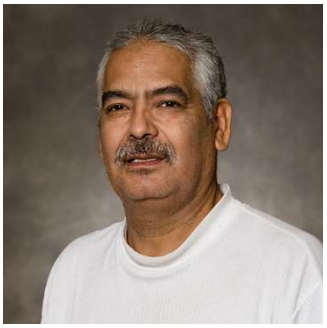
Little Big Book

The *JVI* Team

James R. Voss
President & General Manager

Todd Adams
Sales Manager – Midwest & West Regions



Miguel Arambula
Production

Jazmin Bravo
Administrative Associate

Ronald Brcka
Production Supervisor

Jose Carcamo
Production

Nilda Gomez
Administrative Supervisor

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Billy Jolly
Sales Manager – Southeast & Southwest Regions

Charles Magnesio, FPCI
Senior Vice President – Technical Marketing

Brenda Maldonado
Administrative Associate

Danny Solis
Inside Sales

A.J. Sassaman
Sales Manager-North East & Canada

Edward Stibbs
Facility & Shipping Supervisor

Joe Voss
National Sales Manager

Tim Voss
Executive Administrator

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The *JVI* Team

Oscar Valle
Shipping &
Receiving

Kris Walk-
Faust
Inside Sales &
Purchasing Manager

Heidi
Ziemann
Chief Engineer

Visit our website @ www.jvi-inc.com to contact our JVI team.

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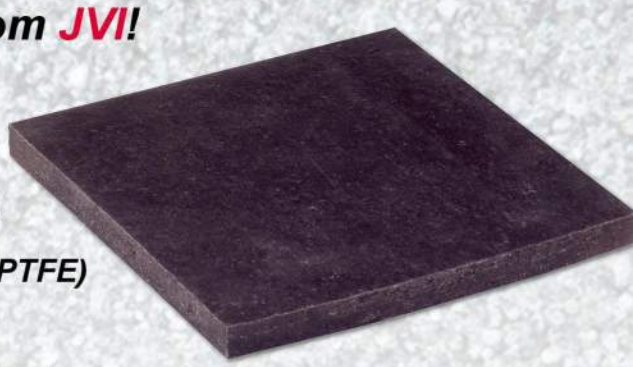
MASTICORD

STRUCTURAL BEARING PAD

The reliable, economical and engineered random oriented fiber (ROF) bearing pad from JVI!

Benefits

- *High Quality*
- *Cost Effective*
- *Complete Design Guide*
- *Significant Rotational Capacity*
- *Capable of Allowing for Horizontal Movement*
- *High Allowable Compressive Stress Based on Test Data*



MASTICORD, can be provided with a bonded DYNALON (PTFE) surface for use in expansion bearing.

MASTICORD, is available in the following stock thicknesses: 1/4", 3/8", 1/2", 3/4", 1". Additional thicknesses availabe upon request.

Properties	ASTM Test Method		
Hardness (Shore A)	ASTM D 2240	75	(± 5)
Tensile Strenth	ASTM D 412	1,000 PSI	Min.
Elongation	ASTM D 412	40%	Min.
Heat Aging	ASTM D 573		
Chagne in Hardness		± 10 points	Max.
Change in Tensile Strength		± 25%	Max.
Change in Elongation		± 25%	Max.
Tear Strength	ASTM D 624	400 lb/in	Min.
Compression			
Minimum Ultimate	ASTM D 575	8,000 PSI	
Initial minimum cracking strain		40%	
Volume Change (IRM 903 Oil Swell)	ASTM D 471	120%	
Ozone Resistance	ASTM D 518 50 hrs @ 100° F ozone concentration of 80 pphm - tear strength	300 lb/in	Min.
Shear Modulus (G)	ASTM D 5992 @ 70° F under a uniform compressive stress of 1,000 PSI, an applied shear strain of 50%, and with both bearing surfaces contacting smooth concrete. The shear modulus is constanst in all directions parallel to the bearing plane.	170 PSI	(± 50 PSI)

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Safety Data Sheet-MASTICORD

Section 1: Identification

Product Names:	Masticord (ROF) Bearing Pads
Chemical Name/Synonym:	Cured and Uncured ,Natural / Synthetic Rubber
Chemical Family:	Polymeric Rubber
Emergency Phone:	847-675-1560
Distributor Name:	JVI, Inc.
Distributor Address:	7131 North Ridgeway Ave, Lincolnwood, IL, 60712
Distributor Phone:	847-675-1560

Section 2: Hazards Identification

This material contains carbon black, zinc oxide, Sulphur, rubber processing oils, and other chemicals which are encapsulated in the rubber crumb. The rubber crumb is then encapsulated in the polyolefin. It is not expected that workers handling the pellets would be exposed to any airborne hazard from the material. Molding operations are not expected to emit any significant levels of hazardous airborne contaminants. At high molding temperatures, the more volatile oily constituents of the rubber crumb might release as an oily fume. The low molecular weight of the polyolefins can also produce a polymer fume at high temperature. At molding temperatures polyolefins and other organic compounds can decompose to form carbon monoxide, carbon dioxide, aldehydes, and other unidentified compounds. Adequate room and press ventilation should be provided to minimize exposure. Avoid contact with strong oxidizing agents.

Section 3: Composition/Information on ingredients

Hazardous Ingredients	C A S #	%	ACGIH: TLV
Rubber Process Oils	64742-04-7, 64742-11-6	>1.0	5 mg/cubic meter
Carbon Black	1333-86-4	>1.0	3.5 mg/cubic meter
Zinc Oxide	1314-13-2	>1.0	10 mg/ cubic meter

Section 4: First Aid Measures

Fire would be the only time First Aid Measures would be in effect.

Eye Contact: From Smoke

Go to Eye Wash Station and rinse cold water for 5 minutes

Inhalation: From Smoke

Remove subject to ventilated area, if persistent coughing results get medical attention.

Chronic Effects: Not Tested

Section 5: Fire-Fighting Measures

Flash Point	NA
Flammable Limits	NA
Extinguishing Media	Water spray, protein type air foam, ABC dry chemical
Special Fire Fighting Procedures	Wear self-contained breathing apparatus
Unusual Fire & Explosion Hazards	None

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Section 6: Accidental Release Measures

This section is not applicable

Section 7: Handling & Storage

Normal storage in cool, dry location, sprinkler protection advisable. Keep excessive heat, sparks and open flame away from material.

Section 8: Exposure Controls/Personal Protection

Ventilation:	Store and use in well ventilated areas.
Respiratory Protection:	None Recommended
Eye Protection	None Recommended
Skin Protection	Cloth Gloves Recommended
Other:	None
Work/Hygienic Practices:	This material may contain aromatic/naphthenic oil. Prolonged contact with this oil caused skin cancer in laboratory animals. Practice good personal hygiene.

Section 9: Physical And Chemical Properties

Boiling Point:	NA	Specific Gravity (H_20=1):	1.15
Vapor Pressure:	NA	% Volatile (By Volume):	NA
Vapor Density:	NA	Evaporation Rate:	NA
Solubility in Water:	Insoluble	Appearance & Odor:	Black Rubber Solid Characteristic odor

Section 10: Stability and Reactivity

Stability:	Stable under normal conditions
Incompatibility	None under normal conditions
Hazardous Decomposition Products	Containment in rubber binder greatly reduces risk of contact with hazardous materials.
Hazardous Polymerization	Will Not Occur
Hazardous Polymerization to Avoid	None Known

Section 11: Toxicological Information

Primary Route of Exposure:	Inhale, ingest, skin, eye
Threshold Limit Value	N/A.
Effect of Over Exposure:	Containment in rubber binder greatly reduces risk of contact with hazardous materials
Carcinogenicity:	The International Agency for Cancer Research (IARC) has determined that there is sufficient evidence that solvent extracts of carbon are carcinogenic to experimental animals, but inadequate evidence of its carcinogenicity for humans.

Section 12: Ecological Data

This material does not pose any ecological effects under normal conditions.

Section 13: Disposal Considerations

This material should be recycle where possible

Section 14: Transport Information

This material conforms to all regulations regarding transportation and is not a controlled substance.

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Section 15: Regulatory information

All Safety, Health and Environmental Regulations are strictly enforced

Section 16: Other information

Latest Revision:	05.05.2016
Changes Since Previous SDS:	Changed format from MSDS to SDS
Telephone Number for Additional Information	847-675-1560

Disclaimer

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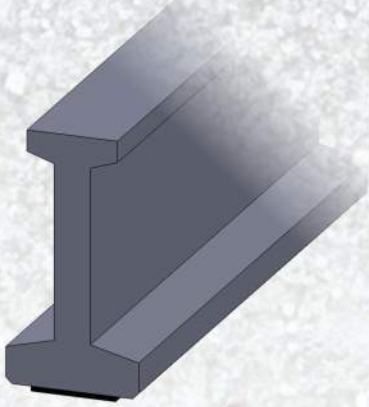
NEWLON

NEWLON Bearing Pads are made of 100% virgin chloroprene. They can be utilized between structural components in highway bridges, railroad bridges, and in all types of concrete and/or steel structures as an efficient and economical method for accomodating shock, vibration, rotation, and shear casued by load deflection and themal movement.

Advantages

- *Meets current AASHTO highway specifications, Grade 3*
- *Available in 50, 60 or 70 Shore "A" Durometer hardness*
- *Available in all available durometers in the following stock thicknessess: 1/8", 1/4", 1/2", 3/4", 1". Additional thicknesses available upon request.*



Product Secifications

Properties	ASTM Test Method	
Tensile Strength (MIN)	D-412	2,250 PSI
Ultimate Elongation (MIN)	D-412	300%-400%
Heat Resistance Change in Hardness – Max Pts. Change in Tensile – Max %	D-573	 +15 -15
Compressive Set – Max %	D-395	35
Ozone Resistance	D-1149	No Cracks

BEARING PADS

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Safety Data Sheet –NEWLON & CAPRALON Elastomer Only

SECTION 1: IDENTIFICATION

Product Names:	Newlon & Capralon Elastomer Only
Chemical Name / Synonym:	Duraking, Flexking, and Techflex Cured Belts; All sheet rubber Products both Supported and Unsupported
Chemical Family:	Multiple SBR, Nitrile, EPDM, Neoprene, Butyl, and Natrual Rubber
Emergency Phone:	(847) 675-1560
Distributor Name:	JVI, Inc
Distributor Address:	7131 North Ridgeway Ave, Lincolnwood,
Distributor Phone:	(847) 675-1560

SECTION 2: HAZARD(S) IDENTIFICATION

NFPA Hazard Rating:	Health 0, Flammability 1, Reactivity 0
HMIS Hazard Rating:	Health 0, Flammability 1, Reactivity 0

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name:	Common Name:	CAS #:	% (by wt)	Exposure Limits:
Nonhazardous as per 29 CFR 1910.1200.	None	None	100	None Established

SECTION 4: FIRST AID MEASURES

First Aid Procedures:	No special action necessary.

SECTION 5: FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:	Carbon dioxide, foam, sand/earth, or dry chemicals.
Hazardous Combustion Products:	Carbon dioxide and carbon monoxide, oxides of nitrogen, sulfur dioxide, and partially burned carbon.
Recommended Fire Fighting Procedures:	Wear impermeable protective clothing and self-contained breathing apparatus. Toxic fumes and vapors may be evolved.
Unusual Fire and Explosion Hazards:	Oil 'bleeds' from material when burning.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Steps to Be Taken in Case Material is Released or Spilled:	Not Applicable

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SECTION 7: HANDLING AND STORAGE

Precautions to Be Taken in Handling and Storing:	Keep away from heat, sparks, and open flames. Store in a dry area. Storage area should be well ventilated.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation:	Store and use in well ventilated areas.
Respiratory Protection:	None recommended.
Eye Protection:	None recommended.
Skin Protection:	None recommended.
Other:	None.
Work / Hygienic Practices:	Wash exposed skin prior to eating, drinking or smoking and at the end of each shift. Wash contaminated clothing prior to reuse.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor:	Multiple colors with slight rubber odor.		
Flash Point:	Not Applicable	Lower Explosive Limit:	None
Method Used:	Not Applicable	Upper Explosive Limit:	None
Evaporation Rate:	Not Applicable	Boiling Point:	None
pH (undiluted product):	Not Applicable	Melting Point:	Unknown
Solubility in Water:	Insoluble	Specific Gravity:	Varies
Vapor Density:	Not Applicable	Percent Volatile:	Unknown
Vapor Pressure:	Not Applicable		

SECTION 10: STABILITY AND REACTIVITY

Thermal Stability:	Stable
Hazardous Polymerization:	Will not occur
Conditions to Avoid:	Heat, sparks, and open flames.

SECTION 11: TOXICOLOGICAL INFORMATION

Signs and Symptoms of Exposure:	No known adverse effects.
Medical Conditions Aggravated by Exposure:	Sensitive individuals may exhibit eye, nose, throat or dermal irritation with prolonged exposure to processing fumes or vapors.
Chronic Effects:	No known adverse effects.
Carcinogenicity:	None

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SECTION 16: OTHER INFORMATION

Additional Comments:	This product is considered to be a finished article as per 29 CFR 1910.1200 (C) and is, therefore, exempt from the requirements of the Hazard Communication standard.
Date of Previous MSDS:	February 1, 2013
Changes Since Previous MSDS:	N/A
Telephone Number for Additional Information:	(847) 675-1560

DISCLAIMER

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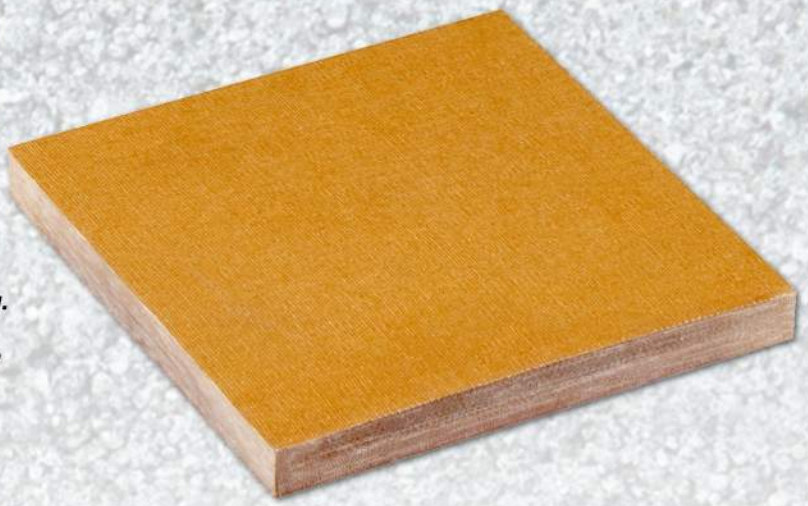
CAPRALON



CAPRALON preformed fabric bearing pads feature alternating layers of cotton/polyester fabric and elastomer vulcanized together.

CAPRALON pads are used to eliminate spalling by accomodating constuction tolerances and allowing for lateral movement.

CAPRALON pads can be provided with a bonded DYNALON (PTFE) surface for use in expansion bearing.

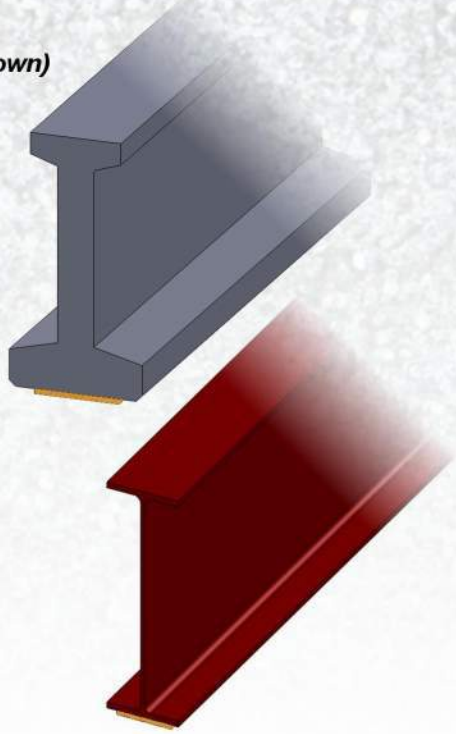
CAPRALON also is used to control shock and vibration in industrial applications of drop forge hammers, wear pads, and other machine-related vibration dampening applications.

Benefits

- *Manufactured & tested under Military Specification MIL-C-882E*
- *Meets AASHTO LRFD Bridge Construction Specification 18.10.2*
- *Meets AASHTO LRFD Bridge Design Specifications 14.7.6.1 & 14.7.6.2*
- *High Load Capacity (10,000 PSI perpendicular to the laminations with no breakdown)*
- *Absorbs shock and vibration*
- *Eliminates spalling*

Material Properties	
Maximum Sheet Size	48" x 96"
Stock Thicknesses	1", 3/4", 1/2", 11/32", 15/64", 1/8"
Elastomer Type	Nitrile
Fungus Resistant	Per Federal Standard-191
Fabric	Polyester x Cotton
Durometer Hardness	90 +/-5 Shore A

Physical Properties		
Tensile (Elastomer)	1000 PSI (Min.)	1200 PSI (Typ.)
Ultimate Elongation (Elastomer)	600%	
Permanent Set	13% max @ 10,000 PSI Compressive Stres	
Temperature Range	-40°F to + 200°F	



COTTON DUCK BEARING PADS

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Safety Data Sheet –NEWLON & CAPRALON Elastomer Only

SECTION 1: IDENTIFICATION

Product Names:	Newlon & Capralon Elastomer Only
Chemical Name / Synonym:	Duraking, Flexking, and Techflex Cured Belts; All sheet rubber Products both Supported and Unsupported
Chemical Family:	Multiple SBR, Nitrile, EPDM, Neoprene, Butyl, and Natrual Rubber
Emergency Phone:	(847) 675-1560
Distributor Name:	JVI, Inc
Distributor Address:	7131 North Ridgeway Ave, Lincolnwood,
Distributor Phone:	(847) 675-1560

SECTION 2: HAZARD(S) IDENTIFICATION

NFPA Hazard Rating:	Health 0, Flammability 1, Reactivity 0
HMIS Hazard Rating:	Health 0, Flammability 1, Reactivity 0

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name:	Common Name:	CAS #:	% (by wt)	Exposure Limits:
Nonhazardous as per 29 CFR 1910.1200.	None	None	100	None Established

SECTION 4: FIRST AID MEASURES

First Aid Procedures:	No special action necessary.

SECTION 5: FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:	Carbon dioxide, foam, sand/earth, or dry chemicals.
Hazardous Combustion Products:	Carbon dioxide and carbon monoxide, oxides of nitrogen, sulfur dioxide, and partially burned carbon.
Recommended Fire Fighting Procedures:	Wear impermeable protective clothing and self-contained breathing apparatus. Toxic fumes and vapors may be evolved.
Unusual Fire and Explosion Hazards:	Oil 'bleeds' from material when burning.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Steps to Be Taken in Case Material is Released or Spilled:	Not Applicable

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SECTION 7: HANDLING AND STORAGE

Precautions to Be Taken in Handling and Storing:	Keep away from heat, sparks, and open flames. Store in a dry area. Storage area should be well ventilated.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation:	Store and use in well ventilated areas.
Respiratory Protection:	None recommended.
Eye Protection:	None recommended.
Skin Protection:	None recommended.
Other:	None.
Work / Hygienic Practices:	Wash exposed skin prior to eating, drinking or smoking and at the end of each shift. Wash contaminated clothing prior to reuse.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor:	Multiple colors with slight rubber odor.		
Flash Point:	Not Applicable	Lower Explosive Limit:	None
Method Used:	Not Applicable	Upper Explosive Limit:	None
Evaporation Rate:	Not Applicable	Boiling Point:	None
pH (undiluted product):	Not Applicable	Melting Point:	Unknown
Solubility in Water:	Insoluble	Specific Gravity:	Varies
Vapor Density:	Not Applicable	Percent Volatile:	Unknown
Vapor Pressure:	Not Applicable		

SECTION 10: STABILITY AND REACTIVITY

Thermal Stability:	Stable
Hazardous Polymerization:	Will not occur
Conditions to Avoid:	Heat, sparks, and open flames.

SECTION 11: TOXICOLOGICAL INFORMATION

Signs and Symptoms of Exposure:	No known adverse effects.
Medical Conditions Aggravated by Exposure:	Sensitive individuals may exhibit eye, nose, throat or dermal irritation with prolonged exposure to processing fumes or vapors.
Chronic Effects:	No known adverse effects.
Carcinogenicity:	None

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SECTION 16: OTHER INFORMATION

Additional Comments:	This product is considered to be a finished article as per 29 CFR 1910.1200 (C) and is, therefore, exempt from the requirements of the Hazard Communication standard.
Date of Previous MSDS:	February 1, 2013
Changes Since Previous MSDS:	N/A
Telephone Number for Additional Information:	(847) 675-1560

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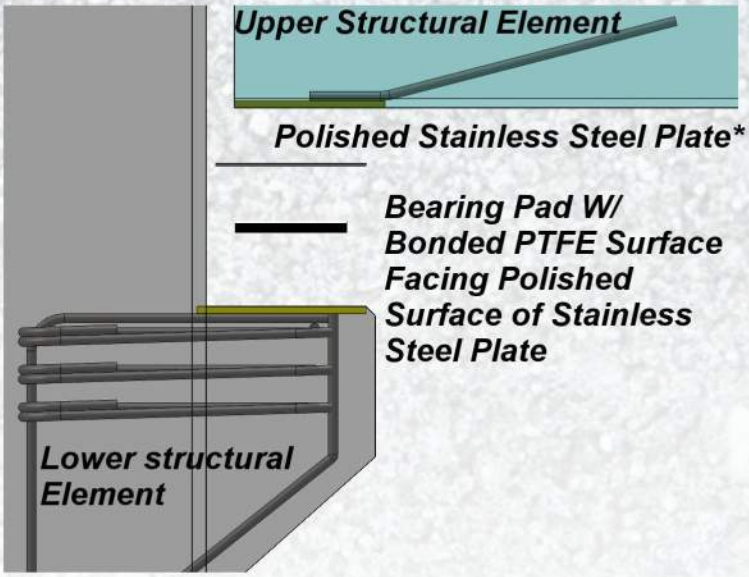
DYNALON

Composed of highest quality PTFE sheet, DYNALON can be permanently bonded to any size, type or thickness of steel plate, MASTICORD pad, or CAPRALON pad.

Assemblies can be furnished complete or DYNALON can be bonded to customer supplied assemblies.

Advantages

- Meets AASHTO Specifications
- Low Coefficient of Friction
- High Load Capacity
- Maintenance Free
- Easy Installation



Typical Applications

- Bridges
- Parking Decks
- Offices
- High Rises
- Hospitals
- Warehouses
- Pipelines
- Sports Arenas

Exploded Typical Precast Detail

*Stainless steel plate should overhang bearing pad w/ bonded PTFE surface on all sides. Stainless steel plate should be fastened to uppper structural element. Consult Masticord Design Guide 3rd Ed. for additional design requirements.

Slide Bearings

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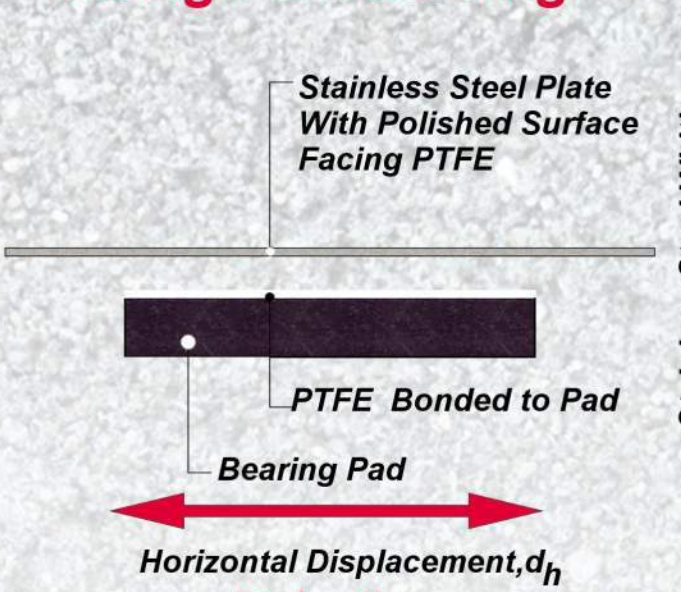
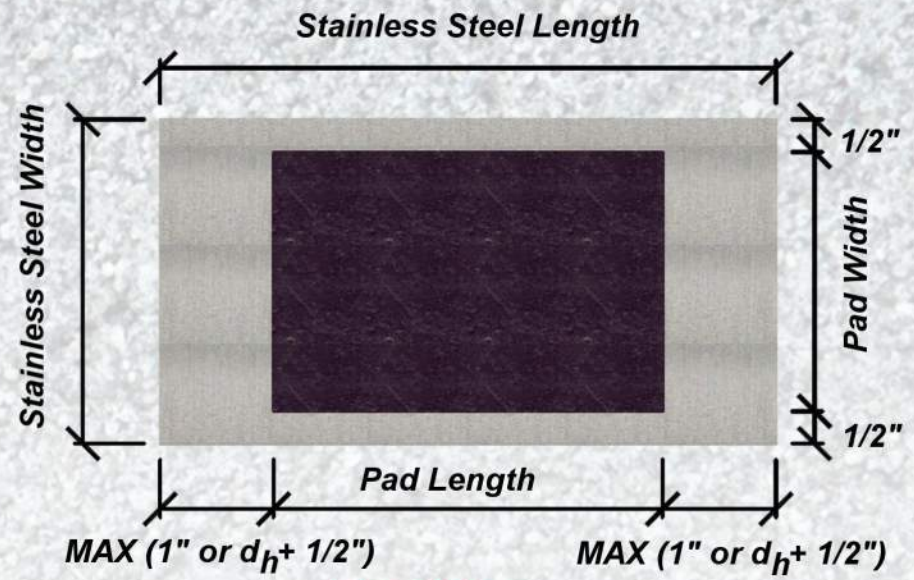
DYNALON

Design & Detailing



Elelvation



Plan View

Slide bearing should be designed and specified by a qualified professional per the appropriate design requirements. Additional deisgn information can be found in the Masticord Design Guide, 3rd Ed.

Product Specifications

Properties	ASTM Test Method	Unfilled	Filled*
Tensile Strength (MIN)	D-1457	2800 PSI	2000 PSI
Elongation (MIN)	D-1457	200%	150%
Coefficient of Friction (Against a stainless steel mating surface with a 2B finish or smoother)	N/A	0.06 Typical	0.10 Typical
Maximum Compressive Load Recommendation	N/A	2000 PSI	2500 PSI
Specific Gravity	D-792	2.13-2.19	2.18-2.25

* Masticord Design Guide 3rd Edition & Associated Software Assumes Filled Properties

How To Specify

- Specify Pad Material, Thickness, Length and Width
- Specify PTFE Material and Thickness
- Specify Stainless Steel Plate Thickness, Length, Width and Required Polished Surface Finish

Slide Bearings

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WHITE NITRILE

Nitrile bearing pads are primarily used where resistance to oil, solvents and fuels is required. WHITE nitrile has the added benefit of being non-marking and FDA approved.

It also meets "3A Sanitary Standards for Multiple-Use Rubber and Rubber-Like Materials used as product contact surfaces in dairy equipment," Number 18-01, Class III and IV.

Benefits

- *FDA-approved ingredients per Z1 CFR 177.2600*
- *ASTM D2000-2BF-615-E034*
- *Eliminates spalling while storing and shipping precast panels*
- *Non-Marking*

Material Properties	
Maximum Sheet Size	36" x 480"
Stock Thicknesses	1/4"
Maximum Sheet Width	36"
Elastomer Type	Nitrile
Durometer Hardness	60 +/-5 Shore A

Physical Properties	
Tensile (Elastomer)	1700 PSI (Min.)
Ultimate Elongation (Elastomer)	400%
Temperature Range	-20°F to + 200°F

NON-MARKING NON-STRUCTURAL PADS

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COMCORD

COMCORD bearing pads are an economical, single layered random oriented fiber (ROF) bearing pad that is only availabe in 1/8" thickness.

COMCORD is manufactured from a homogeneous mixture of reycled masticated rubber reinforced with unused synthetic fibers.

Advantages

- *Meets New York Specification 728-02*
- *Enhanced tensile strength*
- *10,000 psi compressive load capacity*
- *Manufactured from recycled materials*
- *Economical*

Product Secifications

Properties	ASTM Test Method		
Hardness (Shore A)	ASTM D 2240	80	(± 5)
Tensile Strenth	ASTM D 412 Parallel to Grain	750 PSI	Min.
Elongation	ASTM D 412 Parallel to Grain Perpendicular to Grain	15% 40%	Min. Min.
Tear Strength	ASTM D 624 Parallel to Grain Perpendicular to Grain	150 lb/in 350 lb/in	Min. Min.
Compression	ASTM D 575	10,000 PSI	

BEARING PADS

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SHIMMERS™

Available as shim strips, shim packs, bearing strips and horseshoe shims, SHIMMERS are perfect for leveling and accurate placement of precast and prestressed concrete walls, floors, and architectural and structural components.

Molded from high-impact polystyrene (HIPS), SHIMMERS are excellent in compressive strength, have superior surface contact characteristics and are fabricated as SOLID plastic shims with no voids.

Benefits

- Economical
- Will NOT rust, stain or leach concrete
- Available in precise thicknesses and lengths
- Compressive Strength of 10,000 psi with no fracture
- Unaffected by liquids, chemicals, alkalis and micro-organisms.

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Your Connection Connection

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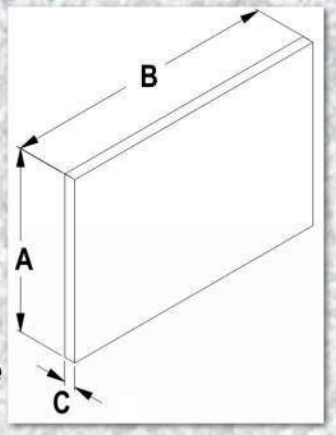
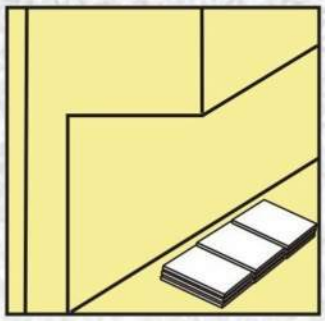
SHIMMERS™

SHIMMERS Shim Strips

- *Assures accurate placing and leveling of precast panels, tilt-up walls, structural and architectural components.*
- *Has excellent stability, eliminates rust, stained concrete, etc.*
- *Less expensive and more versatile than steel.*
- *Available in convenient thicknesses, lengths and widths which permit precise leveling and alignment.*
- *Will not rust, rot, stain or leach concrete.*





Part Number	Shim Dimensions			Box QTY
	A	B	C	
SS0060202	2"	2"	1/16"	1000
SS0130202			1/8"	1000
SS0250202			1/4"	1000
SS0380202			3/8"	500
SS0500202			1/2"	250
SS0060303	3"	3"	1/16"	1000
SS0130303			1/8"	1000
SS0250303			1/4"	500
SS0500303			1/2"	250
SS0060204	4"	2"	1/16"	1000
SS0130204			1/8"	1000
SS0250204			1/4"	500
SS0060404	4"	4"	1/16"	500
SS0130404			1/8"	500
SS0250404			1/4"	250
SS0500404			1/2"	125
SS0060406	4"	6"	1/16"	500
SS0130406			1/8"	250
SS0250406			1/4"	125
SS0060408	4"	8"	1/16"	250
SS0130408			1/8"	250
SS0250408			1/4"	125
SS0060505	5"	5"	1/16"	500
SS0130505			1/8"	250
SS0250505			1/4"	125
SS0060206	6"	2"	1/16"	500
SS0130206			1/8"	500
SS0250206			1/4"	250
SS0060606	6"	6"	1/16"	250
SS0130606			1/8"	125
SS0250606			1/4"	125
SS0060608	6"	8"	1/16"	250
SS0130608			1/8"	160
SS0250608			1/4"	80

Other Sizes Available

MADE IN THE USA

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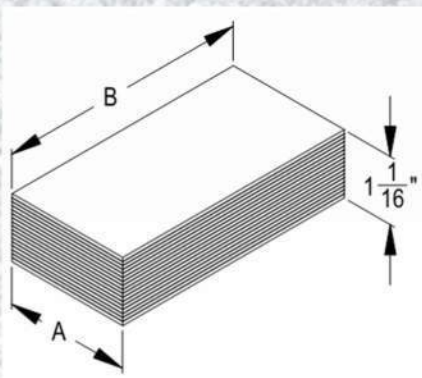
SHIMMERS™

SHIMMERS Shim-Packs

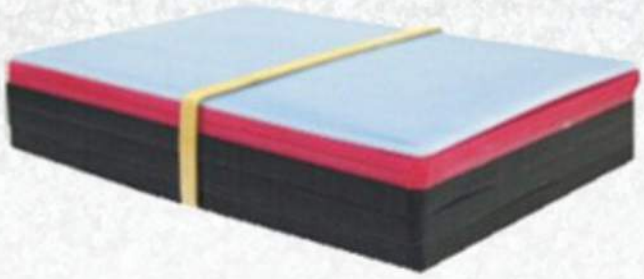


Part Number	Thickness	A	B	Box QTY
SP1060202	1-1/16"	2"	2"	50
SP1060303		3"	3"	50
SP1060404		4"	4"	50
SP1060406		4"	6"	50
SP1060505		5"	5"	25
SP1060606		6"	6"	20
SP1060608		6"	8"	20
SP1060610		6"	10"	20

MADE IN THE USA

- *Pre-assembled packages of shims designed for precise placing of large load bearing precast units.*
- *Eliminates correction of elastomeric drift.*
- *Can be compressed sufficiently at post tensioning to allow load transfer to the grout.*
- *17 pieces; 1/16" thick, HEAT-SEALED together on adjacent sides.*
- *Peel off shims in 1/16" Increments to obtain the correct height adjustment.*

SHIMMERS Multi-Packs



Part Number	Thickness	A	B	Box QTY
SM1060404	1-1/16"	4"	4"	50
SM1060406		4"	6"	30

Please inquire @ info@jvi-inc.com regarding product origin

- *1 1/16" Thick 4" x 4" or 4 x 6" Multi-Pack contains (1) 1/16", (2) 1/8" & (3) 1/4" shims rubber-baneded together for easy height adjustment.*
- *Color Coded by Thickness*
- *Each Shim has no-slip serrations.*
- *Pre-assembled packages of shims designed for precise placing of large load bearing precast units.*
- *Eliminates correction of elastomeric drift.*
- *Can be compressed sufficiently at post tensioning to allow load transfer to the grout.*

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SHIMMERS™

SHIMMERS Bearing Strips

Used for placing and leveling precast panels, tilt slabs and other architechtural or structural components. SHIMMERS bearing strips are designed to be placed between concrete floor slabs and a supporting wall or beam. The smooth surface allows for movement of precast floor slabs and helps them easily slide into their final position.

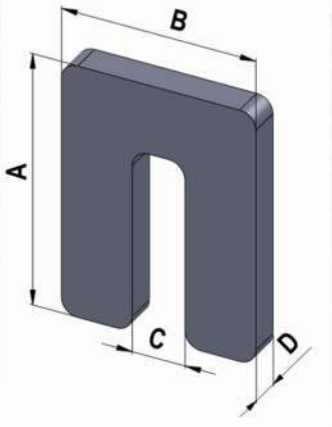
- *Strips are easily applied and lay flat*
- *Smooth surface allows precast plank to slide easily*

Part Number	Size	Box QTY
ST0250248	2" x 48" x 1/4"	72
ST0130248	2" x 48" x 1/8"	144
ST0250348	3" x 48" x 1/4"	48
ST0130348	3" x 48" x 1/8"	96
ST0250448	4" x 48" x 1/4"	36
ST0130448	4" x 48" x 1/8"	72

MADE IN THE USA

SHIMMERS Horseshoe Shims

- *Economical*
- *Save time, money and labor.*
- *Excellent compressive strength.*
- *Available in a wide variety of sizes.*



		Part Number	Length A	Width B	Slot C	Thickness D	Color	Box QTY
	20 Series	SH0060203	3"	2-5/16"	13/16	1/16"	Blue	1000
		SH0130203				1/8"	Red	1000
		SHC0250203				1/4"	Black	500
		SH0380203				3/8" SOLID	Black	150
		SH0500203				1/2" SOLID	Black	150
	50 Series	SH0060304	4"	3"	13/16"	1/16"	Blue	500
		SH0130304				1/8"	Red	500
		SHC0250304				1/4"	Black	250
		SH0380304				3/8" SOLID	Black	150
		SH0500304				1/2" SOLID	Black	150

Other Sizes as well as custom design available.

Please inquire @ info@jvi-inc.com regarding product origin

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HIGH IMPACT SHIMMERS: PROPERTY CHART

MECHANICAL PROPERTY	UNITS	ASTM TEST	HIPS POLYMER
specific gravity	-	D792	1.05
tensile strength, 73°	PSI	D638	8,000-10,000
tensile mdoulus of elasticity, 73°	PSI	D638	240,000
tensile modulus of elongation, 73°	%	D638	3
flexural strength, 73°	PSI	D790	10,000-15,000
flexural modulus of elasticity, 73°	PSI	D790	-
shear strength	PSI	D732	7,500-8,000
compressive strength	PSI	D695	10,000 w/ no fracture
compressive modulus of elasticity, 73°	PSI	D695	
coefficient of friction	-	-	-
(dry vs. Steel) dynamic	-	-	-
hardness, rockwell, 73°	-	D785	R110-120
hardness, durometer, 73°	-	D676	D80-85
tensile impact, 73°	Ft. lb. in 2	D1822	-
THERMAL PROPERTY			
coefficient of linear thermal expansion	in./in./°F	D696	5.0x10(-5)
deformation under load (122°F 2,000 PSI)	%	D621	1
deflection temperature: 264 PSE	°F	D648	200-225
66PSI	°F	D648	-
melting point	°	D789	187
conitnuous service temp in air (maximum	°F	-	215
ELECTRICAL PROPERTY			
dielectric strength short time	volts/mil	D149	700-1,200
volume resistivity	OHM-CM	D257	10
dielectric constant: 60HZ	-	D150	2.55
10/cubed HZ	-	D150	2.55
10/sixth HZ	-	D150	2.55
CHEMICAL PROPERTY			
Water absorption immersion: 24 hours	%	D570	0.02-0.03
Acids: Weak 73°			A
Strong 73°			A
Alkalies: Weak 73°			A
Strong 73°			A
Hydrocarbons Aromatic 73°			U
Hydrocarbons Aliphatic 73°			U
Ketones 73°			L
Ethers 73°			L
Esters 73°			L
Alcohols			L
Inorganic Salt Solutions, 73°			L
Continuous Sunlight 73°			-

KEY
A= ACCEPTABLE SERVICE
L=LIMITED SERVICE
U=UNACCEPTABLE SERVICE

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Coefficient of friction on our PE shim (UHMW) is as follows:
ASTM D-1894

Shim vs. Shim	
Static	0.20 - 0.30
Kinetic	0.20 - 0.30
Mild Steel vs. Shim	
Static	0.15 - 0.20
Kinetic	0.12 - 0.20
Mild Steel vs. Mild Steel	
Static	0.30 - 0.40
Kinetic	0.25 - 0.35

The following sheet is on our non-skid shim. Hope this info helps

TEST RESULTS:
The test results are as follows:

Conditions	Static Coefficient of Friction	Kinetic Coefficient of Friction
Coated to Coated	.802	.750
Coated to Smooth	.508	.464
Coated to Hot Rolled Steel	.473	.445

One test per condition was conducted as requested.

A flat sheet of hot rolled steel plate with a good surface was used for testing. When using the results of this test for comparative purposes please note that the surface roughness affects the Coefficient of Friction results.

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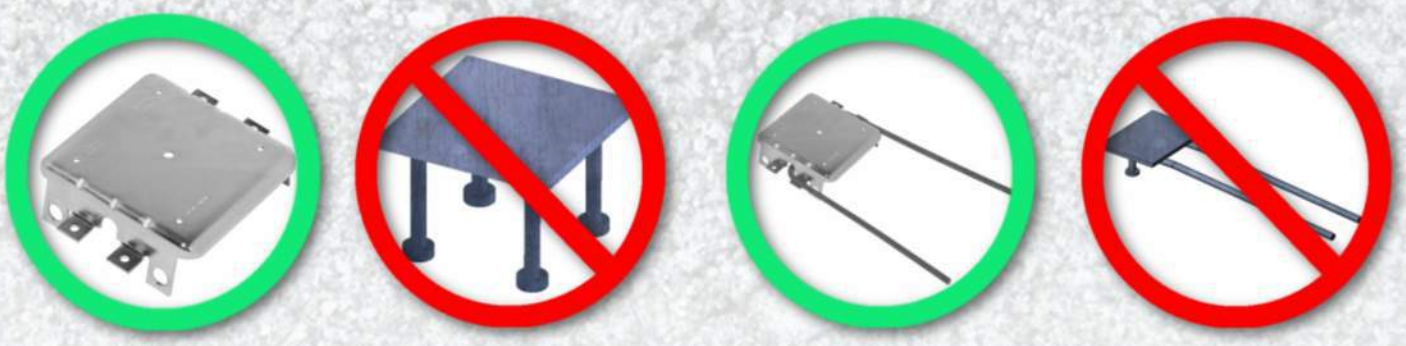
SPIDER PLATE

An economical, versatile, lean solution for precast concrete plates with welded studs & rebar.



Benefits

- *Eliminates concerns over stud welding*
- *Can Fit in a 2" Concrete Wythe*
- *Manufactured with rebar tunnel hole to allow for the addition of supplemental reinforcing without requiring welding*
- *Extensively Tested*
- *Meets AWS Standards*

Specifications

- *Available in 2 1/12" and 1 1/2" depths*
- *Available in galvanized and J-Finish*
- *Available flat surface measures 6" x 6"*
- *Constructed of 3/16" high-strength, low alloy steel*

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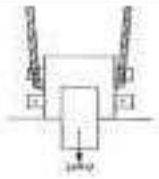
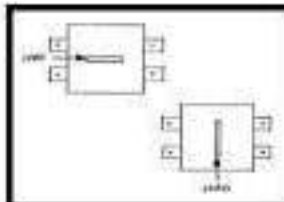
Tested Capacity Summaries for Shallow and Deep Spider Plates

SHEAR PERPENDICULAR TO EDGE:

	Slab Thickness	Field Plate Location on Spider Plate	Ultimate Capacity
66SLCT, No Studs, with U-Bar	2"	Centered	12.0 Kips
	≥ 5"	Centered	23.5 Kips
66DLCT, No Studs, with U-Bar	≥ 4"	Centered	23.6 Kips

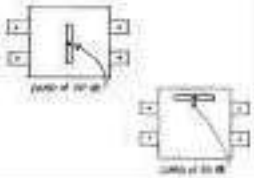
LATERAL SHEAR:

	Slab Thickness	Field Plate Location on Spider Plate	Ultimate Capacity
66SLCT, No Studs	2"	Centered	8.3 Kips
	≥ 5"	Centered	21.1 Kips
66DLCT, No Studs	≥ 4"	Centered	18.5 Kips

SHEAR PARALLEL TO EDGE:

	Slab Thickness	Field Plate Location on Spider Plate	Ultimate Capacity
66SLCT, No Studs, with U-Bar	2"	Centered	12.0 Kips
66DLCT, No Studs, with U-Bar	≥ 4"	Centered	13.9 Kips

TENSION:

	Slab Thickness	Field Plate Location on Spider Plate	Ultimate Capacity
66SLCT, No Studs	2"	Centered	5.5 Kips
66DLCT, No Studs	≥ 4"	Centered	13.0 Kips
	≥ 4"	Offset	9.7 Kips

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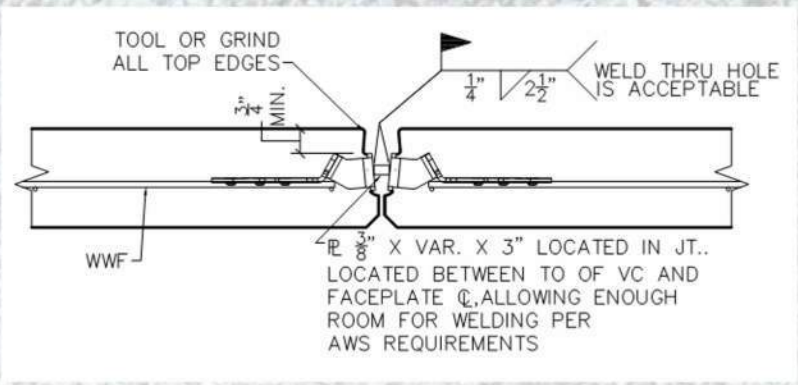
Vector Connector

Beginning with its introduction in 1998, the vector connector became, and remains the state-of-the art in weldable shear and alignment connectors for precast double tees, wall panels and slabs.

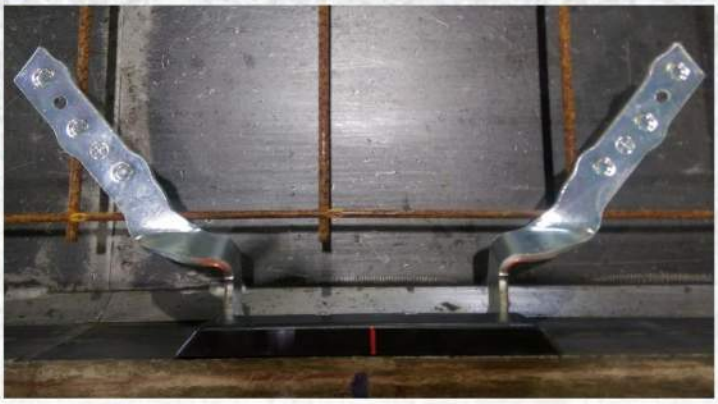
To date, more than 12 million vector connectors are in service in precast products throughout the world.



Benefits:

- 1 1/2" tall faceplate with labeled weld zone.
- Successfully tested to full capacity with 2 1/2" weld
- Patented face sweep and bend to promote flexibility in tension
- Extensive, published test reports to validate recommended capacities
- Strategic leg deformations gradually distribute forces from the leg to the concrete
- Horizontal legs at installation eliminates reinforcing interferences & centers the legs
- User guidelines available for engineering, purchasing, production and erection procedures.

MADE IN THE USA FLANGE CONNECTOR



VC401J
High Strength Low Alloy Steel
with J-Finish

VC4112
201L Stainless Steel

Flush Blockout | **1/4" Blockout** | **3/4" Blockout** | **1" Blockout**

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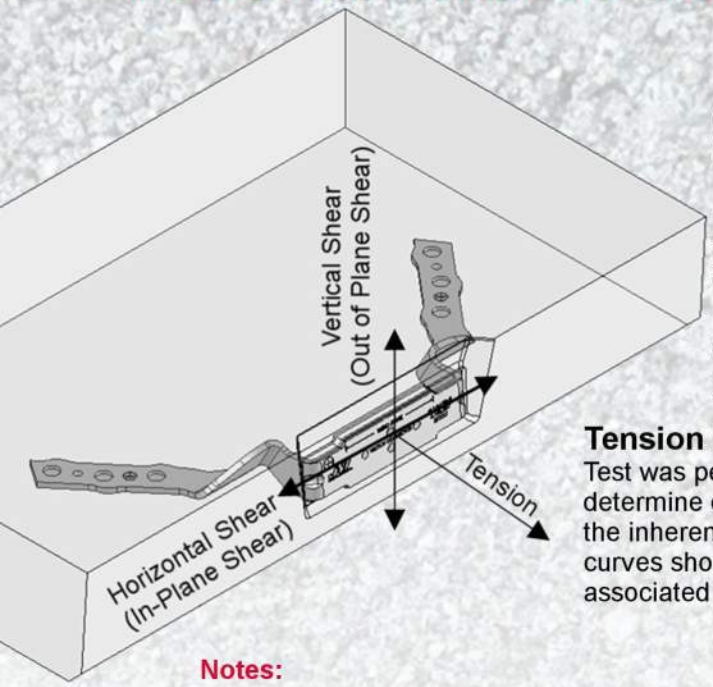
Vector Connector

Recommended Nominal Strengths



Cyclic In-Plane Shear With Tension (Gap = 0.1") **11.0 kips**
Reported value considers test yield load

Monotonic In-Plane Shear with No Tension **10.7 kips**
Reported value conservatively considers test "first-cracking" load

Out-of-Plane Shear with No Tension **4.3 kips**
Reported value considers test breaking load

Tension Normal to Face Plate (Welded top and bottom of slug)
Test was performed for validation of concrete bond capacity of legs and to determine deformation characteristics. Tension capacity is not reported due to the inherent ductility of the connection loaded in tension. Load displacement curves should be investigated for a tension capacity with an acceptable associated displacement.

Notes:

1. Nominal Strengths are 5% fractile strengths calculated using the average ultimate load, and standard deviation of full-scale test results. A 5% fractile strength is the nominal strength for which there is a 90% confidence that there is a 95% probability of the actual strength exceeding the nominal strength. Please reference ACI 318 Appendix D for additional information
2. Strength Reduction Factors applied to the nominal strength to determine design strength are at the discretion of the Engineer. Consideration should be given to the failure mode, application and additional reinforcing as described in PCI Handbook, 7th Edition, 6.2.
3. VC4 configuration is the same as the VC3 (Mid V) with the exception of a slight modification to the faceplate corners. The modification is immaterial and does not impact nominal capacities.
4. All values are based on a 3/8" thick x 1" wide flat bar slug. All welds were located on the top, horizontal plane of the slug, with the exception of the tension normal to faceplate configuration.
5. A ¼" x 2 1/2" long weld is recommended, unless otherwise determined by design
6. Available in, ASTM 201LN stainless steel, A36 carbon steel with a "J" Finish
7. Reported values can be assumed valid for both ASTM 201LN stainless steel and A36 carbon steel.
8. With respect to volume changes, the vector connector is classified as a flexible connection.

References:

1. Ghorbanpoor, A (2009), Testing of the JVI Mid V in 4" slabs. University of Wisconsin-Milwaukee (UWM) Mid_V_Test_Report_Final_021810Final.pdf
2. Ghorbanpoor, A (2010) Additional Testing of the JVI Mid V in 4" Slabs. University of Wisconsin-Milwaukee (UWM) MidVTestReport0410.PDF
3. Ghorbanpoor, A (2012) Testing of the JVI Vector Connector 4 in 4" Slabs. University of Wisconsin-Milwaukee (UWM) VC4ReportNo113012.pdf
4. Klien, G & Lindenberg, R (2009), Volume Change Response of Precast Concrete Buildings. PCI Journal, Fall 2009, 112-131

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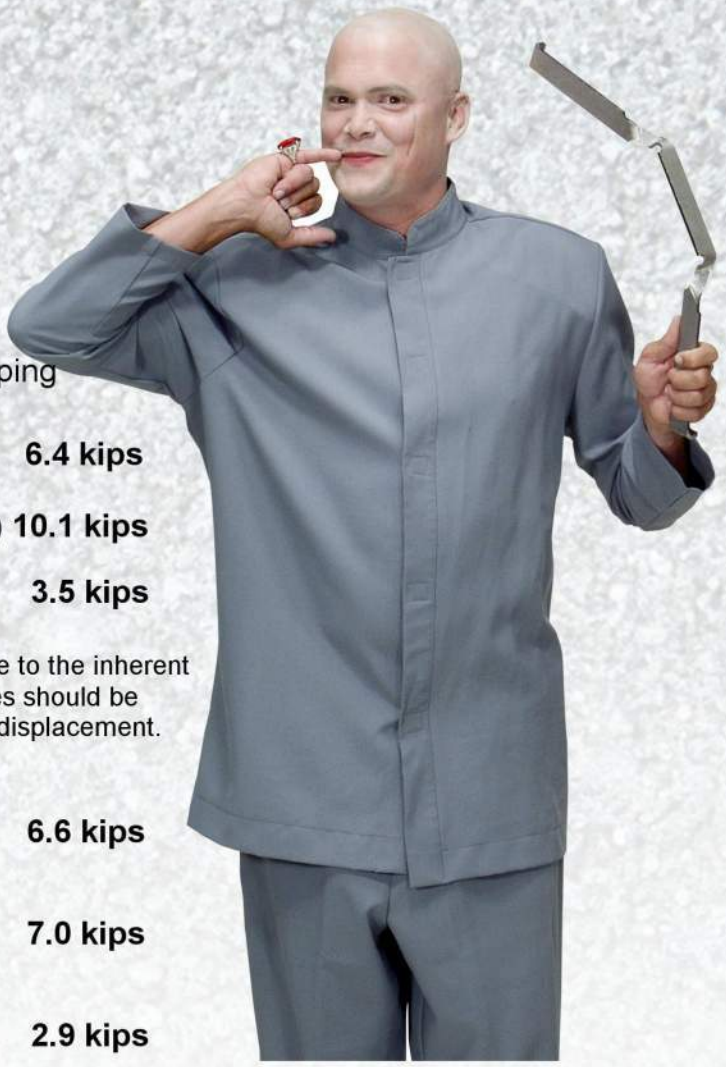
The mini-V

We still call it the mini-V! The mini-v is available in both JVI platinum J-finish and 201L stainless steel. It is available with a square faceplate and with an angled faceplate.

BENEFITS:

- 1" tall faceplate
- Fits in a 2" thick flange
- Ideal for field topped double tees
- Ideal for insulated wall panel alignment
- Tested in 4" and 2" thick flange thicknesses
- Tested in a 2" thick flange with 2" composite topping



Recommended Nominal Strengths in 4" Thickness

Cyclic In-Plane Shear With Tension (Gap = 0.1") **6.4 kips**

Monotonic In-Plane Shear With Tension (Gap = 0.1") **10.1 kips**

Out-of-Plane Shear with No Tension **3.5 kips**

Tension Normal to Face Plate is not explicitly reported due to the inherent ductility of the mini-V loaded in tension. Load displacement curves should be investigated for a tension capacity with an acceptable associated displacement.

Recommended Nominal Strengths in 2" Thickness

Cyclic In-Plane Shear With NO Tension **6.6 kips**
Test performed on 2" thickness with 2" topping

Monotonic In-Plane Shear No Tension **7.0 kips**
Test performed on 2" thickness NO topping

Out-of-Plane Shear with No Tension **2.9 kips**
Single test performed on 2" thickness NO topping

U.N.O Nominal Strengths are 5% fractile strengths calculated using the average ultimate load, and standard deviation of full-scale test results. A 5% fractile strength is the nominal strength for which there is a 90% confidence that there is a 95% probability of the actual strength exceeding the nominal strength. Please reference ACI 318 Appendix D for additional information

Flush Blockout *1/4" Blockout* *3/4" Blockout* *1" Blockout*

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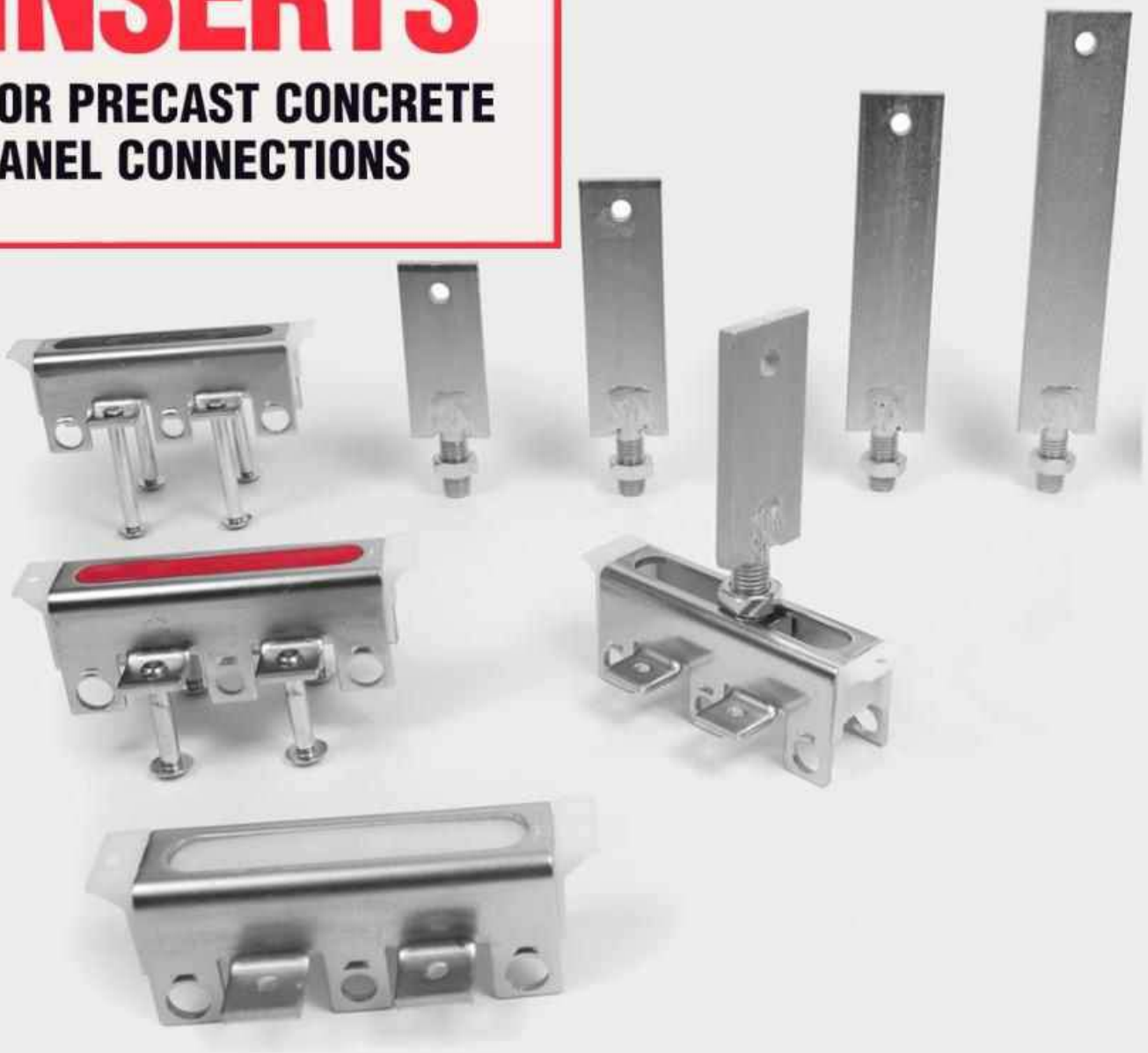
PSA

SLOTTED INSERTS

FOR PRECAST CONCRETE PANEL CONNECTIONS



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YOUR **CONNECTION CONNECTION**

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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!

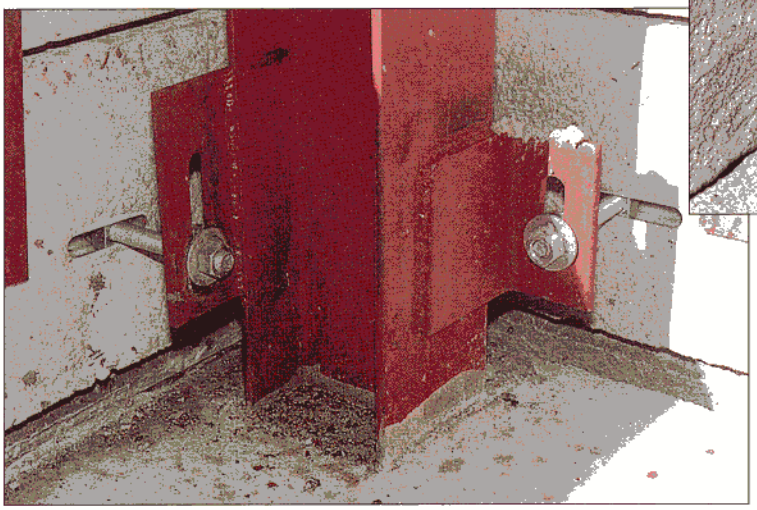
CONSIDER THESE INNOVATIVE FEATURES:

- 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.



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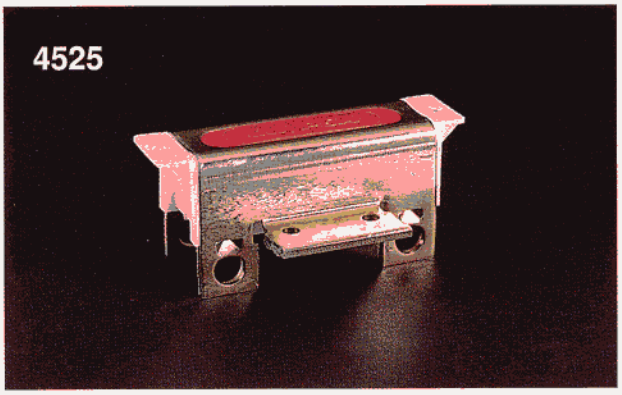
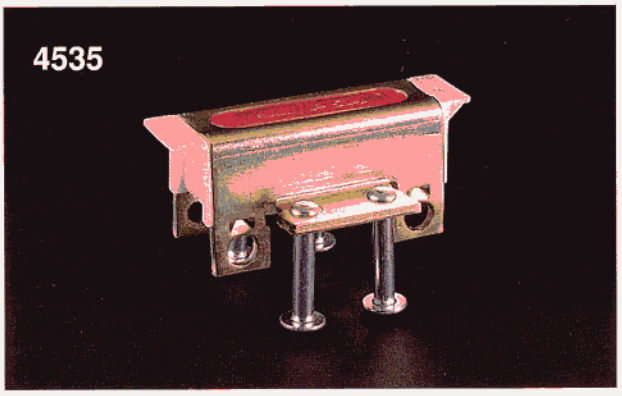
4525



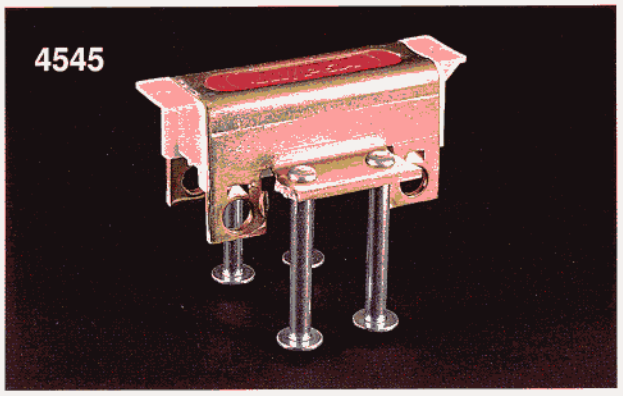
INSERT TYPE	ULTIMATE PULL OUT CAPACITY	ULTIMATE SHEAR CAPACITY	AVAILABLE ADJUSTMENT
4525	>13,400 lbs.	>20,000 lbs.	2-7/8"

4535



INSERT TYPE	ULTIMATE PULL OUT CAPACITY	ULTIMATE SHEAR CAPACITY	AVAILABLE ADJUSTMENT
4535	>18,800 lbs.	>20,000 lbs.	2-7/8"

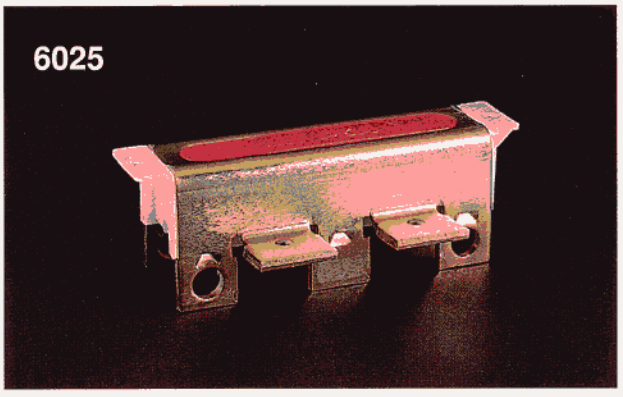
4545



INSERT TYPE	ULTIMATE PULL OUT CAPACITY	ULTIMATE SHEAR CAPACITY	AVAILABLE ADJUSTMENT
4545	>21,500 lbs.	>20,000 lbs.	2-1/8"

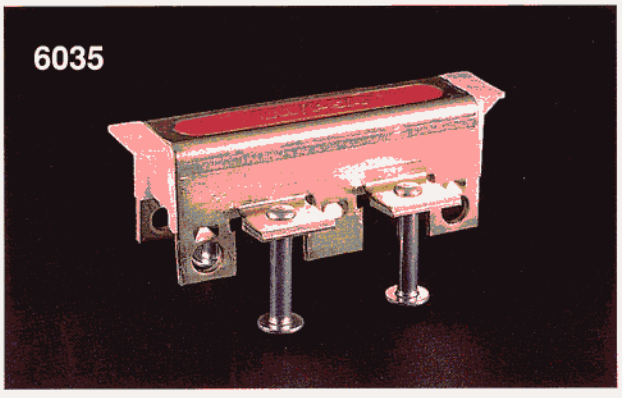
SERIES 6000

6025



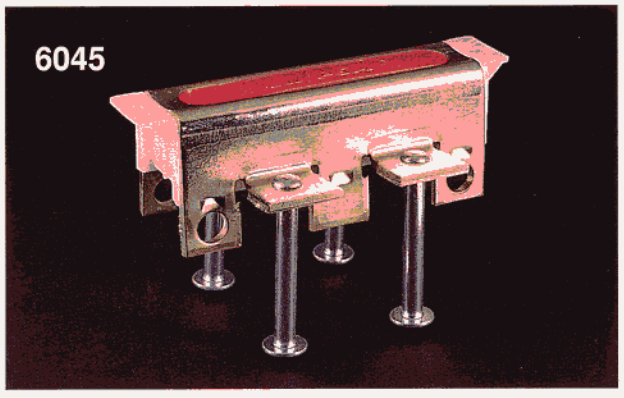
INSERT TYPE	ULTIMATE PULL OUT CAPACITY	ULTIMATE SHEAR CAPACITY	AVAILABLE ADJUSTMENT
6025	>13,400 lbs.	>20,000 lbs.	4-3/8"

6035

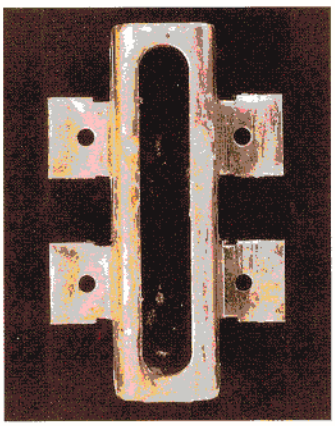


INSERT TYPE	ULTIMATE PULL OUT CAPACITY	ULTIMATE SHEAR CAPACITY	AVAILABLE ADJUSTMENT
6035	>18,800 lbs.	>20,000 lbs.	4-3/8"

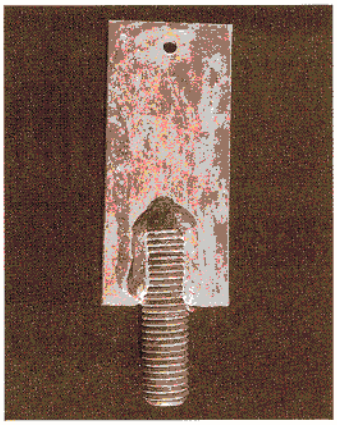
6045



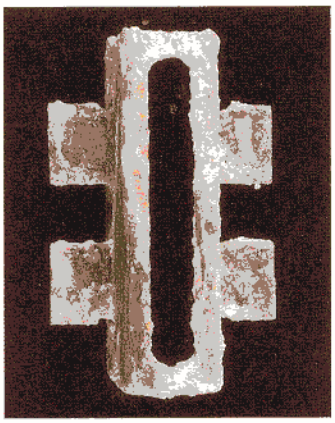
INSERT TYPE	ULTIMATE PULL OUT CAPACITY	ULTIMATE SHEAR CAPACITY	AVAILABLE ADJUSTMENT
6045	>21,500 lbs.	>20,000 lbs.	3-5/8"



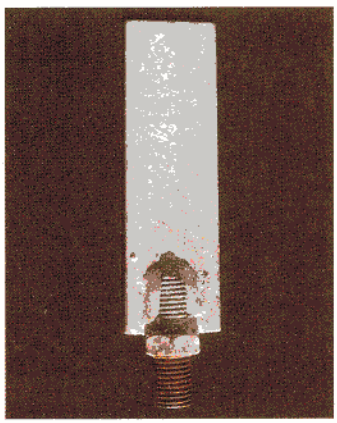
PSA Insert (Top) J-Type Finish after 648 hrs.



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.

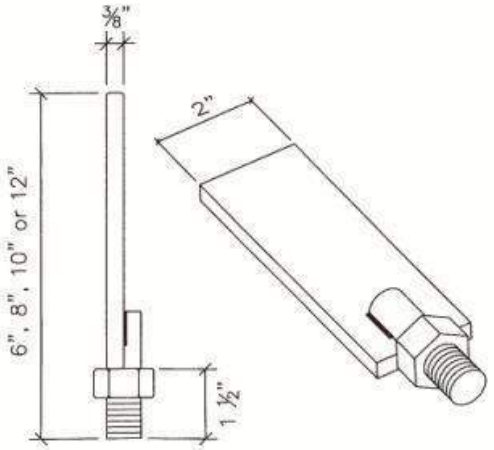
● Erection

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

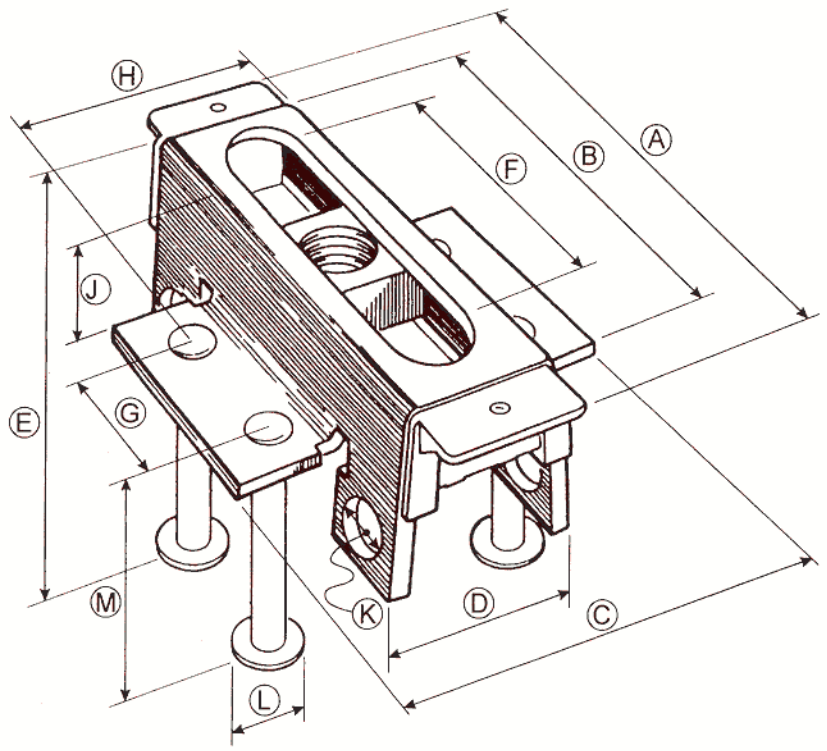
Steel Body	AISI 304 Stainless Steel
Hex Jam Nuts	AISI 304 Stainless Steel, ASTM A194 GR 8
Thread. Stud	¾" dia. 10 UNC-2, AISI 304 Rolled Formed.
Welding	Robot Welding w/ Min. Penetration of 0.8mm

"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



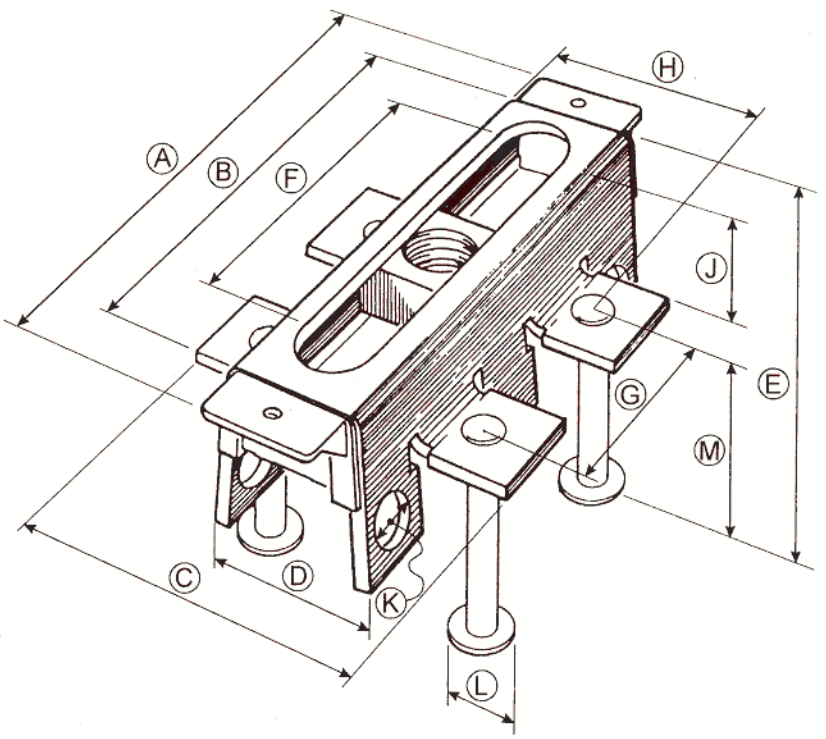
#4545 ILLUSTRATED

SERIES 4500

Ⓐ LENGTH (OVERALL)		5 3/4"
Ⓑ LENGTH (EXCLUDING PLASTIC TAB)		4 1/2"
Ⓒ WIDTH (OVERALL)		4 1/8"
Ⓓ WIDTH (AT BASE)		2"
Ⓔ DEPTH	4525 (NO STUD)	2 1/2"
	4535	3 1/2"
	4545	4 1/2"
Ⓕ ADJUSTMENT	4525	2 7/8"
	4535	2 7/8"
	4545	2 1/8"
Ⓖ CENTER TO CENTER (ON SAME SIDE)		1 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		
	4535	2 1/4"
	4545	3 1/4"

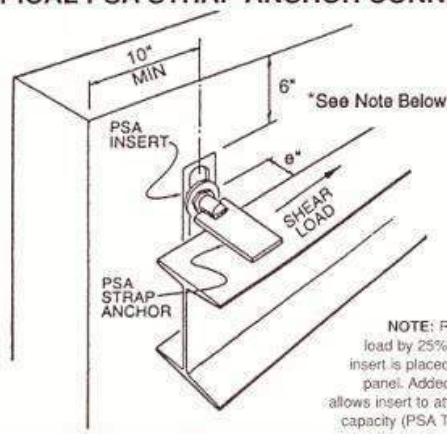
SERIES 6000

Ⓐ 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"

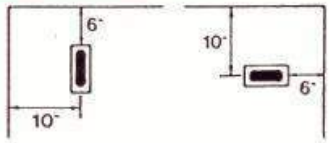


#6045 ILLUSTRATED

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).

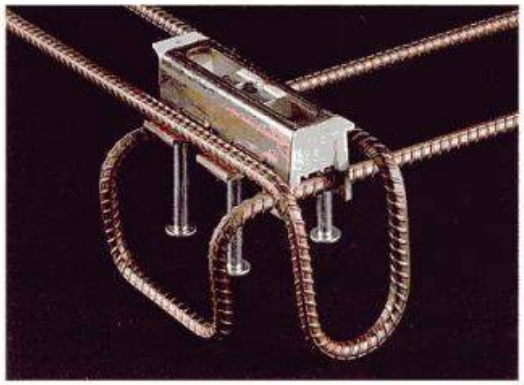


MINIMUM EDGE DISTANCE

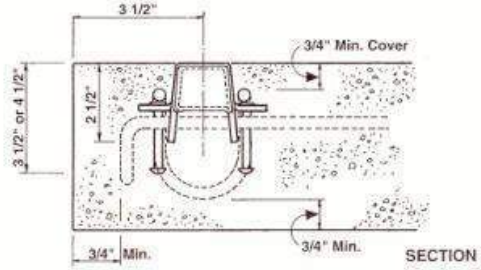
The minimum edge distance without the use of additional reinforcing steel is 6" and 10" as shown in the illustration. The edge distance can be reduced if extra reinforcement is installed (PSA Test Report #2).

INSERTS	• WEIGHT		THREADED STRAPS	• WEIGHT	
	LB.	KGF		LB.	KGF
4525	1.5	0.680	675	1.2	.544
4535	1.9	0.862	875	1.6	.726
4545	2.3	1.043	1075	2.0	.907
6025	2.0	0.907	1275	2.4	1.089
6035	2.3	1.043			
6045	2.5	1.134			

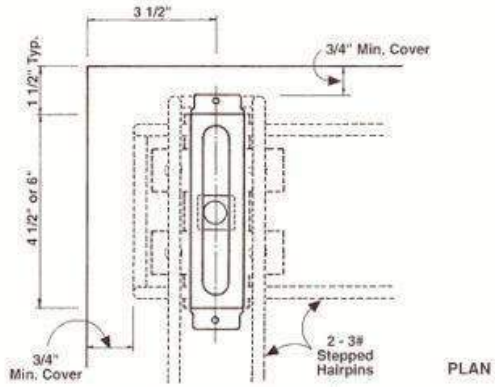
Test Reports available @ www.jvi-inc.com



STEPPED HAIR PIN REINFORCEMENTS NEAR EDGE



SECTION

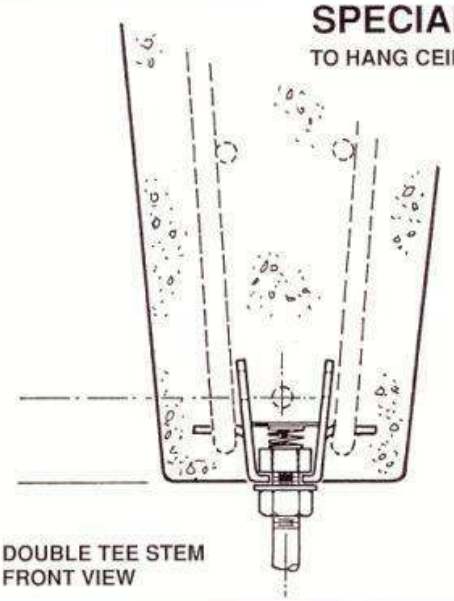


PLAN

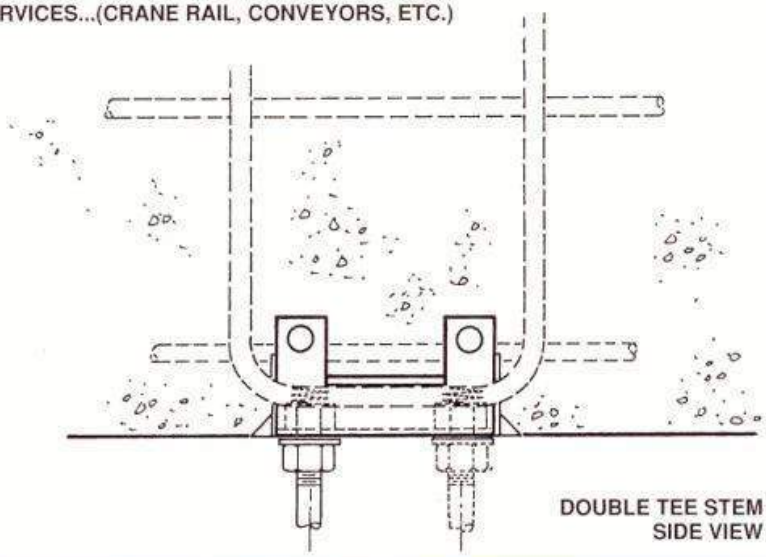
SUGGESTED CORNER DETAIL
(IN ADDITION TO PANEL REINFORCEMENT)

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

Spider Plate

A new approach to weld plates that utilizes monolithic construction to elminate the need for headed concrete anchors.

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.

JVI

Your Connection Connection

7131 North Ridgeway Avenue • Lincolnwood, IL 60712 USA
847/675-1560 • Fax 847/675-0083 • 1-800-742-8127 • http://www.jvi-inc.com

PSA 6045B

The JVI PSA 6045B is a JVI PSA 6045 enhanced with a 3" long nut to increase the pull-out capacity. With the addition of stepped hairpin reinforcement, the nominal tension capacity of the insert is 30,000 lbs!

Benefits

- Nominal Tension Capacity of 30,000 lbs with Reinforcing
- Nominal Tension Capacity of 24,000 lbs Unreinforced
- Available in Galvanized and J-Finish
- 2 5/8" of slot tolerance
- Full Test Report Available (Test Report #7)

Example Hairpin Reinforcing

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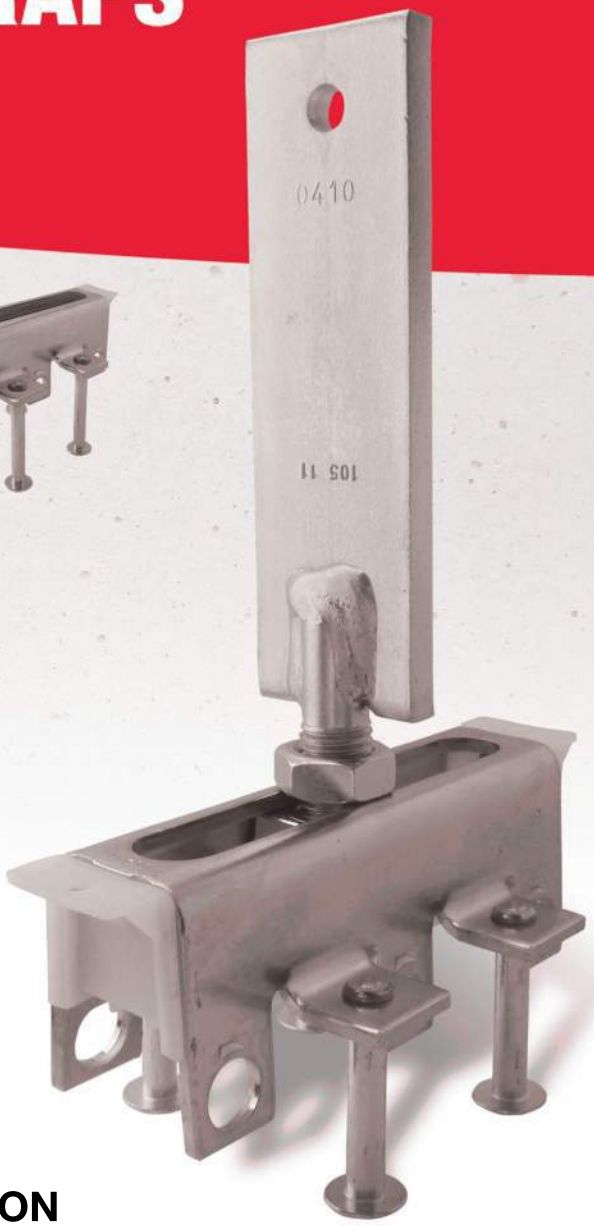
WE SELL STAINLESS STEEL INSERTS & STRAPS



Look who's already using them:

Arban & Carosi, Inc.
U.S. Concrete Precast Group Mid-Atlantic
Coreslab Structures Inc.
Dukane Precast, Inc.
Gate Precast Company
High Concrete Group LLC
IPC, Inc.
International Concrete Products, Inc.
Kerkstra Precast, Inc.
MPC Enterprises, Inc.
Nitterhouse Concrete Products, Inc.
Spancrete, Inc.
The Shockey Precast Group
Tindall Corporation

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M-Series PSA

An additional slotted insert solution from JVI!

- ☑ Threaded Strap
- ☑ Notched Strap
- ☑ Slot Tolerance
- ☑ Ultimate Capacities
- ☑ Test Reports
- ☑ Team JVI

JVI

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M-Series
PSA SLOTTED INSERTS

The M-series slotted insert is a modification to the PSA slotted insert. It utilizes a lighter, more economical construction material for connection areas where load demand is not as substantial. It has all the benefits of the PSA and the added ability to accept either a threaded strap or a notched strap.

Insert Benefits:

- Insert can accept either a threaded or a notched strap
- Available in the JVI Platinum J-Finish
- Totally automated manufacturing process offers the credibility of consistent performance levels previously not possible.

Threaded Strap Anchor Benefits:

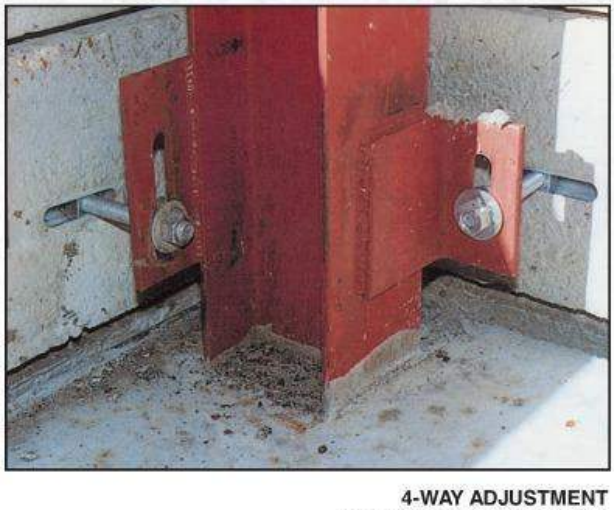
- Flush placement of the threaded rod allows flat placement of the strap anchors thus eliminating the need for cumbersome shimming.
- Available in the JVI Platinum J-Finish
- A jam nut is supplied to accommodate the "push-pull" movement of wind loads.
- Available in 2" x 3/8" x 6",8",10" and 12" standard lengths. Custom Strap Geometries available in small and large quantities

Nothced Strap Anchor Benefits:

- Tight manufacturing tolerances result in a snugger-fitting connection, reducing undesirable "play".
- Most economical strap
- Available in the JVI Platinum J-finish.
- Rapid installation in the field
- Available in 2" x 3/8" x 6",8",10" and 12" standard lengths. Custom Strap Geometries available in small and large quantities.

2-WAY ADJUSTMENT WELDED TO FRAMEWORK USING A NOTCHED STRAP.

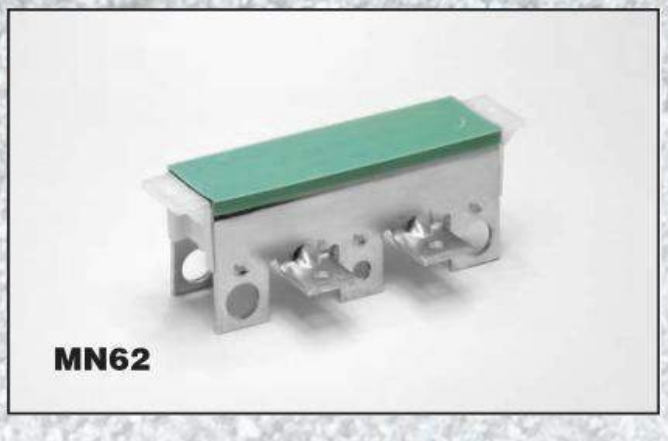
2-WAY ADJUSTMENT WELDED TO FRAMEWORK USING A THREADED STRAP.



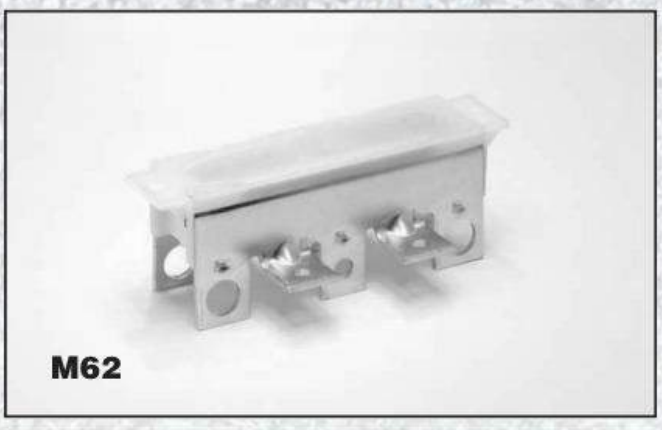
4-WAY ADJUSTMENT BOLTED TO FRAMEWORK.

M-Series
PSA SLOTTED INSERTS

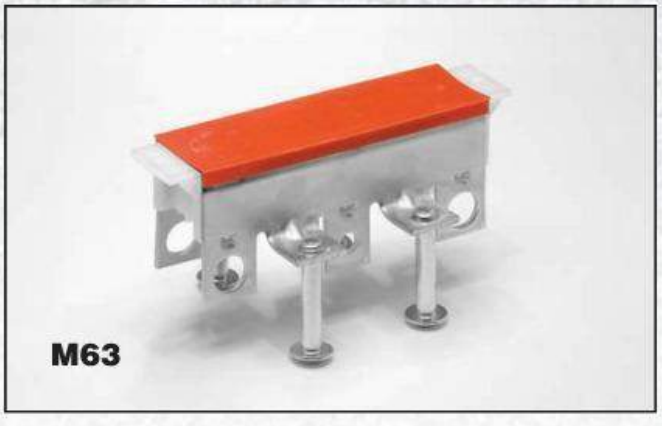
MN62
6" Slotted insert-without nut-is for use with a notched strap and is only available in a 2.57" overall depth. Green Cap.
Note: Since strap capacity is the limiting strength factor in the fastening system, the notched strap is suitable only in concert with the MN62 insert.



M62
6" Slotted insert-with nut-is for use with a threaded strap. 2.57" overall depth. White Cap.



M63
6" Slotted insert with 2" studs and with nut is for use with a threaded strap. 3.74" overall depth. Red Cap.



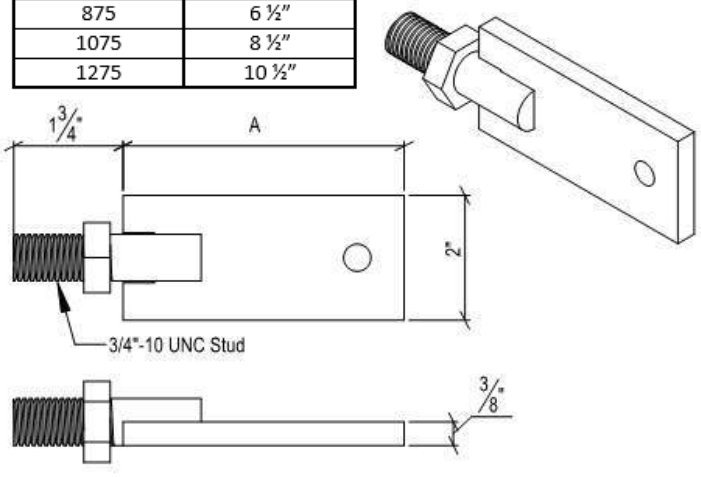
M64
6" Slotted insert with 3" studs and with nut is for use with a threaded strap. 4.74" overall depth. Black Cap.

PSA THREADED STRAPS

FEATURES:

- 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 movement.

Item No.	Dimension "A"
675	4 ½"
875	6 ½"
1075	8 ½"
1275	10 ½"

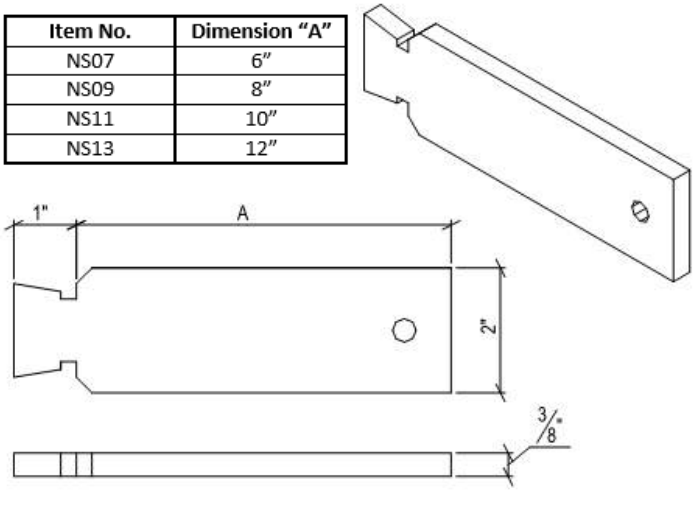


PSA NOTCHED STRAPS

FEATURES:

- Tighter manufacturing tolerances result in a snugger-fitting connection with less undesirable "play".
- Most economical.
- Since strap capacity is the limiting strength factor in the fastening system, the notched strap is suitable only in concert with the MN62 insert.

Item No.	Dimension "A"
NS07	6"
NS09	8"
NS11	10"
NS13	12"



NEW 6" PSA INSERT & NOTCH STRAPS
SHEAR TESTS
FAILURE CAPACITY (LBS)

NOTE: Since strap capacity is the limiting strength factor in the PSA system, the notched strap, having the least capacity within the system, adds no additional capacity when used with higher capacity inserts than when used with the MN62 insert. When considering capacity issues, then, the notched strap is recommended for use only with the MN62 insert.

Insert / Nut / Strap		1" Eccentricity		1.5" Eccentricity		2" Eccentricity		3" Eccentricity	
		05' Tests	06' Tests	05' Tests	06' Tests	05' Tests	06' Tests	05' Tests	06' Tests
M62J w/ 1" nut Threaded Strap		14,601	11,610	12,246		16,485	13,700	14,130	13,700
		15,072		10,362		12,717	14,860	14,130	13,932
									8,823
	Avg	13,761		11,304		14,441		12,943	
	Lowest	**11,300**		**10,300**		**9,200**		**8,800**	
M63J w/ 1" nut Threaded Strap			11,610				9,288		15,325
			12,306				11,145		16,254
			12,074				13,932		11,145
	Avg	11,997				11,455		14,241	
	Lowest	**11,300**		**10,300**		**9,200**		**11,100**	
M64J w/ 2" nut Threaded Strap		16,956	6,966*	11,304		18,804	15,789	17,427	10,217
		18,840	17,647	12,717		19,782	18,576	18,840	14,860
	Avg	17,814		12,011		18,238		15,336	
	Lowest	**16,900**		**11,300**		**15,700**		**10,200**	
MN62J w/ No nut Notch Strap		11,775	12,771	11,304		13,659	13,003	11,775	10,217
		13,188	13,932	13,424		14,130	13,003	12,246	10,217
			13,467				11,610		9,288
	Avg	13,027		12,364		13,081		10,749	
	Lowest	**11,700**		**11,300**		**11,600**		**9,200**	

* = Insert thread sheared - problem speciman, do not use in evaluating capacity
*** = Problem with test speciman

NEW 6" PSA INSERT & NOTCH STRAPS
TENSION TESTS
FAILURE CAPACITY (LBS)

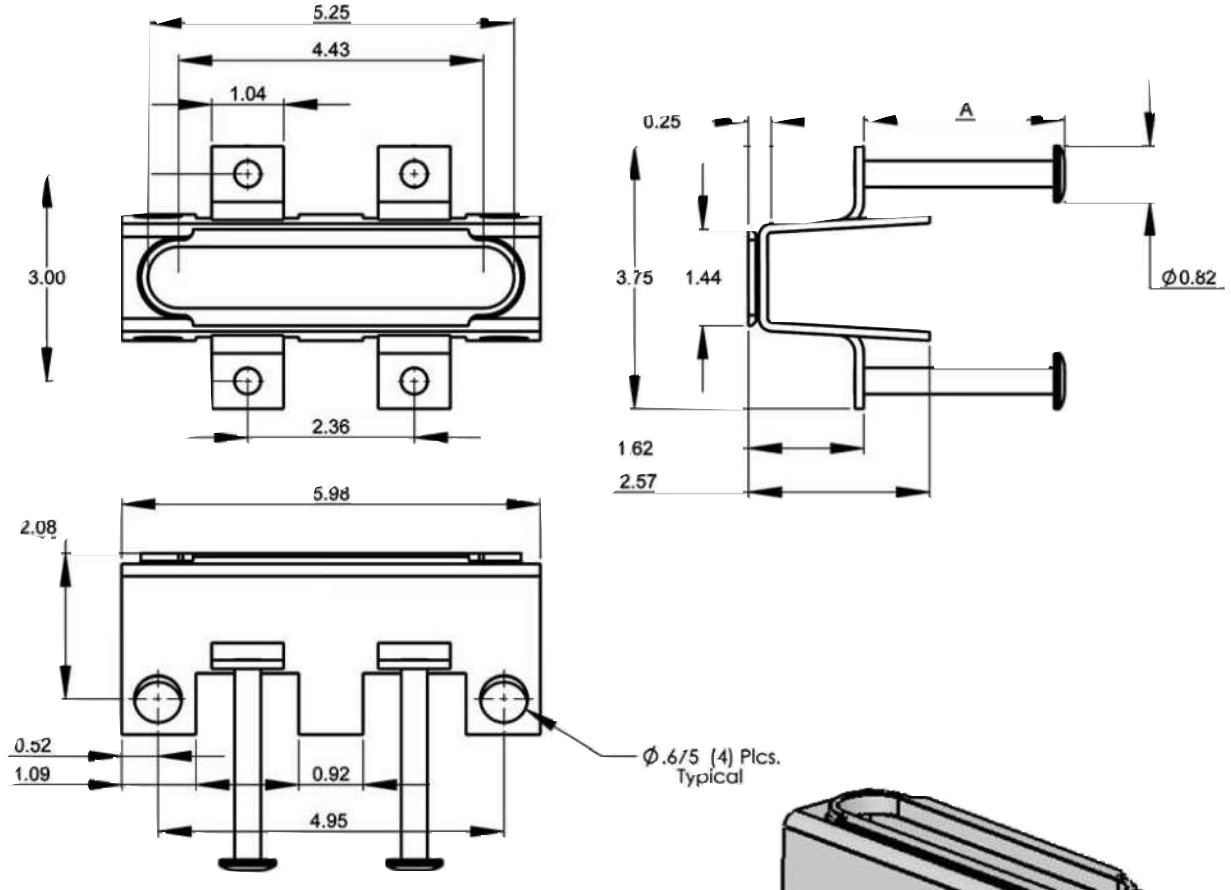
NEW 6" PSA INSERT & NOTCH STRAPS - TENSION TESTS - FAILURE CAPACITY (LBS)

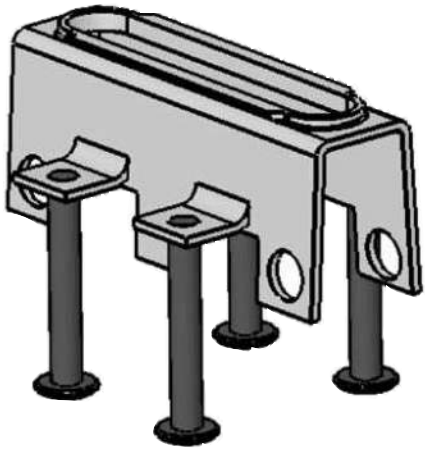
Insert / Nut / Strap		Insert Located Away from Concrete Edge				Insert Located Near & Perpendicular to Concrete Edge		
		Strap @ center of slot		Strap @ end of slot		Strap @ center slot	@ end slot, away edge	@ end slot, near edge
		05' Testing	06' Testing	05' Testing	06' Testing	06' Testing	06' Testing	06' Testing
M62J w/ 1" nut Threaded Strap		14,860	10,217	14,860	10,217	8,823	7,430	6,501
		16,486	12,539	14,860	12,074	10,217	10,217	
						9,288		
	Avg	13,526		13,003		9,443	8,824	6,501
	Lowest	**10,200**		**10,200**		**8,800**	**7,400**	**6,500**
M63J w/ 1" nut Threaded Strap		17,647	14,860	13,932	15,325	13,932	10,217	10,217
		19,504	16,718	14,860	13,932	9,752*	10,217**	
			20,433		15,789	12,539		
	Avg	17,832		14,768		12,074	10,217	10,217
	Lowest	**14,800**		**13,900**		**9,700**	**10,200**	**10,200**
M64J w/ 2" nut Threaded Strap		18,576	21,362	15,789	13,932	14,860	11,145	
		19,504	20,433	14,860	17,182	13,003	11,145	
						12,074	***	
	Avg	19,969		15,441		13,312	11,145	
	Lowest	**18,500**		**13,900**		**12,000**	**11,100**	
MN62J w/ No nut Notch Strap		13,932		13,003				
		13,932		12,771				
	Avg	13,932		12,887				
	Lowest	**10,200**		**10,200**				

* = Pre-existing Crack near insert prior to testing
** = Last gage reading, not failure
*** = Problem with test speciman

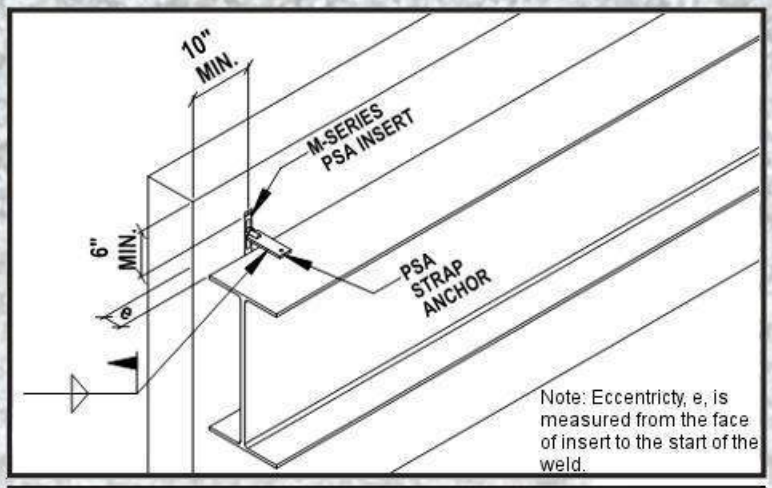
J-FINISH ANTI-CORROSION SYSTEM. Comprehensive documentation of this state-of-the-art anti corrosion system can be found in PSA test report # 6. (www.jvi-inc.com) Of special note is that the J-finish can be applied to the threads of a threaded strap…the most vulnerable area to corrosion. Moreover, unlike with hot-dipped galvanized, grinding off of the J-finish before welding is not necessary. This results in on-site labor savings.

DIMENSIONAL SKETCHES





ITEM NUMBER	DIMENSION	LENGTH
M62	A	NO STUD
M63	A	2.12"
M64	A	3.12"



Note: Eccentricty, e, is measured from the face of insert to the start of the weld.

MINIMUM EDGE DISTANCE

Connections located nearer to an edge than the minimum dimensions shown should consider reported capacities for inserts located near and perpendicular to an edge unless stepped hairpin reinforcement is supplied.

MATERIAL SPECIFICATIONS

M SERIES "J" FINISH INSERTS

Steel Body	Hot Rolled, P & O, HSLA SAE J2340 490XLF
Square Nuts	¾" dia. NC thread, SAE J995 GR-5
2" Rectangular Nuts	Cold Forged¾" dia. 10 UNC-2 thread, SAE J995, GR-5 with "J Finish"
Studs	AISI 1016 or 1018 (Round Head)
Plastic Closers	Non-structural plastic

PSA "J" FINISH Threaded STRAP ANCHORS

Steel Body	ASTM A36/A529 GR 50, CSA G40.21, 44W
Hex Jam Nuts	¾" dia. 10 UNC-2, SAE GR 2 Hex Nut with "J Finish"
Thread. Stud Welding	¾" dia. 10 UNC-2, AISI 1038 CRS To CWB Standards (by robot)

M Series "J" FINISH NOTCH STRAP ANCHORS

Steel Material	ASTM A36/A529 GR 50, CSA G40.21, 44W

"J" FINISH

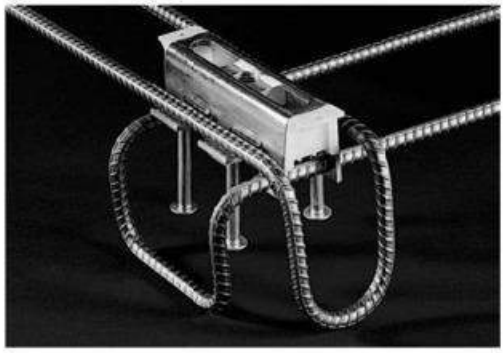
1. Zinc plate to **ASTM B633**, Type II (0.0005 thickness) specification.
2. **Trivalent** Clear Chromate (RoHS and ELV compliant)
3. Seal coat

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

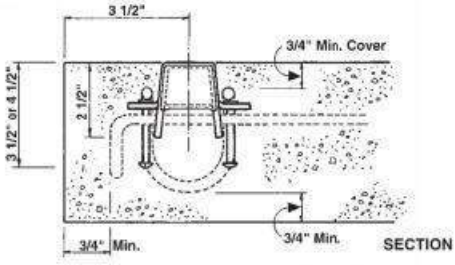
INSERTS • WEIGHT	LB.	KGF
MN62	1.2	.544
M62	1.3	.580
M63	1.7	.780
M64	2.0	.907

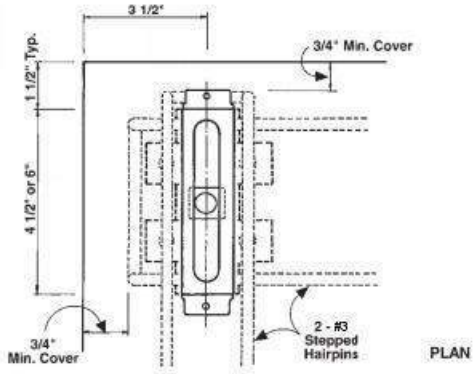
THREADED STRAPS • WEIGHT	LB.	KGF
675	1.2	.544
875	1.6	.726
1075	2.0	.907
1275	2.4	1.089

NOTHCED STRAPS • WEIGHT	LB.	KGF
NS07	1.35	.62
NS09	1.75	.80
NS11	2.20	1.00
NS13	2.60	1.18



STEPPED HAIR PIN REINFORCEMENTS NEAR EDGE





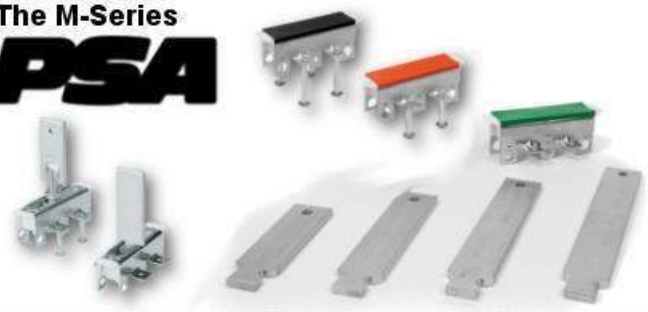
SUGGESTED CORNER DETAIL
(IN ADDITION TO PANEL REINFORCEMENT)

Missing the ORIGINAL PSA ?

No need to miss anything. JVI is happy to offer both the Original PSA and the M-Series PSA.

The Original PSA

The M-Series PSA



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

Spider Plate

A new approach to weld plates that utilizes monolithic construction to elminate the need for headed concrete anchors.

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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Series Name	Part Number	Pieces per Full Box	Weight per Piece	Description	Image
PSA The Original	4525J	500 Pcs	1.50 Lbs	PSA Insert - 4-1/2" No Stud J-Finish	
	4535J	440 Pcs	1.90 Lbs	PSA Insert - 4-1/2" Short Stud J-Finish	
	4545J	400 Pcs	2.30 Lbs	PSA Insert - 4-1/2" Long Stud J-Finish	
	6025J	500 Pcs	1.75 Lbs	PSA Insert - 6" No Stud J-Finish	
	6025G	500 Pcs	1.80 Lbs	PSA Insert - 6" No Stud HDG	
	6025SS	500 Pcs	1.70 Lbs	PSA Insert - 6" No Stud 304 Stainless Steel	
	6035J	440 Pcs	2.10 Lbs	PSA Insert - 6" Short Stud J-Finish	
	6035G	440 Pcs	2.15 Lbs	PSA Insert - 6" Short Stud HDG	
	6035SS	440 Pcs	2.05 Lbs	PSA Insert - 6" Short Stud 304 Stainless Steel	
	6045J	400 Pcs	2.35 Lbs	PSA Insert - 6" Long Stud J-Finish	
	6045G	400 Pcs	2.40 Lbs	PSA Insert - 6" Long Stud HDG	
	6045SS	400 Pcs	2.30 Lbs	PSA Insert - 6" Long Stud 304 Stainless Steel	
	B6045J	400 Pcs	2.55 Lbs	PSA Insert - 6" Blast Long Stud J-Finish	
	B6045G	400 Pcs	2.60 Lbs	PSA Insert - 6"Blast Long Stud HDG	
PSA The M-Series	M62J	500 Pcs	1.30 Lbs	M-Series PSA Insert - 6" x 2-1/2", no stud anchors w/ J Finish	
	M63J	440 Pcs	1.70 Lbs	M-Series PSA Insert - 6" x 3-1/2", short stud anchors w/ J Finish	
	M64J	400 Pcs	2.00 Lbs	M-Series PSA Insert - 6" x 4-1/2", long stud anchors w/ J Finish	
	MN62J	500 Pcs	1.20 Lbs	M-Series PSA Insert - 6" x 2-1/2",no Nut, no stud anchors w/ J Finish	
Threaded Strap	675J	80 Pcs	1.25 Lbs	PSA Strap - 2" x 6" w/ J-Finish	
	675G	80 Pcs	1.30 Lbs	PSA Strap - 2" x 6" w/ HDG	
	675SS	80 Pcs	1.20 Lbs	PSA Strap - 2" x 6" w/ 304 Stainless Steel	
	875J	60 Pcs	1.65 Lbs	PSA Strap - 2" x 8" w/ J-Finish	
	875G	60 Pcs	1.70 Lbs	PSA Strap - 2" x 8" w/ HDG	
	875SS	60 Pcs	1.60 Lbs	PSA Strap - 2" x 8" w/ 304 Stainless Steel	
	1075J	50 Pcs	2.05 Lbs	PSA Strap - 2" x 10" w/ J-Finish	
	1075G	50 Pcs	2.10 Lbs	PSA Strap - 2" x 10" HDG	
	1075SS	50 Pcs	2.00 Lbs	PSA Strap - 2" x 10" 304 Stainless Steel	
	1275J	40 Pcs	2.50 Lbs	PSA Strap - 2" x 12" w/ J-Finish	
	1275G	40 Pcs	2.55 Lbs	PSA Strap - 2" x 12" w/ HDG	
	1275SS	40 Pcs	2.45 Lbs	PSA Strap - 2" x 12" w/ 304 Stainless Steel	
Notched Strap	NS07J	80 Pcs	1.35 Lbs	M-Series Notch Strap - 2" x 7" J-Finish	
	NS09J	60 Pcs	1.75 Lbs	M-Series Notch Strap - 2" x 9" J-Finish	
	NS11J	50 Pcs	2.20 Lbs	M-Series Notch Strap - 2" x 11" J-Finish	
	NS13J	40 Pcs	2.60 Lbs	M-Series Notch Strap - 2" x 13" J-Finish	
Mini-V Angle	MVA05J	1000 Pcs	.95 Lbs	MiniV Angle Vector Connector w/ 1/4" hole centered J-Finish	
	MVA152	1000 Pcs	.95 Lbs	MiniV Angle Vector Connector w/ 1/4" hole centered 201L SS	
Mini-V Square	MVS05J	1000 Pcs	.90 Lbs	MiniV Square Vector Connector w/ 1/4" hole centered J-Finish	
	MVS152	1000 Pcs	.90 Lbs	MiniV Square Vector Connector w/ 1/4" hole centered 201L SS	
Vector Connector	VC401J	700 Pcs	1.40 Lbs	Vector Connector (VC4) w/3 holes HSLA w/ J-Finish	
	VC4112	700 Pcs	1.40 Lbs	Vector Connector (VC4) w/3 holes 201L Stainless Steel	

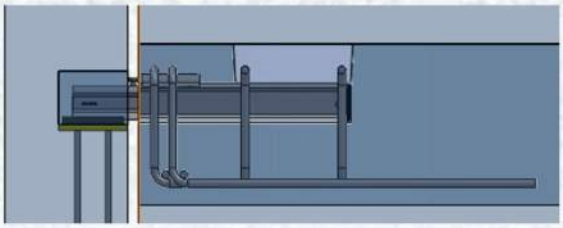
RVK Invisible Connections

The RVK is a completely hidden, telescopic solution for the gravity support of precast stairs and flat slabs.

During casting the inner tube is contained within the outer tube. Limiting work at the bed.

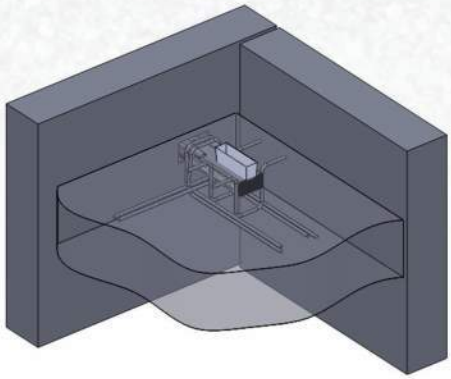
On site, the inner tube is extracted either on the groud or after being moved into place through a top of stair/slab access port.

The inner tube fits into a recieving pocket in a support wall or beam.



Benefits

- Corbel Free Connection with clean lines
- Easy installation at casting
- Safe and Simple installation on site
- Detailed Design Guide
- Hot Dipped Galvanized Finish
- Eliminates welding



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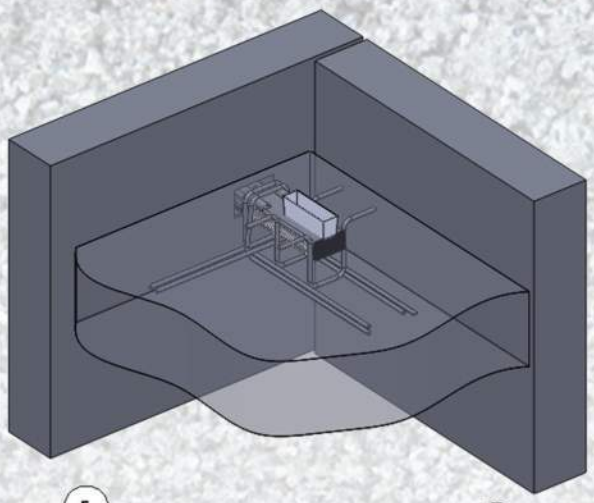
RVK 101G



Galvanized Invisible Gravity Support

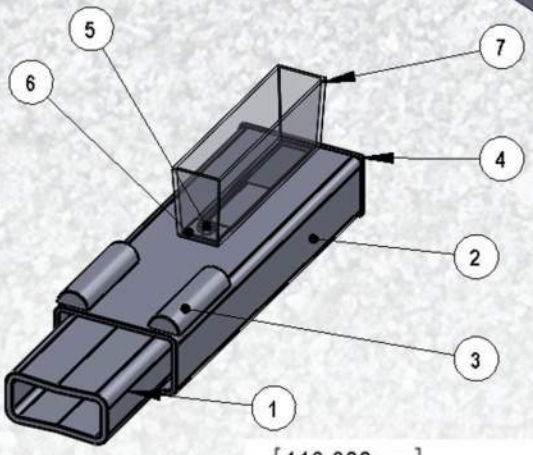
Mechanical Design Strength = 22 kips

Min. Slab Thickness for 22 kips = 10.5"

Min. Slab Thicnkess for fit = 7.9"

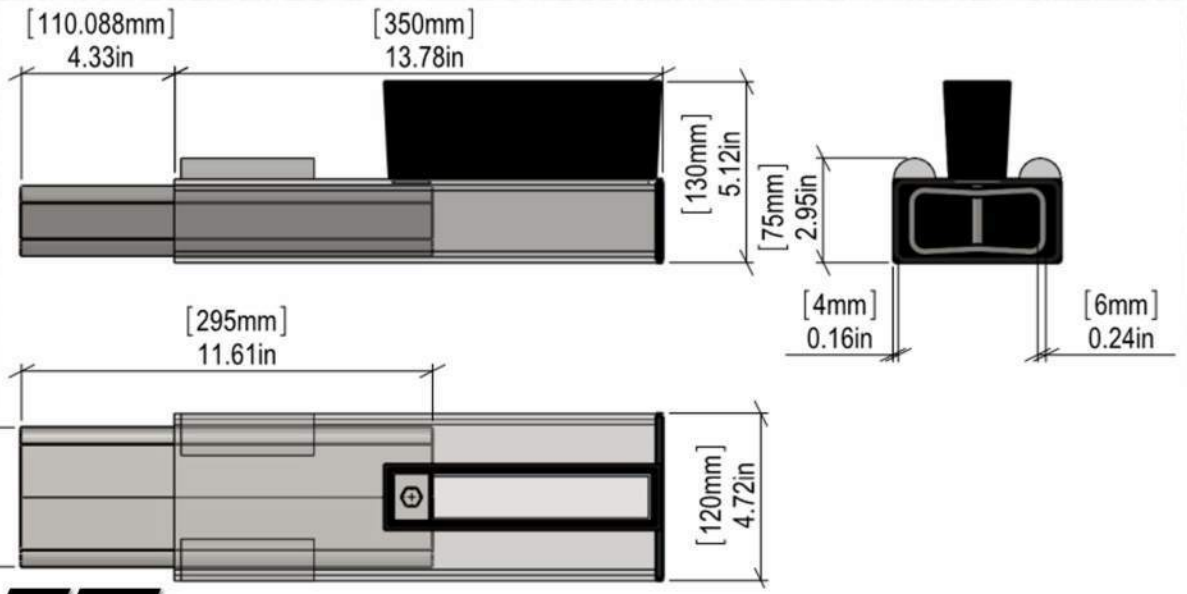
Min. Recommended Edge Distance = 8"

Complete Design Guide Available @
www.jvi-inc.com



Item Number	Description	Quantity	Material	Weight (lbs)
1	Inner Tube-100 x 50 x 6 - 295	1	S355	7.96
2	Outer Tube-120 x 60 x 4 - 350	1	S355	7.96
3	Half Round Steel	2	S355	1.16
4	Plastic Lid	1		0.01
5	Locking Screw – M12 x 40	1	S355	0.06
6	Square Washer	1	S355	0.10
7	Plastic Trough	1		0.05
			Total	17.30

S355 is equivalent to ASTM A500, GR C



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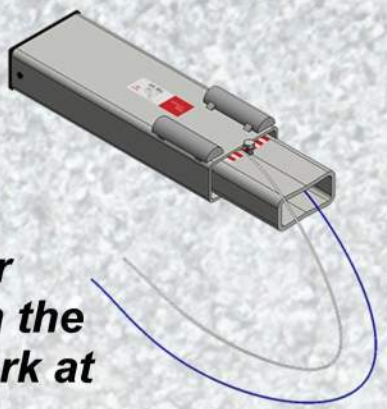
TSS Invisible Connections

The TSS is a completely hidden, telescopic solution for the gravity support of precast stairs and flat slabs.



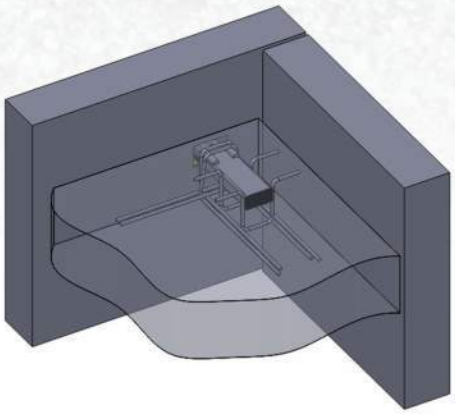
During casting the inner tube is contained within the outer tube. Limiting work at the bed.

On site, the inner tube is extracted either on the groud or after being moved into place.

The inner tube then fits into a recieving pocket in a support wall or beam.

Benefits

- Corbel Free Connection with clean lines
- Easy installation at casting
- Safe and Simple installation on site
- Available in (2) sizes/capacties
- Detailed Design Guide
- Hot Dipped Galvanized Finish
- Eliminates welding



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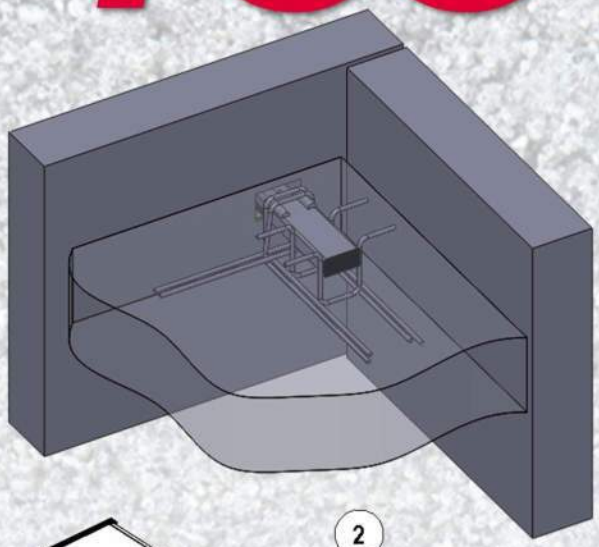
TSS 41G



Galvanized Invisible Gravity Support

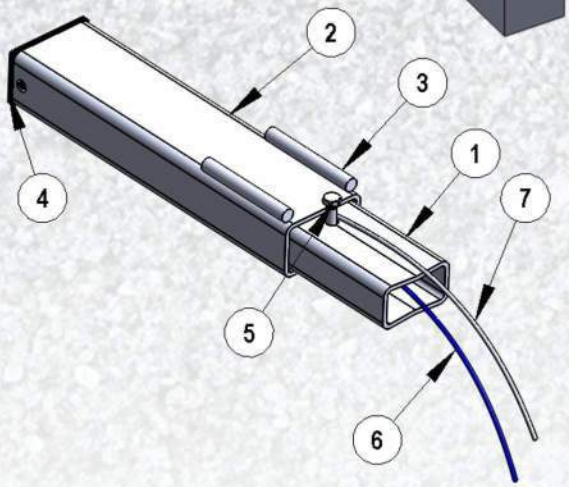
Mechanical Design Strength = 9 kips

Min. Slab Thickness for 9 kips = 6"

Min. Slab Thicnkess for fit = 6"

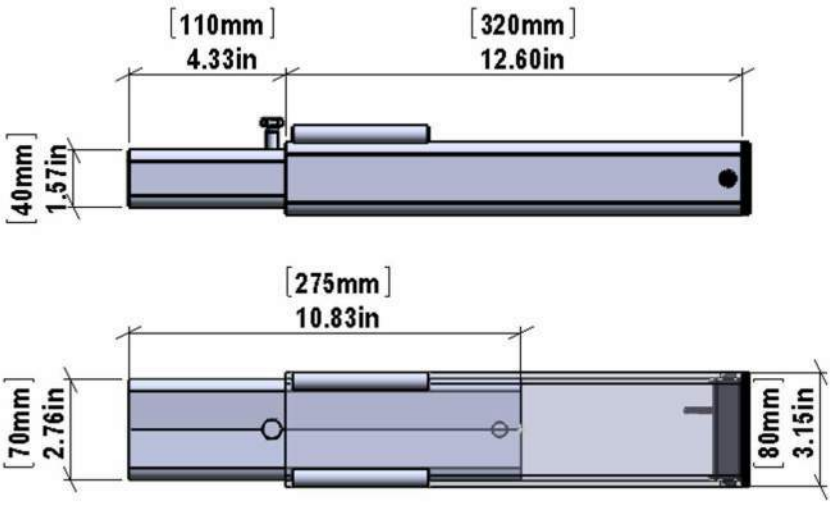
Min. Recommended Edge Distance = 6.3"

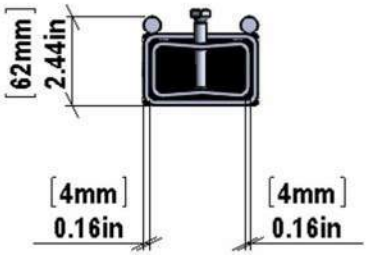
Complete Design Guide Available @
www.jvi-inc.com



Item Number	Description	Quantity	Material	Weight (lbs)
1	Inner Tube-70 x 40 x 4 - 275	1	S355	3.68
2	Outer Tube-80 x 50 x 4 - 320	1	S355	5.16
3	Round Steel	2	S355	0.38
4	Plastic Lid	1		0
5	Locking Screw - 8mm	1	S355	0.06
6	Pull In Rope	1	Nylon	0
7	Pull Out Wire	1		0.25
			Total	9.53

S355 is equivalent to ASTM A500, GR C





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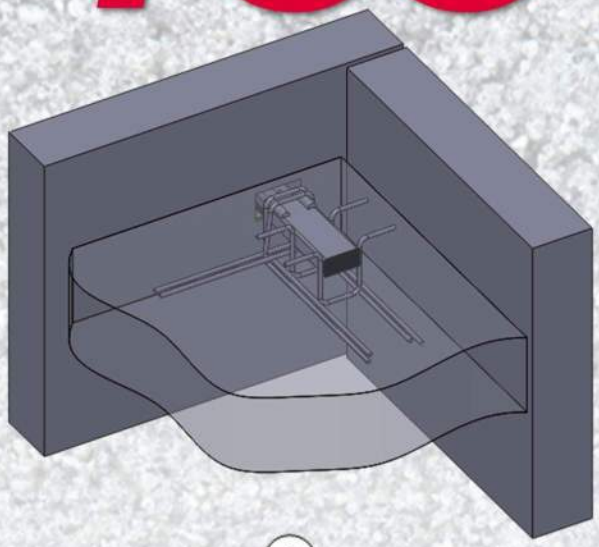
TSS 101G



Galvanized Invisible Gravity Support

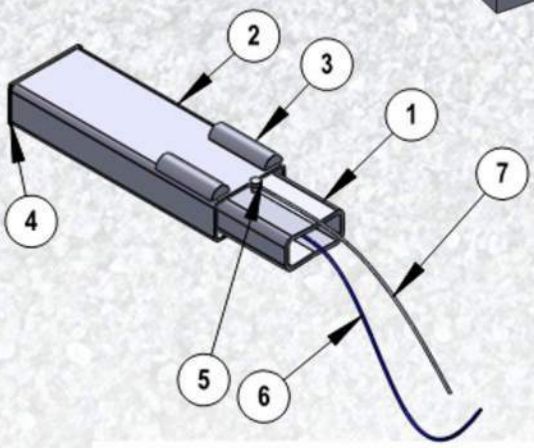
Mechanical Design Strength = 22 kips

Min. Slab Thickness for 22 kips = 10.5"

Min. Slab Thicnkess for fit = 7.9"

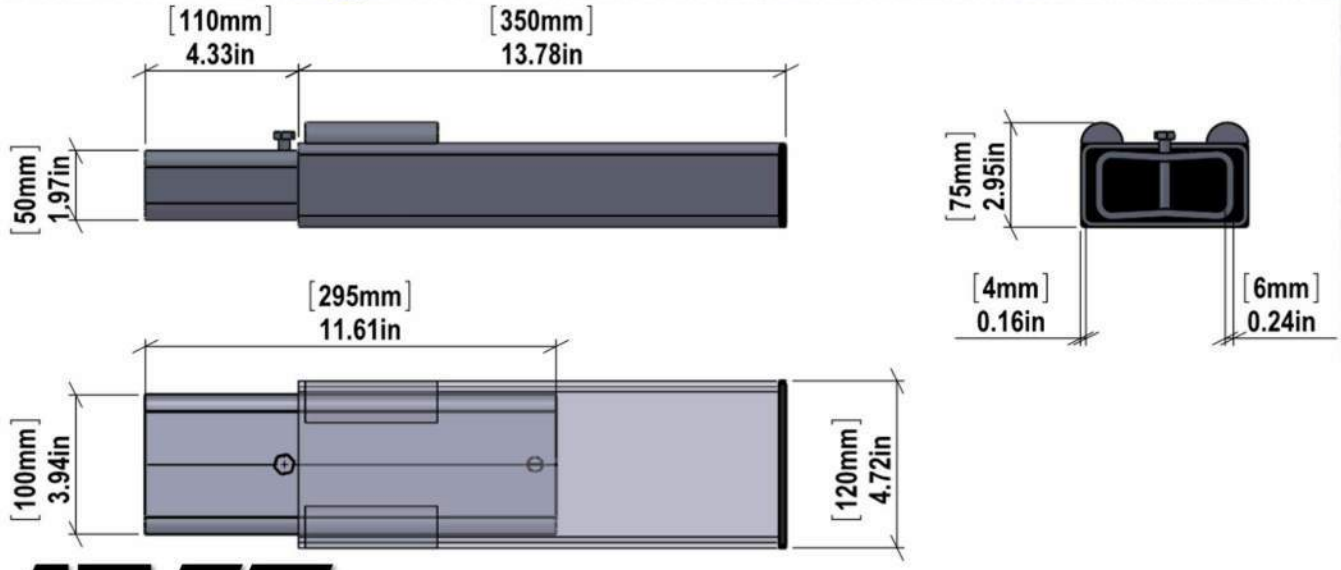
Min. Recommended Edge Distance = 8"

Complete Design Guide Available @
www.jvi-inc.com



Item Number	Description	Quantity	Material	Weight (lbs)
1	Inner Tube-100 x 50 x 6 - 295	1	S355	7.96
2	Outer Tube-120 x 60 x 4 - 350	1	S355	7.96
3	Half Round Steel	2	S355	1.16
4	Plastic Lid	1		0
5	Locking Screw - 8mm	1	S355	0.06
6	Pull In Rope	1	Nylon	0
7	Pull Out Wire	1		0.25
			Total	17.39

S355 is equivalent to ASTM A500, GR C



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BSF Invisible Connections

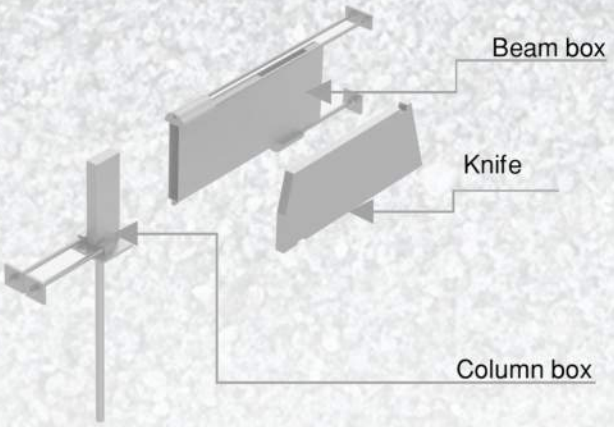
BSF inserts are a mechanical alternative to other beam supports such as integral corbels, bolt-on corbels or cast-in solid corbels. Four different BSF units are available, with various capacities according to their size.

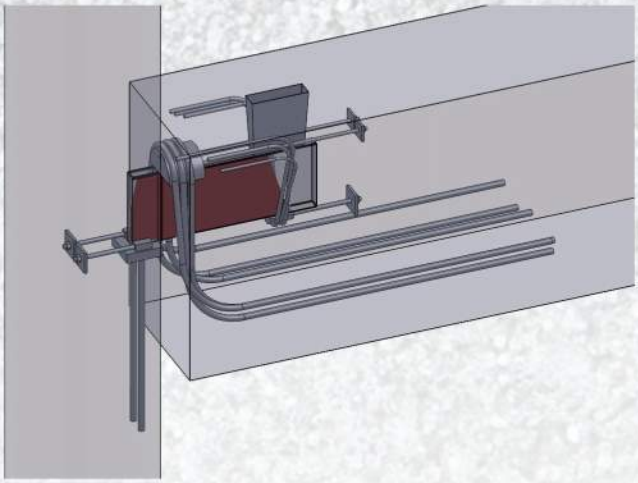
The system consists of 3 main parts.

a) A beam box. This is cast into the beam which is being supported. It works in conjunction with purpose-bent reinforcing bars and threaded rods to transfer loads into the body of the concrete.

b) A column box. This is cast into the column. Threaded rods, and a welded-on bar transfer loads into the concrete.

c) A sliding 'knife'. This solid steel member actually carries the load from one member to another. It is placed within the beam box, and then partially slid out when in position, to bear on the bottom of the column box





BSF Unit Type	Mechanical Capacity of the Unit kip	Minimum Beam Height* in	Minimum Beam Width* in
225	50.58	17.72	11.81
300	67.44	19.68	11.81
450	101.16	21.65	13.78
700	157.37	31.50	21.65

* Dimensions based on approximate minimum beam geometry to obtain mechanical capacity of Unit. Beam geometry and required reinforcing should be evaluated for each specific condition by a qualified engineer.

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THE JVI SHOOTER

Developed by JVI, with input from engineers, architects and precast producers, the Shooter is the only invisible, gravity support solution for Double Tees.

Numerous cost/benefit studies have shown the Shooter is comparable in cost versus traditional connections. Specifically the labor to make daps as well as secondary pours of corbels.

The Shooter has also been the ideal solution in clean buildings that require the elimination of ledges and in architecturally governing structures where aesthetics are crucial.

The shooter has been proven to reduce the production time of double tees when compared to a conventionally dapped configuration. This is possible because the Shooter is mounted on the double tee bulk head near the top of the stem eliminating the need to reach to the bottom of the form.

The documented, typical rebar cage is prefabricated to slide over the mounted shooter.

It has been demonstrated and documented that double tee erection with the Shooter is equivalent to the erection of a traditional double tee with regard to time, but it is superior when it comes to safety when traditional systems would require the “diving” of a double tee to miss corbels on vertical surfaces.

The shooter has been tested at full scale, with each test result confirming analytical models and expected performance. Performance and design requirements are fully documented. Production and erection recommendations are available.

Key Benefits:

- **Eliminates weld on corbels and ledges**
- **Reduces torsion on supporting members**
- **Reduces the pocket size in the supporting member**
- **Simplifies erection-No diving of double tess**
- **Mechanical design strength of 40,000 lbs**
- **Entire unit is hot dipped galvanized**

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J-Finish is just getting started

We are taking the J-Finish from GOLD to

PLATINUM

The Platinum J-Finish is a 3 step process as defined below.

1. ***Zinc Plate Per ASTM B633 FE/Zn12 TYPE II, SC3 Severe, (minimum thickness 0.0005")***
2. ***Trivalent Clear Chromate (RoHS and ELV compliant)***
3. ***Sealer***

The "PLATINUM J-FINISH" shall meet the following specifications.

PLATINUM J-FINISH SPECIFICATIONS		
1.	Coating Thickness	Minimum .00050" on significant surface.
2.	Appearance	There shall be no evidence of blisters, peeling, pinholes, pits or rough surface on parts.
3.	Adhesion Requirements	There shall be no defects such as peeling, blisters or cracking after heating coated parts to 300 ± 10º C for 30 ± 5 minutes and quenching in water at 15º C to 25º C.
4.	Corrosion Resistance ASTM B 117	Part shall show no evidence of white corrosion after 96-hour exposure. Part shall show no evidence of red rust after 500-hour exposure.

Why Change?

The motivation for the change was to have a RoHS/ELV compliant finish. While this initiative has been in place since 2003, the trivalent equivalent available until today has not been satisfactory. Recent advances in the trivalent coating have made this a clear change for the better.

Team JVI is happy to answer any questions you may have.
Please call, email, or request a presentation.

JVI

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Test Report No. 6 UPDATE

The JVI Gold J-Finish has been updated to a Platinum J-Finish per the specifications below.

The Platinum J-Finish is a 3 step process as defined below.

1. Zinc Plate Per ASTM B633 FE/Zn12 TYPE II, SC3 Severe, (minimum thickness 0.0005")
2. Trivalent Clear Chromate (RoHS and ELV compliant)
3. Sealer

The "PLATINUM J-FINISH" shall meet the following specifications.

PLATINUM J-FINISH SPECIFICATIONS		
1.	Coating Thickness	Minimum .00050" on significant surface.
2.	Appearance	There shall be no evidence of blisters, peeling, pinholes, pits or rough surface on parts.
3.	Adhesion Requirements	There shall be no defects such as peeling, blisters or cracking after heating coated parts to 300 ± 10º C for 30 ± 5 minutes and quenching in water at 15º C to 25º C.
4.	Corrosion Resistance ASTM B 117	Part shall show no evidence of white corrosion after 96-hour exposure. Part shall show no evidence of red rust after 500-hour exposure.

Salt spray testing in accordance with Test Report 6 have been conducted and the results included with this update. The Platinum J-Finish passed all testing the previous gold J-Finish has been subjected to.

The motivation for the change was to have a RoHS/ELV compliant finish, a finish that does not require a hexavalent chromium. While this initiative has been in place since 2003, the trivalent equivalent available until today has not been satisfactory. Recent advances in the trivalent coating have made this a clear change for the better.

Please consider Test Report No. 6 to serve as reference only and consider the latest certificates of compliance to replace Test Report No. 6 for all specification and submittal purposes.

Please contact team JVI with any questions.

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Coatings 85 Ltd.
6995 Davand Drive, Mississauga, Ontario L5T 1L5
Tel: (905) 564-1711 Fax: (905) 564-2819

CERTIFICATE OF COMPLIANCE

Customer:	**A.B.M. Tool & Die Co. Ltd**	***Processing Location:***	Coatings 85 Ltd.
Part Number:	Sample parts	***Specification:***	**ASTM-B633-FE/ZN12 TYPE11+SEAL**
Type of Finish:	Electroplated Zinc Clear Trivalent +Seal		
Processing Date	August 24,2015	***Prepared Date:***	September 25, 15

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Actual Parts processed to the above specification have been tested with results as detailed below.

	TEST PERFORMED	RESULT	SPECIFICATION
1.	*Coating Thickness* **ASTM-B633-FE/ZN12** **TYPE11+SEAL** Actual parts tested	.00057 .00060 .00059	Minimum .00050 on significant surface.
2.	*Appearance* **ASTM-B633-FE/ZN12** **TYPE11+SEAL** **Actual parts tested**	No evidence of blisters, peeling, pinholes, pits or rough surface on parts.	There shall be no evidence of blisters, peeling, pinholes, pits or rough surface on parts.
3.	*Adhesion Requirements* **ASTM-B633-FE/ZN12** **TYPE11+SEAL** **Actual part tested**	No evidence of peeling, blisters or cracking after heating coated parts to 300 ± 10º C for 30 ± 5 minutes and quenching in water at 15º C to 25º C.	There shall be no defects such as peeling, blisters or cracking after heating coated parts to 300 ± 10º C for 30 ± 5 minutes and quenching in water at 15º C to 25º C.
4.	*Corrosion Resistance – Neutral* **ASTM-B633-FE/ZN12** **TYPE11+SEAL** **3 Actual parts tested**	**Passed** . **Passed**	Part shall show no evidence of white corrosion after 96-hour exposure. Part shall show no evidence of red rust after 500-hour exposure.

Clifford Allen
Q.C. Supervisor

JAGEMANN PLATING CO.
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LABORATORY CONTROL • ELECTRO PLATING • METAL FINISHING

ISO 9001:2008 CERTIFIED

In-House Test
Process Verification: Zinc Trivalent Clear Chromate Plate .0005 Minimum Thickness, With Sealer (Rack Process)

Date: **Subject:**	11/16/2015 Salt Spray Test	**Your Ref # :** **Part # :** **Inspection Date:**	25DL/Zincroshield Sample 10/26/2015 - 11/16/2015
Plating Specification:	Zinc Trivalent Clear Chromate Plate .0005 Minimum Thickness With Sealer 1010 Material Pin		
Actual Plating Thickness:	.00051 - .00062		

Salt Spray Test Results
(ASTM B 117)

Hours Of Exposure	Visual Observations	Test Requirements	Pass/Fail
120	After 120 hours of exposure to the below described test conditions, the parts were removed from the test chamber, rinsed with de-ionized water, dried with filtered dry compressed air and inspected. The surface of the test sample shows no visible white rust products in the concern area. After 500 hours of exposure to the below described test conditions, the parts were removed from the test chamber, rinsed with de-ionized water, dried with filtered dry compressed air and inspected. The surface of the test sample shows visible white rust, no visible red rust products.	We were requested to salt fog test the parts according to American Society for Testing and Materials (ASTM) B 117 for 500 hours.	PASS

Solution	5 % NaCl
Chamber Temperature	95 ± 1 ° F
Specific Gravity @ 95 ° F	1.025 to 1.040
PH Of Collected Solution	6.5 to 7.2
Average Collection Rate	1 – 2 ml/hr./80 cm² surf. area

Signed: ***Electronic document Original Contains Signature***

John R. Nelesen
Quality Assurance Manager