	13.7
new	SSLU1872	L Soffit Upturn 18 × 72"	90"	1-1/4"	12	90	47.5	20.5	32	13.7
new	SSU182418	U Soffit 18 × 24 × 18"	58-1/2"	1-1/4"	12	58-1/2	47.5	20.5	32	13.7
new	SSU123612	U Soffit 12 × 36 × 12"	58-1/2"	1-1/4"	12	58-1/2	47.5	20.5	32	13.7

Metric

Perspective	Item No.	Length	Height	Packaging Pcs./Ctn.	Packaging Ln. Ft./Ctn.	Load Test Data (kg./lm.) L/240 SimpleSpan 24 (609.60mm)	L/240 SimpleSpan 36 (914.40mm)	L/240 SimpleSpan 48 (1219.20mm)	L/360 SimpleSpan 24 (609.60mm)	L/360 SimpleSpan 36 (914.40mm)	L/360 SimpleSpan 48 (1219.20mm)
	HD7940*	3600mm	43mm	12	138.80	213.2	72.83	72.83	142.12	64.27	27.77
	7940G*	3600mm	43mm	12	141.73	153.8	73.57	73.57	102.52	49.05	21.24

Red Numbers are Fire Guard items. For fire-rated assemblies, use Type C gypsum board as noted in the UL® fire-rated assembly designs.
NOTE: All load test data based on flat installation per ASTM C635.
* Indicates items that are not Type F Fixture compatible

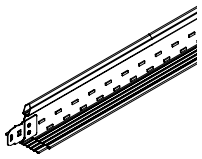
Cross Tees

Perspective	Item No.	Length	Height	Pcs./Ctn.	Ln. Ft./ Ctn.	Load Test Data (lbs./ln. ft.) L/240 Simple Span 72"	L/360 Simple Span 72"
	XL8965 XL8965HRC XL8965G90	72"	1-1/2"	36	216	6.87 @ 72"	4.58 @ 72"
	XL8947P XL8947PG90	50"	1-1/2"	36	150	19.5 @ 50"	12.79 @ 50"
	XL8945P XL8945HRC XL8945PG90	48"	1-1/2"	36	144	22.5 @ 48"	14.27 @ 48"
	XL8940	40"	1-1/2"	36	119	36.22 @ 40"	24.15 @ 40"
	XL7936G90*	36"	1-1/2"	36	108	45.7 @ 36"	31.33 @ 36"
	XL8926 XL8926G90	24"	1-1/2"	36	78	119.0 @24"	90.25 @ 24"

Moldings

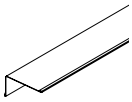
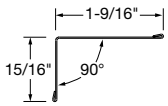
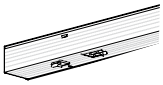
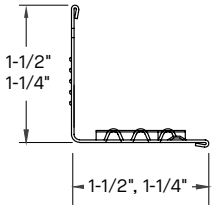
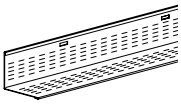
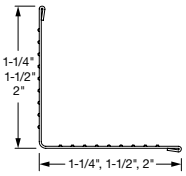
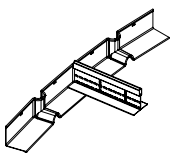
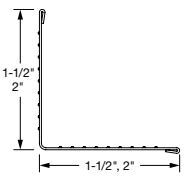
Cross Tees

Metric

Perspective	Item No.	Length	Height	Pcs./Ctn.	Ln. Ft./ Ctn.	Load Test Data (lbs./ln. ft.) L/240 Simple Span	Load Test Data (lbs./ln. ft.) L/360 Simple Span	Load Test Data (kg./lm.) L/240 Simple Span	Load Test Data (kg./lm.) L/360 Simple Span
Drywall Cross Tees – Metric 	XL7961*	1600mm	38mm	36	188.9	10.25 @ 72"	6.84 @ 72"	15.21 @ 1600mm	10.15 @ 1600mm
	XL7930*	1200mm	38mm	36	138.8	22.4 @ 48"	14.93 @ 48"	33.48 @ 1200mm	21.24 @ 1200mm
	XL7925*	900mm	38mm	36	108	51.92 @ 36"	34.61 @ 36"	68.01 @ 900 mm	46.62 @ 900mm
	XL7920*	600mm	38mm	36	69.4	114.59 @ 24"	79.39 @ 24"	177.15 @ 600mm	134.31 @ 600mm

Red Numbers are Fire Guard items. For fire-rated assemblies, use Type C gypsum board as noted in the UL® fire-rated assembly designs.
NOTE: All load test data based on flat installation per ASTM C635.
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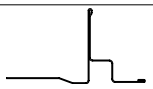
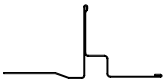
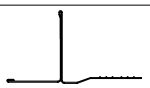
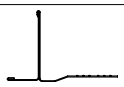
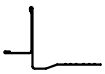
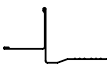
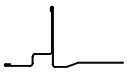
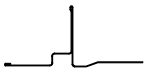
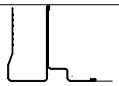
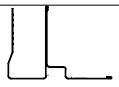
Moldings

Perspective	Item No.	Length	Height	Metal Thickness	Pcs./Ctn.	Ln. Ft./ Ctn.	Profile
Reverse Angle Molding 	7858	144"	15/16"	0.018"	20	240	
Locking Angle Molding 	LAM12	144"	1-1/4"	0.018"	10	240	
	LAM12G90	144"	1-1/4"	0.018"	10	240	
	LAM12HRC	144"	1-1/4"	0.018"	10	240	
	LAM151220E	144"	1-1/2"	0.028"	10	120	
Knurled Angle Molding (KAM) 	KAM10	120"	1-1/4"	0.018"	10	100	
	KAM12	144"	1-1/4"	0.018"	10	120	
	KAM12G90	144"	1-1/4"	0.018"	10	120	
	KAM1510	120"	1-1/2"	0.018"	10	100	
	KAM1512	144"	1-1/2"	0.018"	10	120	
	KAM151020E	120"	1-1/2"	0.028"	10	100	
	KAM151220E	144"	1-1/2"	0.028"	10	120	
	KAM151020	120"	1-1/2"	0.033"	10	100	
	KAM1525G90	120"	1-1/2"	0.018"	10	100	
	KAM1520G90	120"	1-1/2"	0.018"	10	100	
	KAM21025	120"	2"	0.018"	10	100	
	KAM21020EQ	120"	2"	0.028"	10	100	
	KAM21020	120"	2"	0.033"	10	100	
SimpleCurve® KAM 	SC151220EQ (37" Radius)	148"	1-1/2"	0.028"	10	124	
	SC151225 (32" Radius)	148"	1-1/2"	0.018"	10	124	
	SC21220EQ (55" Radius)	148"	2"	0.028"	10	124	
	SC21225 (40" Radius)	148"	2"	0.018"	10	124	

Drywall Transition Molding

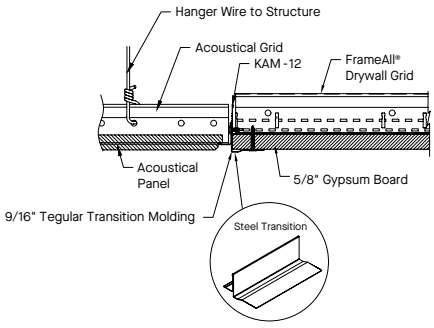
Transitions can be found on nearly every project. We've created pre-engineered solutions for these and other common conditions to make installation easier and to provide a finished look that is consistent and reliable.

Material: Commercial-quality cold-rolled hot-dipped galvanized steel

Item No.	Length/Item Description	Face Dimension	Flange	Total Width	
7901	120" Shadow Reveal Molding	3/8" shadow reveal	9/16"	1-1/4"	
7902	120" Shadow Reveal Molding	3/8" shadow reveal	15/16"	1-1/4"	
7903	120" Inverted T Molding	1" inverted T	–	1-1/2"	
7904 7904PF*	120" Flush Transition Molding	15/16" horizontal	15/16"	1-1/4"	
7905 7905PF*	120" Flush Transition Molding	9/16" horizontal	9/16"	1-1/4"	
7906	120" F Molding	120" vertical transition	1/2"	1-7/16"	
7907	120" Tegular Transition Molding	9/16" horizontal	9/16"	1-1/4"	
7908	120" Tegular Transition Molding	15/16" horizontal	15/16"	1-1/4"	
7909	15/16" 1" Step Transition Molding	15/16" horizontal	15/16"	1-7/8"	
7910	9/16" 1" Step Transition Molding	9/16" horizontal	9/16"	1-7/8"	
7911	9/16" Shadow Reveal Transition Molding	3/8" × 1/4" shadow reveal	9/16"	1-1/8"	
7912	15/16" Shadow Reveal Transition Molding	3/8" × 1/4" shadow reveal	15/16"	1-1/4"	
7913	120" F Vertical Transition Molding	9/16" horizontal	9/16"	1-1/2"	
7914	120" F Vertical Transition Molding	15/16" horizontal	15/16"	1-1/2"	

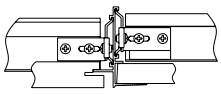
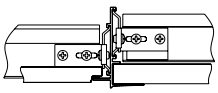
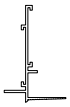
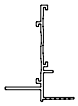
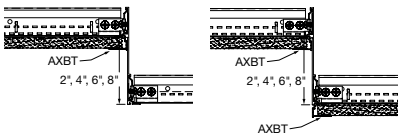
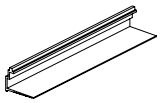
* 7904PF and 7905PF feature protective film on the acoustical wall angle flange for faster, easier finishing.

Steel Flush Transition

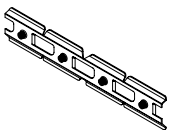
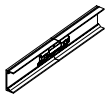
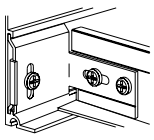


Axiom Drywall Transitions

Material: Extruded aluminum, alloy 6063

Item No.	Length/Item Description	Dimensions	
AXTRVESTR	Straight Transition for Axiom® Vector® Ceiling	120 × 2-9/16 × 1-11/16"	 Axiom® – Transitions with Vector® panel to drywall perimeter (AXTRVESTR)
AXTRTECUR	Curved Transition for Tegular	120 × 2-9/16 × 1-11/16"	 Axiom® – Transitions with Tegular panel to drywall perimeter (AXTRTESTR, AXTRTECUR)
AXTR7907STR	9/16" Tegular Transition Molding, Straight	120 × 2-9/16 × 1-11/16"	
AXTR7907CUR	9/16" Tegular Transition Molding, Curved	Vary × 2-9/16 × 1-11/16"	
AXTR7908STR	15/16" Tegular Transition Molding, Straight	120 × 2-9/16 × 1-13/16"	
AXTR7908CUR	15/16" Tegular Transition Molding, Curved	Vary × 2-9/16 × 1-13/16"	
AXTR2STR	2" Straight Transition	120 × 2 × 1-1/2"	 Acoustical-to-Drywall Drywall-to-Drywall
AXTR2CUR	2" Curved Transition	120 × 2 × 1-1/2"	
AXTR4STR	4" Straight Transition	120 × 4 × 1-1/2"	
AXTR4CUR	4" Curved Transition	120 × 4 × 1-1/2"	
AXTR6STR	6" Straight Transition	120 × 6 × 1-1/2"	
AXTR6CUR	6" Curved Transition	120 × 6 × 1-1/2"	
AXTR8STR	8" Straight Transition	120 × 8 × 1-1/2"	
AXBTSTR AXBTCUR	Drywall Bottom Trim for Straight and Curved 5/8" Drywall	120 × 1-1/8 × 27/32"	
AXBTASTR AXBTACUR	Bottom Trim for AcoustiBuilt® Ceiling Systems (straight or curved)	–	

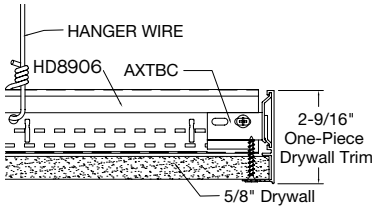
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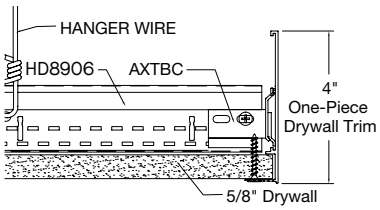
AX4SPLICEB	Splice Plate	–	
AXSPLICE2	Axiom Splice Plate Galvanized sheet steel formed to fit into the trim channel bosses. Provides positive lock between abutting channels with factory-installed setscrews.	–	
AXTBC	T-Bar Connector Clip	–	

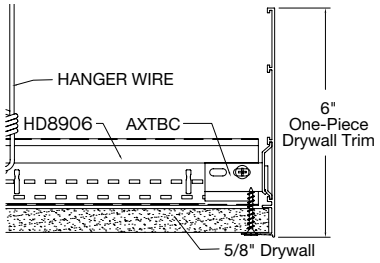
Axiom One-Piece Drywall Trim

Material: Commercial-quality extruded aluminum alloy 6063

Item No.	Length/Item Description
AX1PC2STR	2-9/16" One-Piece Straight Drywall Trim
AX1PC2CUR	2-9/16" One-Piece Curved Drywall Trim
AX1PC4STR	4" One-Piece Straight Drywall Trim
AX1PC4CUR	4" One-Piece Curved Drywall Trim
AX1PC6STR	6" One-Piece Straight Drywall Trim
AX1PC6CUR	6" One-Piece Curved Drywall Trim



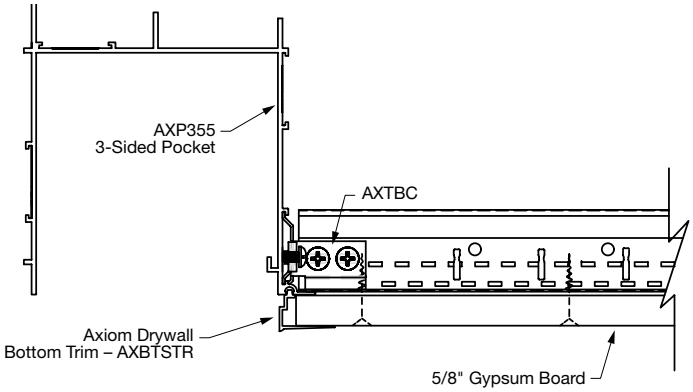


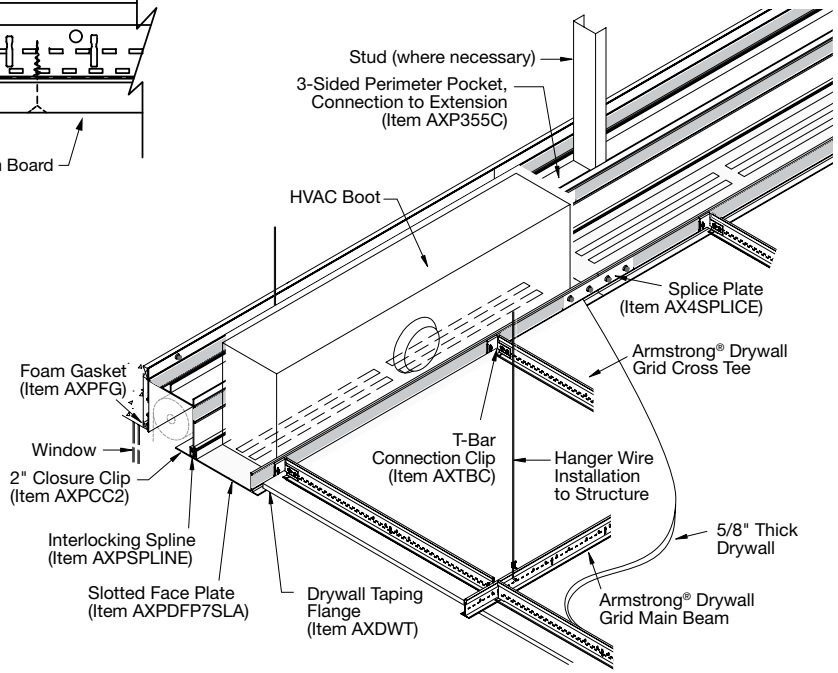


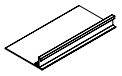
NOTE: For use with 5/8" drywall only

Axiom Shade Pockets with Drywall Integration

For more information, visit our website at armstrong.com/axiom or download BPCS-3911 Axiom® Building Perimeter System Brochure or BPCS-3923 Axiom Building Perimeter Data Page.





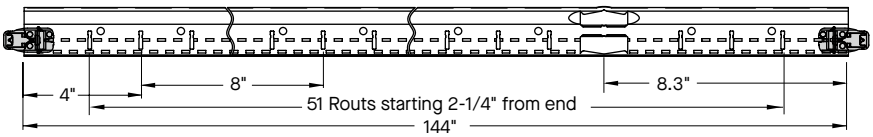
Item No.	Length/Item Description	
AXP355LC	3-Sided Lutron® Compatible Shade Pocket with Connection to Extension/Face Plate Piece	
AXPCC2 AXPCC3	2" Shade Closure Clip 3" Shade Closure Clip	
AXPDFP4DTSLA AXPDFP4DTSLB	4" Axiom Perimeter Face Plate with Drywall Flange – 2-Slot Pattern 4" Axiom Perimeter Face Plate with Drywall Flange – 1-Slot Pattern	
AXPDFP7DT AXPDFP7DTSLA AXPDFP7DTSLB	7" Axiom Perimeter Face Plate with Drywall Flange – Unslotted 7" Axiom Perimeter Face Plate with Drywall Flange – 2-Slot Pattern 7" Axiom Perimeter Face Plate with Drywall Flange – 1-Slot Pattern	

Rout Locations

Rout Spacing Guidelines

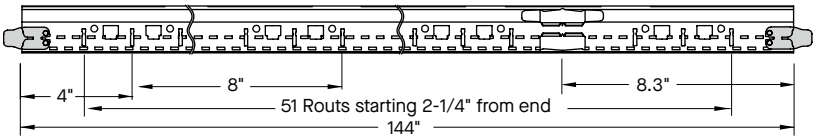
Imperial

HD8906 (HRC)/
HD890610*

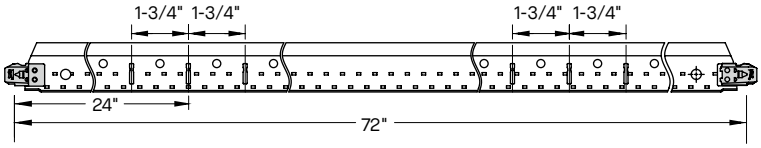


*HD890610 is 120" in length and only has 45 routs

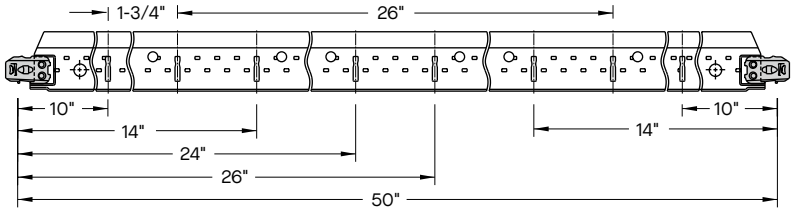
HD8906IIC



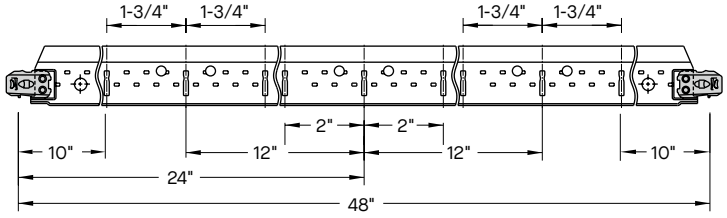
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(Type F Compatible)



XL8947P
(Type F Compatible)



XL8945HRC/XL8945P
(Type F Compatible)

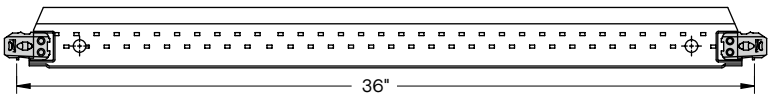


Rout Locations

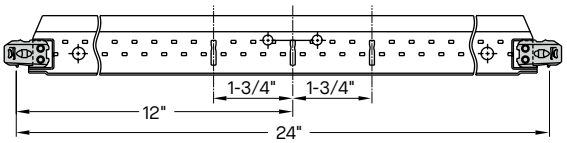
Rout Spacing Guidelines

Imperial

XL7936G90

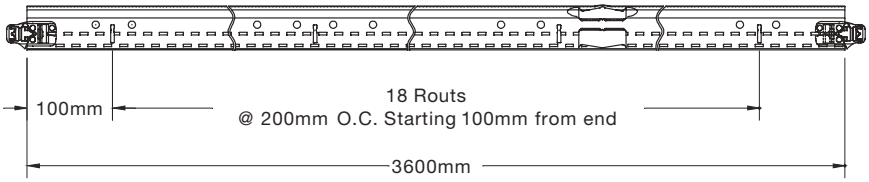


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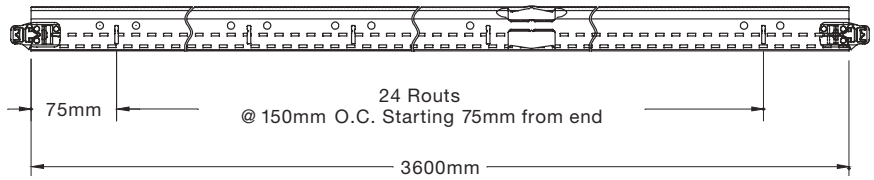


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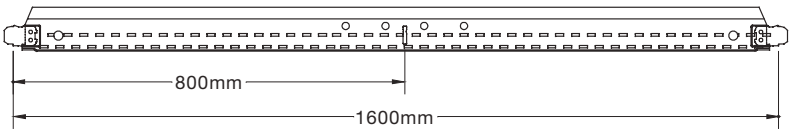
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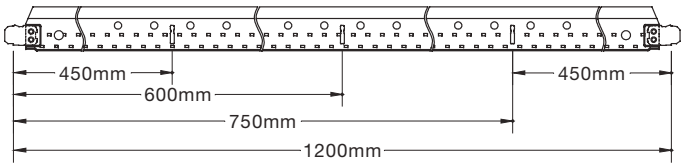
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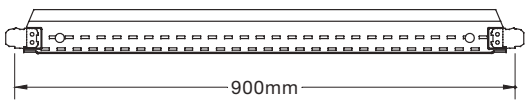
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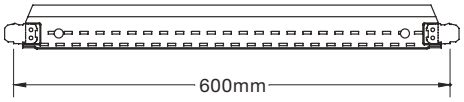
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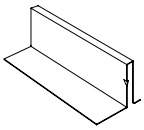
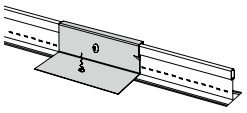
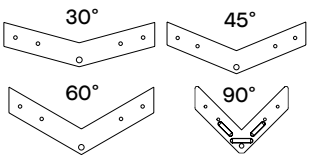
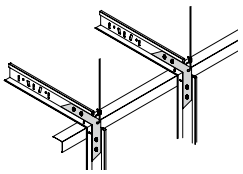
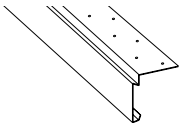
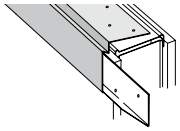
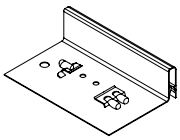
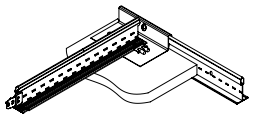
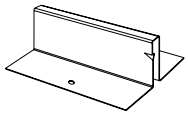
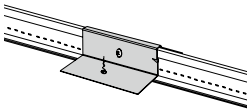
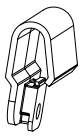
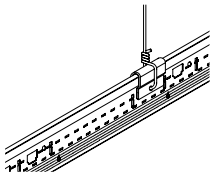
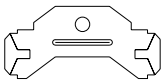
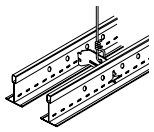
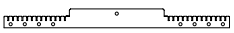
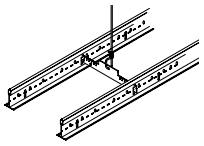
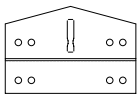
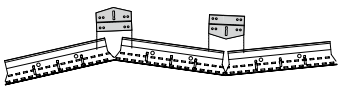
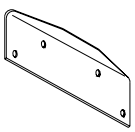
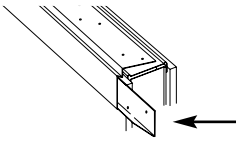


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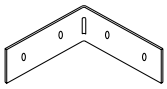
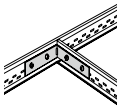
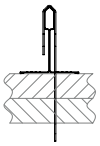
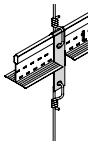
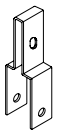
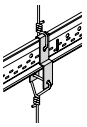
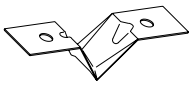
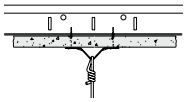
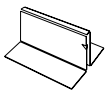
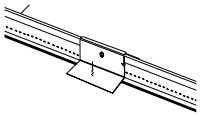
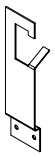
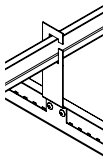
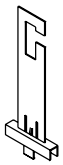
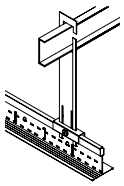


Drywall Grid Accessories

A variety of drywall grid accessories are available to provide problem-solving solutions that save time, labor, and money. For a complete list of accessories, request submittal BPCS-3082.

Item No.	Quantity	Description	Perspective	Application
DWACS FZDWACS	100 50	Drywall Attachment Clip facilitates transition from drywall to acoustical ceiling; locks under bulb of grid section to prevent upward movement and provide secure attachment surface on one side of exposed grid.		
DW30C DW45C DW60C DW90C FZDW30C FZDW45C FZDW60C FZDW90C	250 250 250 250 50 50 50 50	30-, 45-, 60-, and 90-degree Drywall Angle Clips are used to create positive and secure angles for drywall and ceiling installations on either main beams or cross tees.		
TT10	30	Partition Top Trim is used to finish the top of a drywall partition for a continuous drywall/acoustical ceiling interface.		
DW58LT FZDW58LT	125 50	DW58LT – Transition Clip for 5/8" Drywall with Locking Tabs; facilitates transition from drywall to acoustical ceiling; one-sided hold down clip; eliminates need for drywall bead. Locking tabs provide secure location for Drywall Grid System tees.		
DW50LT FZDW50LT	125 50	DW50LT – Transition Clip for 1/2" Drywall with Locking Tabs; facilitates transition from drywall to acoustical ceiling; one-sided hold down clip; eliminates the need for a drywall bead. Locking tabs provide secure location for Drywall Grid System tees.		
IIC IIC2	36 36	Impact Isolation Clip (IIC) for use with HD8906IIC] drywall grid main beam. Provides up to 8 points of IIC improvement to ensure your project meets IBC requirements. IIC2 for use with HD8906IIC drywall grid main beam. For conditions requiring two layers of drywall. Clip Color: Green IIC Clip must be used with HD8906IIC Drywall Grid Main Beam		
MBSC2	200	Main Beam Spacer Clip (2" in length) is used to space two parallel main beams 2" O.C. for air supply or return.		
GSC9 GSC12 GSC16 FZGSC9 FZGSC12 FZGSC16	100 100 100 50 50 50	Adjustable Grid Spacer Clip is used to space two parallel main beams for light fixtures, air diffusers, etc.; allows for 1/4" adjustments with three different clips.		
RC2AG FZRC2AG	205 50	RC2 – Radius Clip is used for drywall applications which form curved installations; attaches to the cavity side of web of the main beam with four 7/16" pan head screws. Install at all knockout locations.		
RC1 FZRC1	200 50	RC1 – Splice Clip is used as a main beam splice or partition top trim splice.		

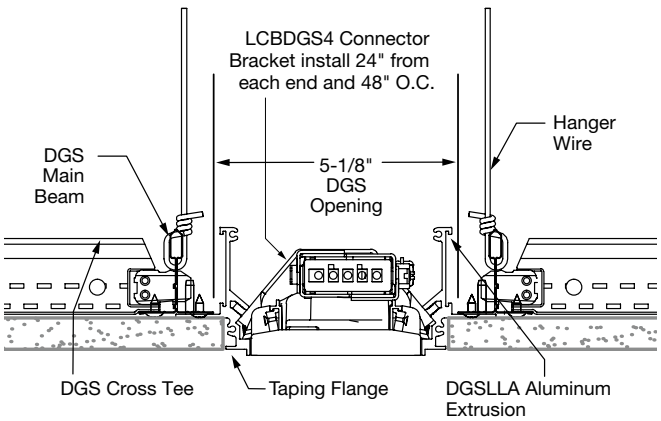
Drywall Grid Accessories

Item No.	Quantity	Description	Perspective	Application
XTAC FZXTAC	100 50	Cross Tee Adapter Clip – is used to attach field cut cross tees to main beams.		
DDC FZDDC	250 50	Double Drywall Clip to hang suspension system below existing 1-1/2" grid face, transferring weight directly to hanger wire; may be used to preserve the fire rating of an existing ceiling and to support heavy accessories; allows for double layer of 5/8" gypsum board.		
DLCC FZDLCC	250 50	Direct Load Ceiling Clip to hang suspension system below existing 15/16" grid face, transferring weight directly to hanger wire; may be used to preserve the fire rating of an existing ceiling and to support heavy accessories.		
DWC	250	Drywall Clip allows for a “second” ceiling to be installed below a drywall ceiling; attach through installed drywall to supporting structure.		
MBAC FZMBAC	70 50	Main Beam Adapter Clip attaches to web of suspension system section; provides larger surface for screw attachments; used as a hold down clip for thin material (metal or plastic lay-in panels); fastens drywall track to underside of exposed suspension system with lay-in panels, leaving suspension system face free of screw holes.		
BPCBS4SS BPCBS6SS BPCBS8SS BPCBS10SS BPCBS12SS	50 50 50 50 50	4", 6", 8", 10", and 12" CBS Hangers – Channel Beam Support Hanger for SimpleSoffit™ is used for easier C Channel installations (New York City market only).		
CBS4A CBS6A CBS8A CBS10A CBS12A CBS2004A CBS2006A CBS2008A	200 200 200 150 150 75 75 75	4", 6", 8", 10", and 12" Channel Beam Splice – Used to suspend main beams to 1-1/2" black iron carrying channels CBS2004A (4"), CBS2006A (6"), and CBS2008A (8") used for 2" black iron carrying channels		

BASO™ LED Light Drywall Trim Kit

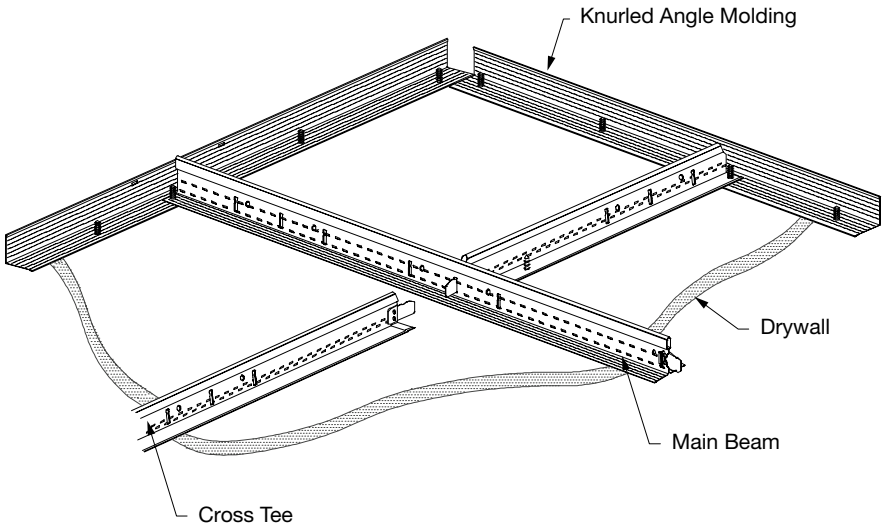
Item No.	Description	Fixture Length
Drywall Linear Lighting		
DGSLLTK24	24" Linear Light Trim Kit	24" × 4"
DGSLLTK30	30" Linear Light Trim Kit	30" × 4"
DGSLLTK48	48" Linear Light Trim Kit	48" × 4"
DGSLLTK60	60" Linear Light Trim Kit	60" × 4"
DGSLLTK72	72" Linear Light Trim Kit	72" × 4"
DGSLLTK90	90" Linear Light Trim Kit	90" × 4"
DGSLLTK96	96" Linear Light Trim Kit	96" × 4"
DGSLLTK120	120" Linear Light Trim Kit	120" × 4"
DGSLLTKCON	120" Continuous Linear Light Trim Kit	120"

NOTE: Linear Light Trim Kits designed to work with 5/8" drywall



Hanging & Framing

The grid system is comprised of main beams and cross tees that are typically suspended by hanger wires to the structural deck. Sections of main beams lock together end-to-end while cross tees span between the main beams. The ends of the main beams and cross tees rest on the angle molding that run around the perimeter of the space.



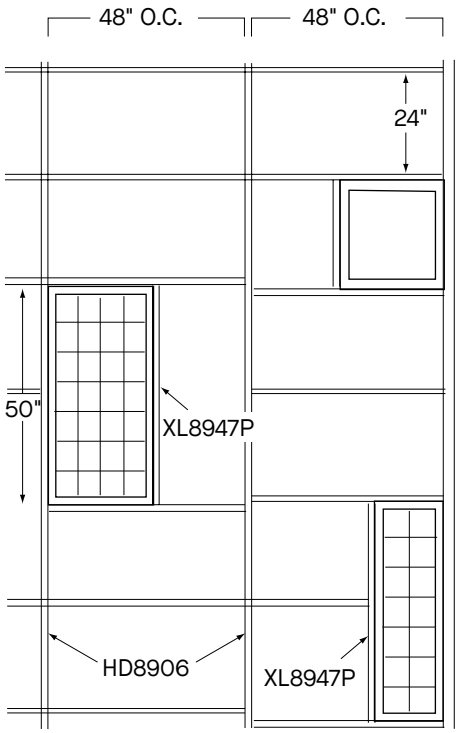
Hanging & Framing

Type F fixtures, access panels, and air diffusers require a full 12", 24", or 48" opening dimension. The Armstrong® Drywall Grid System main beams and cross tees have additional routs in the web to accommodate this larger opening for Type F fixtures.

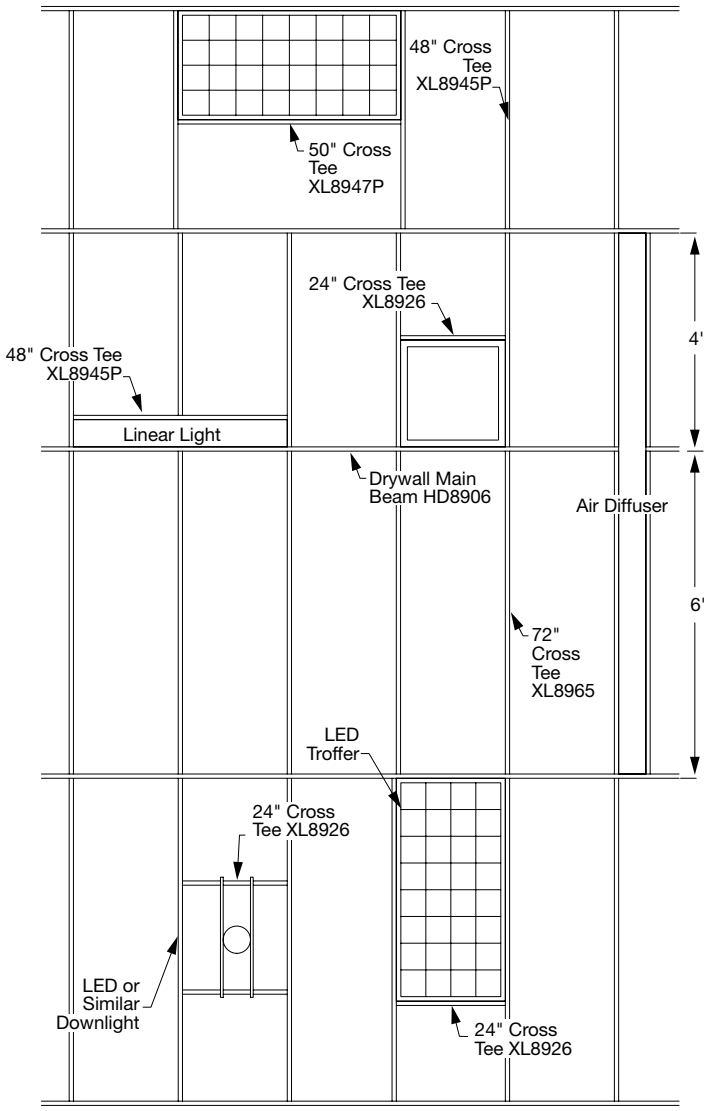
Using our 14", 26", 50", and 72" cross tees, Type F fixtures fit perfectly without field cutting or special accessories.

When installing Type F fixtures parallel to the main beams, use a 48" cross tee for easy placement of fixtures without field modifications.

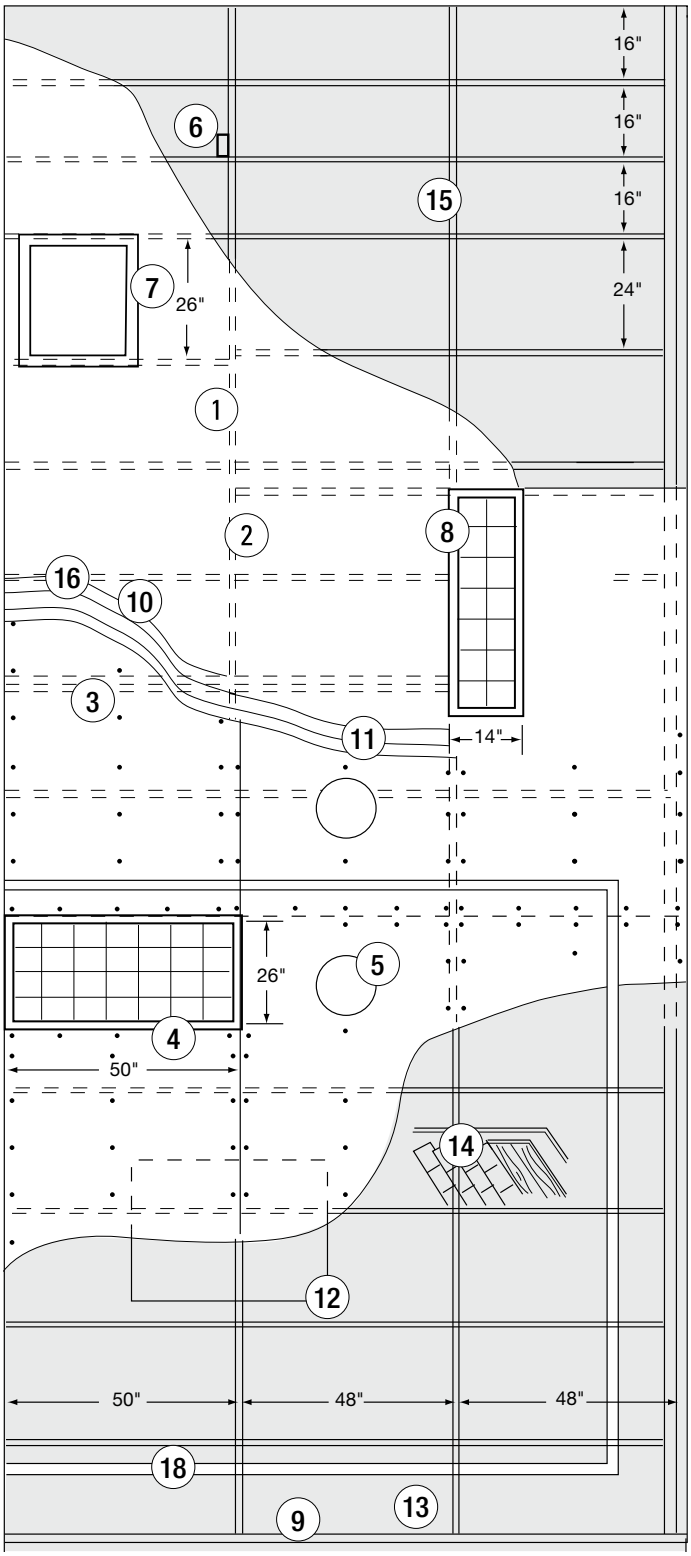
Main Beams

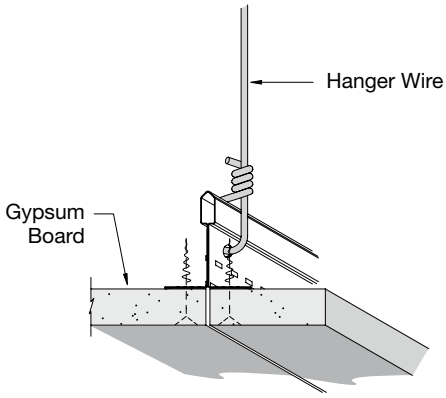


When installing fixtures perpendicular to the main beams, use 72" cross tees for virtually limitless fixture placement.

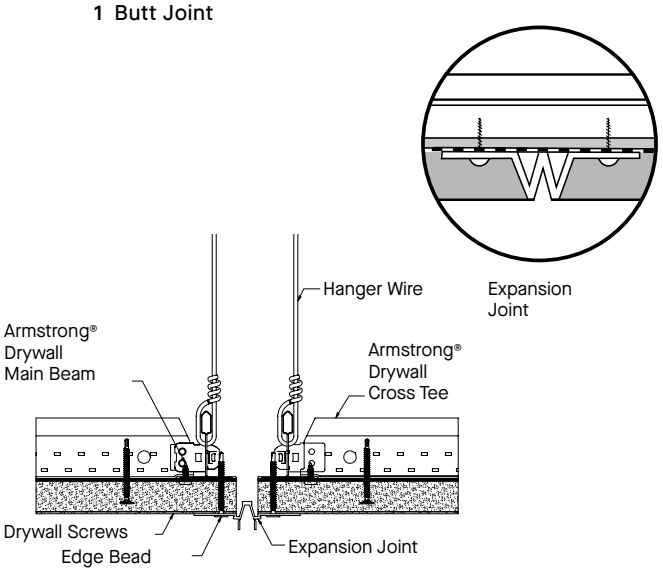


Suspended Drywall Grid System Details

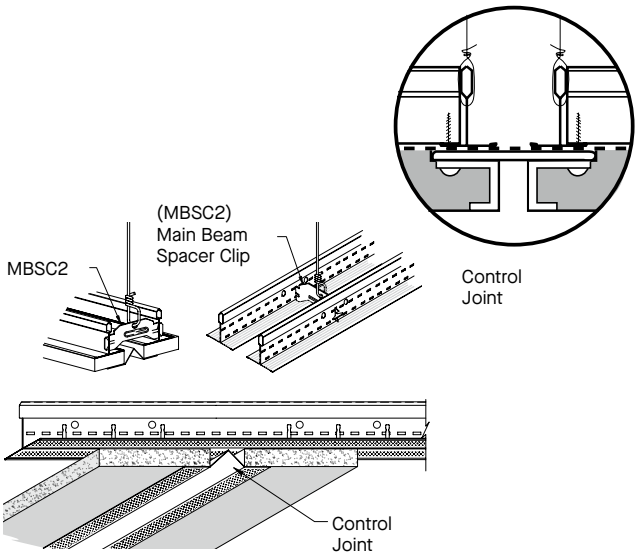




1 Butt Joint

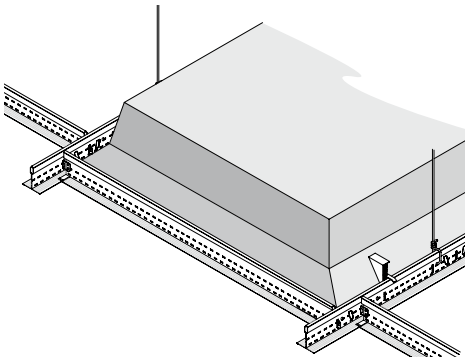


2 Expansion Joint

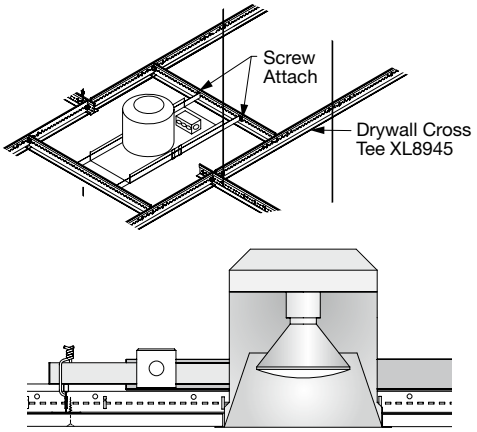


3 Control Joint

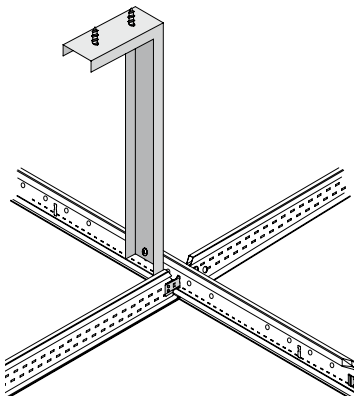
Suspended Drywall Grid System Details



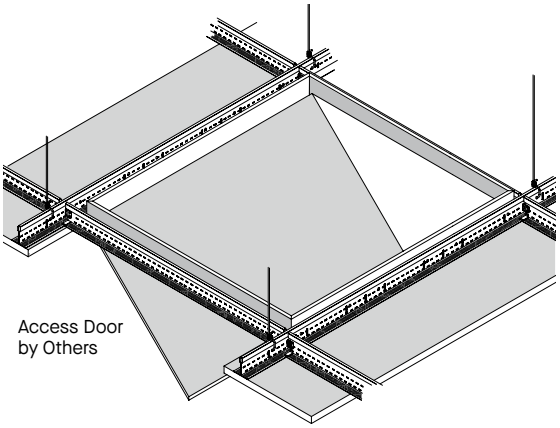
4 Type F Fixture



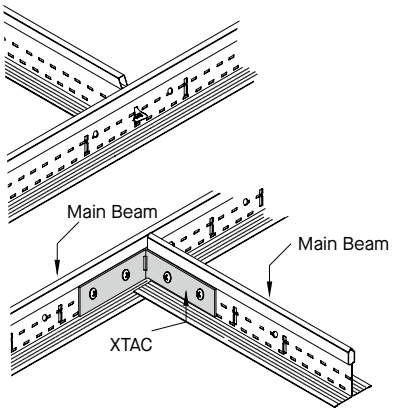
5 High Hat Fixture



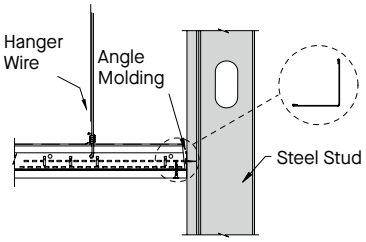
6 Vertical Brace



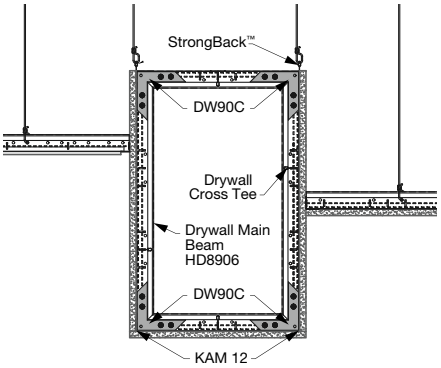
7 Access Door



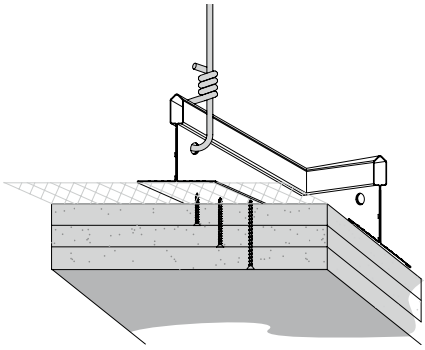
8 Securing a Single Cross Tee



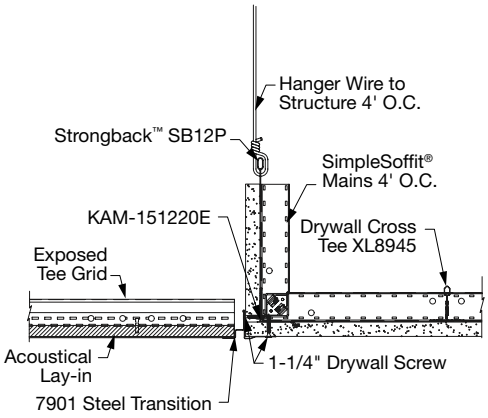
9 Channel and Angle Molding



10 Angle Clip on Box Soffit

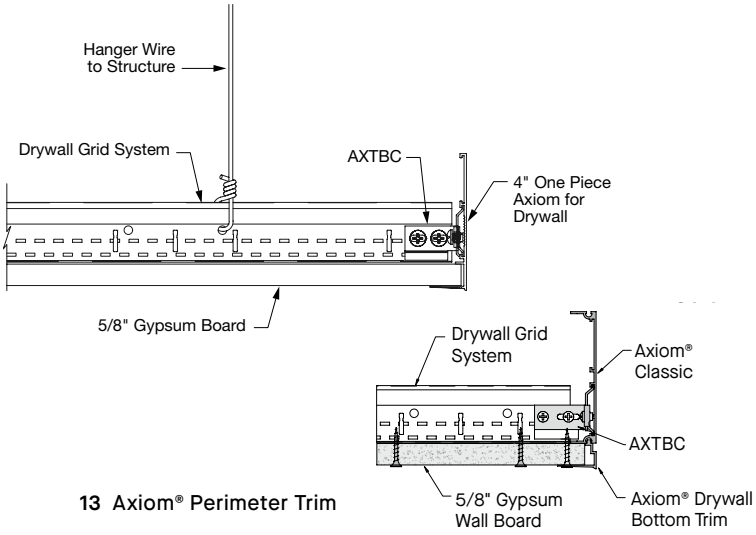


11 Double or Triple Layer with Security Lath

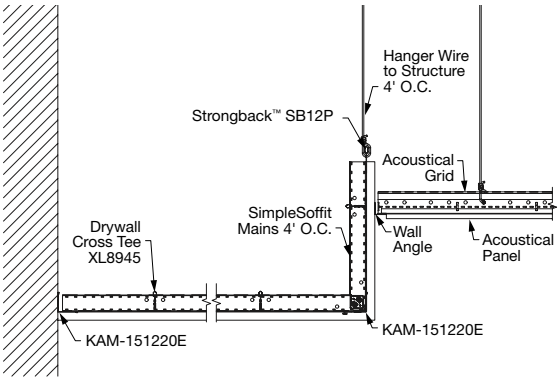


12 Transition

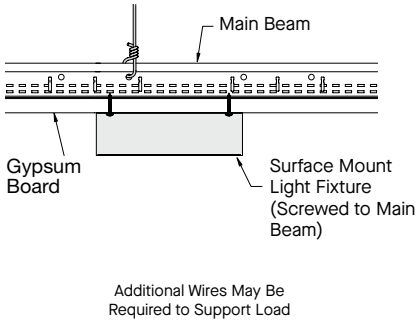
Suspended Drywall Grid System Details



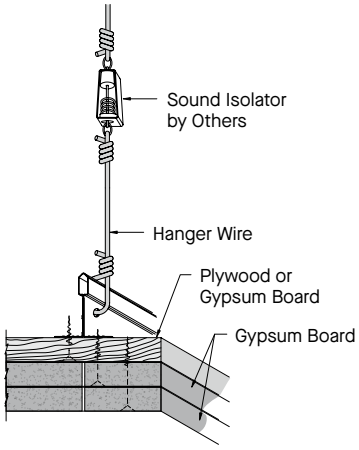
13 Axiom® Perimeter Trim



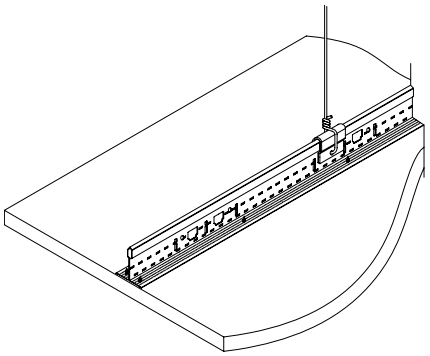
14 Drywall Vertical



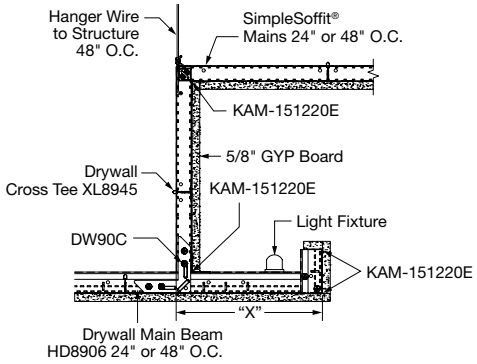
15 Surface Mount Fixture



16 Triple Layer with Sound Isolators



17 HD8906 with IIC Clip



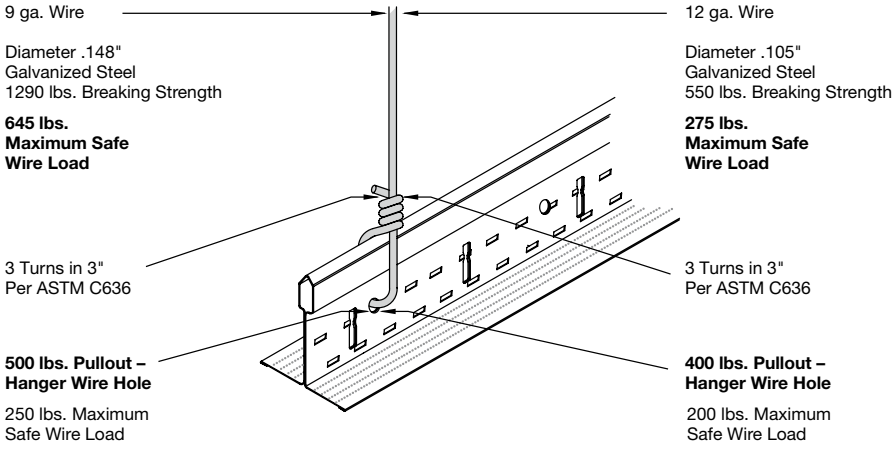
18 Light Cove Option

Wire Loading

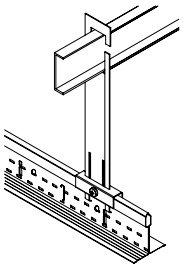
Hanging & Framing

9-gauge Wire-Breaking Strength
and Technical Data

12-gauge Wire-Breaking Strength
and Technical Data



Where Black Iron is a Requirement



NOTE: Screw recommended for all FrameAll and Strongback installations.

Basic Products Used on Suspension Systems

Material	Weight lbs./sq. ft.
OSB 1/4"	**0.9**
3/8"	1.3
1/2"	1.7
5/8"	2.2
3/4"	2.5
Plywood 1/4"	**.075**
3/8"	1.1
1/2"	1.5
5/8"	1.8
3/4"	2.2
Gypsum Board 1/4"	**1.2**
3/8"	1.4
1/2"	2.0
5/8"	2.4
3/4"	4.2
Cement Board 1/2"*	3.0
Cement Siding 5/8"*	1.9
Hard Board Siding 1/2"	2.0
Water-Resistant Gypsum Board 5/8"	3.42
Water-Resistant Gypsum Board 1/2"	2.8
Expanded Steel Lath	3.4
12-gauge Sheet Steel	4.5

NOTES: All framing on the exterior should be 16" O.C. or less.
Some manufacturers make 1/2" gypsum board with special core to span 24" framing on interior ceiling installations (available on request). All steel product on exterior made from G90 galvanized finish.
* Use lower RPM (1,000-2,500) screw gun to install cement board screws with intermittent pressure.

Hanging & Framing

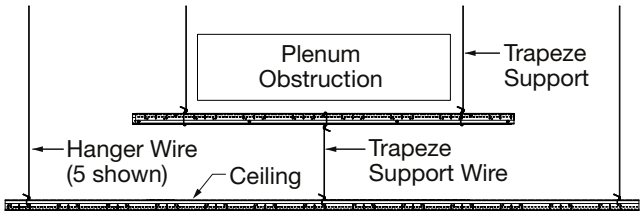
Trapeze load support solutions offer calculated and resourceful solutions for supporting hanger wires under plenum obstructions using scrap material contractors already have on their jobsite.

Table A	**Trapeze Span (ft.)**				
Single Member Plenum Trapeze	**4'**	**5'**	**6'**	**7'**	**8'**
Acoustical Grid	**Allowable Midspan Point Load (lbs.)**				
730145 – Prelude® Max Main Beam **(Fig. 2)**	80	50	30	20	–
HD* Main Beam – 7300, 7500, 7600, 6100 **(Fig. 3)**	32	20	–	–	–
ID* Main Beam – 7301, 7501, 7601, 6101 **(Fig. 3)**	24	–	–	–	–
	Drywall Grid (See Fig. 3)				
S7708 – ShortSpan®	44	28	–	–	–
HD8906 – Main Beam	36	23	–	–	–
XL8965 – Cross Tee	28	–	–	–	–

Table B	**Trapeze Span (ft.)**				
Nested Composite Members; Screw Attached	4'	5'	6'	7'	8'
Drywall Grid System Nested (Fig. 4)	**Allowable Midspan Load (lbs.)**				
HD8906 – Main Beam	–	–	51	37	28
S7708 – ShortSpan	–	–	61	44	34

* Duty classification determined by performance and testing specifications of ASTM C635.

Fig. 1



NOTE: Referencing Table A, a 4 ft. span of 7301 Main Beam used as a "Trapeze Support" can carry a mid-span point load of 32 lbs. If the "Trapeze Support Wire" **(Fig. 1)** is supporting a ceiling area of 16 sq-ft. (4-ft. main spacing × 4-ft. hanger wire spacing), the maximum allowable uniform weight of the ceiling is 2 lb./sq-ft. (32 lb. ÷ 16 sq-ft. = 2 lb./sq-ft.)

Single Member Trapezing

Fig. 2
730145

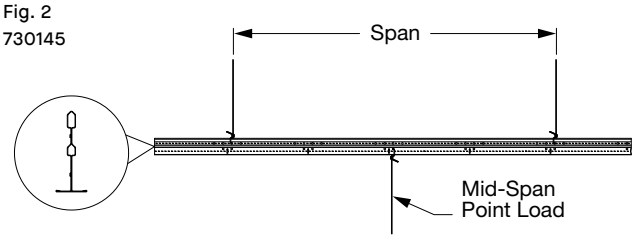
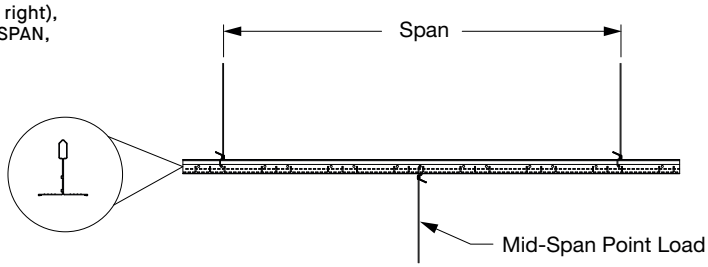
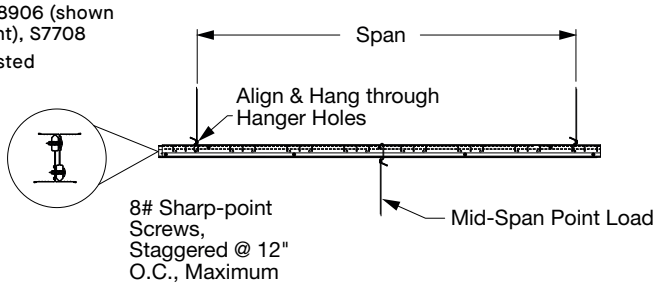


Fig. 3
HD8906 (shown right), XL8945, SHORTSPAN, HD (7301, 7501, 7601, 6101)
ID (7300, 7500, 7600, 6100)



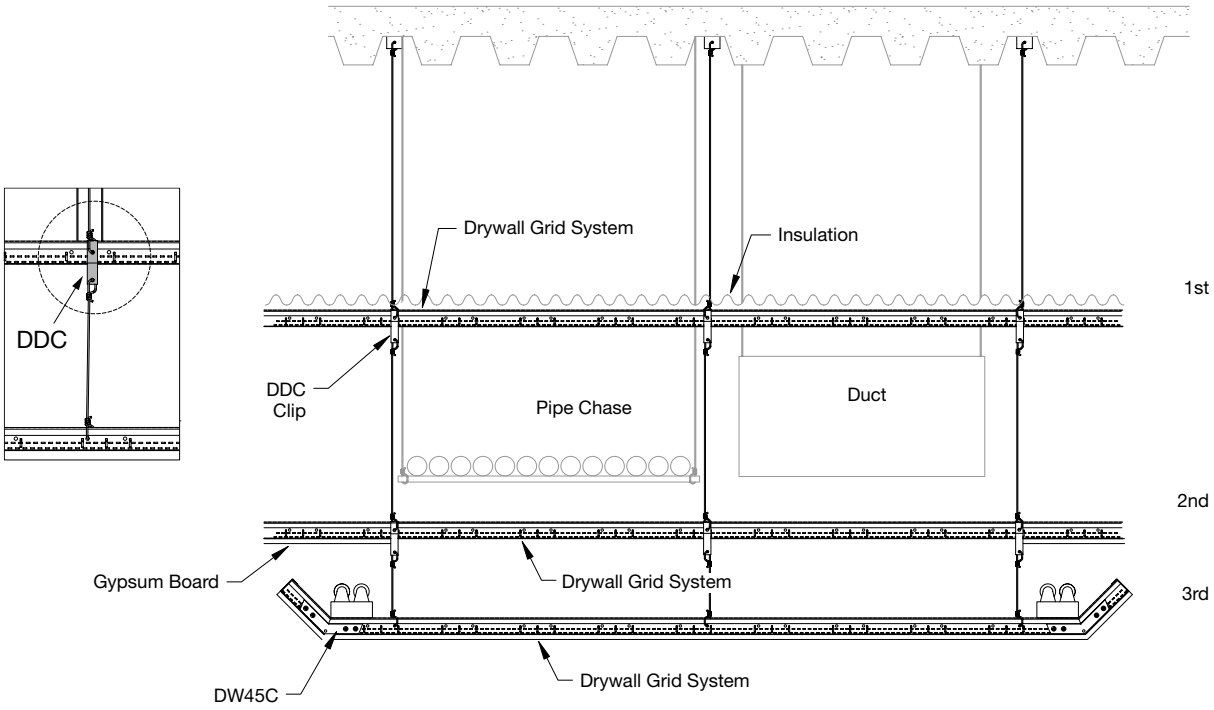
Nested/Composite Member Trapezing

Fig. 4
HD8906 (shown right), S7708
Nested



Hanging & Framing

A suspended ceiling not only carries the load of the applied finish, but can also act as a load-carrying structure or membrane that supports another ceiling at a lower level. The DDC clip is used at hanger wire locations to allow for connecting the second and even third ceiling. This method of hanging and framing is used in multi-layer ceilings with long vertical drops – eliminating the use of long stud drops.



Exterior Wind Load Data

Exterior Wind Load Ceilings Design for North America

Plenum Height (ft.-in.)	Design Wind Velocity (MPH)	Design Wind Pressure (lbs./sq. ft.)	Compression Post Size (in.)	Compression Post Gauge (ga. no.)	Sheathing Membrane Substrate 5/8" Drywall Sheet DensGlass Gold® GP	Compression Post Spacing (ft.-in.)	Main Beam Spacing (in.)	Cross Tee Spacing (in.)	Hanger Wire Spacing (ft.-in.)	Cross Tee Length (ft.)	Compression Post Load Design Load (lbs.)
0' - 0" ↓ 6' - 0" †	15	0.507	2-1/2" CWN	20	5/8" DensGlass GP & 1/4"-3/8" EIFS*	4'-2"	48"	16"	4'	4'	18
	30	2.03	2-1/2" CWN	20	5/8" DensGlass GP & 1/4"-3/8" EIFS	4'-2"	48"	16"	4'	4'	49
	45	4.56	2-1/2" CWN	20	5/8" DensGlass GP & 1/4"-3/8" EIFS	3'-6"	48"	16"	4'	4'	96
	60	8.1	2-1/2" CWN	20	5/8" DensGlass GP & 1/4"-3/8" EIFS	3'-6"	36"	16"	4'	3'	125
	90	18.24	2-1/2" CWN	20	5/8" DensGlass GP & 1/4"-3/8" EIFS	2'-9"	36"	16"	3'	3'	229
	120	32.43	2-1/2" CWN	20	5/8" DensGlass GP & 1/4"-3/8" EIFS	2'-8"	24"	16"	2'-6"	2'	266
	140	44.14	2-1/2" CWN	18	5/8" DensGlass GP & 1/4"-3/8" EIFS	2'-4"	24"	16"	2'-6"	2'	331
	172	75	2-1/2" CSJ	18	See NOA 15-0127.04 Design						
	172	75	2-1/2" CSJ	18	See NOA 14-1204.05 Design						
6' - 1" ↓ 10' - 3" ††	15	0.507	2-1/2" CSJ	18	5/8" DensGlass GP & 1/4"-3/8" EIFS	4'-2"	48"	16"	4'	4'	18
	30	2.03	2-1/2" CSJ	18	5/8" DensGlass GP & 1/4"-3/8" EIFS	3'-10"	48"	16"	4'	4'	49
	45	4.56	2-1/2" CSJ	18	5/8" DensGlass GP & 1/4"-3/8" EIFS	3'-6"	48"	16"	4'	4'	96
	60	8.1	2-1/2" CSJ	18	5/8" DensGlass GP & 1/4"-3/8" EIFS	3'-6"	36"	16"	4'	3'	125
	90	18.24	2-1/2" CSJ	18	5/8" DensGlass GP & 1/4"-3/8" EIFS	3'-4"	36"	16"	3'	2'	178
	120	32.43	2-1/2" CSJ	18	5/8" DensGlass GP & 1/4"-3/8" EIFS	2'-8"	24"	16"	2'-6"	2'	266
	140	44.14	2-1/2" CSJ	18	5/8" DensGlass GP & 1/4"-3/8" EIFS	2'-4"	24"	16"	2'-6"	2'	331
	172	75	2-1/2" CSJ	18	See NOA 15-0127.04 Design	2'	24"	16"	2'	2'	445
	172	75	2-1/2" CSJ	18	See NOA 14-1204.05 Design	2'-6"	36"	16"	2'-6"	3'	565
10' - 4" ↓ 15' - 0" ††	*15	0.507	2-1/2" CSJ	18	5/8" DensGlass GP & 1/4"-3/8" EIFS	4'-2"	48"	16"	4'	4'	18
	*30	2.03	2-1/2" CSJ	18	5/8" DensGlass GP & 1/4"-3/8" EIFS	3'-10"	48"	16"	4'	4'	49
	*45	4.56	2-1/2" CSJ	18	5/8" DensGlass GP & 1/4"-3/8" EIFS	3'-6"	48"	16"	4'	4'	96
	*60	8.1	2-1/2" CSJ	18	5/8" DensGlass GP & 1/4"-3/8" EIFS	3'-6"	36"	16"	4'	3'	125
	*90	18.24	2-1/2" CSJ	18	5/8" DensGlass GP & 1/4"-3/8" EIFS	3'-4"	36"	16"	3'	2'	178
	*120	32.43	2-1/2" CSJ	18	5/8" DensGlass GP & 1/4"-3/8" EIFS	2'-8"	24"	16"	2'-6"	2'	266
	*140	44.14	2-1/2" CSJ	18	5/8" DensGlass GP & 1/4"-3/8" EIFS	2'-4"	24"	16"	2'-6"	2'	331
	*172	75	2-1/2" CSJ	18	See NOA 15-0127.04 Design	2'	24"	16"	2'	2'	445
	*172	75	2-1/2" CSJ	18	See NOA 14-1204.05 Design	2'-6"	36"	16"	2'-6"	3'	565
15' - 1" ↓ 20' - 0" ††	**15	0.507	3-5/8" CSJ	18	5/8" DensGlass GP & 1/4"-3/8" EIFS	4'-2"	48"	16"	4'	4'	18
	**30	2.03	3-5/8" CSJ	18	5/8" DensGlass GP & 1/4"-3/8" EIFS	3'-10"	48"	16"	4'	4'	49
	**45	4.56	3-5/8" CSJ	18	5/8" DensGlass GP & 1/4"-3/8" EIFS	3'-6"	48"	16"	4'	4'	96
	**60	8.1	3-5/8" CSJ	18	5/8" DensGlass GP & 1/4"-3/8" EIFS	3'-6"	36"	16"	4'	3'	125
	**90	18.24	3-5/8" CSJ	18	5/8" DensGlass GP & 1/4"-3/8" EIFS	3'-4"	36"	16"	3'	2'	178
	**120	32.43	3-5/8" CSJ	18	5/8" DensGlass GP & 1/4"-3/8" EIFS	2'-8"	24"	16"	2'-6"	2'	266
	**140	44.14	3-5/8" CSJ	18	5/8" DensGlass GP & 1/4"-3/8" EIFS	2'-4"	24"	16"	2'-6"	2'	331
	**172	75	3-5/8" CSJ	18	See NOA 15-0127.04 Design	2'	24"	16"	2'	2'	445
	**172	75	3-5/8" CSJ	18	See NOA 14-1204.05 Design	2'-6"	36"	16"	2'-6"	3'	565

* 1-1/2" 16-ga. U-Channel Bridging required at mid span for 124" up to 180"
** 1-1/2" 16-ga. U-Channel Bridging required at one-third points for 181" up to 240"
† Compression Post and Ceiling System tested at the plenum design depth shown here for positive and negative wind speed pressure loads as listed
†† Compression Post Assemblies at this plenum design depth calculated by Dietrich Design Group
NOTE: For building heights over 20 feet, refer to ASCE 7-10 Chapter 6 Wind Loads

Hanging & Framing

Deck Construction Type	UL® Design Number	Concrete Thickness	Panel or Tile Size and Type	Minimum Panel or Tile Thickness	Maximum Fixture Penetration (In²/100 sq. ft.)	Maximum Duct Penetration (In²/100 sq. ft.)	Suspension Systems
CONCRETE FLOOR/CEILING ASSEMBLIES							
Concrete on Flat Cellular, Fluted, or Blend Deck							
3-Hour – Exposed Grid	A212	2-1/2"	48" × 48" ; PC 36" × 60" ; PC 30" × 60" ; PC	5/8"	25	158	1, 2
	2-1/2"	2-1/2"	24" × 24" to 30" × 60" ; P 24" × 24" to 36" × 60" or 48" × 48" ; PC	5/8" (P or PC)	24	576	1, 2
2-Hour – Exposed Grid	D216	2-1/2"	24" × 24" to 30" × 60" ; P 24" × 24" to 36" × 60" or 48" × 48" ; PC	5/8" (P or PC)	24	576	1, 2, 3
Concrete on Ribbed or Corrugated Deck							
3-Hour – Exposed Grid	G256	3-1/2"	24" × 24" ; P 24" × 48" ; P or PC	5/8" (P or PC)	24	255	1, 2
2-Hour – Exposed Grid	G256	2-1/2"	24" × 24" ; P 24" × 48" ; P or PC	5/8" (P or PC)	24	576	1, 2, 3
	G258	2-1/2"	24" × 24" ; P 24" × 48" ; P	5/8"	24	113	1, 2
	G214	2-3/4"	24" × 48" ; P 20" × 60" ; P	5/8"	17	57	1, 2
Concrete on Ribbed or Corrugated Deck							
3-Hour – Exposed Grid	G229	3-1/4"	24" × 48" ; P or PC	5/8"	20	576	1, 2
2-Hour – Exposed Grid	G022	2-1/2"	12" × 24" ; P	3/4"	16	57	4
2-Hour – Exposed Grid	G209	3"	24" × 48" ; P or PC 24" × 24" ; P or PC	5/8"	8	None	1, 2
	G244*	3"	24" × 48" ; P or PC 24" × 24" ; P or P 20" × 60" ; P or PC	5/8"	24*	576	1, 2, 3
	G210	2-1/2"	24" × 24" ; P	3/4"	24	113	1, 2
	G216	2-1/2"	24" × 48" ; P or PC 24" × 24" ; P	5/8"	8	None	1, 2
	G217	2-1/2"	24" × 48" ; P or PC 24" × 24" ; P or PC 20" × 60" ; P or PC	5/8"	8	57	1, 2
	G229	2-1/2"	24" × 48" ; P or PC 24" × 24" ; P or PC 20" × 60" ; P or PC	5/8"	20	576	1, 2, 3
	G242	2-1/2"	24" × 48" ; P or PC	5/8"	8	None	1, 2
2-Hour – Exposed Grid	G243*	2-1/2"	24" × 48"; P 24" × 24"; P 20" × 60"; P	5/8"	16	576	1, 2, 3
	G236	2-1/2"	24" × 48"; P 24" × 24"; P	5/8"	None	None	1, 2
	G250	2-1/2"	30" × 60"; P or PC 20" × 60"; P or PC 24" × 48"; P or PC 24" × 24"; P	5/8"	20	113	1, 2
1-Hour – Exposed Grid	G241	2	24" × 48" ; P 24" × 24" ; P	5/8"	None	None	1, 2
WOOD DECK/CEILING ASSEMBLIES							
Double-Plywood (or Plywood), 2' × 10' Wood Joists							
1-Hour – Exposed Grid	L209	–	24" × 48"; P	5/8"	16	110	1, 2
	L210	–	24" × 48"; P 24" × 24"; P	5/8"	24	227	1, 2, 3
Double-Plywood (or Plywood), 3' × 8' Wood Joists							
1-1/2-Hour – Exposed Grid	L208	–	24" × 48"; P or PC 24" × 24"; P	5/8"	None	None	1, 2

NOTE: Numbers in parentheses are original UL design numbers.
Some unit sizes are no longer available as standard items; some designs include additional sizes.
* Allows flat-board fixture protection

Hanging & Framing

Deck Construction Type	UL® Design Number	Concrete Thickness	Panel or Tile Size and Type	Minimum Panel or Tile Thickness	Maximum Fixture Penetration (in^2/100 sq. ft.)	Maximum Duct Penetration (in^2/100 sq. ft.)	Suspension Systems
ROOF/CEILING ASSEMBLIES							
Standing Seam Exposed Metal Roof							
1-1/2 + 1-Hour – Exposed Grid	P265***	See Design Details	24" × 48" ; P or PC 24" × 24" ; P or PC	3/4" (P) 5/8" (PC)	24	576	1
Lightweight Insulating Concrete on Ribbed or Corrugated Deck							
2-Hour – Exposed Grid	P215	2"	24" × 48" ; PC plus 24" × 48" ; Gypsum Board	5/8" (PC) plus 1/2" Gypsum Board	16	57	1, 2
	P219	2"	24" × 48" ; PC plus 24" × 24" ; Gypsum Board	5/8" (PC) plus 1/2" Gypsum Board	16	57	1, 2
	P251	2-3/4" Min. to 6-3/4"	24" × 48" ; P or PC 24" × 24" ; P or PC 20" × 60" ; P or PC	5/8" (P or PC)	24	576	1, 2, 3
1-1/2 Hour – Exposed Grid	P231	3-3/8"	24" × 48", 24" × 24" ; P 24" × 48" ; Gypsum Board	5/8"	24	255	1, 2
1-Hour – Exposed Grid	P216*	2"	24" × 48" ; P	5/8"	16	57	1, 2
Mineral-Fiber, Glass-Fiber, or Composite Roof Insulation on Fluted Metal Roof Deck							
		Installation Thickness					
1-1/2 Hour – Exposed Grid	P225	1" min. to unlimited max.	24" × 48" ; P or PC 20" × 60" ; P or PC	5/8"	24	255	1, 2
	P227	1" min. to unlimited max.	24" × 48" ; P or PC	3/4" (P)	24	255	1, 2
	P250***	1" min. to unlimited max.	24" × 48" ; P or PC 24" × 24" ; P or PC	3/4" (P) 5/8" (PC)	24	113	1
1-Hour – Exposed Grid	P206	1" min. and max.	24" × 48" ; P	5/8"	16	113	1, 2
	P210	1" min. and max.	24" × 48" ; PC	5/8"	16	57	1, 2
	P211	1" min. to 2" max.	24" × 48" ; PC	5/8"	16	57	1, 2
	P225	1" min. to unlimited max.	24" × 48" ; P or PC 24" × 24" ; P or PC 20" × 60" ; P or PC	5/8" (PC)	24	576	1, 2, 3
	P227	1" min. to unlimited max.	24" × 48" ; P or PC 24" × 24" ; P or PC	5/8"	24	255	1, 2
	P250***	1" min. to unlimited max.	24" × 48" ; P or PC 24" × 24" ; P or PC	3/4" (P) 5/8" (PC)	24	576	1
Poured Gypsum Concrete Over 1/2" Gypsum Formboard							
1-1/2-Hour – Exposed Grid	P217	1-1/2"	24" × 60" ; P	5/8"	16	288	1, 2
IRMA (Inverted Roof Membrane Assembly)							
1-Hour – Exposed Grid	R217 (UL Canada)	2" min. to unlimited max.	24" × 48" ; P or PC	5/8"	24	255	1, 2
FLOOR/CEILING DRYWALL ASSEMBLIES							
Concrete on Composite Flat Cellular, Fluted, or Blend Deck							
2-Hour	D501	2-1/2"	1	5/8"	None	None	DFR8000 DFR8000SS
	D502**	2-1/2"	1	5/8"	24	144	DFR8000 DFR8000SS
Concrete on Composite Flat Cellular, Fluted, or Blend Deck							
3-Hour	G523	3"	1	5/8"	24	144	DFR8000
	G524	3-1/2"	1	1/2"	None	113	DFR8000
	G529	3-1/4"	1	1/2"	24	57	DFR8000
	G529	3-3/4"	1	5/8"	24	57	DFR8000
	G561	2-1/2"	–	–	144	144	DFR8000
2-Hour	G523	2-1/2"	1	1/2"	24	144	DFR8000 DFR8000SS
	G524	2-1/2"	1	1/2"	None	113	DFR8000 DFR8000SS
	G526	2-1/2"	1	1/2"	25	56.5	DFR8000 DFR8000SS
	G527	2-1/2"	1	1/2"	None	None	DFR8000 DFR8000SS
	G527	2-1/2"	1	1/2"	24	57	DFR8000 DFR8000SS
	G561	2-1/2"	1	1/2"	144	144	DFR8000
1 1/2-Hour	G527	2-1/2"	1	1/2"	None	None	DFR8000
1 Hour	G561	2-1/2"	–	–	144	144	DFR8000 DFR8000SS
Concrete on Steel Deck							
2-Hour	G-553	1"	1	5/8"	None	None	DFR8000
1-Hour	G-553	1"	1	5/8"	None	None	DFR8000 DFR8000SS

* Allows flat-board fixture protection. ** Concrete plus insulation. *** Square-edge ceiling panels only.

Hanging & Framing

Deck Construction Type	UL® Design Number	Concrete Thickness	Panel or Tile Size and Type	Minimum Panel or Tile Thickness	Maximum Fixture Penetration (in²/100 sq. ft.)	Maximum Duct Penetration (in²/100 sq. ft.)	Suspension Systems
FLOOR/CEILING DRYWALL ASSEMBLIES (Cont...)							
Concrete on Composite Steel Joist							
2-Hour	G-531	3"	1	5/8"	144	20	DFR8000 DFR8000SS
1-1/2-Hour	G-531	3"	1	5/8"	144	20	DFR8000 DFR8000SS
1-Hour	G-531	3"	1	5/8"	144	20	DFR8000 DFR8000SS
ClarkDietrich® C-Channel System							
2-Hour	G-553	1"	1	5/8"	None	None	DFR8000 DFR8000SS
	G-560	1"	1	5/8"	None	None	DFR8000
	G-566	2"	1	5/8"	None	None	DFR8000 DFR8000SS
	G-579	1"	1	5/8"	None	None	DFR8000 DFR8000SS
	G-594	1"	1	5/8"	None	None	DFR8000
1-Hour	G-553	1"	1	5/8"	None	None	DFR8000 DFR8000SS
	G-560	1"	1	5/8"	None	None	DFR8000
	G-566	2"	1	5/8"	None	None	DFR8000 DFR8000SS
	G-579	1"	1	5/8"	None	None	DFR8000 DFR8000SS
	G-591	1"	1	5/8"	None	None	DFR8000
Concrete on Steel Deck and Steel Joists							
3-Hour	G-561	2-1/2"	1	5/8"	144	144	DFR8000
2-Hour	G-561	2-1/2"	1	5/8"	144	144	DFR8000
1-1/2-Hour	G-561	2-1/2"	1	5/8"	144	144	DFR8000
1-Hour	G-561	2-1/2"	1	5/8"	144	144	DFR8000
WOOD DECK/CEILING ASSEMBLIES							
1-Hour	L502	–	1	1/2"	None	None	DFR8000 DFR8000SS
	L513	–	1	5/8"	None	None	DFR8000 DFR8000SS
	L515	–	1	1/2"	None	None	DFR8000 DFR8000SS
	L525	–	1	1/2"	24	57	DFR8000 DFR8000SS
	L526*	–	1	5/8"	24	144	DFR8000 DFR8000SS
Plywood (2), 2' × 10' or (1) 4' × 10' Wood Joists							
1-Hour	L508	–		5/8"	None	None	DFR8000 DFR8000SS
Plywood with Wood Trusses							
1-Hour	L529	–		5/8"	24	57	DFR8000 DFR8000SS
Structural Cement – Fiber Units Over Steel Joists							
1-Hour	L-564	3/4"	1	5/8"	144	144	DFR8000 DFR8000SS
ROOF/CEILING DRYWALL ASSEMBLIES							
Standing Seam Exposed Metal Roof with Batts/Blankets							
1-Hour	P516	–	2	5/8"	None	None	DFR8000
Mineral Fiber Foam on Cellular, Fluted, Corrugated Metal Deck							
2-Hour	P514	–	1	5/8"	24	255	DFR8000 DFR8000SS
1-1/2-Hour	P507	–	1	5/8"	24	57	DFR8000 DFR8000SS
	P510	–	1	5/8"	24	57	DFR8000 DFR8000SS
	P513*	–	1	5/8"	24	144	DFR8000 DFR8000SS
1-Hour	P508*	–	1	5/8"	24	144	DFR8000 DFR8000SS
	P509*	–	1	5/8"	24	144	DFR8000 DFR8000SS
	P510	–	1	1/2"	24	57	DFR8000 DFR8000SS
Mineral Fiber/Laminated Gypsum Planks							
1-1/2-Hour	P506	2"	1	5/8"	24	57	DFR8000 DFR8000SS

NOTE: Numbers in parentheses are original UL design numbers. Some unit sizes are no longer available as standard items; some designs include additional sizes.

* Optional acoustical tile may be glue-applied to gypsum board.
ÝFR8000 – UL designation, Fire Guard™ Drywall Grid System including HD8906, HD8906IIC and Cross tees XL7914, XL8926, XL 8925, XL8945P, XL8947P and XL8965ÝFR8000SS – UL designation, Fire Guard™ ShortSpan® Drywall Grid System

Hanging & Framing

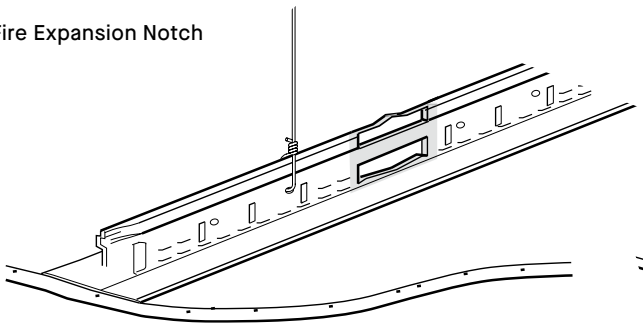
Deck Construction Type	UL® Design Number	Concrete Thickness	# Drywall Layers	Minimum Drywall Thickness	Maximum Fixture Penetration (ft²/100 ft²)	Maximum Duct Penetration (in²/100 ft²)	Drywall Grid System
ClarkDeitrick® TradeReady® FLOOR SYSTEM/CEILING DRYWALL ASSEMBLIES							
1-Hour	L564	3/4" Cement Fiber Units	1	5/8"	None	None	DFR 8000
1-Hour Corrugated Decking	G553	3/4"	1	5/8"	None	None	DFR 8000
Roof/Ceiling Drywall Assemblies							
Standing Seam Exposed Metal Roof With Batts/Blankets							
1-Hour	P516	–	2	5/8"	None	None	DFR 8000
Mineral Fiber, Foam on Cellular, Fluted, Corrugated Metal Deck							
2-Hour	P501	–	1	5/8"	None	None	DFR 8000
	P514	–	1	5/8"	24	255	DFR 8000
1-1/2-Hour	P507	–	1	5/8"	24	57	DFR 8000
	P510	–	1	5/8"	24	57	DFR 8000
	P513*	–	1	5/8"	24	144	DFR 8000
1-Hour	P508*	–	1	5/8"	24	144	DFR 8000
	P509*	–	1	5/8"	24	144	DFR 8000
	P510	–	1	1/2"	24	57	DFR 8000
Mineral Fiber/Laminated Gypsum Planks							
1-1/2-Hour	P506	–	1	5/8"	24	57	DFR 8000

* Optional acoustical tile may be glue-applied to gypsum board.

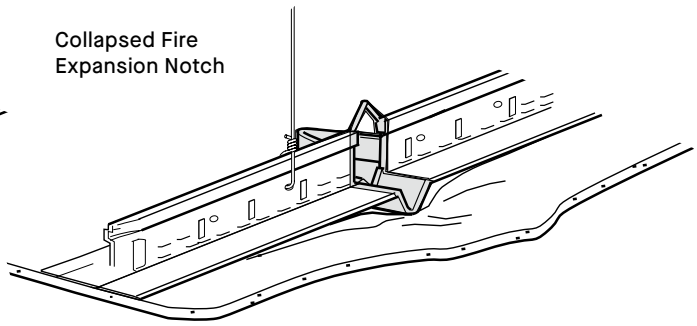
Armstrong® Drywall "Design To Fit" Items XL7936G90 and XL8965 cannot be used as part of a UL Fire Resistive Design. DFR 8000 – UL Designation, Fire Guard™ Drywall Grid System. For fire-rated assemblies, use Type C gypsum board as noted in the UL fire-rated assembly designs.

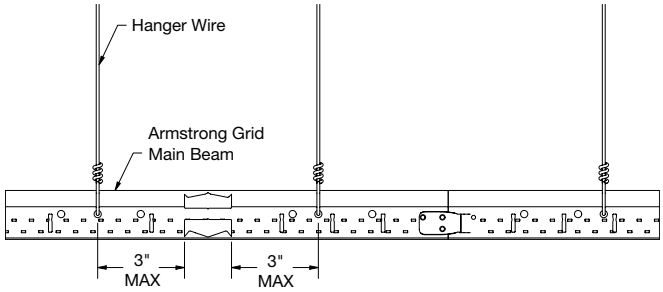
Fire Rated Expansion Joint

Fire Expansion Notch



Collapsed Fire Expansion Notch





NOTE: When installing fire rated main beams, all fire expansion relief cut outs must have a hanger wire within three inches (ASTM C636)

Seismic Installations

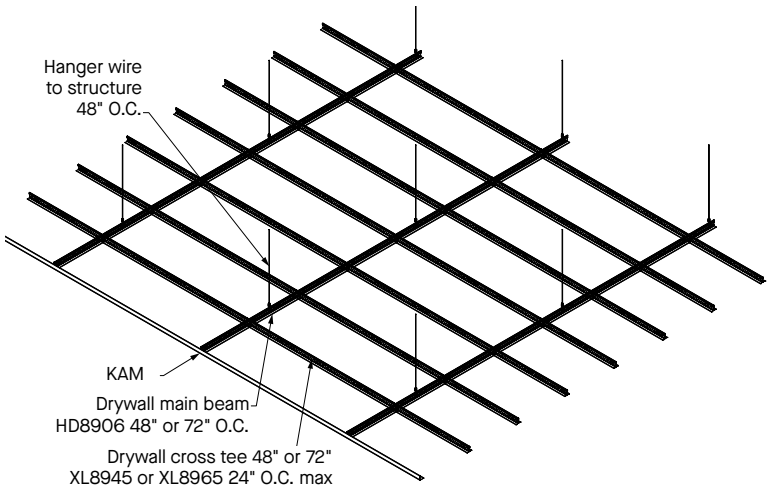
Scope: ASTM C-1858

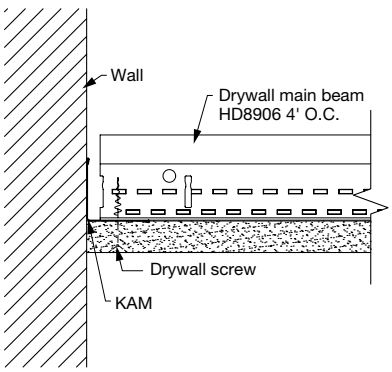
This recommendation applies to the installation requirements of direct-hung Armstrong® Drywall Grid ceiling systems, receiving flat, single-level gypsum panel products surrounded on all sides by a wall, bulkhead, or soffit braced to the building structure to resist the effects of earthquake ground motions.

DGS Seismic Installation Components/Conditions	Category A, B	Category C	Category D, E, & F
Hanger wire	12 ga.	12 ga.	12 ga.
Hanger wire spacing on main beams	48" O.C.	48" O.C.	48" O.C.
Hanger wire plumb	1' in 6', or add counter splayed wire	1' in 6', or add counter splayed wire	1' or 6' or add counter splayed wire
Vertical hanger wires on main beams at perimeter wall	No more than 24"	No more than 24"	No more than 24"
Hanger wire wraps	3 within 3"	3 within 3"	3 within 3"
Substitute hanger wire for galvanized sheet metal or clips designed for hanging	Allowed	Allowed	Allowed
Terminal grid ends screwed to wall angle/channel	Required	Required	Required
Seismic separation joints	Not required	Not required	Not required
Perimeter wires on tees within 8" of wall angle	Not required	Not required	Not required
Minimum spacing between main beam/tee ends and wall molding	Not required	Not required	Not required
Spacing Bars/BERC clips on perimeter tees/main beams	Not required	Not required	Not required
Armstrong KAM/LAM face widths	1-1/4" Minimum	1-1/4" Minimum	1-1/4" Minimum
Seismic restraint splay wire pods or rigid bracing	Not required	Not required	Not required
Compression posts	Not required	Not required	Not required

Control Joint Notes:
General industry guidance to reduce cracking of drywall

Interior ceiling applications	Maximum dimension in any direction	Maximum square feet
With perimeter relief	50 ln. ft.	2,500 sq. ft.
Without perimeter relief	30 ln. ft.	900 sq. ft.
Exterior ceiling applications	30 ln. ft.	900 sq. ft.
Drywall control joints	As required by drywall manufacturer	As required by drywall manufacturer





Load Data

Main Beam – Technical Load Test Data

Imperial

Item No.	Flange Width (in.)	Length (in.)	Web Height (in.)	Simple Span (lbs./ln. ft.)					
				48"		36"		24"	
				L/240	L/360	L/240	L/360	L/240	L/360
HD8906	1-1/2"	144"	1-11/16"	28.14	18.66	48.95	43.19	120.0	95.5
HD8906IIC	1-1/2"	144"	1-11/16"	28.14	18.66	48.95	43.19	120.0	95.5
HD890610	1-1/2"	120"	1-11/16"	28.14	18.66	48.95	43.19	120.0	95.5
SSLU2424	1-1/2"	48"	1-1/4"	20.46					
SSLU4824	1-1/2"	72"	1-1/4"	20.46					
SSLU3636	1-1/2"	72"	1-1/4"	20.46					
SSLD2424	1-1/2"	48"	1-1/4"	20.46					

Metric

Item No.	Flange Width	Length	Web Height	Simple Span (kg./lm.)					
				48" (1219.20mm)		36" (914.40mm)		24" (609.60mm)	
				L/240	L/360	L/240	L/360	L/240	L/360
HD7940	38mm	3600mm	43mm	41.65	27.77	96.41	64.27	213.2	142.12
7940G	38mm	3600mm	38mm	31.85	21.24	73.57	49.05	153.8	102.52

Cross Tees–Technical Load Test Data

Imperial

Item No.	Flange Width (in.)	Length (in.)	Web Height (in.)	Simple Span (lbs./ln. ft.)									
				72"		50"		48"		36"		24"	
				L/240	L/360	L/240	L/360	L/240	L/360	L/240	L/360	L/240	L/360
XL8965	1-1/2"	72"	1-1/2"	6.87	4.58								
XL8947P	1-1/2"	50"	1-1/2"			19.5	12.79						
XL8945P	1-1/2"	48"	1-1/2"					22.5	14.27				
XL7936G90	1-1/2"	36"	1-1/2"							45.7	31.3		
XL8926	1-1/2"	24"	1-1/2"									119.0	90.25

Metric

Item No.	Flange Width	Length	Web Height	Simple Span (kg./lm.)							
				1600mm		1200mm		900mm		600mm	
				L/240	L/360	L/240	L/360	L/240	L/360	L/240	L/360
XL7961	38mm	1600mm	38mm	10.22	6.82						
XL7930	38mm	1200mm	38mm			33.48	21.24				
XL7925	38mm	900mm	38mm					68.01	46.62		
XL7920	38mm	600mm	38mm							177.15	134.31

Membrane Load Values

Imperial

Component Combinations		Maximum Load in Lbs/SF2 at Hanger Wire/Cross Tee Spacing					
		48 / 24		48 / 16		36 / 16	
Main	Cross Tee	L/240	L/360	L/240	L/360	L/240	L/360
HD8906 –	XL8965	3.20		4.66	3.16	4.81	3.44
HD8906 –	XL8947P	6.78	4.52	6.78	4.52	13.41	8.95
HD8906 –	XL8945P	7.03	4.69	7.03	4.69	14.93	9.95
HD8906 –	XL7936G90	9.34	6.31	9.34	6.31	21.77	14.51
HD8906 –	XL8926	14.02	9.47	14.02	9.47	26.13	21.77

Metric

Component Combinations		Maximum Load in kg/lm2 at Hanger Wire/Cross Tee Spacing					
		1200mm / 600mm		1200mm / 300mm		900mm / 300mm	
Main	Cross Tee	L/240	L/360	L/240	L/360	L/240	L/360
HD7940 –	XL7961	24.51		26.27			
HD7940 –	XL7930	36.37	24.22	36.37	24.22	78.12	56.20
HD7940 –	XL7925					112.59	75.04
HD7940 –	XL7920					168.59	112.39
7940G –	XL7961	20.07		20.07			
7940G –	XL7930	27.78	18.50	27.78	18.50	64.35	42.87
7940G –	XL7925					85.93	57.27
7940G –	XL7920					128.70	85.78

Hanging & Framing

The International Building Code (Section 1206) provides guidelines to ensure that construction meets suitable sound isolation performance. These guidelines are used for commercial and multiple-family buildings such as: offices, apartments, hospitals, dormitories, schools, hotels, condominiums, and mixed-use buildings.

The IBC uses two sound classes to make sure these guidelines are met: Sound Transmission Class (STC) – sound transmitted through the air such as voices and music and Impact Insulation Class (IIC) – sound transmitted through the building structure such as foot traffic and objects dropped on the floor.

A rating of 50 or above for both STC and IIC sound tests will satisfy the IBC's minimum requirements, with one or two layers of drywall using Armstrong® Drywall Grid.

Understanding Sound Control Ratings

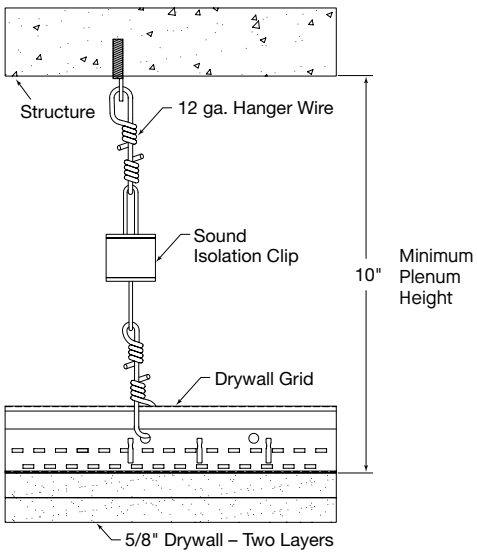
STC/IIC Ratings	Description
60	Superior soundproofing
55	Excellent
50	Loud speech barely audible
45	Some loud speech audible – not understood
30	Loud speech audible – well understood
25	Regular speech audible and understood through walls

Changes in STC/IIC Ratings	Description
+ / - 1	Almost perceptible
+ / - 3	Just perceptible
+ / - 5	Clearly Perceptible
+ / - 10	Twice (or half) as loud

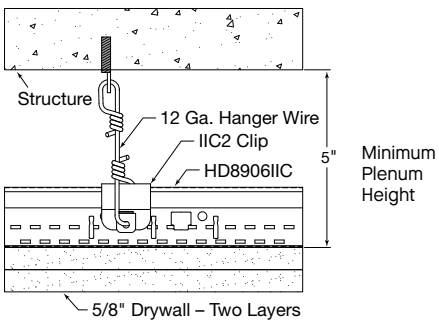
Why Choose Armstrong Drywall Grid Sound Isolation Solutions?

- Easier to detail, specify, and 50% faster to build than traditional stud and track
- Armstrong Drywall Grid-tested assemblies provide proven results and piece of mind

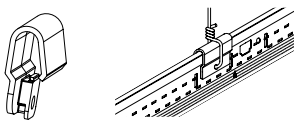
Traditional Method IIC Solution



Armstrong Solution IIC Solution

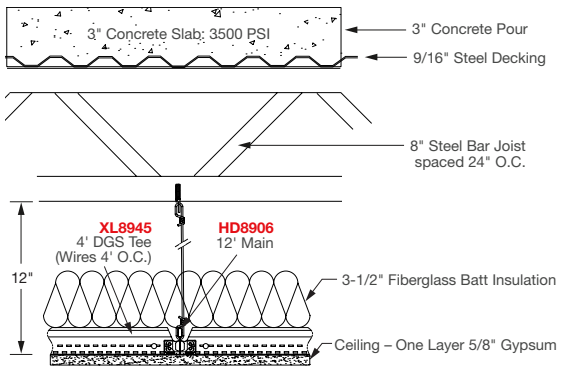


IIC isolator shown with the HD806IIC main



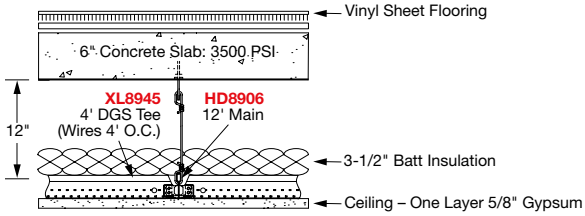
Armstrong Standard Drywall Grid Assemblies – One Layer of Drywall

Assembly 1



Item No.	Traditional Assembly	Building Structure	STC	ICC
HD8906 XL8945	12' Main Beam / 4' Cross Tee 3-1/2" Batt Insulation 5/8" Gypsum	Bare Concrete Base 3" Concrete Slab Fluted Steel Decking 8" Bar Joist, 24" O.C.	55	47

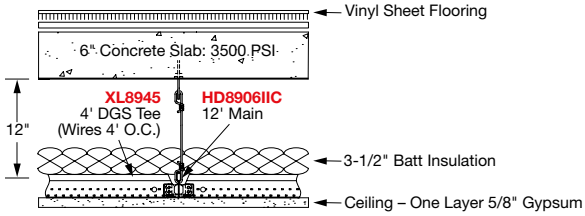
Assembly 2



Item No.	Traditional Assembly	Building Structure	STC	ICC
HD8906 XL8945	12' Main Beam / 4' Cross Tee 3-1/2" Batt Insulation 5/8" Gypsum	6" Thick Slab Concrete Base with Vinyl Sheet Flooring	57	58

Armstrong IIC Solution Assemblies–One Layer of Drywall

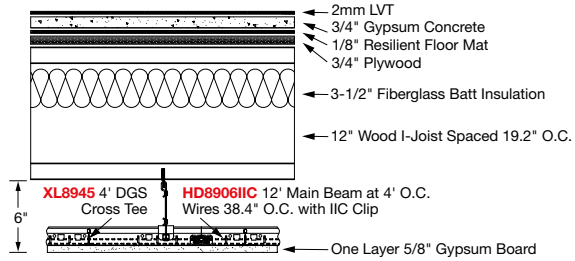
Assembly 1 – Concrete Slab Structure



Item No.	Traditional Assembly	Building Structure	IIC	Gain
HD8906IIC XL8945 IIC Clip	12' Main Beam / 4' Cross Tee IIC Clip 3-1/2" Batt Insulation 5/8" Gypsum	6" Thick Slab Concrete Base with Vinyl Sheet Flooring	66	+8

NOTE: Results are compared to Armstrong standard Drywall Grid Assembly 2

Assembly 2 – Wood I-Joist Structure

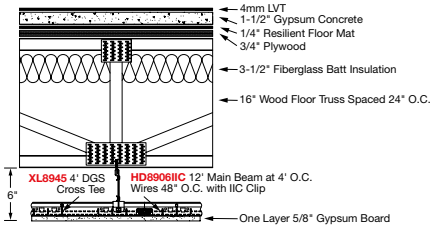


Item No.	Traditional Assembly	Building Structure	IIC	Gain
HD8906IIC XL8945 IIC Clip	12' Main Beam / 4' Cross Tee IIC Clip 3-1/2" Batt Insulation 5/8" Gypsum	2mm LVT 3/4" Gypsum Concrete 12" Wood I-Joist	55	+4

NOTE: Results are compared to RC – Deluxe

Armstrong Standard Drywall Grid Assemblies – One Layer of Drywall (cont...)

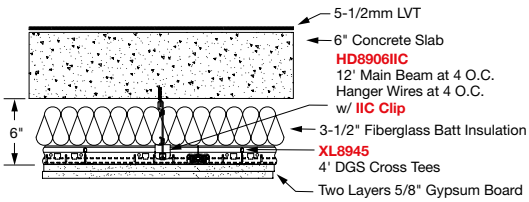
Assembly 3 – Wood Floor Truss Structure



Item No.	Traditional Assembly	Building Structure	IIC	Gain
HD8906IIC XL8945P IIC Clip	144" Main Beam / 48" Cross Tee IIC Clip 3-1/2" Batt Insulation 5/8" Gypsum	4mm LVT 1-1/2" Gypsum Concrete 16" Wood Floor Truss	60	+4

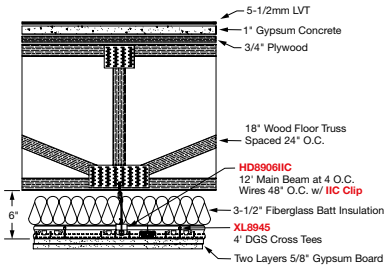
Armstrong IIC Solution Assemblies–Two Layer of Drywall

Assembly 1 – Concrete Slab Structure



Item No.	Traditional Assembly	Building Structure	IIC	Gain
HD8906IIC XL8945 IIC Clip	144" Main Beam / 48" Cross Tee IIC Clip 3-1/2" Batt Insulation 2 – Layers 5/8" Gypsum	5-1/2mm LVT 6" Thick Slab Concrete Base	61	62

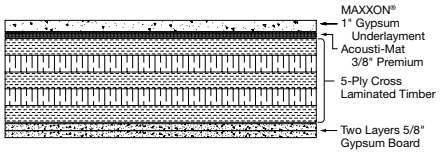
Assembly 2 – Wood Floor Truss Structure



Item No.	Traditional Assembly	Building Structure	IIC	Gain
HD8906IIC XL8945 IIC Clip	144" Main Beam / 48" Cross Tee IIC Clip 3-1/2" Batt Insulation 2 – Layers 5/8" Gypsum	5-1/2mm LVT 1" Gypsum Concrete 3/4" Plywood 18" Wood Floor Truss	61	58

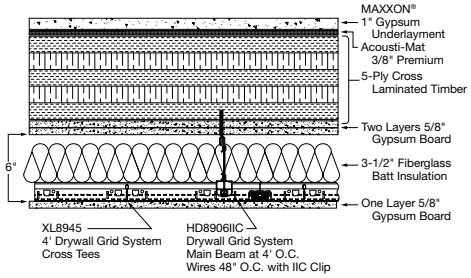
Armstrong IIC Solution Assemblies–Mass Timber Construction

Assembly 1 – Assembly No Suspended Ceiling



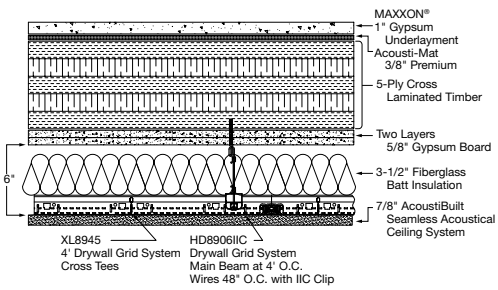
Item No.	Traditional Assembly	Building Structure	IIC	Gain
–	2 – Layers 5/8" Gypsum	1" Gypsum Underlayment Acousti-Mat 3/8" Premium 5-Ply Cross Laminated Timber	52	46

Assembly 2 – Suspended Ceiling w/ Gypsum Board



Item No.	Traditional Assembly	Building Structure	IIC	Gain
HD8906IIC XL8945 IIC Clip	144" Main Beam / 48" Cross Tee IIC Clip 1 – Layer 5/8" Gypsum 3-1/2" Batt Insulation 2 – Layers 5/8" Gypsum	1" Gypsum Underlayment Acousti-Mat 3/8" Premium 5-Ply Cross Laminated Timber	63	60

Assembly 3 – Suspended Ceiling w/ AcoustiBuilt® Seamless Ceiling System



Item No.	Traditional Assembly	Building Structure	IIC	Gain
HD8906IIC XL8945 IIC Clip	144" Main Beam / 48" Cross Tee IIC Clip 3/4" AcoustiBuilt Ceiling System 3-1/2" Batt Insulation 2 – Layers 5/8" Gypsum	1" Gypsum Underlayment Acousti-Mat 3/8" Premium 5-Ply Cross Laminated Timber	63	59

Estimating Material

Item No.	Length	Pcs./Ctn.	In. Ft./Ctn.	Lbs./Ctn.	Area of ceiling completed by one carton (sq. ft.) 8" O.C.	16" O.C.	24" O.C.	36" O.C.	48" O.C.	50" O.C.	72" O.C.
DRYWALL GRID MAIN BEAM											
HD8906/HD8906G90/HD8906IIC	144"	12	144	53			288	432	576	600	864
HD8906F08/HD8906F16	144"	12	144	53			Varies with radius				
HD890610	120"	12	120	49			288	432	576	600	864
DRYWALL GRID 1-1/2" FACE CROSS TEES											
XL8965	72"	36	216	78	144	288	432				
XL8947P/XL8947PG90*	50"	36	150	56	100	200	300				
XL8945P/XL8945PG90	48"	36	144	52	96	192	288				
XL7936G90	36"	36	108	39	72	144	216				
XL8926/XL8926G90	24"	36	72	26	48	115	144				

* Dimensions are nominal.

Item No.	Length	Pcs./Ctn.	In. Ft./Ctn.	Lbs./Ctn.
REVERSE MOLDINGS				
7857	120"	30	360	51
7858	120"	20	240	67
DRYWALL ANGLE MOLDING				
KAM-12	144"	10	120	16
KAM-10	120"	10	100	16
LAM-12	144"	20	240	39
LAM-151220E	144"	10	120	39
SIMPLECURVE®				
SC151220EQ	148"	10	124	40
SC151225	148"	10	124	26
SC21220EQ	148"	10	124	52
SC21225	148"	10	124	34

Estimating Lineal Feet of Grid Based on Square Footage of Ceiling

O.C. Spacing of Component	Percent of Square Footage
8"	108%
12"	100%
16"	76%
20"	60%
24"	50%
30"	40%
36"	33%
48"	25%
60"	20%

Example calculation based on 5,100 sq. ft. ceiling:

Main beam at 48" O.C.

5,100 sq. ft. × 0.25 = 1,275 ln. ft.
1,275 ln. ft. ÷ 144 ln. ft./ctn. = 9 cartons needed

Cross tee at 16" O.C.

5,100 sq. ft. × 0.76 = 3,876 ln. ft.
3,876 ln. ft. ÷ 144 ln. ft./ctn. = 27 cartons needed

Notes

Notes

Notes

Next Steps

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