
DESIGN SUMMARY

1 - THE SKYLIGHT CURB [REDACTED] IS ADEQUATE FOR SEISMIC AND WIND LOAD.

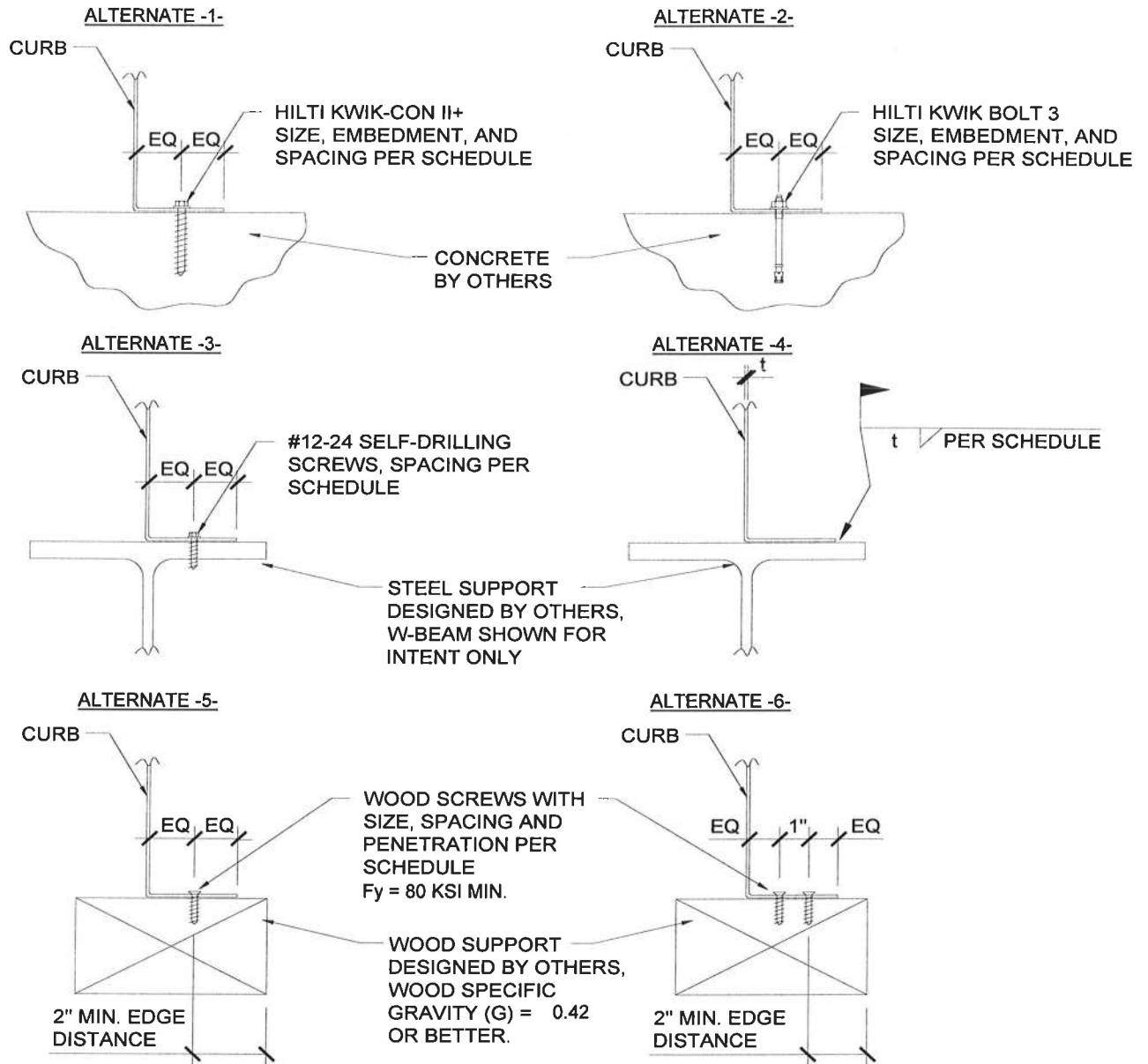
2 - THE ATTACHED SKYLIGHT CURB TO SPAN BETWEEN ADJACENT JOISTS.

[REDACTED]

4 - FASTEN CURB TO THE SUPPORTING STEEL JOISTS USING #12 INTERCORP SELF-DRILLING SCREWS AT 6" O.C. MAXIMUM SPACING ALONG EDGES CONTINUOUSLY SUPPORTED ON STEEL JOISTS. ALONG EDGE WHERE THE CURB CANTILEVERS OVER THE JOIST USE A MINIMUM OF (4)-#12 INTERCORP SELF-DRILLING SCREWS AT EACH SUPPORT LOCATION, FOR A TOTAL OF (16) SCREWS. ALTERNATIVELY, WELD CURB TO THE STEEL JOIST A MINIMUM OF 2" OF WELD LENGTH OF 1/8" FILLET WELDS AT EACH SUPPORT LOCATION. SEE BELOW FOR ALTERNATES.

5 - ATTACHMENT OF THE SKYLIGHT TO THE CURB IS THE RESPONSIBILITY OF OTHERS.

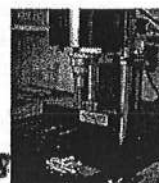
CURB TO SUPPORT CONNECTION DETAILS



NOTE:
CONNECTION DETAILS ARE ONLY A SUGGESTION FOR
INSTALLATION. IT IS THE RESPONSIBILITY OF THE INSTALLER TO
INSTALL PER LOCAL/MUNICIPAL BUILDING CODES AND/OR
ARCHITECT/ENGINEER REQUIREMENTS.



Test Results for INTERCORP Screws



Pullout Values for INTERCORP Self-Drilling Screws One Piece Metal

SIZE	POINT	GAUGE (lbs.)								
		22	20	18	16	14	12	1/8	3/16	1/4
6-20	2	149	277	462	571	855	1043			
8-18	2	260	292	479	685	933	1533			
10-16	2	267	360	534	763	1005	1606			
10-16	3	261	293	487	690	941	1432	2017		
12-14	3	283	333	537	737	1034	1585	2349	2911	
12-24	4			484	679	959	1489	2371	3384	3732
12-24	5			475	672	951	1486	2269	3593	3882
14-14	3	287	339	595	856	1114	1805	2337	4416	4885

The complete line of INTERCORP Self-Drilling Screws meets or exceeds the applicable ASTM Standard C954 A510, (American Society of Testing Materials) for steel screws. Tested in accordance with F.I.P-1000.7

Shear Strength Values for INTERCORP Self-Drilling Screws Metal to Metal

SIZE	POINT	GAUGE (lbs.)								
		22-20	20-20	18-18	16-16	14-14	12-12	1/8-1/8	3/16-3/16	1/4-1/4
6-20	2									
8-18	2	546	721	1031	1049					
10-16	2	574	808	1173	1233					
10-16	3		709	1231	1497	1508				
12-14	3		749	1320	1574	1914	1929			
12-24	4						1989	1972		
12-24	5							2622	2641	2682
14-14	3		905	1401	2040	2509	2573	2738		

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<http://www.intercorpusa.com/test.htm>

3.3.4 KWIK Bolt TZ Expansion Anchor

Table 7 - KWIK Bolt TZ Carbon and Stainless Steel Allowable Nonseismic Shear (ASD), Steel (lb)^{1,2,3,4,5,6}

Diameter (in.)	Allowable Steel Capacity, Shear	
	Carbon Steel	Stainless Steel
3/8	1,925	2,530
1/2	2,945	3,685
5/8	4,335	5,290
3/4	7,325	8,415

- 1 Single anchors with no edge or anchor spacing reductions and no supplementary reinforcement (Condition B).
- 2 Strength design load combinations from ACI 318 Section 9.2. ASD load combinations from ASCE 7-05, Section 2.
- 3 For strength design, the required strength = $1.6D + 1.2L$. For ASD, the factored load = $1.0D + 1.0L$. Conversion factor α is calculated by dividing the ACI 318 required strength by the ASCE 7 factored load.
- 4 $ASD = \Phi_{steel} \cdot V_{sa} / \alpha = 0.75 \cdot V_{sa} / 1.4$

Table 8 - KWIK Bolt TZ Carbon and Stainless Steel Allowable Seismic Tension (ASD), Normal-Weight Cracked Concrete (lb)^{1,2,3,4,5}

Diameter	h_{ef} (in.)	Concrete Compressive Strength ²							
		$f'_c = 2500$ psi		$f'_c = 3000$ psi		$f'_c = 4000$ psi		$f'_c = 6000$ psi	
		Carbon Steel	Stainless Steel	Carbon Steel	Stainless Steel	Carbon Steel	Stainless Steel	Carbon Steel	Stainless Steel
3/8	2	774	882	937	966	1,082	1,115	1,225	1,366
1/2	2	906	1,198	992	1,312	1,146	1,515	1,297	1,856
	3-1/4	1,852	1,876	2,028	2,055	2,342	2,373	2,651	2,907
5/8	3-1/8	1,769	1,769	1,938	1,938	2,238	2,238	2,533	2,741
	4	2,562	2,200	2,806	2,410	3,240	2,783	3,668	3,408
3/4	3-3/4	2,325	3,055	2,547	3,347	2,941	3,865	3,330	4,733
	4-3/4	3,315	3,315	3,632	3,632	4,193	4,193	4,747	5,136

- 1 Single anchors with no edge or anchor spacing reductions and no supplementary reinforcement (Condition B).
- 2 Strength design load combinations from ACI 318 Section 9.2. ASD load combinations from ASCE 7-05, Section 2.
- 3 For strength design, the required strength = $1.2D + 1.0E$. For ASD, the factored load = $1.0D + 0.7E$. Conversion factor α is calculated by dividing the ACI 318 required strength by the ASCE 7 factored load.
- 4 Assuming a 50% dead and 50% earthquake contributions, $\alpha = (1.2 \cdot 0.5 + 1.0 \cdot 0.5) / (1.0 \cdot 0.5 + 0.7 \cdot 0.5) = 1.294$
- 5 $ASD = \Phi_{concrete} \cdot \Phi_{seismic} \cdot N_{p,ungr} / \alpha = 0.65 \cdot 0.75 \cdot N_{p,ungr} / 1.294$

Table 9 - KWIK Bolt TZ Carbon and Stainless Steel Allowable Seismic Shear (ASD), Steel (lb)^{1,2,3,4,5}

Diameter (in.)	Allowable Steel Capacity, Shear	
	Carbon Steel	Stainless Steel
3/8	1,565	1,915
1/2	2,390	2,590
5/8	3,515	4,005
3/4	5,945	6,375

- 1 Single anchors with no edge or anchor spacing reductions and no supplementary reinforcement (Condition B).
- 2 Strength design load combinations from ACI 318 Section 9.2. ASD load combinations from ASCE 7-05, Section 2.
- 3 For strength design, the required strength = $1.2D + 1.0E$. For ASD, the factored load = $1.0D + 0.7E$. Conversion factor α is calculated by dividing the ACI 318 required strength by the ASCE 7 factored load.
- 4 Assuming a 50% dead and 50% earthquake contributions, $\alpha = (1.2 \cdot 0.5 + 1.0 \cdot 0.5) / (1.0 \cdot 0.5 + 0.7 \cdot 0.5) = 1.294$
- 5 Seismic ASD = $\Phi_{steel} \cdot \Phi_{seismic} \cdot V_{eq} / \alpha = 0.75 \cdot 0.75 \cdot V_{eq} / 1.294$

WOOD SCREW CAPACITY BASED ON NDS 2005

Input

Wood Screw # = 12
 Diameter, in. = 0.216
 $F_y = 80$ ksi
 Load Duration Type: Wind / Earthquake
 Penetration, in. = 2.25

Wood Species: Spruce-Pine-Fir

Specific Gravity, $G = 0.42$

Moisture Content:

At Time of Fabrication $\leq 19\%$

In-Service $\leq 19\%$

Condition Dry

Temperature $T \leq 100^\circ\text{F}$

Metal Gage = 12
 $F_y = 33$ ksi

		Lateral Load	Withdrawal Load	
ASD	Load Duration, $C_D =$	1.60	1.60	Table 2.3.2
Both	Wet Service, $C_M =$	1.0	1.0	Table 10.3.3
Both	Temperature, $C_t =$	1.0	1.0	Table 10.3.4
Both	Group Action, $C_g =$	1.0	-	Section 10.3.6
Both	Geometry, $C_\Delta =$	1.0	-	Section 11.5.1
Both	Penetration Depth, $C_d =$	-	-	
Both	End Grain, $C_{eg} =$	1.0	1.0	Not Loaded in end Grain
Both	Metal Side PL, $C_{st} =$	-	-	
Both	Diaphragm, $C_{di} =$	1.0	-	Not Used As Diaphragm
Both	Toe-Nail, $C_{tn} =$	1.0	1.0	No Toe Nailing
LRFD	Format Conv., $K_F =$	3.32	3.32	Table N1
LRFD	Resistance, $\Phi_z =$	0.65	0.65	Table N2
LRFD	Time Effect, $\lambda =$	1.00	1.00	Table N3

Z , lb. = 135 Table 11M

W , lb / in of Penetration = $2850 \cdot G^2 \cdot D = 109$ Eq. 11.2-2

Lateral Capacity

Penetration Reduction Factor = 1.00 Table 11M Note #3

Minimum, p_{min} , in. = 2.16 10d

Z'_{ASD} , lb. = 216

Z'_{LRFD} , lb. = 292

Withdrawal Capacity (times penetration)

Minimum, p_{min} , in. = 1.30 6d

W'_{ASD} , lb. = 391

W'_{LRFD} , lb. = 528

Combined Lateral and Withdrawal Capacity

$\alpha = 0.0$

$$\begin{aligned} Z'_{\alpha ASD}, \text{ lb.} &= 216 \\ Z'_{\alpha LRFD}, \text{ lb.} &= 292 \end{aligned} \quad Z'_\alpha = \frac{(W' \cdot p) \cdot Z'}{(W' \cdot p) \cdot \cos^2 \alpha + Z' \cdot \sin^2 \alpha}$$

Eq. 11.4.2

