

1. Product Name

Structural Connectors

2. Manufacturer

USP Structural Connectors
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 www.uspconnectors.com

3. Product Description

BASIC USE

USP Structural Connectors has been making professional grade structural connectors for more than 50 years, and provides a comprehensive retail lumber connector program oriented towards the professional. USP offers over 4000 structural connector products, including complete truss connector lines and engineered wood product (EWP) connectors that are recognized by all North American engineered lumber manufacturers. USP is ISO 9000:2001 certified and maintains strict quality control standards that are audited by an independent outside agency.

COMPOSITION & MATERIALS

USP selects steel for its products based upon application needs and steel properties, including tensile strength, ductility, corrosion resistance, gauge and weldability. Structural connectors are manufactured from prime quality galvanized and hot-rolled steel. Consult USP for specific product composition information.

TYPES

- Purlin, beam and joist hangers and supports
- Truss and girder truss hangers
- Hurricane seismic anchors, truss anchors, straps and light framing devices
- Anchor downs, column bases, column caps, beam seats and hinge connectors

SIZES

USP structural connectors are available in a vast array of types and sizes. For detailed information, visit www.uspconnectors.com or contact the manufacturer.

FINISH

All galvanized products have a zinc coating. Hot-dip galvanized parts are galvanized after fabrication with a minimum of 1 oz of zinc per ft² (28 g per 0.09 m²) of surface. Non-galvanized steel products are prime coated for corrosion protection.

It is important that the potential for corrosion be considered as part of the connector selection criteria. For improved corrosion resistance, 3 additional finish options are described below:

Triple Zinc (TZ)

Triple Zinc galvanizing provides a prefabrication coating of 1.85 (G-185) oz of zinc per ft² (52 g per 0.09 m²) of surface area. Triple Zinc G-185 connectors may be used as an economic alternative to stainless steel connectors for corrosion protection with new wood preservatives. TZ finished parts require the use of hot-dip galvanized fasteners.

Hot-Dip Galvanized (HDG)

HDG galvanizing provides an after-fabrication hot-dipped zinc coating. The coating thickness generally ranges from 1.1 - 2.3 oz of zinc per ft² (31 - 65 g per 0.09 m²) of surface depending on the connector material. HDG finished parts require the use of hot-dip galvanized fasteners.

Stainless Steel (SS)

For maximum corrosion protection, USP recommends the use of 316 grade stainless steel connectors. Although costs are higher, stainless steel is virtually corrosion-proof, a needed feature in certain applications. Stainless steel finished parts require the use of stainless steel fasteners.

LIMITATIONS

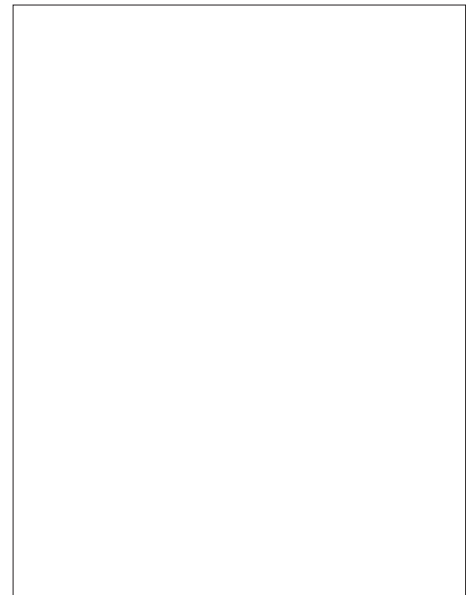
USP zinc dichromate WS Wood Screws are not recommended for use with preservative or fire-retardant treated wood.

4. Technical Data

APPLICABLE STANDARDS

ASTM International (ASTM)

- ASTM A36 Standard Specification for Carbon Structural Steel
- ASTM A123 Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
- ASTM A153 Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
- ASTM A307 Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength
- ASTM A570 Standard Specification for Structured Steel, Sheet and Strip, Carbon,



High wind connectors

Hot-Rolled (Withdrawn 2000)

- ASTM A653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
- ASTM A1011 Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength
- ASTM D1761 Standard Test Methods for Mechanical Fasteners in Wood

ICC Evaluation Services, Inc. (ICC-ES) - ICC-ES AC13 Acceptance Criteria for Joist Hangers and Similar Devices

APPROVALS

- Building Officials and Code Administrators International, Inc. (BOCA)
- Canadian Construction Materials Centre (CCMC)
- City of Los Angeles
- Dade County, Florida
- Division of State Architect, California (DSA)
- International Conference of Building Officials (ICBO)
- International Organization for Standardization (ISO)
- National Evaluation Service (NES)
- Southern Building Code Congress International, Inc. (SBCCI)
- State of Florida



Engineered lumber connectors

Visit www.uspconnectors.com or contact the manufacturer for a complete list of approved design and assembly numbers.

PHYSICAL PROPERTIES

USP performs full-scale testing on all structurally rated products in accordance with ICC-ES AC13 or ASTM D1761, and all final testing is conducted by a third-party testing laboratory. Design loads are the lowest results obtained from one of the following methods:

- The lowest ultimate tested load divided by 3
- Lowest load producing 1/8" (3.2 mm) deflection
- Calculations are based on 1997 or 2001 National Design Specification for Wood Construction (NDS®) and current codes

Note - Details about specific structural connector products are available online at www.uspconnectors.com, or by contacting USP Structural Connectors.

5. Installation

PREPARATORY WORK

Deliver products in manufacturer's original, unopened, undamaged containers with identification labels intact. Protect from exposure to harmful environmental conditions and at temperature and humidity recommended by the manufacturer. Store materials off ground and cover with a waterproof tarp or canvas.

Verify that site conditions are acceptable for installation. Do not proceed with installation until unacceptable conditions are corrected.

Verify that the wood that is to support the hanger is flat, free of large cracks or splits and is of the species noted on the plans. If the lumber or wood is not Douglas Fir-Larch or Southern Pine, reduction of the manufacturer's published load values is required in accordance with the building code. A design professional must reduce the published values in accordance with Uniform Building Code (UBC) Chapter 23 or the National Design Specification of the American Forest and Paper Association.

METHODS

Nails

Fill all nail holes with nails of the type and size shown in manufacturer's literature. All nails used must be common wire nails and should be driven at right angles and seated fully to the hanger body except as otherwise indicated in manufacturer's literature.

If power nail drivers are used, the nails must be driven through the hole furnished in the hanger and must not be driven through the hanger where no hole exists.

The maximum length nail that can be driven into the top or bottom flange of the I-joist is 9 gauge (10d) x 1 1/2" (38 mm) long. The largest nail size that can be driven into the web is a 16d nail.

When installing hangers to laminated veneer lumber (LVL), the maximum size nail that can be driven into the narrow face is 16d, and the maximum size nail that can be driven into the wide face is 20d.

Hangers

Install hangers tightly against the supporting members. The carried member must be long enough to maintain full bearing on the hanger seat and must not fit tightly against the carrying member. A gap to 1/8" (3.2 mm) between the carried member and the carrying member is acceptable.

Fully seat the carried member so that no space exists between its bottom and the hanger, then nail the carried member to the hanger. Where safe and practical, attach carried members to the hanger after floor sheathing has been installed.

On some hangers, 2 diamond holes appear at the bottom of the seat to allow wood screw installation. The screws "pull" the wood into the seat for positive bearing. Use 2 each No. 6 x 1 1/4" (32 mm) wood screws or No. 6 x 1 1/4" (32 mm) drywall screws.

Where bolting, use a wood template to accurately locate boltholes. Drill holes no



Seismic connectors

more than 1/32" (0.08 mm) larger than the diameter of the bolts they are to receive. Tap bolts through the holes and connecting devices with a hammer or mallet. Always use a washer under the head or nut if it is not in contact with a steel plate or hanger.

When attaching wood connecting devices to concrete, ensure that they are installed plumb, square and true. Use a plywood template to accurately locate the device. Anchor bolts, as furnished and installed under Section 03 30 00 Cast-in-Place Concrete, must also be accurately located, plumb and true before attaching wood connecting devices.

Follow the prefabricated wood manufacturer's written instructions regarding nailing, bearing support, bracing and installation when attaching prefabricated structural wood to the hanger.

PRECAUTIONS

- Connectors and fasteners should always be of like materials
- Follow preservative wood treater recommendations for use of connectors and fasteners in contact with their brand of treated wood product
- Do not use roofing nails, box nails, sinkers or power driven nails (electric or pneumatic) that are not equivalent to common wire nails
- Allowable loads are reduced when using nails shorter than 1 1/2" (38 mm) or pneumatic or electric driven staples
- Lag bolts and screws must not be used in

lieu of nails unless specified

- Use only stainless steel nails with stainless steel hangers

BUILDING CODES

Installation must comply with the requirements of all applicable local, state and federal code jurisdictions.

6. Availability & Cost

AVAILABILITY

USP Structural Connectors has national distribution coverage with manufacturing facilities located in CA, FL, MN, NC and Canada and warehouse facilities located in CA, TX and NJ. Products are readily available from certified distributors, with shipping options that range from regular freight to overnight delivery.

USP Structural Connectors also offers a choice of distribution methods, including co-op or buying group. Contact the manufacturer for information about local availability.

COST

USP Structural Connectors offers competitive pricing with no minimum order requirements. Suggested retail pricing is available online from www.uspconnectors.com. Detailed information may be obtained from USP Structural Connectors.

7. Warranty

USP Structural Connectors warrants its products to be free from defects in material and workmanship. Products are further warranted as to adequacy of design, provided products are used and installed in strict accordance with USP Structural Connectors' current published design limits. Complete warranty terms and conditions are available from the manufacturer.

8. Maintenance

None required.

9. Technical Services

Technical assistance, including more detailed information, product literature, test results, project lists, assistance in preparing project specifications and arrangements for application supervision, is available by contacting USP Structural Connectors.

10. Filing Systems

- First Source CAD
- MANU-SPEC®
- Additional product information is available from the manufacturer upon request.