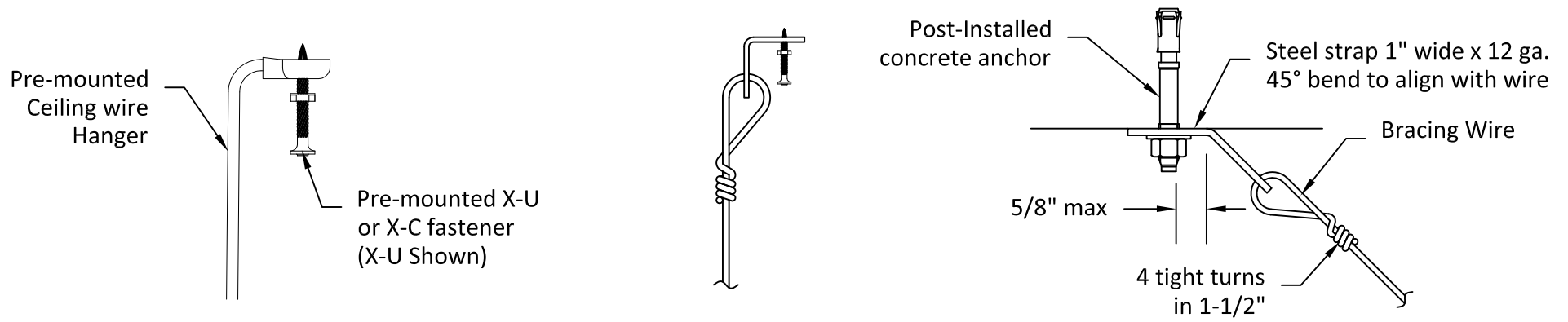


Architectural General Notes for Suspended Ceiling Systems

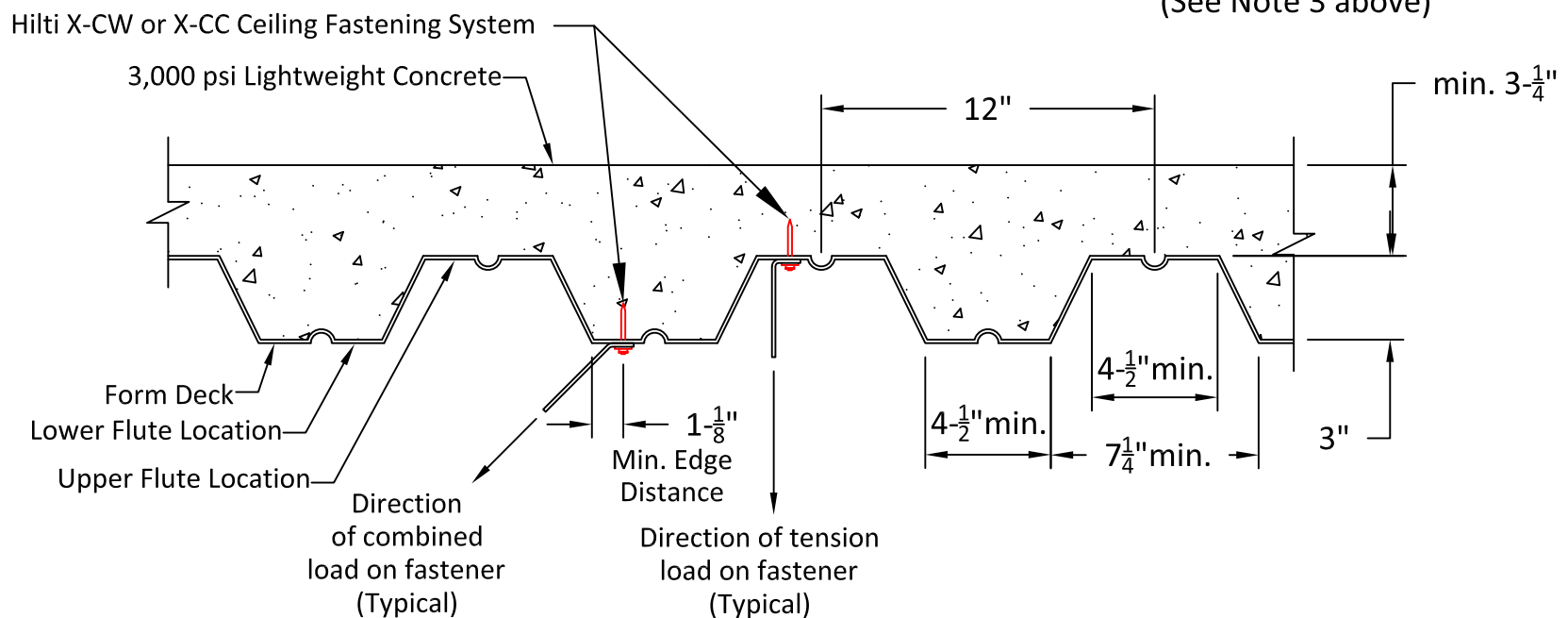
1. Direct hung suspended ceiling system installations shall be done in accordance with ASTM C635, ASTM C636 and the CISCA System Handbook, Recommendations for Direct-Hung Acoustical Tile and Lay-In Panel Ceiling Assemblies and Guidelines for Seismic Restraint for Direct-Hung Suspended Ceiling Assemblies.
2. Suspended ceiling system installations shall comply with all ceiling system manufacturer recommendations. Vertical drop ceiling powder-actuated fastener hangers shall be qualified in accordance with ASTM E1190 and ICC-ES AC70. Reference ICC-ES ESR-2184 and ESR-2892.
3. Seismic bracing hangers, splay wires and compression posts post-installed concrete expansion or screw anchors shall be qualified in accordance with ACI 355.2 and ICC-ES AC193. Reference ICC-ES ESR-1917 or ICC-ES ESR-3027.
4. All ceiling fastener hangers and anchor installations shall follow manufacturer Instructions For Use (IFU).
5. Hanger wires shall be minimum 12 ga. (2.7mm) thickness and shall comply with ASTM A651 unless otherwise specified. Hanger wires shall be tied on the suspended ceiling support elements with minimum 3 tight turns in 1-1/2 inches.
6. All lighting fixtures shall be positively attached to the suspended ceiling system. The attachment devices shall have a capacity of 100 percent of the lighting fixture weight acting in any direction.
7. Lighting fixtures weighing less than or equal to 10 lbf (5 kg) shall have one, No. 12 gauge (2.70 mm) safety wire connected from the fixture housing to the structure above. Lighting fixtures weighing greater than 10 lbf (5 kg) but less than or equal to 56 lbf (25 kg) shall have two No. 12-gauge (2.70 mm) safety wires connected from the fixture housing to the structure above that act as safety wires. It is not necessary for these safety wires to be taut. Lighting fixtures weighing greater than 56 lbf (25 kg) or more shall be supported directly from the structure above by approved hangers.



Hilti X-CW
ICC-ES ESR-2892

Hilti X-CC
ICC-ES ESR-2184

Hilti 45° Ceiling Clip with Hilti
Post-Installed Concrete Anchor
(See Note 3 above)



Hilti Ceiling Fastening System Location in 3-in.-Deep Composite Floor Deck, Normal Deck Profile Orientation

Allowable Loads for Hilti Ceiling Wire Assemblies Installed in Normal Weight Concrete, lbf ^{1,2,3,4}				
Ceiling Wire Type	Concrete Compressive Strength			
	4000 psi		6000 psi	
	Tension	45 Degree	Tension	45 Degree
X-CW C27	210	210	--	--
X-CW C32	210	210	--	--
X-CW U22	--	--	100	90
X-CW U27	210	210	130	150
X-CC27 C27	160	210	--	--
X-CC27 C32	220	260	--	--
X-CC27 U22	--	--	80	90
X-CC27 U27	160	210	125	150

Allowable Loads for Hilti Ceiling Fastener Assemblies Installed in Lightweight Concrete Over Metal Deck, lbf ^{1,2,3,4}				
Ceiling Clip Assembly	$f'_c = 3000$ psi Concrete Compressive Strength			
	Lower Flute		Upper Flute	
	Tension	45 Degree	Tension	45 Degree
X-CW C27	110	210	100	145
X-CW C32	150	210	100	145
X-CW U27	170	210	150	160
X-CC27 C27	50	120	105	240
X-CC27 C32	65	130	130	265
X-CC27 U27	150	160	170	240

- 1 The tabulated allowable load values apply to the powder-actuated ceiling fastener assemblies only, using a safety factor that is greater than or equal to 5.0, calculated in accordance with ICC-ES AC70. Connected components, including wires*, must be investigated separately.
- 2 Allowable values are for fasteners installed in concrete having the designated compressive strength at the time of installation.
- 3 Testing completed in 3" deep composite floor deck having a minimum steel deck thickness of 20 gauge (0.0358") and a minimum yield strength (F_y) of 38 ksi. Lower and upper flute width must be a minimum of 4-1/2" nominal flute dimensions, fastener locations and load orientations for the steel deck profile are shown in the 2011 Hilti Product Technical Guide, Volume 1. Concrete thickness at the point of penetration must be a minimum of the fastener embedment plus 1-1/2".
- 4 Multiple fasteners are recommended for any attachment.

* Note: For Hilti supplied wire, the recommended allowable load capacities of 12, 10, and 8 gauge wire are 210, 340, and 500 lb, respectively.