



Freestanding

INDUSTRIAL

S T R U C T U R E S

Mezzanine Systems



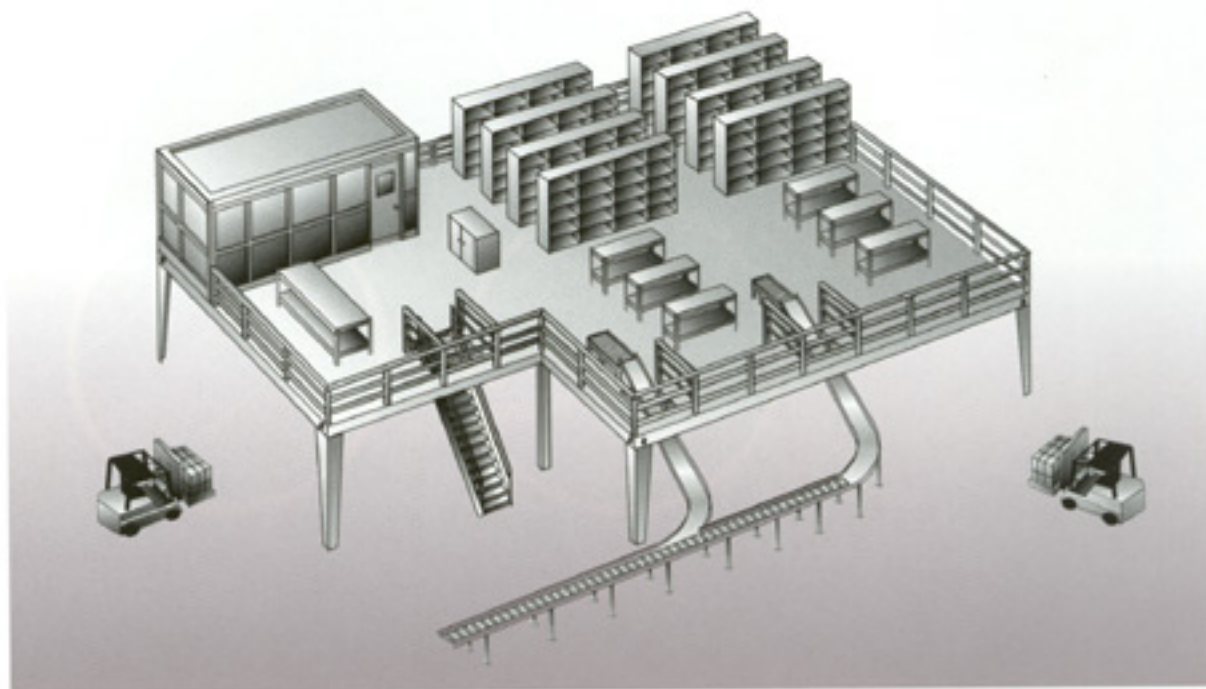
**Western Pacific
Storage Systems**

Industrial Structures Group

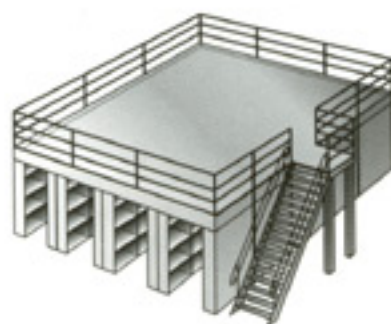
Industrial Structures Mezzanines

Double your usable floor space with a two-level mezzanine system:

- Less than 30% of the cost of a new building
- Isolate operations or processes that generate heat, fumes, or noise
- Accelerated depreciation (7 yrs. vs. 30 yrs.)
- Leasing options
- Reduced heating, lighting, and housekeeping costs
- Add office space
- Increase storage space
- Increase production area
- Centralize or consolidate operations
- Avoid moving expenses
- Minimize downtime
- Relocatable and expandable



Types of Mezzanines



Rack or Shelving Supported Mezzanines use inherent members to withstand loads placed on the upstairs level. Space below is limited to racks or shelving. This type of mezzanine simply transfers the floor level space to the upstairs area.





Freestanding Mezzanines are supported by framing members connected to the primary floor by columns alone, creating optimum usable space above *and* below.

Use all the space you're paying for!

Features of Industrial Structures Mezzanines

IS Mezzanines offer much more than the competitors:

OURS	THEIRS
<ul style="list-style-type: none"> • use lightweight, high tensile steel in coil form 	<ul style="list-style-type: none"> • hot-rolled I-beam steel in preestablished lengths
<ul style="list-style-type: none"> • 1/3 less steel by weight, yet 38% stronger 	<ul style="list-style-type: none"> • higher shipping costs and difficult to unload
<ul style="list-style-type: none"> • open spans to 30' in either direction 	<ul style="list-style-type: none"> • open spans limited
<ul style="list-style-type: none"> • requires fewer columns  <p>9 columns</p>	<ul style="list-style-type: none"> • requires additional column support  <p>22 columns</p>
<ul style="list-style-type: none"> • engineered to fit any application 	<ul style="list-style-type: none"> • often available only as "standard packages"
<ul style="list-style-type: none"> • unique bidirectional frame — no need for obstructive cross or knee bracing 	<ul style="list-style-type: none"> • use post and beam construction which is weaker and more costly
<ul style="list-style-type: none"> • quick and easy assembly — no field welding required 	<ul style="list-style-type: none"> • site welding is often required with beam and column connections
<ul style="list-style-type: none"> • galvanized finish resists scratches and corrosion and is light reflective 	<ul style="list-style-type: none"> • painted surfaces scratch and rust

Impact Resistance

Industrial Structures Rigid Frame maintains a right angle between the column and beam, therefore minimizing the effect of impact loads, seismic loads, and accidental overloads, by transferring excessive loads to beams and other columns in a multispan environment. Our mezzanines meet all seismic zone and impact resistance requirements. IS systems have withstood the 1990 San Francisco earthquake (7.1 on the Richter Scale) and the 1994 Northridge earthquake (6.8 on the Richter Scale) without failure!

Industrial Structures

- Frame is continuous over supports
- Maintains right angle
- Load transfers to adjoining columns



Post and Beam Construction

- Columns act independently to overcome impact
- Connection overloads and breaks away
- Possibility of total collapse

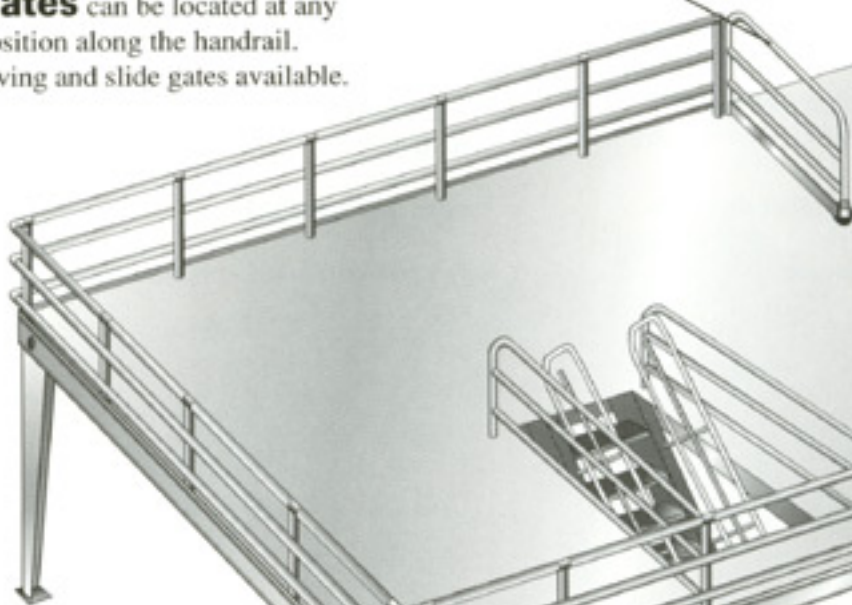


The IS Advantage



Handrail is easy to install. Rails can be spaced to meet local requirements.

Gates can be located at any position along the handrail. Swing and slide gates available.



Unique Eight Bolt Connection is far stronger than post and beam or rack supported structures.



Galvanized Stairs are attractive and strong with a safe, nonslip tread, and meet UBC and OSHA requirements.

The lowest cost solution to adding floor space!

Flooring Options

- **High-density** wood and resin panel or diamond plate steel
- **Concrete**
- **Bar Grating** steel grid flooring
- **Polyethylene** overlaid panel



Square



Tapered

Columns can be located strategically near existing building walls or supports. Square tube and tapered columns available.

- no bracing needed
- meets tight space requirements
- used for double deck requirements
- footplate designed per slab application

Galvanized Finish

resists corrosion and scratching — no costly touch-ups needed!

- withstands harsh industrial atmospheres
- light reflective — helps reduce energy bills
- reduces shipping damage
- ASTM high strength bolts are not plated

Rigid Frame System

supports heavy loads while maximizing floor space below. Members bolt together for easy assembly and expansion with no field welding.

Wide Spans and Bays

Up to 30' between columns!



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Put an Industrial Structures Mezzanine to work anywhere you want to take advantage of usable cubic footage:

- Assembly areas
- Auto parts storage
- Balconies
- Bulk storage
- Canopies
- Catwalks
- Classrooms
- Conveyor supports
- Equipment platforms
- First Aid station
- Inplant offices
- Laboratories
- Locker rooms
- Lunch rooms
- Order picking
- Packing/shipping
- Parts departments
- Production areas
- Record storage
- Restrooms
- Stock rooms
- Work platforms



Transform empty space into upper-level or two-level office areas.

Our unique bidirectional rigid frame is strong!

IS Mezzanines can span up to 30', allowing plenty of clear area for work or storage. Galvanized finish reflects light for more efficient use of electrical resources.



Frame system can support a second level as well as roof and wall systems.



Free additional space above existing storage without interrupting the space on the ground level.



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Galvanized subfloor resists corrosion and scratching, reflects light and reduces costly painting maintenance.

Columns are widely spaced for easy access to your materials or equipment.

Multilevel support structures enhance distribution and material handling systems.



Outdoor canopies provide additional covered storage on existing premises. Ceiling and wall panels meet your environmental requirements.

Turn congested space into efficient space!



Design and Engineering

Our systems are designed to grow with your business. Our design and engineering team can custom develop a system to meet your needs – and your budget – no matter what your business application.

- Engineered for seismic applications
- Computer Aided Design (CAD) capabilities
- Cross-functional development team
- Custom design and engineering assistance

Quality

Our quality assurance guarantees that WPSS products can perform in the toughest of applications. Need a mezzanine system in a seismic application? No problem – our systems can withstand the shock.

- OSHA and UBC/BOCA approved designs
- Industry-leading testing
- High customer satisfaction ratings
- Innovative product development



Manufacturing

Our state-of-the-art manufacturing technology ensures that we produce the highest quality product at the lowest price. Our “value added” products are manufactured in accordance with the highest industry standards. We reinvest into our own facility and machinery, which allows us to be responsive while controlling your project from start to finish.

- Computerized scheduling
- A to Z quality checkpoints
- Quality 1st program



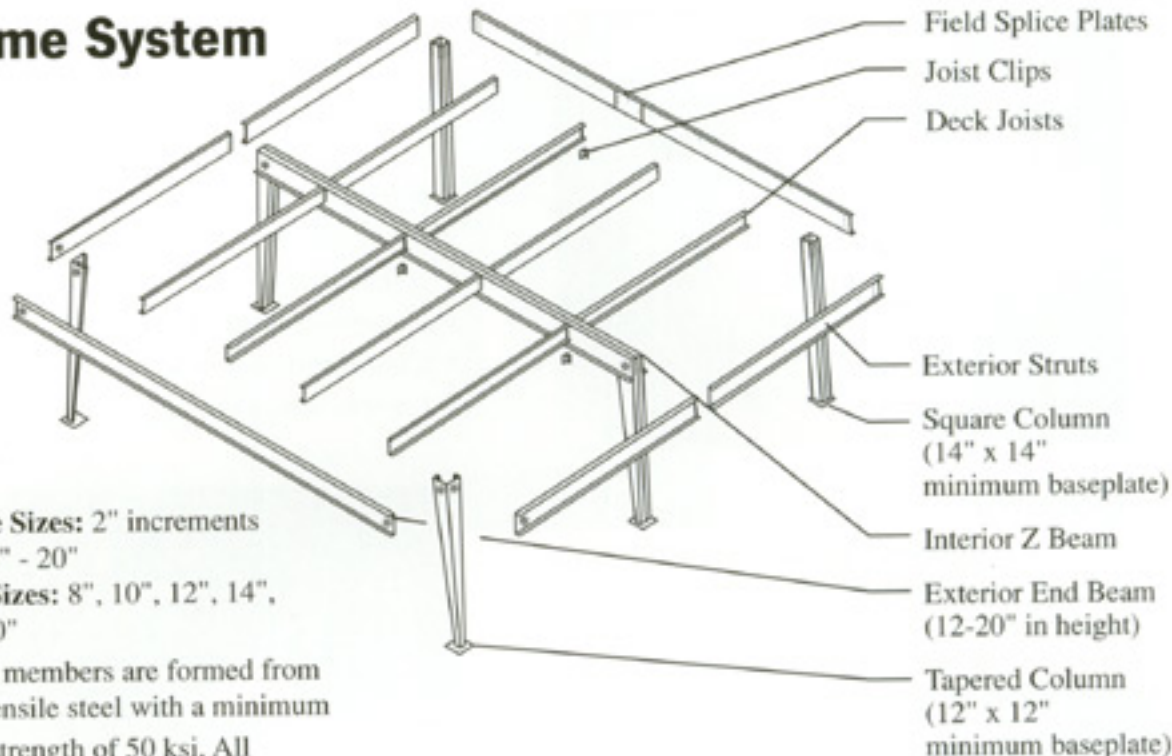
Installation

A network of factory trained dealers will help design a system to meet your needs!

- Installation crews available
- Facilitate permitting process
- After-sale support



Frame System



Frame Sizes: 2" increments from 8" - 20"

Joist Sizes: 8", 10", 12", 14", 16", 20"

Frame members are formed from high tensile steel with a minimum yield strength of 50 ksi. All members have galvanized finished.

Accessories



Stairs

- 3' wide stair, nonskid treads
- closed riser and handicapped stairs available
- optional widths and heights per requirement



Handrail & Access Gates

- 1 5/8" diameter rail
- galvanized kick plate
- sliding or swing gates
- conforms to OSHA and UBC



Landings

- 4' 3" x 4' 3" standard
- double return and intermediate landings available

Beam Types



Open Single Beam

- cantilever available



Enclosed Double Beam

- use when maximum loadbearing capacity is required

Column Types



Tapered



Square

Custom shapes and applications are no problem!

Mezzanine Specifications

1. General

- A) Mezzanine shall be of the freestanding type; constructed of zinc coated (galvanized) steel, bidirectional rigid frame design such as the Industrial Structures Mezzanine manufactured by the Industrial Structures Division of Western Pacific Storage Systems, 250 W. Stanley Ave., Ventura, CA 93001.
- B) The system shall be custom designed for the uniform live load specified by the end user and in accordance with UBC, OSHA, BOCA, and other local codes that may affect design.
- C) Mezzanine must be easy to assemble and disassemble for ease of relocation with use of hand tools.
- D) Manufacturer must verify a minimum of 10 years experience in manufacturing and designing mezzanine systems and be a licensed fabricator requiring independent jurisdictional inspection.
- E) Mezzanine manufacturer shall provide warranty for all products to be free from defects in material and workmanship for a period of one year minimum.
- F) System design, specifications, and calculations shall be made under the supervision of a registered professional engineer licensed in the state in which installation and building permit are required.

2. Design

- A) The successful bidder shall supply drawings by a qualified designer showing size and height of mezzanine, column location, size and orientation of baseplates (assuming soil and slab information to be provided by customer), type of decking, design load and deflection under design live load.
- B) The number of support columns shall be held to a minimum to utilize space under the proposed structure. No cross or knee bracing of any kind may be used.
- C) Steel framing members must be cold formed from G60 galvanized, ASTM A446, grade D, high tensile steel with minimum yield strength of 50,000 PSI.
- D) Tolerance of $\pm 1/8"$ must be held.
- E) The system shall be engineered in accordance to the following references:
- AISI – Specifications for the design of cold formed steel structural members
 - AISC – Specifications for the design, fabrication, and erection of structural steel for buildings.
 - ASTM A446 – Steel sheet, Zinc coated (galvanized)
 - ASTM A490 – For high strength bolts
 - UBC – The current uniform building code in effect

3. Products

- A) **Galvanized Rigid frame system:** All steel framing members must be cold formed from G60 galvanized ASTM A446, Grade D, high tensile steel with minimum yield of 50,000 PSI.

B) Galvanized Tapered or Square Columns:

Tapered columns come in 12", 16", or 20" columns tapering down to 5" at the base welded to a minimum 12" x 12" x $1/2"$ baseplate. The baseplates are secured with four $3/4"$ epoxy or wedge anchors. See individual city requirements for type and embedment.

Square columns are 9" square and are welded to a minimum 14" x 14" x $1/2"$ baseplate. The baseplates are secured with four $3/4"$ epoxy or wedge anchors. See individual city requirements for type and embedment.

C) **Beams** are "C" or "Z" shapes and come in 12", 16" or 20" sizes and are 10 or 12 gauge, typically. Connections are made with ASTM A490 $3/4"$ HD bolts (non-galvanized per manufacturer's specifications).

D) **Struts** are "C" shape and are standard in 12", 16", and 20" and are either 10 or 12 gauge, typically. Connections are made with ASTM A490 HD bolts.

E) **Joists** are "C" shape and are 8", 10", 12", 14", 16", or 20" and are 14, 12, or 10 gauge typically. Connections are made with "L" shaped clips and $5/8"$ bolts.

F) Decking Options:

Wood over B-deck, $3/4"$ or $1 1/8"$ HD fiberboard over $1 1/2"$ galvanized B Deck in 18, 20, or 22 gauge. Secured with #12 x $3/4"$ tek screws and #9 x 2" bugle head tek screws.

Diamond plate, $1/4"$, $3/16"$ or $1/8"$ galvanized, painted or plain diamond plate over $1 1/2"$ galvanized B-deck. Secured with #12 x $3/4"$ tek screws and #8-32 x 1" Trusshead screws.

Bar Grating, standard 1" x $1/8"$ galvanized or painted bar grating secured with galvanized saddle clips and #12 x $1 1/4"$ tek screws.

Plank Pak, 2" x 9" nonskid galvanized surface features embossed dimples with traction holes. Secured with j-bolts/clips and #12 x $3/4"$ tek screws.

Concrete, galvanized concrete form decking, secured with #12 x $3/4"$ tek screws. After installation the form is filled with concrete by others.

G) **Stairs and landings** meet OSHA, UBC and BOCA requirements. Nonskid treads, stringer, landing and handrail are all galvanized. Options for ADA/Title 24 and EX stairs. See local building department for location and number of stairs required.

H) **Guardrail** features post and sleeve system with $1 5/8"$ x 14 gauge galvanized posts welded to 6" x 6" x $3/8"$ baseplates with four (4) $7/16"$ holes for $3/8"$ bolts. Rails are $1 5/8"$ x 17 gauge galvanized pipe in six foot lengths to be field cut to exact length. Custom powder-coated colors available.

I) **Gates** are welded $1 5/8"$ galvanized pipe and are available in swing or sliding designs. Standard widths are 4', 5', 6' and 8'. Custom sizes and powder-coated colors are available.

All Industrial Structures Mezzanine Systems meet UBC Code and AISI and AISC standards.



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