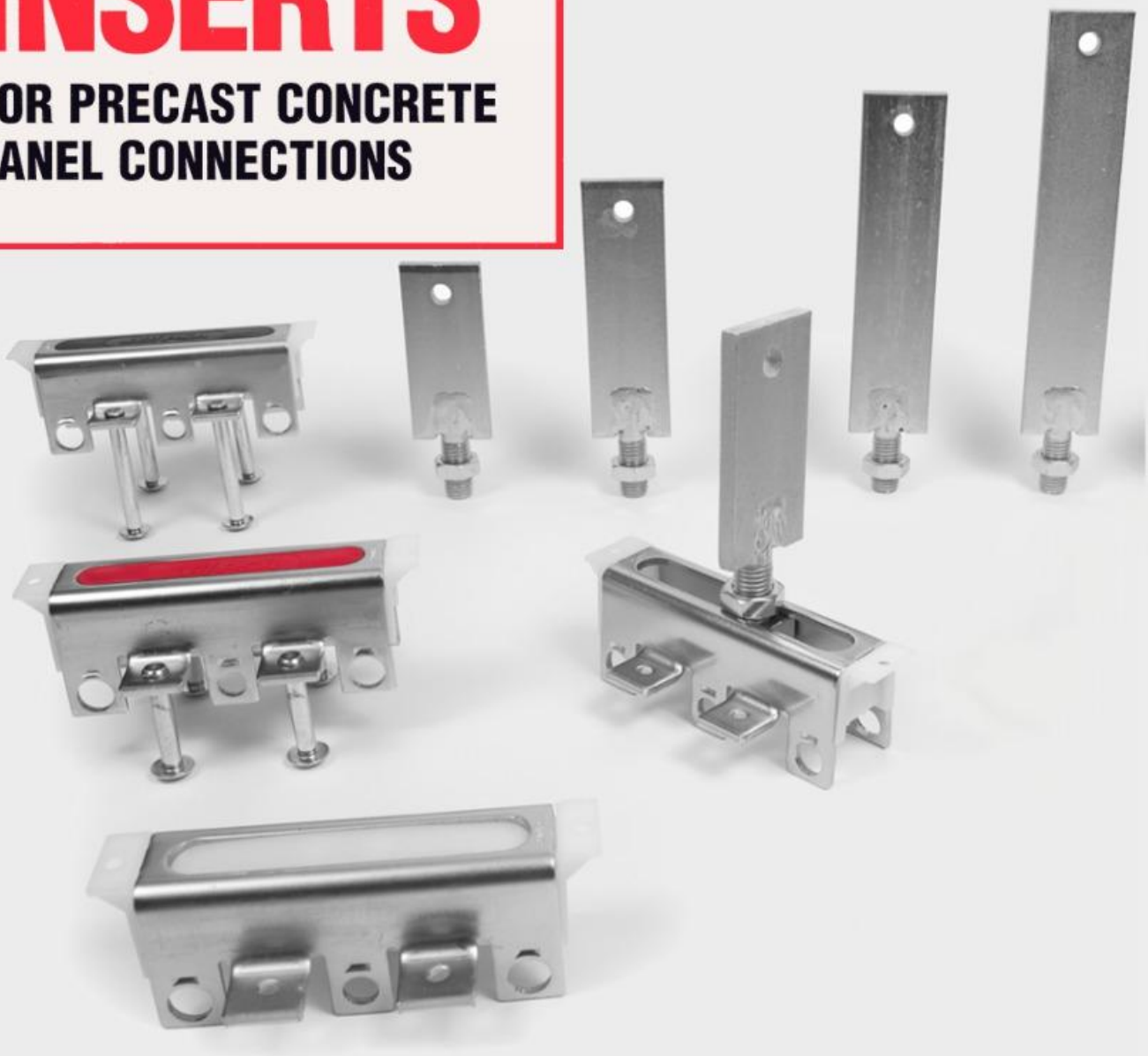
PSA

SLOTTED INSERTS

FOR PRECAST CONCRETE PANEL CONNECTIONS



JVI

YOUR **CONNECTION CONNECTION**

7131 N. Ridgeway Avenue • Lincolnwood, IL 60712 USA • 847/675-1560 • Fax 847/675-0083
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WHY A SLOTTED INSERT?

The early use of slotted inserts was in response to a need to move away from a myriad of complex and costly connection schemes and forward to an engineered prefabricated adjustable connection system providing the measurably consistent performance characteristics so necessary for credibility. They were – and are – an easy, safe, accurate, and economical method to locate and connect precast panels to framework while dramatically reducing erection costs.

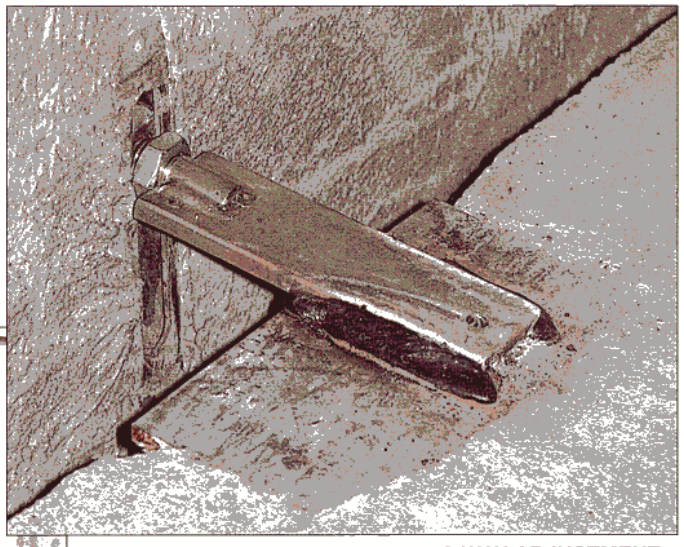
WHY PSA SLOTTED INSERTS?

A fresh look at design concepts, manufacturing methods, and performance characteristics have resulted in numerous innovations that have pushed the evolution of the slotted insert to the next level...the PSA slotted insert!

CONSIDER THESE INNOVATIVE FEATURES:

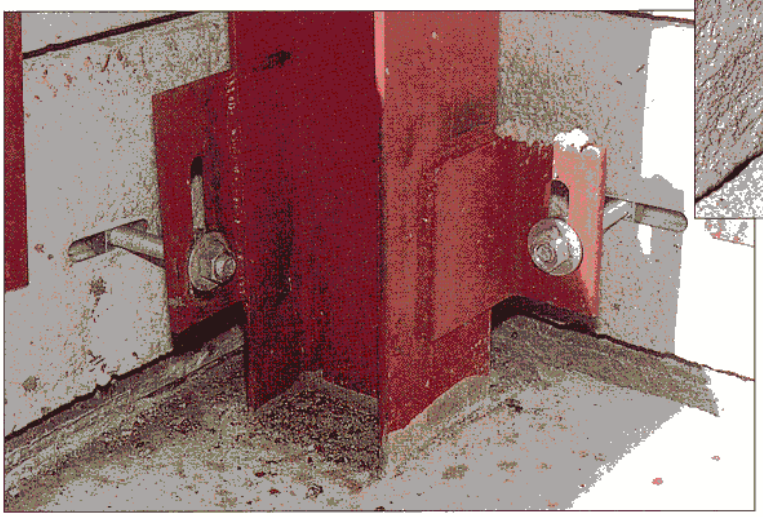
- The modular design concept offers improved pull-out capacity of the basic insert. Higher capacities – up to 30 kips (ultimate) – are easily achieved by the addition of component parts.
- The totally automated manufacturing process offers the credibility of consistent performance levels not previously possible.
- Improved corrosion resistance is being mandated throughout the construction industry. The PSA slotted insert and strap anchor utilizes the J-finish, a remarkable new patented 3 step coating process developed by the automotive industry. Salt spray tests have rendered such superior results that traditional coatings of epoxy and hot-dipped galvanized are obsolete.
- Extensive performance reports provide the highest level of credibility and are readily available on request. Reports include:

  Test #1: Pull-out capacity
  Test #2: Pull-out capacity near edge
  Test #3: Shear capacity
  Test #4: Pull-out capacity, sandwich panels
  Test #5: Pull-out capacity, end of insert
  Test #6: Corrosion resistance
  Test #7: 30 KIP load capacity



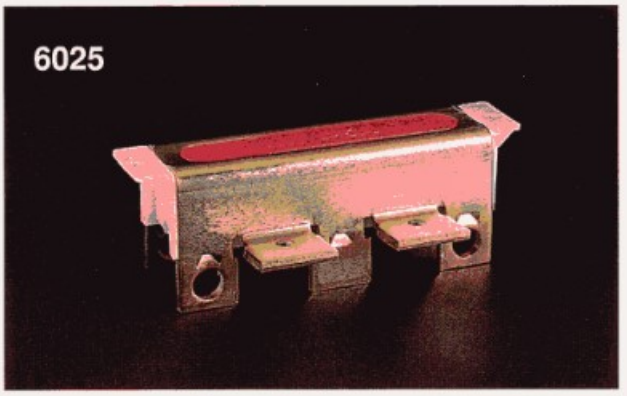
2-WAY ADJUSTMENT
WELDED TO FRAMEWORK.

4-WAY ADJUSTMENT
BOLTED TO FRAMEWORK.



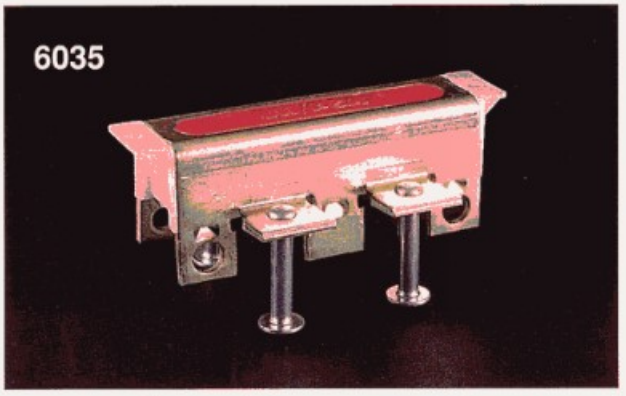
SERIES 6000

6025



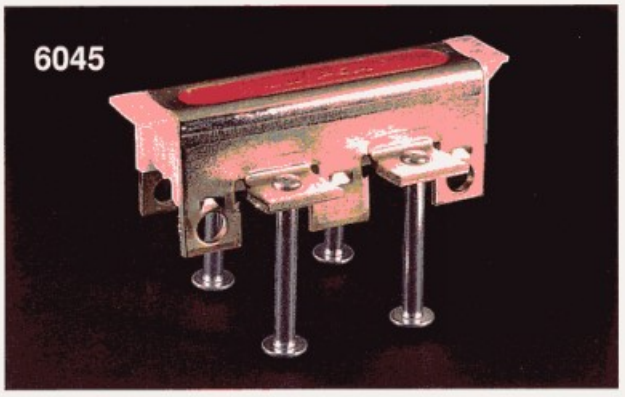
INSERT TYPE	ULTIMATE PULL OUT CAPACITY	ULTIMATE SHEAR CAPACITY	AVAILABLE ADJUSTMENT
6025	>13,400 lbs.	>20,000 lbs.	4-3/8"

6035

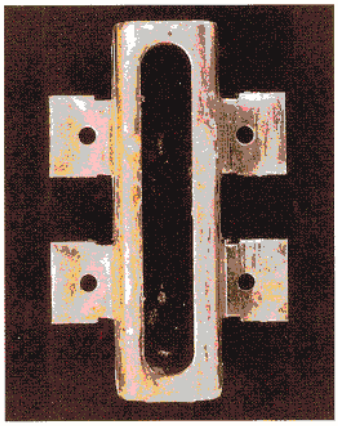


INSERT TYPE	ULTIMATE PULL OUT CAPACITY	ULTIMATE SHEAR CAPACITY	AVAILABLE ADJUSTMENT
6035	>18,800 lbs.	>20,000 lbs.	4-3/8"

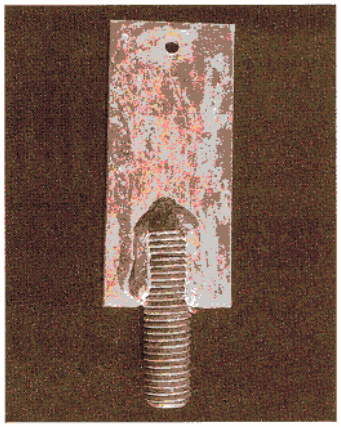
6045



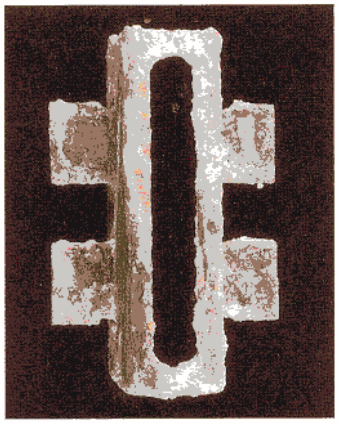
INSERT TYPE	ULTIMATE PULL OUT CAPACITY	ULTIMATE SHEAR CAPACITY	AVAILABLE ADJUSTMENT
6045	>21,500 lbs.	>20,000 lbs.	3-5/8"



PSA Insert (Top) J-Type Finish after 648 hrs.



PSA Strap Anchor J - Type Finish after 360 hrs.



PSA Insert (Top) Hot Dip Galv. Finish after 648 hrs.

PSA Strap Anchor Hot Dip Galv. Finish after 360 hrs.

STATE-OF-THE-ART CORROSION RESISTANCE

J-FINISH is a patented 3 step process (dip, rinse, and seal) developed by the automotive industry as a necessary improvement over the traditional inconsistent methods of hot-dipped galvanizing. It was an obvious choice for the PSA Slotted Insert and Strap Anchor. Full documentation of this advanced coating technology can be found in PSA Test Report #6 on corrosion resistance. Of special note is that the J-Finish (only .0005" thick) can be applied to the threads of strap anchors...traditionally the area most vulnerable to corrosion. Moreover, the choice of the J-Finish dramatically reduces toxic fumes generated from welding and does not contaminate a weld.

THREADED STRAP = SAFETY

SAFETY is always the highest priority in the development of new products at JVI. That is why a notched strap could not be considered. There is simply too much risk of failure. A threaded strap, conversely, provides a dramatically more positive connection method while maintaining the highest level of safety and ease of use.

+ SAFETY ISSUES +

● Tolerance Variations

If notched straps are not installed at 90° to the insert, pull-out strengths are partially compromised. A threaded strap anchor can be rotated to any angle to safely accommodate any variation or irregularity without loss of pull-out capacity.

● Eccentric Loading

Shear forces cause eccentric loading on inserts. The notched method concentrates these forces over its narrow 3/8 inch width which can result in a "can-opener" type failure of the insert lips. The threaded method - with its heavy duty nut (and optional washer) distributes these forces widely and evenly across the insert lips.

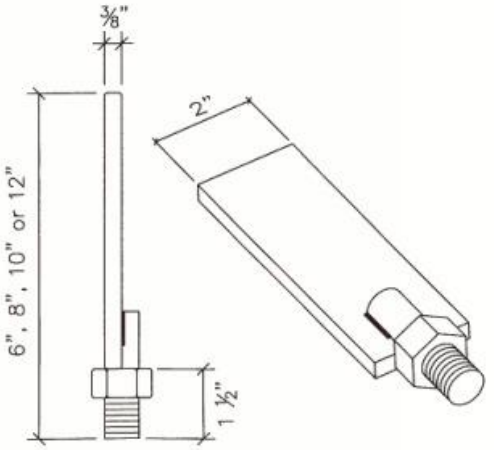
● Erection

The notched strap anchor must be placed after the panel has been placed and requires at least 2" of clearance to rotate to 90° into the insert. If the insert was placed too low, tipping the panel away from the frame to clear the insert opening may put the installer (fingers, hands, etc.) in harms' way.

PSA STRAP ANCHORS

INNOVATIVE FEATURES INCLUDE:

- Flush placement of the threaded rod allows flat placement of the strap anchor thus eliminating the need for cumbersome shimming.
- The J-finish applies full protection onto the threads (traditionally the area most vulnerable to corrosion).
- A jam nut is supplied to accommodate the "push-pull" movement of wind loads.
- When vertical movement is desired, the introduction of a flat washer between the jam nut (tightened "finger tight") and the insert promotes full movement.
- Tension capacity exceeds 30 KIPS.
- A range of strap anchors provide a range of shear capacities while offering dramatic savings.



SHEAR CAPACITY - 2" WIDTH	
Eccentricity	KIPS - Avg
1"	20.2
1 1/2"	17.9
2"	14.2
2 1/2"	13.2
3"	11.3

Our standard 2" wide welded strap anchor provides the Highest shear capacity.

MATERIAL SPECIFICATIONS

"J" Finish & Hot Dipped Galvanized Inserts

Steel Body	Hot Rolled, P & O, HSLA SAE J2340 490XLF
Square Nuts	¾" dia. NC thread, SAE J995 GR-5
2" & 3" Rectangular Nuts	Cold Forged ¾" dia. 10 UNC-2 thread, SAE J995 GR-5
Studs	AISI 1016 or 1018 (Round Head)
Plastic Closers	Non-structural plastic

Stainless Steel Inserts

Steel Body	AISI 304 Stainless Steel
Square Nuts	¾" dia. NC Tread, AISI 304, ASTM A194 GR 8
2" Rectangular Nuts	¾" dia. NC Tread, AISI 304, ASTM A194 GR 8
Studs	AISI 430 Stainless Steel
Plastic Closers	Non-structural plastic

"J" Finish & Hot Dipped Galvanized PSA Threaded Strap Anchors

Steel Body	ASTM A36/A529 GR 50, CSA G40.21, 44W
Hex Jam Nuts	¾" dia. 10 UNC-2, SAE GR 5 Hex, SAE J995
Thread. Stud	¾" dia. 10 UNC-2, AISI 1038 CRS
Welding	Robot Welding w/ Min. Penetration of 0.8mm

Stainless Steel PSA Threaded Strap Anchors

Steel Body	AISI 304 Stainless Steel
Hex Jam Nuts	AISI 304 Stainless Steel, ASTM A194 GR 8
Thread. Stud	¾" dia. 10 UNC-2, AISI 304 Rolled Formed.
Welding	Robot Welding w/ Min. Penetration of 0.8mm

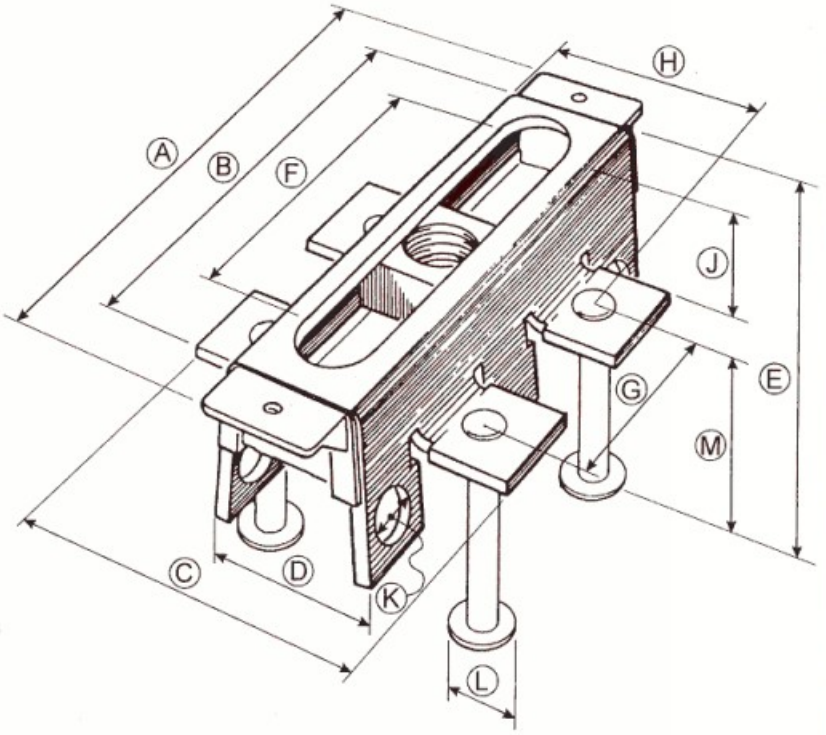
"J" FINISH

1. Zinc plate to **ASTM B633**, Type II (0.0005 thickness) specification.
2. **Trivalent** Clear Chromate (RoHS and ELV compliant)
3. Seal coat

Corrosion Resistance ASTM B 117
- 500 hours before any red rust appears.
- 96 hours before any white rust appears.

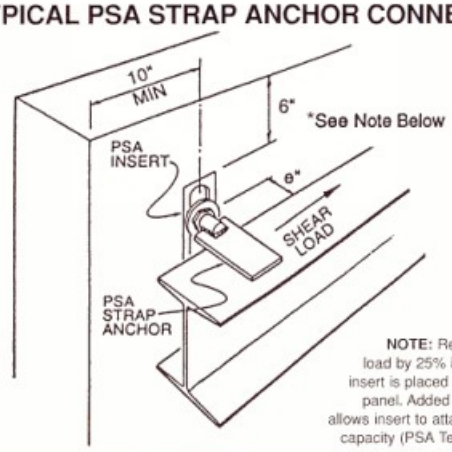
DIMENSIONAL SKETCHES

SERIES 6000		
Ⓐ LENGTH (OVERALL)		7 1/4"
Ⓑ LENGTH (EXCLUDING PLASTIC TAB)		6"
Ⓒ WIDTH (OVERALL)		4 1/8"
Ⓓ WIDTH (AT BASE)		2"
Ⓔ DEPTH	6025 (NO STUD)	2 1/2"
	6035	3 1/2"
	6045	4 1/2"
Ⓕ ADJUSTMENT	6025	4 3/8"
	6035	4 3/8"
	6045	3 5/8"
Ⓖ CENTER TO CENTER (ON SAME SIDE)		2 1/2"
Ⓗ CENTER TO CENTER (ACROSS INSERT)		2 3/4"
Ⓙ TOP OF INSERT TO WING		1 1/4"
Ⓚ HOLE DIAMETER		9/16"
Ⓛ STUD HEAD DIAMETER		7/8"
Ⓜ STUD LENGTH		
	6035	2 1/4"
	6045	3 1/4"

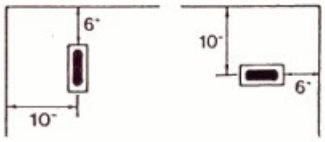


#6045 ILLUSTRATED

TYPICAL PSA STRAP ANCHOR CONNECTION



NOTE: Reduce ultimate load by 25% if unreinforced insert is placed at top edge of panel. Added reinforcement allows insert to attain full pull-out capacity (PSA Test Report #2).

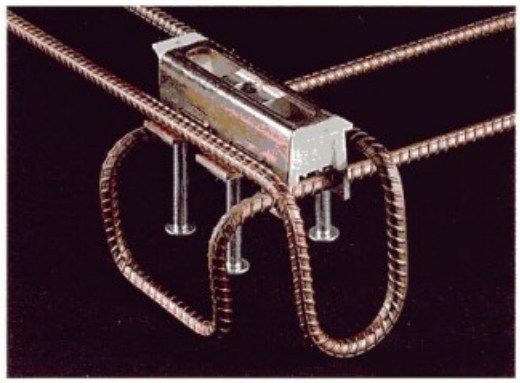


MINIMUM EDGE DISTANCE

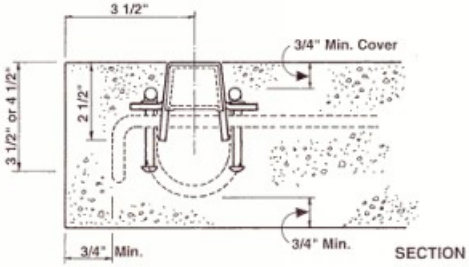
The minimum edge distance without the use of additional reinforcing steel is 6" and 10" as shown in the illustration. The edge distance can be reduced if extra reinforcement is installed (PSA Test Report #2).

INSERTS	• WEIGHT		THREADED STRAPS	• WEIGHT	
	LB.	KGF		LB.	KGF
6025	2.0	0.907	675	1.2	.544
6035	2.3	1.043	875	1.6	.726
6045	2.5	1.134	1075	2.0	.907
			1275	2.4	1.089

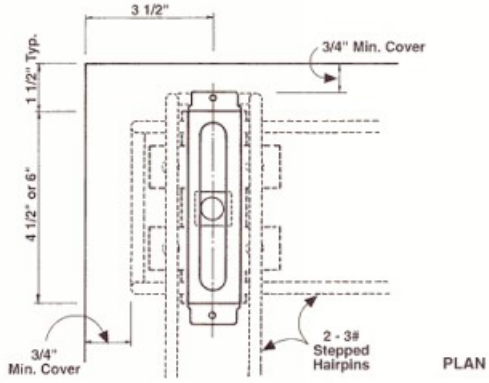
Test Reports available @ www.jvi-inc.com



STEPPED HAIR PIN REINFORCEMENTS NEAR EDGE



SECTION

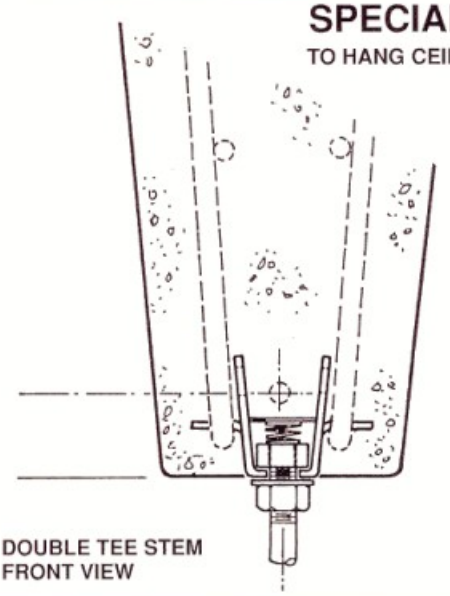


PLAN

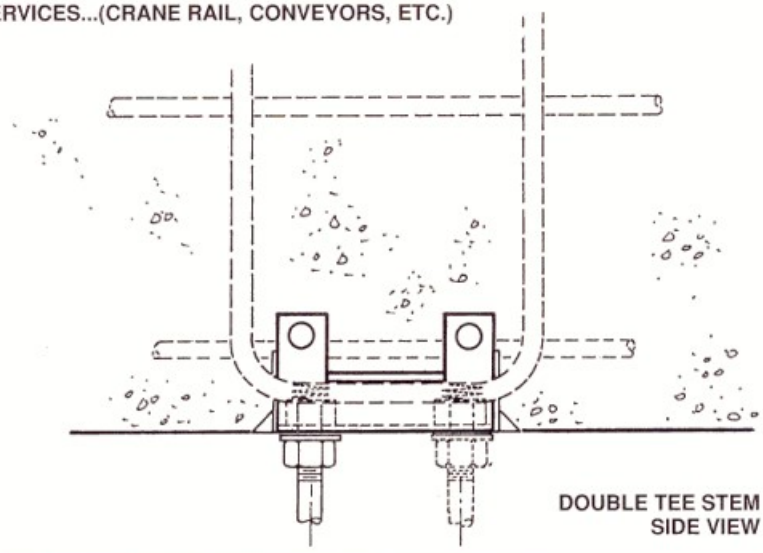
SUGGESTED CORNER DETAIL
(IN ADDITION TO PANEL REINFORCEMENT)

SPECIAL DOUBLE TEE CONNECTION

TO HANG CEILING SERVICES...(CRANE RAIL, CONVEYORS, ETC.)



DOUBLE TEE STEM
FRONT VIEW



DOUBLE TEE STEM
SIDE VIEW

WE WELCOME YOUR INQUIRIES ON OTHER INNOVATIVE JVI CONNECTIONS!

DISCLAIMER: *The use of JVI connections should be approved by a qualified professional engineer or architect.*

Vector Connector

A shear/alignment connection typically used in pre-topped double tee flanges or wall panels.

MASTICORD™

The original engineered R.O.F. structural bearing pad and still state-of-the-art.

The mini-V Connector

A shear/alignment connection typically used in field-topped double tee flanges or wall panels.

CAPRALON™

High capacity layered duck load bearing pad for commercial and highway bridge applications. Plain or PTFE coated for slide bearing applications

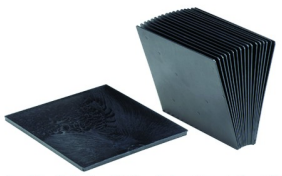
JVI

NEWLON™

Molded neoprene or natural rubber bearing pads conforming to current AASHTO specifications for highway bridges.

SHOOTER

The only invisible, gravity support solution for double tees. Technical data available @ www.jvi-inc.com.

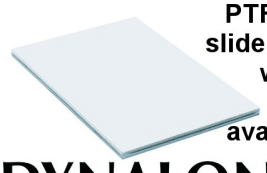


SHIMMERS™

Solid, layered, high strength plastic shims for vertical adjustment during erection of precast panels.

RVK/TSS

An innovative solution to the age-old question of how to connect precast concrete stiarcases.



DYNALON™

PTFE coated steel for use in slide bearings in combination with a polished stainless steel plate. Also available applied to a range of elstomeric bearing pad products.

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