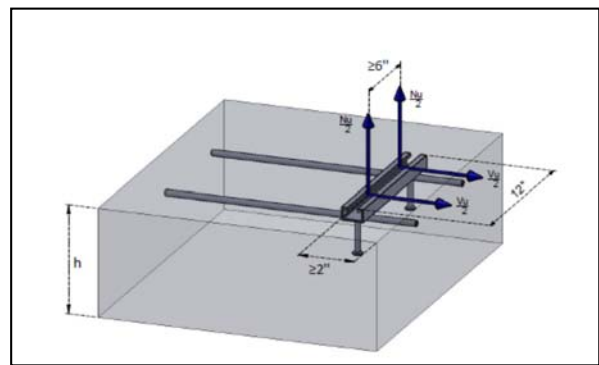
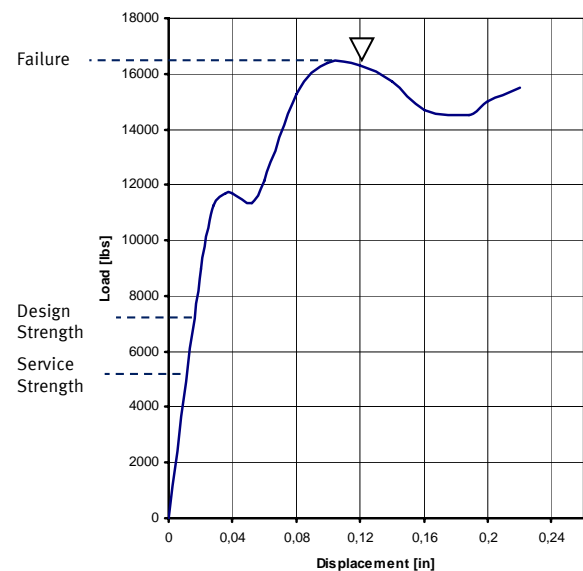


For applications with high shear loads and reduced edge distances JORDAHL® JTA-RT Anchor Channels with rebar tails offer high anchorage capacities for curtain wall applications.

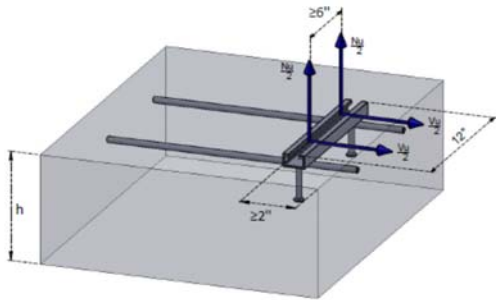
Often top of slab connections between the curtain wall and the concrete structure are dominated by high wind suction loads. JTA-RT Anchor Channels are especially designed to meet the requirements under these conditions, where small edge distances and high shear loads occur. They combine all the advantages of the JORDAHL® JTA-W Anchor Channels, as easy installation and suitability for fatigue loads with additional horizontal rebar tails for additional shear capacity. JTA-RT Anchor Channels are available in three profile sizes, JTA-RT W40/22, W50/30 and W53/34 and can be installed as close as 2 inches to the edge. The length of the channel and the number of anchors can be customized to meet the geometric requirements of the project.



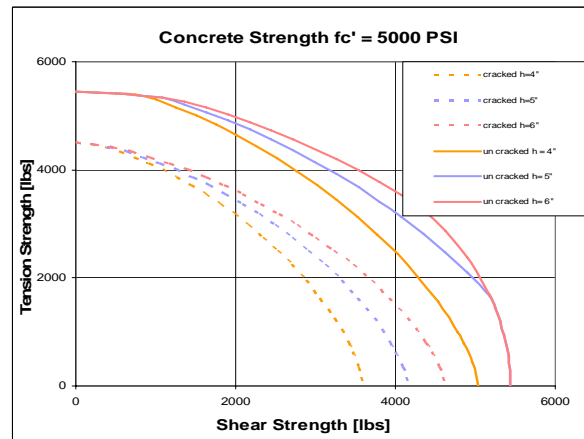
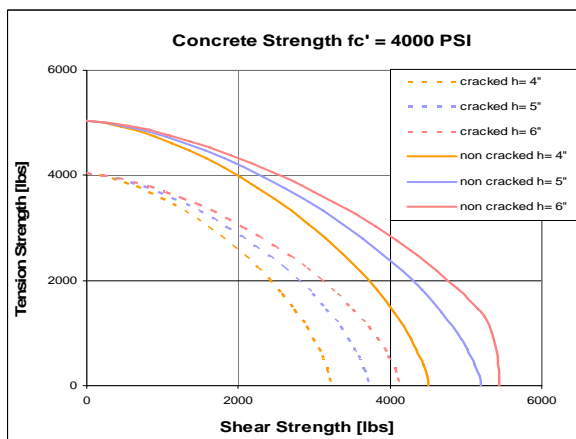
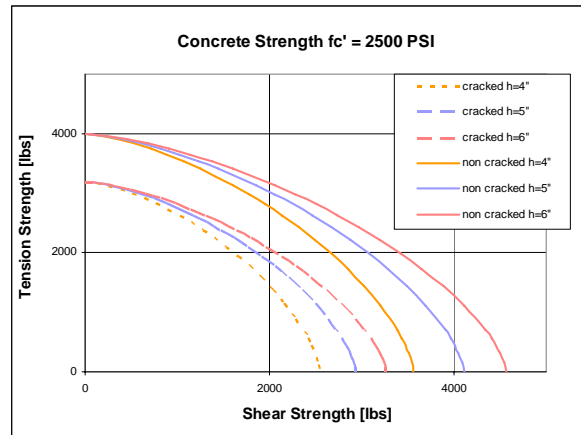
The adjacent load- displacement diagram shows a **typical load bearing behaviour of a JTA-RT W50/30 with 3 inches edge distance**. At the first load plateau small cracks began to form during the test, followed by a second drop of the load curve after failure of the concrete in front of the channel. Due to the tieback action of the horizontal rebar, ductile behaviour is ensured even under extreme impacts as e.g. seismic or blast loads. All JTA-RT channel types have been tested with the specified minimum edge distance. The recommended design values of this information for the JTA-RT series are in accordance with the ACI-318-11.



## JTA-RT W40/22-300 Design Nomograms

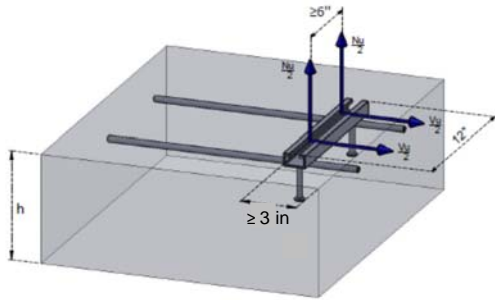


Edge distance  $\geq 2$  in, no lateral edges  
 Channel length = 12 in  
 T-Bolt spacing  $\geq 6$  in  
 Slab thickness  $\geq 4$  in variable, see design charts  
 Concrete cover might be reduced for  $h = 4$  in

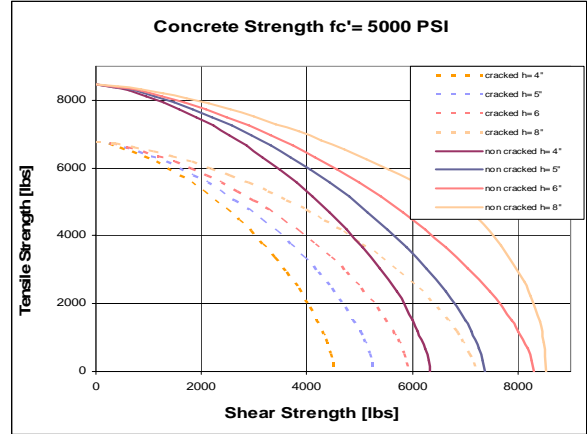
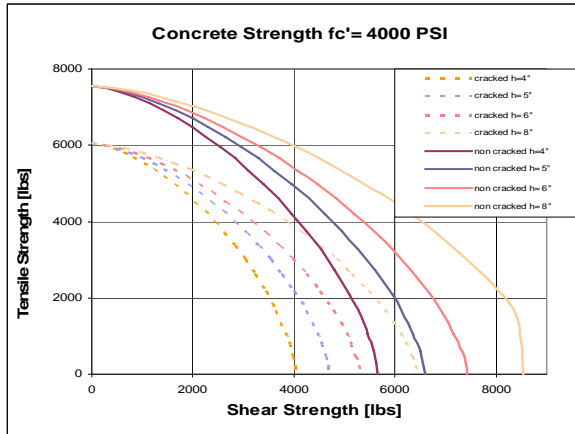
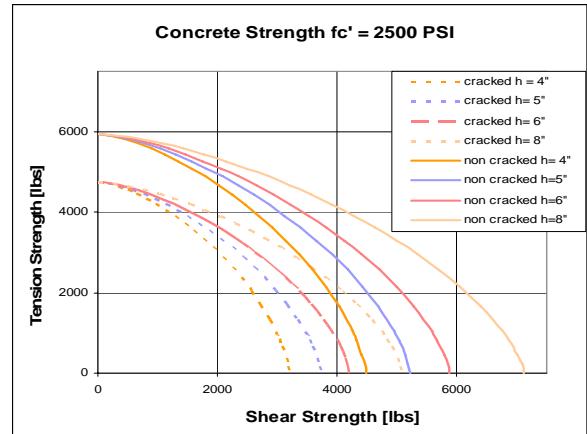


Separate T-Bolt design required, see JORDAHL® JTA catalogue data. Load transmission into the structure must be considered in the general design. For customized design, please contact JORDAHL® technical support.

## JTA-RT W50/30-300 Design Nomograms

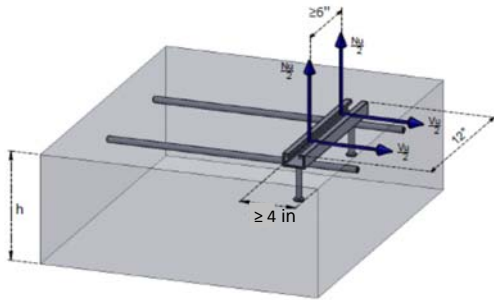


Edge distance = 3 in, no lateral edges  
 Channel length = 12 in  
 T-Bolt spacing ≥ 6 in  
 Slab thickness ≥ 4 in variable, see design charts  
 Concrete cover might be reduced for h=4 in

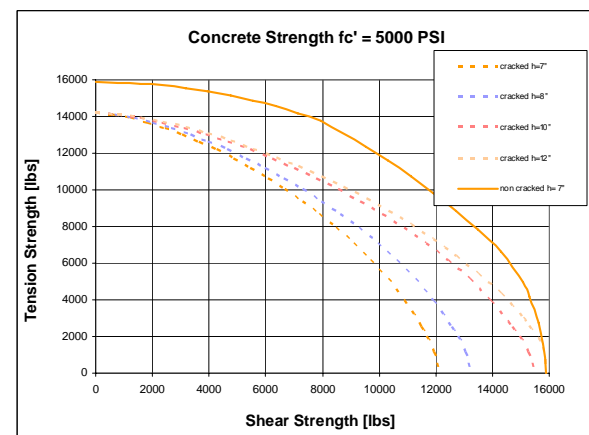
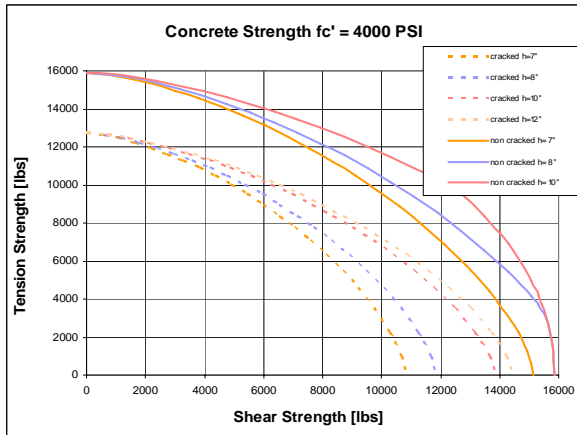
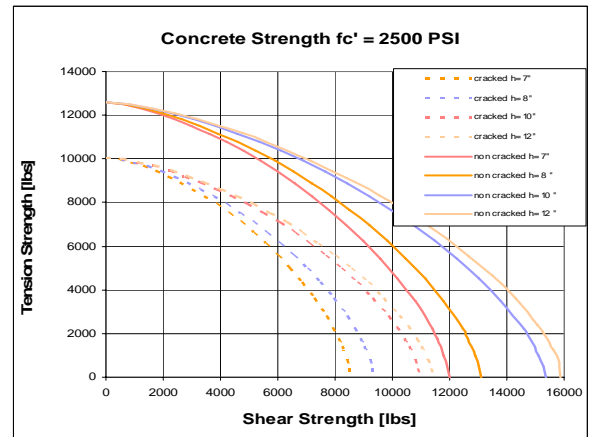


Separate T-Bolt design required, see JORDAHL® JTA catalogue data. Load transmission into the structure must be considered in the general design. For customized design, please contact JORDAHL® technical support.

## JTA-RT W53/34-300 Design Nomograms



Edge distance  $\geq 4$  in, no lateral edges  
 Channel length = 12 in  
 T-Bolt spacing  $\geq 6$  in  
 Slab thickness  $\geq 7$  in variable, see design charts  
 Concrete cover might be reduced for  $h=7$  in

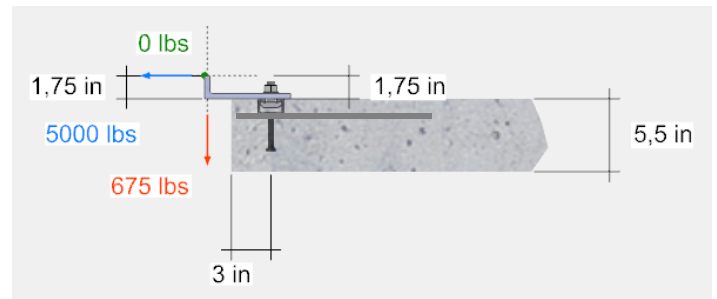
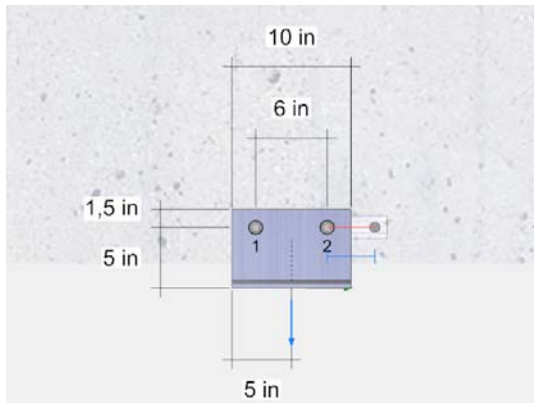


Separate T-Bolt design required, see JORDAHL® JTA catalogue data. Load transmission into the structure must be considered in the general design. For customized design, please contact JORDAHL® technical support.

## Calculation example JTA-RT W 50/30-300-2A

### 1. Given:

Channel JTA W 50/30 RT-300-2A with 2 bolts JB M16; grade 4.6  
 Concrete 5000 PSI, non-cracked condition; edge distance  $c_1=3$  in; thickness = 5 in  
 Design load acting on the bracket: Wind suction=5000 lbs; dead load = 675 lbs; channel  
 protrusion= 2 in



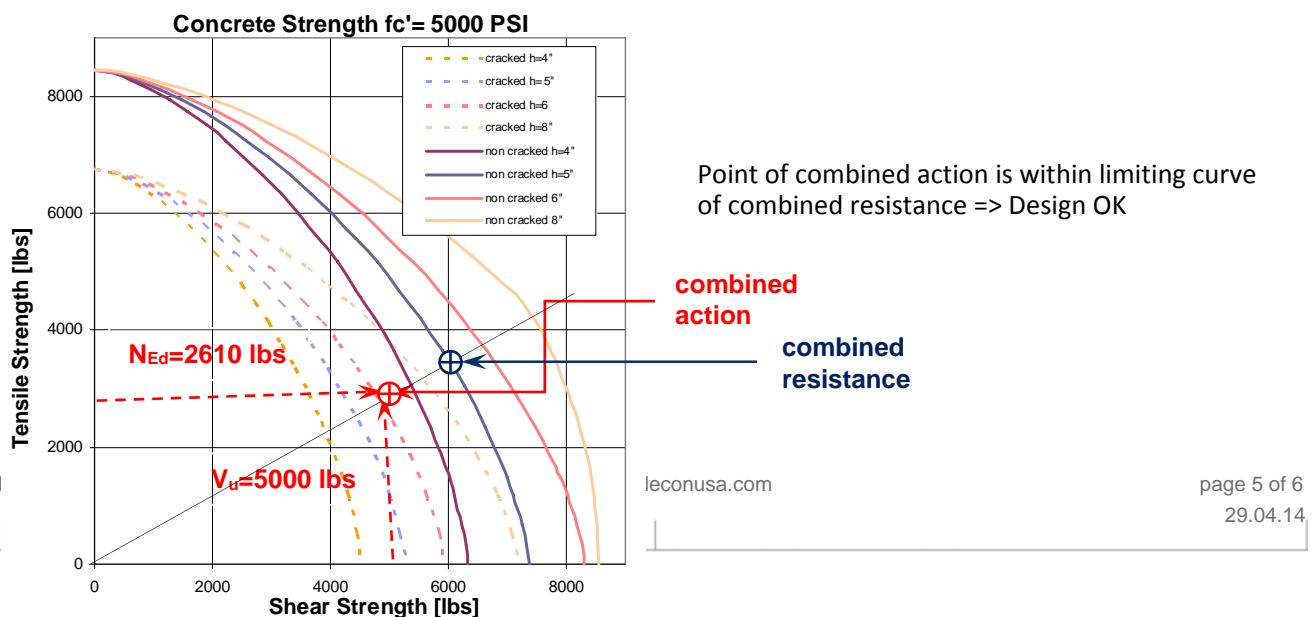
### 2. Loads acting on the channel:

Shear:  $SH=0 \rightarrow V_{Ed}=5000$  lbs

Tension: Moment caused by eccentricities  $M_{Ed}=5000$  lbs  $\times$  1.0 in + 675 lbs  $\times$  (5 in - 3 in) = 6654 lb-in

Tension =  $6654 / 0,85 \times 3$  in =  $N_{Ed}=2610$  lbs

### 3. Check channel capacity:



**4. Check T-bolt capacity:**

Loads acting on the bolts  $N_u = 2610 / 2 = 1305$  lbs  
 $V_u = 5000 / 2 = 2500$  lbs

		T-Bolts Ø	M 6	M 8	M 10	M 12	M 16	M 20	M 24	M 27	M 30	
Channel Profile	JTA	K 28 / 15	Hammer-head T-bolts Type JD				-	-	-	-	-	-
		K 38 / 17	-	-	Hammer-head T-bolts Type JH		-	-	-	-	-	
		W 40 / 22	-	-	Hammer-head T-bolts Type JC		-	-	-	-	-	
		W 50 / 30	-	-	Hammer-head T-bolts Type JB			-	-	-	-	
		W 53 / 42	-	-	Hammer-head T-bolts Type JB			-	-	-	-	
		W 55 / 42	-	-	Hammer-head T-bolts Type JB				-	-	-	
		W 72 / 48	-	-	-	-	-	Hammer-head T-bolts Type JA				
T-Bolt Strength	4.6	Tensile Strength $\phi N_{ss}$	lbs. (kN)	1170 (5.2)	2130 (9.5)	3390 (15.1)	4920 (21.9)	9180 (40.8)	14320 (63.7)	20630 (91.8)	26830 (119.3)	32790 (145.9)
		Shear Strength $\phi V_{ss}$	lbs. (kN)	650 (2.9)	1190 (5.3)	1870 (8.3)	2720 (12.1)	5090 (22.6)	7930 (35.3)	11420 (50.8)	14860 (66.1)	18160 (80.8)
	8.8	Tensile Strength $\phi N_{ss}$	lbs. (kN)	-	4070 (18.1)	5700 (25.3)	9850 (43.8)	13880 (61.8)	26300 (117)	41270 (183.6)	-	-
		Shear Strength $\phi V_{ss}$	lbs. (kN)	-	2370 (10.6)	3750 (16.7)	5450 (24.2)	10170 (45.2)	15860 (70.6)	22850 (101.6)	-	-

$N_u = 9180$  lbs

$V_u = 5080$  lbs

Check Tension:

$N_u / \phi N_n = 1308 / 9180 = 0.14$

Check Shear:

$V_u / \phi V_n = 2500 / 5080 = 0.49$

Check Interaction:

$0.14^2 + 0.49^2 = 0.26 \leq 1$

**JORDAHL Expert Design Team:**

With our products, we guarantee the highest quality and safety standards and offer customer-specific solutions to the highest level.

The JORDAHL Expert Technical Consulting Team is at your disposal to support you on all occurring questions during the design process of JORDAHL® Anchor Channels:

- Selection of the suitable type of channel
- Choice of material
- Optimized design and special solutions for curtain wall fastening
- Design-Trainings
- Software-Support

**Contact Information:**

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