

Light Fixture Hanger Wire Requirements

The International Building Code (IBC), through references to *ASCE/SEI 7 Minimum Design Loads for Buildings and Other Structures*, American Society of Civil Engineers/Structural Engineering Institute (ASCE/SEI) and *CISCA Guidelines for Seismic Restraint for Direct-Hung Suspended Ceiling Assemblies—Seismic Zones 3-4*, defines the requirements for supplementary hanger wires and slack wires to support lay-in light fixtures in suspended acoustical ceilings. There are two factors that determine these hanger wire requirements in seismic design categories D, E, and F:

1. The weight of the lighting fixture.
 2. The load carrying capacities of the suspension system tees which include the main tee duty classification and the cross tee load capacity.
- Both requirements may apply.

1. Lighting Fixture Slack Wire Requirement

The lighting fixture slack wire requirement relative to the weight of the lighting fixture is as follows:

Lighting fixture weight	Hanger wire requirement
< 10 lbs	One min. 12-gauge slack wire connected from the fixture housing to the structure.
10 - 55 lbs	Two min. 12-gauge slack wires connected from the fixture housing to the structure.
≥ 56 lbs.	Independently supported to the structure and no slack wires are required.

2. Supplementary Hanger Wire Requirement

The lighting fixture supplementary hanger wire requirement relative to the duty rating of the suspension system is as follows:

Main Tees	Suspension system	Hanger wire requirement
Intermediate Duty	Main Tees with cross tee rating below 16 lbs./LF	Min. 12-gauge hanger wires must be attached to the grid members within 3 inches of each corner of each light fixture.
Heavy Duty	Main Tees with cross tee rating below 16 lbs./LF	Min. 12-gauge hanger wires must be attached to the supporting cross tee within 3 inches of the corner of each light fixture.
	Main Tees with cross tee rating equal to 16 lbs./LF	Supplementary hanger wires not required.

Notes

Main Tee Load Carrying Classifications

A note about main tee duty rating classifications – ASTM C635 addresses the load carrying capability of main tees, categorizing them as Light, Intermediate or Heavy Duty. The associated load ratings are:

Light Duty	Intermediate Duty	Heavy Duty
5 lbs./LF	12 lbs./LF	16 lbs./LF

Cross Tee Load Capacities

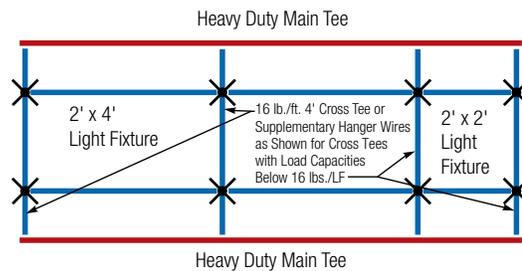
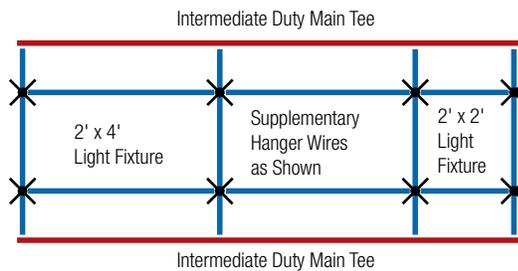
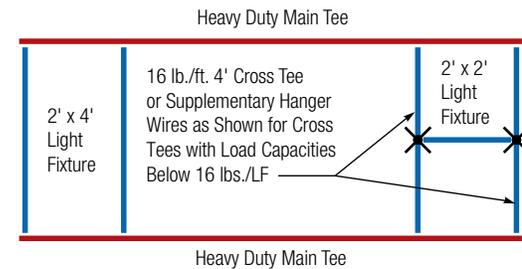
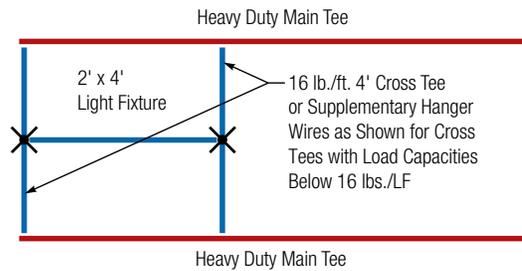
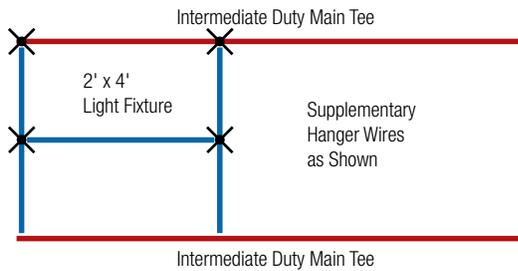
Only main tees are classified by ASTM as Light, Intermediate or Heavy Duty. Cross tees have a load capacity but are not classified. USG offers several different DONN® 4ft. cross tees for each grid profile with varying load capacities. Below are the available 4 ft. x 15/16 in. cross tees.

Cross Tee Item No.	Load capacity
DX® 416	4.2 lbs./LF
DX® 422	9 lbs./LF
DX®/DXL™ 424	12 lbs./LF
DX®/DXL™ 426	16 lbs./LF

Note: All load tests are simple span with uniform load per ASTM C635.

Supplementary Hanger Wires*

Installation Requirements



✕ Supplementary hanger wires to the supporting tee located within three inches of the corner of the light fixture.

— Main Tee
— Cross Tee

* Note: Main tee hanger wire supports and light fixture slack wires are not shown. Please see previous page for slack wire requirements.

Product Construction Examples

- If Heavy Duty DX/DXL26 main tees are used with DX/DXL 426 cross tees, then supplementary hanger wires are not required around each light fixture.
- If Heavy Duty DX/DXL26 main tees are used with DX/DXL 424 cross tees and the light fixture is not supported by the main tees as in an H-style configuration, then supplementary hanger wires are required within 3 inches of each corner of each light fixture.

Product Information

See usg.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 reference.

Purpose

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 ESR-1222. Evaluation Reports are subject to reexamination, revision and possible cancellation. Please refer to usgdesignstudio.com or usg.com for current reports.

L.A. Research Report Compliance

DOWN brand suspension systems manufactured by USG Interiors, Inc., have been reviewed and are approved by listing in the following L.A. Research Report number: 25764.

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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 have been discovered.

Safety First!

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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SC2493/rev. 7-10
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