

IMPROVE SAFETY



This Icon is used throughout this catalog to identify **Armstrong products approved for use in seismic zones.**

Seismic Compliance

In geographic seismic zones, properly engineered building structures need to be properly designed to withstand the seismic effects while sustaining an acceptable level of damage. The International Building Code (IBC) presents minimum design/performance requirements and, in some instances, prescriptive guidance for product and installation requirements in seismic areas.

Seismic Performance

Armstrong has an International Code Council-Evaluation Service (ICC-ES) evaluated approach to installations Evaluation Service Report (ESR-1308). The Armstrong Seismic Rx® Suspension System eliminates unsightly 2" wall angles in Category D, E, F seismic-compliant installations. It provides a labor and cost-saving method of meeting seismic codes without the risk of delaying the construction schedule.

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PURPOSE OF INSTALLATION REQUIREMENTS FOR SUSPENDED CEILINGS

- Provide a suspension system strong enough to resist lateral forces imposed upon it without failing
- Prevent border panels from falling from the ceiling plane



Flat, level ceiling with standard acoustical suspension



Serpentina® Classic Ceiling Clouds

IBC Requirements for Wall-to-Wall Ceiling Systems with Standard Acoustical Suspension Systems

IBC requirements are based on flat, level suspended ceiling systems – main beams and cross tees suspended from the building structure by wires and wall molding around the perimeter.

- The IBC code is based on the suspension system only
- Many manufacturers market non-standard ceiling systems not covered by the code
- You must be able to prove ceiling systems specified to perform at a level consistent with the intent of the code

Ceiling Designs Using Clouds, Canopies, Blades, and Baffles

Code officials may reject specified products such as clouds or canopies* during plan review, **challenging your design and delaying the construction schedule.** However, the code "is not intended to prevent" certain ceiling systems, and does allow "alternative materials, designs, and methods" to be used. To substantiate claims for alternative materials and designs, code officials "have the authority to require tests as evidence of compliance."² If you are having problems getting free-floating or non-traditional objects approved, contact your local Armstrong representative. See page 346 for a list of tested systems.

1. Section 104.11 Alternative materials, designs, and methods of construction and equipment.
2. Section 104.11.2 Tests.

*Armstrong defines a cloud as a ceiling that is not connected to a wall on any side. Armstrong defines a canopy as a single, unique architectural element which is independently suspended from the building structure.

Seismic Rx allows for a More Aesthetically Pleasing Visual in a Seismic-compliant Installation



ICC Evaluated Heavy-duty Suspension Systems ESR-1308

- Prelude® XL® 15/16" Exposed Tee suspension system
- Suprafine® XL 9/16" Exposed Tee suspension system
- Silhouette® XL 9/16" Slotted Tee suspension system
- Interlude® XL 9/16" Exposed Tee suspension system

2" wall angles are prone to the following problems:

- Difficult to keep "tight" to wall
- Difficult to install corners
- Prone to twisting and warping



ESR-1308 Lists Specific Armstrong Components and Method of Installation

The performance of the Armstrong Seismic Rx Suspension System is based on the specific combination of components and method of installation. **Other manufacturers' components and installation methods were not tested and are not covered in the ESR-1308 evaluation. Substitution of other components puts the system at risk and is not allowed by this ESR report.**

ARMSTRONG RESOURCES AVAILABLE TO YOU

- armstrong.com/seismic
- TechLine at 1 877 ARMSTRONG (276-7876)
- CS-4141 Seismic Installations and Armstrong Ceiling Systems
- Consult your local code professional for information specific to your region
- Visit these code related web sites:
 - ASTM web site: www.astm.org
 - BSSC web site: www.nibs.org
 - FEMA web site: www.fema.gov
 - ICC web site: www.iccsafe.org
 - USGS web site: geohazards.cr.usgs.gov
- CEU Course: "IBC Seismic Code and Ceiling Installation Requirements"



BPCS-4141 Seismic Installations and Armstrong Ceiling Systems

IMPROVE SAFETY

Armstrong is one of the only ceiling manufacturers consistently providing seismic test results for all types of installations: Wall-to-Wall Ceilings, Canopies, Clouds, Blades, Baffles, and Drywall Grid Systems

Seismic Compliance

Providing a valid Evaluation Service Report to a code official represents the “gold standard” for installations. The ESR represents the safest, least risky method for selecting a seismic ceiling solution. Armstrong has also tested products that do not appear in ESR reports, as many products do not have clear code requirements. Armstrong can provide you with seismic test results via a white paper or test report based on large-scale seismic shake table test results from an IAS accredited test facility (State University of New York, University at Buffalo).

Contact TechLine at 1 877 ARMSTRONG (276-7876), techline@armstrongceilings.com

When requesting a white paper or test report, please have this information ready to share:

- . Project Name
- . Location
- . Product
- . Installing Customer Contact
- . Design Professional Contact

SEISMIC TESTED SYSTEMS

Product	Installation Detail	Product	Installation Detail
Building Perimeters	Perimeter Pocket with Horizontal Diffuser Perimeter Pocket with Vertical Diffuser	Seismic	Category C Installation per Code Category D, E & F Installation per Code Seismic Corridor with 12" Gusset Seismic Corridor with 8" Gusset Seismic Joint Clip Main Beam (SJMR15) Fully Loaded Seismic Joint Clip Main Beam (SJMR9) Fully Loaded Seismic Joint Main Beam Splice Seismic Separation Joint on Prelude XL Seismic Separation Joint on Suprafine® XL
Canopies	Capz™ Infusions® Hills Infusions Valleys Infusions (Grouped) MetalWorks™ Canopies SoundScapes® Canopies MetalWorks Wings WoodWorks® Canopies	Seismic Rx	BERC2 45-degrees to the Wall on Prelude XL BERC2 Fully Loaded on Prelude XL BERC2 on 7897 Shadow Molding with Ultima® Vector Panels BERC2 on Interlude® BERC2 on Interlude with Lights & Sprinklers BERC2 on Silhouette® XL with Diffusers & Sprinklers BERC2 with Prelude XL Intermediate Duty BERC2 with Suprafine XL Prelude XL - Alternate Category C
Blades	SoundScapes Blades MetalWorks Blades	Standard Suspension System	DC FlexZone™ Fully Loaded Metaphors® Optima® Radial Ceiling Optima Vector Optima Vector 24" x 96" Panels Optima Vector 48" x 48" Prelude XL Fire Rated Prelude XL Heavy-duty Prelude XL to Black Iron (NYC) Ultima Shiplap Full Room Silhouette XL with Shadow Molding Sloped Ceiling Suprafine XL Installation per Code TechZone™ Ultima Beveled Tegular Ultima Vector
Clouds	72" x 72", 144" x 144", and 168" x 168" Formations™ 12" Axiom® Floating 2-sides with Prelude® XL® ID 12" Axiom Floating Cloud with Prelude XL ID 6" Axiom Floating 2-sides with Prelude XL ID 6" Axiom Floating Cloud with Prelude XL ID Formations Curves Serpentina® Classic Serpentina Waves™ SoundScapes Shapes	WoodWorks	Access Concealed Linear Curved Linear Flat Tegular on Prelude XL Vector on Prelude XL
Corridors	Acoustical Locking Angle Mold with 8" Gusset Acoustical Locking Angle Mold with 12" Gusset Acoustical Locking Angle Mold with Fiberglass Panels Acoustical Locking Angle Mold with Mineral Fiber Panels Corridor ShortSpan® Corridor System with Gusset	Direct Attach	Capz
Drywall Systems	6' DGS Tees Drywall Grid System QuikStix™ Locking Pocket Main ShortSpan 14' ShortSpan 6'		
MetalWorks	3D Concealed DH700 Faceted Tegular and Vector® Fastrack 3", 6", and 12" Flush Tegular on Prelude XL Linear Curved and Flat Open Cell 4" and 8" Planks RH200 RH200 Cantilevered Curved RH215 Curved RH215 Square Tegular on Prelude XL Standard Planks Tartan™ 3" Tartan 6" with Mega Panels Tartan 6" with Planks Vector on Prelude Suspension System Wings		

REFERENCE – SEISMIC COMPLIANCE