



# American Mezzanine Systems

## Structural Steel Mezzanine Specifications



### General -

1. Mezzanine shall be a custom designed system by an established firm specializing in mezzanine systems such as American Warehouse Systems.
2. Mezzanine design firm shall be a member in good standing with the International Code Council to ensure code compliance and the highest level of structural safety.
3. Final mezzanine design shall be approved by a licensed professional engineer.
4. All finished materials will be made in the United States of America to ensure the highest quality.
5. Mezzanine shall be free standing and shall be capable of being erected, dismantled and relocated with hand tools.
6. Mezzanine fabrication shall be completed by confirmed certified welders.
7. All projects shall come standard with engineered drawings that will meet customers approval before any fabrication begins.
8. Mezzanine structure shall come standard with a printed Lifetime Warranty Certificate.

### Specifications -

1. System Design: The American Mezzanine System design is completed in accordance with Ninth Edition American Institute Steel Construction (AISC). The structure shall be designed per the following codes, IBC 2003 and OSHA
2. Vertical Loading shall consist of specified design Loading, plus dead load of structure. Maximum vertical deflection of beam shall not exceed  $L/360$  ( $L$ =beam length).
3. Vertical design Loading shall be as required by application, but not less than the minimum design Loading specified by the governing building code.
4. Seismic design is computed when American Warehouse Systems is informed of the zone in which the mezzanine will be located.
5. The minimum horizontal Loading shall be taken as 3% of the Live loading. The horizontal Loading shall be combined with the maximum column Load without infringing on the standard AISC factors of safety. The Lateral deflection of the column shall not exceed  $h/400$  ( $h$ =top of deck).



# Structural Steel Mezzanine Specifications

## Pg. 2 - Mezzanine Materials

**Column:** Structural support columns shall be totally free standing and constructed from cold formed structural tubing. All columns shall have a welded top cap to completely seal the tube from any debris. Columns shall continue past the mezzanine deck to provide a stable structure to attach the guardrail whenever possible. Minimum column size is 5" x 5" x 07 ga. Minimum base plate size is 1/2" x 9" x 9".

Columns -ASTM A500 Grade B Fy=46 ksi  
Base Plate -ASTM A36 Fy=36 ksi  
Anchor Bolt -Ramset/Red Head, 1/2" Diameter x 3 3/4" Long

**Beam:** Framing members (beams) shall be constructed from structural Wide Flange beams (standard). All structural angle connections shall be welded to the beam and made of a minimum of 3/8" thick material. Distance between bolts of any structural connection shall not exceed 3 1/2".

W-Beam -ASTM A36 Fy=36 ksi  
Connections -ASTM A36 Fy=36 ksi

**Hardware:** All structural web connections shall use no less than a 3/4" diameter Grade 5, A449 bolt. All structural flange connections shall use no less than a 5/8" diameter Grade 5, A449 bolt. For technical properties see AISC manual page 4-3 to 4-9. Hardware shall be tightened to a snug tight condition, then the nut shall be turned an additional 1/3 turn. No high strength bolts should be reused. Retightening is not considered reuse.

**Web Attachment:** -Grade 5 3/4" x 1 1/2" LG.

**Flange Attachment:** -Grade 5 5/8" x 1 1/2" LG.

**Guardrail:** Three rails (11" space), 2" square top rail, 1 1/2" square intermediate rails, 2" x 4" rectangular kickplate. All tubing use in handrail shall be 14 gauge wall thickness. Standard handrail is fastened directly to the structural mezzanine columns using self drilling screws.

**Tubing:** -ASTM A500 Grade B Fy=46ksi

**Flat Steel:** -A36 Fy=36 ksi

**Stair:** Stairs shall be designed to meet IBC 2003. Stairs shall be all welded one piece construction shipped completely assembled with exception of guardrail. Stringers are constructed of MC10 @ 8.4 c-channel and all treads shall be constructed of solid 12 gauge checker plate. Minimum Length of run is 11" and maximum rise is 7". Risers shall be closed risers. Handrail is provided for both sides of the stair and has a 1 1/2" grip.

**Paint:** All steel to be painted is to be washed and treated to give it a phosphate etching. The paint is to be a powder system using epoxy and electrostatic process. Paint must then be cured in an oven to a temperature of 550 degrees. The finished thickness of paint must be at Least 2.5 mills.

**Colors:**

Columns	-American Mezzanine Systems Blue
Beams	-American Mezzanine Systems Blue
Handrail	-American Mezzanine Systems Red
Stair	-American Mezzanine Systems Blue
Bar Joists	-Standard Factory Grey