Seismic Technical Guide

Locix[™] Systems

Code Requirements¹

The International Building Code (IBC) defines the seismic requirements for suspended ceiling systems. Generally, these requirements must be defined in the project drawings. However, there are exceptions and the actual construction of LOGIX[™] suspended ceiling system in a seismic design category can meet code requirements in different ways. This technical guide provides drawings, details, and specification information for the use of USG[®] LOGIX[™] in a seismic application.

With LOGIXTM, you can design ceilings that meet building requirements without being constrained by the limits of traditional acoustical ceilings. LOGIXTM transforms visual distractions such as lighting, air vents and other utilities into dramatic design elements by concentrating these fixtures on narrow bands that run the length of a ceiling. This allows for open ceilings that are uncluttered by ceiling utilities.

A wide selection of acoustical and specialty panels as well as corresponding suspension system components and accessories are available to enhance and customize your design. Plus, with a wide selection of Logix™ partners, you can be assured that ceiling utilities will complement your design and integrate seamlessly into the ceiling.

This guide is a comprehensive resource for LogIXTM Integrated Ceiling Systems in a seismic application. There are generally no unique seismic requirements for LogIXTM Systems, however, due to some of the non-traditional module sizes, special attention is required to ensure all seismic requirements are satisfied. USG teamed with the Pacific Earthquake Engineering Research Center (PEER) University of California, Berkeley to conduct full-scale dynamic seismic shake-table testing to evaluate and qualify the seismic performance of LogIXTM Integrated Ceiling Systems. This testing proved that LOGIXTM Integrated Ceiling Systems are approved for use and provide a code-compliant solution meeting International Building Code (IBC) requirements, including installations in all seismic design categories.

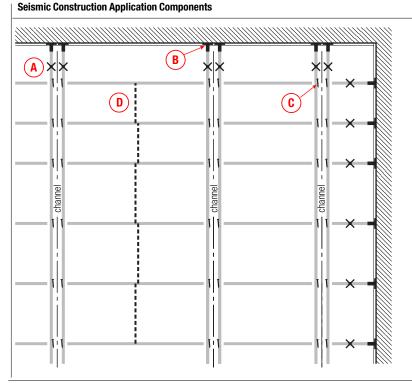
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Seismic Construction

In addition to the current seismic code requirements' the applications in the following section shall apply to LOGIX[™] systems concerning perimeter treatment, ashlar connections, and planks and large size panels².





¹Please refer to seismicceilings.com for current seismic requirements.

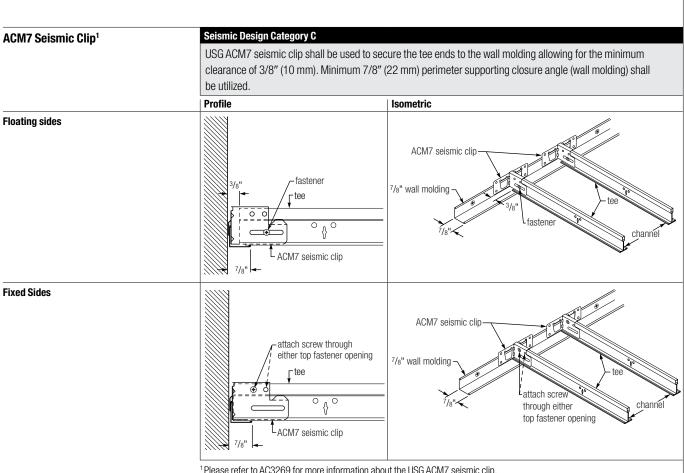
²Please refer to IS265 for complete information about the various layouts and sizes available.

Note:

The performance of Logix[™] Integrated Ceiling Systems is based on the specific combination of superior components including our quick release cross tee clip, and the design and installation methods shown. Suspension system components from other manufacturers were not evaluated, and their use or any mixed use is not recommended or covered by this guide.

Logix[™] Integrated Ceiling Systems

Perimeter Treatment

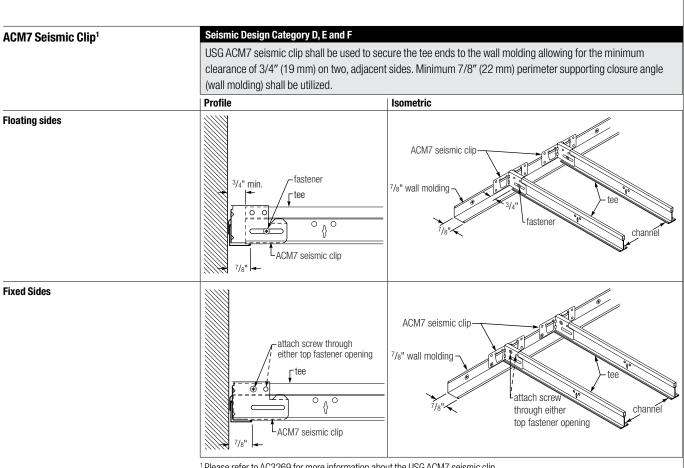


¹Please refer to AC3269 for more information about the USG ACM7 seismic clip.

Note: USG has performed dynamic shake-table testing on assemblies utilizing the ACM7 seismic clip with fasteners and without fasteners relying on the friction fit mechanisms of the clip. Both methods passed and are approved for use.

Logix[™] Integrated Ceiling Systems

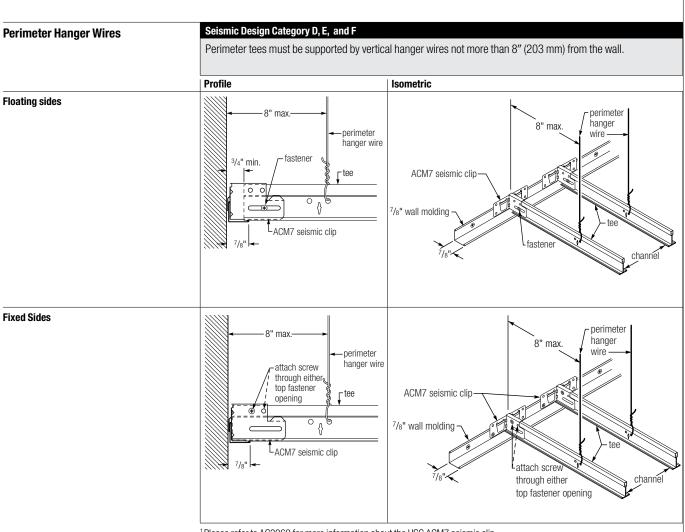
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Perimeter Treatment



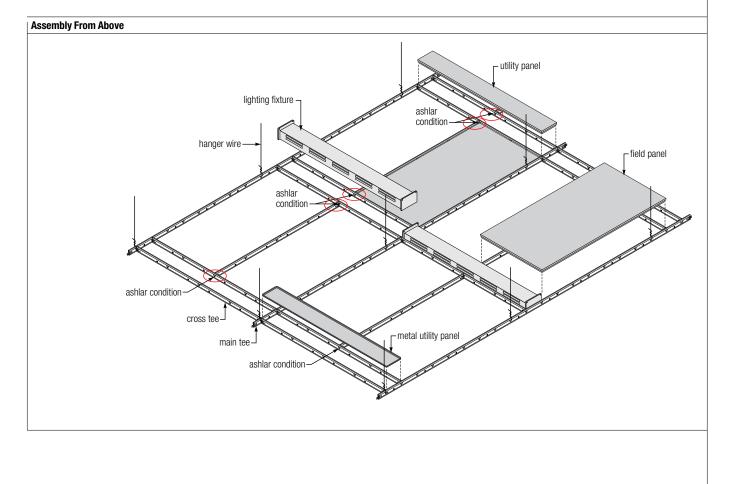
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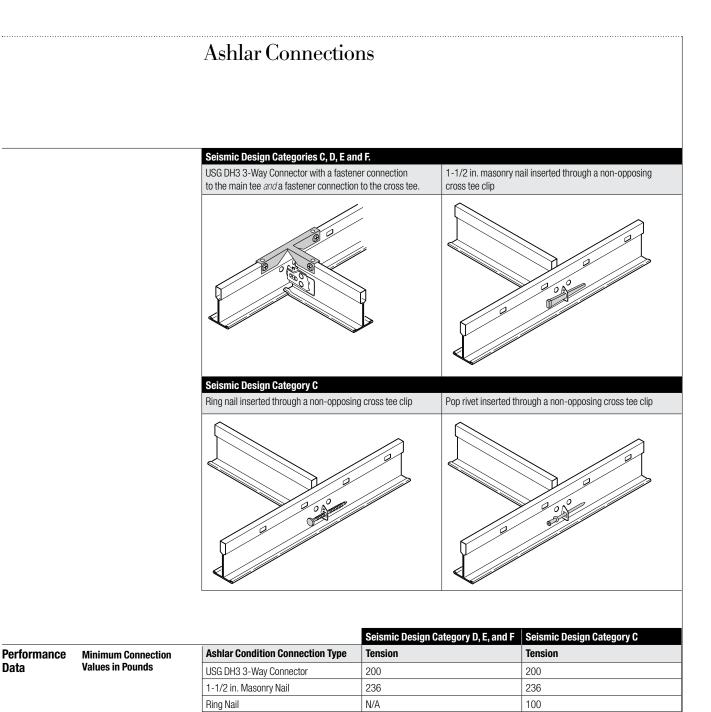
Ashlar Connections

Guidelines

- USG DH3 3-Way Connector with a fastener connection to the main tee and a fastener connection to the cross tee is acceptable for use in ashlar installations in seismic design categories C, D, E and F.
- 1-1/2 in. masonry nail inserted through a non-opposing cross tee clip is acceptable for use in ashlar installations in seismic design categories C, D, E and F.
- Ring nail inserted through a non-opposing cross tee clip is acceptable for use in ashlar installations in seismic design category C.
- Pop rivet inserted through a non-opposing cross tee clip is acceptable for use in ashlar installations in seismic design category C.
- In conditions where a non-opposing cross tee clip must be cut to accommodate a light fixture or other building element, the USG DH3 3-Way Connector with a fastener connection to the main tee and a fastener connection to the cross tee is acceptable for use in ashlar installations in seismic design categories C, D, E and F.
- Hanger wire inserted through a non opposing cross tee clip is not recommended for use in ashlar installations in seismic design categories C, D, E and F.
- Bending or folding a non-opposing cross tee clip is not recommended.



Logix[™] Integrated Ceiling Systems



Data

Note: The performance of DONN® suspension systems is based on the specific combination of superior components including our quick release cross tee clip, and the design and installation methods shown. Suspension system components from other manufacturers were not evaluated, and their use or any mixed use is not recommended or covered by this guide.

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N/A

Pop Rivet

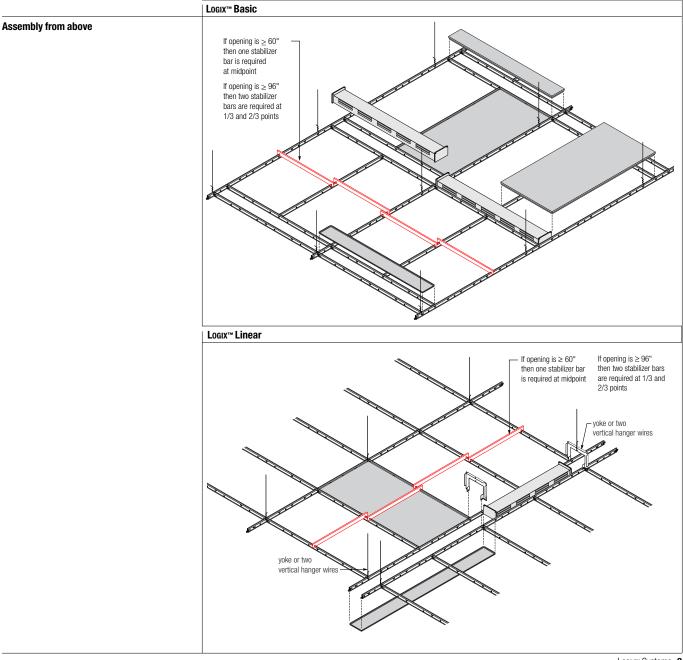
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Plank and Large Sized Panels

Stabilizer Bars

The USG DONN® Stabilizer Bar provides rigid support for a ceiling suspension system in seismic applications. Specially notched compression bars attach to the top bulb of main tees and cross tees to provide strength. The DONN® Stabilizer Bar is a unique, factory engineered solution that meets the requirements for seismic ceiling installations. The variety of factory-notched stabilizer bars with locking tabs saves installation time for overall cost savings. A stabilizer bar is required for all module sizes 60" and larger.

Note: For more information about stabilizer bars please refer to SC2540.



Seismic Code Reference Standards

American Society of Civil Engineers (ASCE) ASCE7-02 ASCE7-05 ASCE7-10 ASCE7-10 Ceilings Interior Systems Construction Association (CISCA) or Association (CISCA) CISCA Zones 0-2 CISCA Zones 3-4 CISCA Zones 3-4 CISCA Zones 3-4 CISCA Zones 3-4 ASTM International (ASTM) International Building Code (IBC) defines Seismic Design Categories A, B, C, D, E, and F. Www.icceasile.org ASCE/SEI 7 Minimum Design Loads for Buildings and Other Structures Americans Society of Coli Engineera/Sinutural Engineer Institute (ASCE/SEI) Assection (CISCA) Www.asce.org Guidelines for Seismic Restraint for Direct-hung Suspended Ceiling Assemblies (Zones 3-4) CISCA Ceiling Suspension Systems for Accustical Tite and Lu-y-in Panels in Areas Subject to Earthquate Encound Motions. ASTM International (formerly American Society for Testing and Materials) State First Selection (Escher Society Ceiling Suspension Systems for Accustical Tite and Lu-y-in Panels in Areas Subject to Earthquate Encound Motions. ASTM International (formerly American Society for Testing and Materials) Selection (Escher Society Ceiling Suspension Systems for Accustical Branding and Materials) Selection (Escher Society Ceiling Society Ce	International Building Code (IBC)	Installation Guidelines for Suspended Ceilings			
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usq.com for current reports.		See cgcinc.com for the most up-to-date product information. Installation Must be installed in compliance with ASTM C636, ASTM E580, CISCA, and standard industry practices. Code Compliance The information presented is correct to the best of our knowledge at the date of issuance. Because codes continue to evolve, check with a local official prior to designing and installing a ceiling system. Other restrictions and exemptions may apply. This is only intended as a quick	This seismic technical guide (STG) is intended as a resource for design professionals, to promote more uniform criteria for plan review and jobsite inspection of projects. This STG indicates an acceptable method for achieving compliance with applicable codes and regulations, although other methods proposed by design professionals may be considered and adopted. ICC Evaluation Service, Inc., Report Compliance Suspension systems manufactured by USG Interiors, Inc., have been reviewed and are approved by listing in ICC-ES Evaluation Report 1222. Evaluation Reports are subject to reexamination, revision and possible cancellation. Please refer to	Compliance Down® suspension systems manufactured by USG Interiors, Inc., have been reviewed and are approved by listing in the following L.A. Research Report number: 25764. Notice We shall not be liable for incidental and consequential damages, directly or indirectly sustained, nor for any loss caused by application of these goods not in accordance with current printed instructions or for other than the intended use. Our liability is expressly limited to replacement of defective goods. Any claim shall be deemed waived unless made in writing to us within thirty (30) days from date it was or reasonably should	Follow good safety/industrial hygiene practices during installation. Wear appropriate personal protective equipment Read MSDS and literature before specification and installation.

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