



# Project Specific Wind/Seismic Support Design Requirements

Project information needed to complete a code compliant rooftop support submittal:

- Original Project Drawings with
  - MEP General Notes
  - Rooftop MEP Plans that include:
    - equipment size and material type
    - content (for pipe)
    - insulation thickness
    - desired height off the roof, and adjustability limits if applicable
    - Unit dimensions and weights with spec sheets for each type of unit
  - Structural General Notes and Structural Roof Framing Plans
  - Building Section/Elevations
  - Roof Cross Section showing roofing type, coverboard, insulation thickness, deck type, etc.
- Project Specifications
- Project Structural Engineer of Record (SER) is responsible for verifying support layout and loading from rooftop equipment supports through the building structure. If a structural engineer is not involved in the project, it is the contractor's responsibility to ensure layout and load transfer is compatible with the building structure.

## What if Structural Drawings and Specifications are not available?

On projects involving additions or renovations, project drawings, specifications and the SER may not be readily available. In this situation MIRO asks that the contractor field verify and document existing conditions, dimensions, locations and elevations of work to be performed. The information provided to MIRO Industries will be used to prepare a site-specific solution for the rooftop supports that will meet code requirements. Allowable design assumptions will be made and noted in the design documents based on the information provided. If discrepancies are discovered between existing conditions and contract work, the contractor shall immediately notify MIRO Industries prior to performance of work.

## Contractor review and delivery of stamped submittal documents

MIRO Industries will provide a primary layout with proposed frame design to the contractor for review to ensure the project scope is being met. At this point we are typically at approximately 60% through the design process. These preliminary drawings provide the contractor an opportunity to review the design and make corrections prior to a final sealed submittal being generated. Corrections or modifications at this point are more easily addressed and can prevent future delays in product delivery.

A final stamped submittal will be provided to the contractor. It is the contractor's responsibility to submit the sealed documents to the building owners or their representative and officials having jurisdiction for approval as required. MIRO will begin fabrication at the contractor's discretion after the stamped submittal has been delivered to the contractor.

Upon request a representative from MIRO Industries can be sent to the project site to assist the contractor in obtaining the information needed to complete a design for the rooftop supports.

Please use the following sheet to provide MIRO Industries with sufficient project information which will allow us to prepare a preliminary estimate and timeframe for your project. As additional project information as outlined above is available we will be able to adjust accordingly.

**Contact Person:** Name: \_\_\_\_\_  
Company: \_\_\_\_\_  
Phone #: \_\_\_\_\_  
Email: \_\_\_\_\_

**Job Name and Address:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Adopted Building Code:** \_\_\_\_\_

**Description of the Intended Use of the Building:** \_\_\_\_\_

Example: Office, Warehouse, School, Hospital, Processing Plant, etc.

**Building Information:**

- Required rooftop layout drawing showing:
  - Pipe or Duct Details (Size, Material Type, Content, Height off roof, etc.)
  - Pipe or Duct Insulation Thickness
- Detailed drawing of roof cross section showing:
  - Layout of structural roof framing with member sizes if possible
  - Decking Material (Metal deck, wood deck, concrete deck, composite deck, etc.)
    - Additional information of deck will likely be required as we get into the design.
  - Rooftop insulation type and thickness
  - Finished roof covering (TPO, PVC, EPDM, Built-Up, etc., roof cover manufacturer specific information is also helpful.)

**Comments or List of documents proved to MIRO Industries via email or other means:**

## Design Criteria

1. ADOPTED BUILDING CODE:
2. BUILDING OCCUPANCY/RISK CATEGORY:
3. WIND DESIGN CRITERIA:
  - MEAN ROOF HEIGHT: feet
  - BASIC WIND SPEED: mph - 3 sec gust
  - EXPOSURE CATEGORY:
4. SEISMIC DESIGN CRITERIA:
  - SOIL SITE CLASS:
  - RESPONSE ACCELERATION (0.2s),  $S_{DS}$ : g
  - SEISMIC DESIGN CATEGORY:
  - SEISMIC COMPONENT IMPORTANCE FACTOR,  $I_p$ :
    - Component Importance factor of 1.5 shall be used if:*
      - *the component is required to function for life-safety purposes, including fire protection sprinkler lines?*
      - *the component conveys or contain hazardous materials*
      - *the component is attached to or services an Occupancy Category IV structure (Critical Facility)*

## Summary

In our experience, rooftop supports, specifically on projects requiring a sealed submittal package, tend to slip through project scheduling and can unnecessarily become a critical item on your project. This can lead to delays in the project schedule and additional costs for installation of the system. Early and thorough coordination between the installers, the design team and MIRO Industries can significantly improve and expedite the design and delivery of your rooftop supports.

Changes made after a full design submittal has been received by the contractor from MIRO Industries, or after fabrication of supports has begun will require a change order. Additional work and associated costs are to be coordinated with the contractor.

MIRO Industries is eager to help with all your rooftop equipment support needs. We strive to provide elite customer service and expertise, to ensure every customer that interacts with us feel that we went out of our way to help.

If there are any questions about the services and products of MIRO Industries, please give me a call at any time.

Thanks

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**Building Risk/Occupancy Category:**                    I            II            III            IV

**I. Buildings and other structures that represent a low hazard to human life in the event of failure**

Typically limited to agricultural, temporary and minor storage facilities.

**II. All buildings and other structures except those listed in Occupancy Categories I, III, and IV**

**III. Buildings and other structures that represent a substantial hazard to human life in the event of failure**

Buildings and other structures, not included in Occupancy Category IV, with potential to cause a substantial economic impact and/or mass disruption of day to day civilian life in the event of failure.

- Buildings and other structures where more than 300 people congregate in one area
- Buildings and other structures with day care facilities with a capacity greater than 150
- Buildings and other structures with elementary school or secondary school facilities with a capacity greater than 250
- Buildings and other structures with a capacity greater than 500 for colleges or adult education facilities
- Health care facilities with a capacity of 50 or more resident patients, but not having surgery or emergency treatment facilities
- Jails and detention facilities.

Buildings and other structures not included in Occupancy Category IV (including, but not limited to, facilities that manufacture, process, handle, store, use or dispose of such substances as hazardous fuels, hazardous chemicals, hazardous waste, or explosives) containing sufficient quantities of toxic or explosive substances to be dangerous to the public if released.

Buildings and other structures containing toxic or explosive substances shall be eligible for classification as Occupancy Category II structures if it can be demonstrated to the satisfaction of the authority having jurisdiction by a hazard assessment as described in Section 1.5.2 that a release of the toxic or explosive substances does not pose a threat to the public.

**IV. Buildings and other structures designated as essential facilities**

- Hospitals and other health care facilities having surgery or emergency treatment facilities
- Fire, rescue, ambulance, and police stations and emergency vehicle garages
- Designated earthquake, hurricane, or other emergency shelters
- Designated emergency preparedness, communication, and operation centers and other facilities required for emergency response
- Power generation stations and other public utility facilities required in an emergency
- Ancillary structures (including, but not limited to, communication towers, fuel storage tanks, cooling towers, electrical substation structures, fire water storage tanks or other structures housing or supporting water, or other fire suppression material or equipment) required for operation of Occupancy Category IV structures during an emergency
- Aviation control towers, air traffic control centers, and emergency aircraft hangers
- Water storage facilities and pump structures required to maintain water pressure for fire suppression
- Buildings and other structures having critical national defense functions

Buildings and other structures (including, but not limited to, facilities that manufacture, process, handle, store, use, or dispose of such substances as hazardous fuels, hazardous chemicals, or hazardous waste) containing highly toxic substances where the quantity of the material exceeds a threshold quantity established by the authority having jurisdiction.

Buildings and other structures containing highly toxic substances shall be eligible for classification as Occupancy Category II structures if it can be demonstrated to the satisfaction of the authority having jurisdiction by a hazard assessment as described in Section 1.5.2 that a release of the highly toxic substances does not pose a threat to the public. This reduced classification shall not be permitted if the buildings or other structures also function as essential facilities.