



SECTION 10 82 13
ROOFTOP EQUIPMENT SCREENS

GUIDE SPECIFICATION

Custom Mechanical Equipment (CME)
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PURPOSE OF THIS DOCUMENT

SPECIFIER NOTE: *This document is intended as a manufacturer guide specification and basis-of-design specification. Architects and engineers may edit it to suit project conditions, code requirements, wind-load criteria, equipment layouts, and owner requirements.*

This guide specification is intended to assist architects, engineers, contractors, and owners in specifying rooftop equipment screening systems manufactured by Custom Mechanical Equipment (CME).

Since 1999, CME has manufactured custom rooftop equipment screening systems for commercial, institutional, educational, healthcare, industrial, and government facilities.

CME screening systems are engineered around the specific requirements of each project, including equipment serviceability, airflow requirements, maintenance clearances, rooftop obstructions, wind-loading criteria, and architectural screening objectives. Unlike standardized screening products, CME systems are custom-designed for each application and can be configured as one-sided, two-sided, three-sided, four-sided, or combination screening assemblies to suit project-specific conditions.

PART 1 - GENERAL

1.1 SUMMARY

SPECIFIER NOTE: *Edit this section to coordinate with project scope. Delete items not required for the project.*

- A.** Section includes custom-fabricated rooftop equipment screening systems manufactured by Custom Mechanical Equipment (CME) for concealing rooftop mechanical equipment and coordinating with project-specific architectural and service-access requirements.
- B.** Work includes exterior screen panels, aluminum support framing, access doors, removable access sections where indicated, mounting hardware, trim, support accessories, and related components required for a complete screening system as shown on approved shop drawings.
- C.** Screening systems are intended to conceal rooftop equipment from view while maintaining manufacturer-required service access, maintenance clearances, and airflow requirements.
- D.** Screening systems may be configured as one-sided, two-sided, three-sided, four-sided, or combination screening assemblies as required by project conditions.
- E.** Manufacturer installation services may be provided where indicated in the project scope.

1.2 REFERENCES

SPECIFIER NOTE: *Delete references not required by the edited project specification. Add project-specific codes or standards required by the Engineer of Record or Authority Having Jurisdiction.*

- A.** ASCE 7-22 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures.
- B.** ASTM B221 - Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes. ASTM B26— Standard Specification for Aluminum-Alloy Sand Castings.
- C.** Applicable building codes and requirements of Authorities Having Jurisdiction.

1.3 SUBMITTALS

SPECIFIER NOTE: *Submittals are the documents the manufacturer provides for review. CME provides project-specific submittals for each project; PE-stamped drawings and calculations are provided when required by the Contract Documents.*

- A.** Product Data:
 1. Manufacturer's product information.
 2. Panel profile information.
 3. Finish and color information.
 4. Framing and accessory information.
- B.** Shop Drawings:
 1. Plan layouts.
 2. Elevations.
 3. Screen heights.
 4. Access door locations.

- 5. Support locations.
- 6. Mounting details.
- 7. Required clearances.
- 8. Panel profile selections.
- 9. Finish selections.

C. Engineering Documentation:

- 1. Project-specific design drawings and calculations as prepared by the manufacturer.
- 2. Professional Engineer stamped drawings and calculations shall be provided when required by the Contract Documents.

D. Closeout Submittals:

- 1. Warranty documentation.
- 2. Maintenance recommendations.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: Manufacturer shall specialize in custom rooftop equipment screening systems and related metal fabrication.

B. Source Limitations: Provide a complete screening system from a single manufacturer to maintain uniformity of design, fabrication, materials, finish coordination, and warranty responsibility.

C. Installer Qualifications: Installer shall have documented experience with rooftop screening systems, rooftop construction practices, rooftop safety requirements, and protection of roofing systems.

D. Preconstruction Coordination: Coordinate screening layout with equipment service clearances, airflow requirements, electrical disconnects, roof drainage, roof access, roof edges, parapets, obstructions, and adjacent construction before release for fabrication.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in Manufacturer's protective packaging or packaging suitable to protect finished components during transportation, handling, and jobsite staging.

B. Protect panels, framing, trim, hardware, and finished surfaces from scratching, denting, bending, marring, corrosion, or other damage.

C. Store materials above standing water and protect from construction traffic, weather exposure, and other trades in a manner consistent with Manufacturer recommendations.

D. Handle finished panels and coated materials to prevent damage to factory-applied finishes.

1.6 WARRANTY

SPECIFIER NOTE: Confirm final warranty language with CME leadership and warranty documentation before public release.

A. Company warrants the goods against defects in materials and workmanship, either (A) for a period of 18 months from the date of delivery of the goods or (B) for a period of 12 months from the date of the installation of the goods, whichever first expires

B. Warranty shall cover structural failure resulting from cracking, buckling, bending, tearing, or corrosion arising under normal use and environmental conditions.

C. Warranty shall not include damage resulting from improper handling, improper installation, misuse, abuse, unauthorized modifications, or conditions outside the intended use of the system.

D. Screening framework is not designed to support a person, to serve as a fall-arrest anchor, or to serve as a fall-prevention barrier.

E. Additional finishing warranties shall be available where applicable, based on the selected coating system and panel finish.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Basis of Design:

- . Custom Mechanical Equipment (CME)
- . 2101 Hall Boulevard
- . Ponca City, Oklahoma 74601
- . Phone: (580) 762-4114

. Website: www.cmemultizone.com

- B.** Design is based upon rooftop equipment screening systems manufactured by Custom Mechanical Equipment.
- C.** Comparable products seeking approval shall demonstrate compliance with all specified requirements, including:
 - 1. Custom-engineered project-specific layouts.
 - 2. Unit-mounted screen construction.
 - 3. Equipment serviceability and maintenance access provisions.
 - 4. Airflow accommodation requirements.
 - 5. Structural performance requirements.
 - 6. Wind-load performance requirements.
 - 7. Warranty provisions.
 - 8. Configuration capabilities specified herein.
 - 9. Metal panel construction and aluminum framing.
- D.** Substitutions shall comply with Division 01 requirements.
- E.** Substitution requests shall include documentation demonstrating equal or superior material construction, configuration capability, service access provisions, airflow accommodation, structural performance, wind-load performance, warranty coverage, finish options, and project-specific shop drawing support.
- F.** Manufacturer shall provide project-specific shop drawings for each screening system.

2.2 MANUFACTURER RESPONSIBILITIES

- A.** Manufacturer shall review project-specific equipment information provided by others for the purpose of developing the screening layout.
- B.** Manufacturer shall design screening layouts around equipment service requirements, airflow requirements, access doors, electrical disconnects, rooftop obstructions, and other project-specific conditions identified in the information provided to Manufacturer.
- C.** Manufacturer shall prepare project-specific shop drawings indicating screen layout, elevations, screen heights, support locations, mounting details, access provisions, panel profiles, finishes, and accessories.
- D.** Manufacturer shall fabricate the screening system in accordance with approved shop drawings and project-specific requirements accepted by Manufacturer.
- E.** Manufacturer shall provide installation documentation or recommendations for installing the screening system in accordance with approved shop drawings.
- F.** Professional Engineer stamped drawings and calculations shall be provided when required by the Contract Documents.

2.3 SYSTEM DESCRIPTION

- A.** Provide custom-fabricated rooftop equipment screening systems designed specifically for the project equipment layout, service-access requirements, airflow requirements, wind-loading criteria, and architectural objectives.
- B.** Systems shall be manufactured as complete assemblies consisting of screen panels, aluminum framing, mounting hardware, access components, trim, support accessories, and related components required for a complete installation.
- C.** Screening systems shall be custom engineered for each project and shall not be limited to predetermined standard layouts.
- D.** Screening systems shall be capable of being configured as one-sided, two-sided, three-sided, four-sided, or combination screening assemblies as required by project conditions.
- E.** Screening systems will be designed to accommodate manufacturer-required service clearances, airflow requirements, rooftop obstructions, and maintenance access requirements.
- F.** Screens shall be unit-mounted unless otherwise indicated on approved shop drawings. The manufacturer may provide panel systems for post-mounted applications; structural posts, foundations, and post installation shall be provided by others.
- G.** Where requested, screening systems may include access doors, removable sections, louvered panels, trim, support accessories, and locking hardware as indicated on approved shop drawings.

2.4 DESIGN CRITERIA

- A.** General:
 - 1. Screening systems shall be custom-engineered for each project.
 - 2. Screening systems shall not be limited to predetermined standard layouts.

3. Screening systems will be designed to coordinate with project-specific equipment locations, roof conditions, access requirements, and architectural screening objectives.

B. Service Clearances and Equipment Access:

1. Screening systems will be designed to maintain equipment manufacturer-published service-clearance and airflow requirements unless alternate clearances are specifically requested by the Owner, Architect, Engineer, or equipment manufacturer.
2. Screening systems should not obstruct equipment access doors, removable panels, filters, coils, electrical disconnects, ventilation openings, drains, hoods, controls, or service areas.
3. Access doors, removable access sections, or other access provisions shall be provided where indicated on approved shop drawings.

C. Airflow Requirements:

1. Screening systems shall be coordinated with required equipment airflow paths, including intake, discharge, condenser airflow, exhaust, and ventilation openings where applicable.
2. Louvered panel profiles or other airflow accommodations shall be provided where required by the equipment layout, project design, or approved shop drawings.

D. Screen Configurations:

1. Screening systems should be capable of one-sided, two-sided, three-sided, four-sided, or combination screening configurations.
2. Screen configuration shall be based on AHJ and or owner's requirements. Based on Line-of-sight, equipment layout, rooftop conditions, and service access. As shown in the approved shop drawings.

E. Support Requirements:

1. Framework supports shall be spaced at a maximum of 108 inches in the center unless project-specific engineering requires closer spacing.
2. The end of a screen wall shall not extend more than 36 inches beyond the final support location unless otherwise approved by the manufacturer.
3. Provide intermediate support, bracing, offsets, jackstands, saddle mounts, reinforcement, or other accessories as required to maintain structural integrity, alignment, serviceability, and installation requirements. Combination screens may enclose multiple units behind one screen wall. Provided the distance between units does not exceed 16 feet, and the unit elevation difference does not exceed the height of the shortest unit.

F. Height Limitations:

1. Standard screening systems will be designed for overall screen heights up to 120 inches unless otherwise approved by the manufacturer and supported by project-specific engineering.
2. Screen height will be coordinated with equipment height, line-of-sight requirements, service access, wind-loading criteria, and approved shop drawings.

G. Wind Design:

1. Standard screening systems will be designed to withstand wind speeds up to 120 mph.
2. Where project requirements exceed standard design criteria, provide project-specific engineering based on design requirements furnished by the Engineer of Record.

H. Mounting:

1. Screens shall be unit mounted.
2. Manufacturer may provide panel systems for post-mounted applications; structural posts and foundations shall be provided by others unless specifically included in project scope.

I. Shop Drawing and Engineering Requirements:

1. Manufacturer shall provide project-specific shop drawings for each screening system.
2. Professional Engineer-stamped drawings and calculations shall be available when required by the Contract Documents.

J. Information Required for Design and Fabrication:

1. Equipment manufacturer and model number.
2. Equipment dimensions.
3. Roof plan showing equipment location.
4. Required clearances.
5. Electrical disconnect locations.
6. Rooftop obstructions affecting screen layout.

7. Project wind-load requirements where applicable.

2.5 MATERIALS

A. Screen Panels:

1. Factory-fabricated metal screening panels.
2. Panels will utilize the manufacturer's standard panel profiles.
3. Thermoformed plastic screening panels shall not be acceptable.

B. Framing:

1. Manufacturer's standard aluminum framing system designed for project-specific loading and support requirements.
2. Framing members, support components, and accessories shall be selected by the manufacturer as required for the approved screen layout and project-specific requirements.

C. Fasteners:

1. Corrosion-resistant fasteners and attachment hardware as required for installation.
2. Fastener type, quantity, and location shall be as shown on approved shop drawings or as recommended by the manufacturer.

D. Accessories:

1. Brackets, supports, isolation pads, trim, and related components required for complete installation.
2. Accessory components shall be provided as indicated on approved shop drawings.

2.6 PANEL PROFILES

SPECIFIER NOTE: Panel profile availability should be confirmed with current CME standard offerings before publication.

A. Available panel profiles shall include:

1. R-Panel.
2. U-Panel.
3. Mega Rib Panel.
4. Multi-Cor Panel.
5. Mini-Rib Panel.
6. Louvered Panel.
7. Custom panel profiles as approved by the manufacturer.

B. Panel profile shall be selected from the manufacturer's current standard offerings.

C. Louvered panels shall be provided only where indicated on approved shop drawings or required for project-specific airflow or architectural requirements.

2.7 FINISHES

SPECIFIER NOTE: Do not list all colors in the specification. Use the current CME color chart as the project selection tool. Confirm final color availability, panel compatibility, and lead time before publication or submittal approval.

A. Panels shall be factory finished utilizing the manufacturer's standard coating system.

B. Color shall be selected from the manufacturer's current standard color chart.

C. Custom colors shall be available subject to the manufacturer's review and approval.

D. Color samples shall be available upon request for final architectural selection.

E. Premium finishes, metallic finishes, deep tone finishes, and custom colors may affect availability, cost, and lead time.

F. Final color selection shall be based on actual manufacturer-approved color samples or color chips. Printed and digital color charts are approximate only.

G. Finish warranties shall be available where applicable, based on the selected coating system and panel finish.

2.8 ACCESSORIES

A. Provide accessories required for complete installation as indicated on approved shop drawings.

B. Accessories may include:

1. Hinged access doors.

2. Removable access panels or removable access sections.
 3. Top trim and corner trim.
 4. Cross braces.
 5. Saddle mounts.
 6. Kicker offsets.
 7. Jackstands.
 8. Mounting brackets and hardware.
 9. Optional lockable access hardware where indicated in project documents.
- C. Accessory locations, quantities, and configurations shall be as indicated on approved shop drawings.

PART 3 - EXECUTION

3.1 EXAMINATION AND SHOP DRAWING COORDINATION

- A. Contractor shall verify equipment dimensions, locations, service clearances, and project conditions against approved shop drawings prior to fabrication and installation.
- B. CME shall verify all project-specific requirements that have been incorporated into approved shop drawings prior to release for fabrication.
- C. Notify Architect, Engineer, Owner, or Contractor of discrepancies that may affect installation, serviceability, airflow, structural support, or system performance.
- D. CME will not release the screening system for fabrication until shop drawings have been reviewed and approved in accordance with project requirements by the contractor.
- E. Beginning installation constitutes acceptance of project conditions by the installer unless discrepancies have been reported prior to installation.

3.2 PREPARATION

- A. Protect roof membrane, rooftop equipment, finished panels, and adjacent construction during staging and installation.
- B. Coordinate hoisting, staging, rooftop access, fall protection, and equipment shutdowns as required by project safety requirements.
- C. Verify attachment locations, access door locations, support locations, and accessory locations against approved shop drawings before fastening components.
- D. Clean attachment areas and bearing surfaces as required to complete installation without damage to equipment, finishes, or adjacent construction.

3.3 INSTALLATION

- A. Install screening systems in accordance with approved shop drawings and Manufacturer recommendations.
- B. Manufacturer installation services may be provided where indicated in the project scope.
- C. Install screen walls straight, plumb, level, and aligned with rooftop equipment as shown on approved shop drawings.
- D. Install supports, accessories, and attachment hardware as indicated on approved shop drawings.
- E. Maintain required equipment, service clearances, and airflow requirements.
- F. Do not place panels, framing, cross braces, supports, fasteners, or accessories where they impede equipment access doors, filters, coils, electrical disconnects, hoods, controls, panels, or other serviceable components.
- G. Install hinged access doors and removable access sections, so they operate freely and provide required access to equipment.
- H. Install jackstands, saddle mounts, kicker offsets, support brackets, and related accessories where indicated on approved shop drawings.
- I. Avoid damage to equipment, roof system, coatings, finishes, and adjacent materials during installation.
- J. Where dissimilar materials or bearing points could damage finishes or roofing, install pads, barriers, or protection as indicated on approved shop drawings or as recommended by the manufacturer.

3.4 FIELD QUALITY CONTROL

- A. Verify completed screening systems are plumbed, level, secure, and visually aligned.

- B. Verify hinged access doors, removable access panels, and required service access points operate without obstruction.
- C. Verify screening installation does not block required equipment service clearances or airflow paths.
- D. Verify that supports, jackstands, saddle mounts, kicker offsets, fasteners, and accessories are installed where indicated on approved shop drawings.
- E. Verify finishes are free from excessive scratches, dents, or installation damage requiring correction.

3.5 CLEANING AND PROTECTION

- A. Remove installation debris, packaging, unused materials, and loose fasteners from the roof area.
- B. Clean exposed screen surfaces in accordance with Manufacturer recommendations.
- C. Touch up minor finish damage where permitted by the manufacturer and project specifications. Replace components where damage is not acceptable to the Owner or Architect.
- D. Protect completed work from damage by subsequent construction activities until project completion.

3.6 CLOSEOUT

- A. Provide final warranty documentation and maintenance recommendations.
- B. Provide final drawings where required by the project scope.
- C. Review access door operation, removable components, and general maintenance considerations with Owner or Contractor where included in project scope.

END OF SECTION 10 82 13