

Oldcastle SurePods is North America's largest and most experienced provider of factory-built bathrooms. Using BIM and lean manufacturing technology, SurePods works with customers from design to installation to produce custom, ready-to-install bathrooms for hotels, hospitals, military barracks and multi-unit residential projects. By replacing on-site bathroom construction, SurePods accelerates the construction time line, improves quality and eliminates the punch list for the most problem-ridden part of a construction project.

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SECTION 132640

PREFABRICATED MODULAR BATHROOMS – NON HEALTHCARE

PART 1 GENERAL

1.01 SUMMARY

- A. This Section specifies prefabricated modular bathrooms provided as finished, self-contained units which include the following:
 - 1. Metal stud wall and ceiling framing with gypsum panels at interior side.
 - 2. Plumbing fixtures including water closets lavatories, tubs and showers, tub and shower surrounds, vanity tops and toilets.
 - 3. Plumbing work including water supply, sanitary lines, and floor drains.
 - 4. Electrical work including power and lighting circuits, GFCI outlets, and light fixtures.
 - 5. HVAC work including exhaust fans and air grilles.
 - 6. Interior floor, wall, and, ceiling finishes, including casework.
 - 7. Prep work for fire sprinkler systems, which includes pre cutting required holes in finished walls and ceilings.
 - 8. Prep work for fire alarm enunciators in Accessible and Hearing Impaired Rooms, which includes pre-cutting required holes in finished walls and ceilings for strobes, lights, flashers, or alarms sirens.
- B. Work includes delivery and final positioning of prefabricated bathrooms to their final locations.
- C. Related Sections, Work Included: Refer to the following sections for specifications for products to be furnished and installed as part of the prefabricated modular bathrooms:
 - 1. Section 064020 – Interior Architectural Woodwork: For casework, countertops and shower surrounds.
 - 2. Section 079200 - Joint Sealants: For sealants.
 - 3. Section 081400 - Wood Doors: For doors.
 - 4. Section 087100 - Door Hardware: For door hardware.
 - 5. Section 088000 - Glazing: For mirrors.
 - 6. Section 093000 - Tiling: For tile.
 - 7. Section 099000 – Painting: For paints.
 - 8. Section 102800 – Toilet Accessories: For toilet accessories and grab bars.
 - 9. Division 22 - Plumbing: For plumbing work and plumbing fixtures.

10. Division 23 – Heating, Ventilating and Air Conditioning: For HVAC work and equipment.
 11. Division 26 - Electrical: For Electrical work light fixtures, outlets and switches.
- D. Related Sections, Work Not Included: Refer to the following sections for specifications for products to be furnished and installed as part of Work of other trades:
1. Section 092116 - Gypsum Board Assemblies: For gypsum board panels to be applied in the field to exterior faces of metal stud partitions after unit are set in place and all electrical, plumbing and HVAC connections are completed, tested and inspected
 2. Division 21 – Fire Protection: Fire Protection Contractor to install sprinkler heads and strobes, lights, flashers, and alarm sirens.
 3. Division 22 - Plumbing: Plumbing Contractor to provide final installation of water closets and connections to all plumbing fixtures drains and vents, as well as single points of connections for hot and cold supply lines for entire bathroom.
 4. Division 25 - Heating, Ventilating and Air Conditioning: HVAC Contractor to provide final connections in the field of all air grilles and exhaust fans.
 5. Division 26 - Electrical: Electrical Contractor to provide final connections in the field for all power supply lines.

1.02 PERFORMANCE REQUIREMENTS

- A. General: Prefabricated modular bathroom units shall be volumetric, self supporting, light gage steel framed structures containing all interior fixtures, accessories, and finishes excluding FF&E items. Pre-Manufactured bathroom units shall be complete with water supply lines and electrical circuits. The units shall be delivered to the construction site complete and ready to be placed into the building and connected to the building's Plumbing, HVAC and Electrical Systems.

1.03 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 01 Specification Sections.
1. Manufacturer's Qualifications: Manufacturer's information indicating compliance with requirements in Paragraph: Quality Assurance. Bids will not be accepted from manufacturers which do not submit qualifications acceptable to the Architect and Owner.
 2. Shop Drawings: Show layout, room dimensions, materials, components, fasteners, doors, hardware, equipment, finishes, method of installation and assembly, supplementary support of bracing, controls and services roughing-in locations.
 - a. Include relationship with adjacent construction.
 - b. Include dimensionally accurate 3D drawings for coordination with project BIM model.
 - c. Include full size templates to jobsite for plumbing placement after approval.
 3. Product Data: Describe hardware, fixtures and finishes.
 4. Samples: Representative samples of all finish materials and colors for verification.

1.04 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Manufacturer shall demonstrate compliance with the following qualifications:
1. Minimum 3 years experience fabricating modular bathrooms for the specific building type and structural framing type required for the project.
 2. Capable of producing 3D fly-through model prior to start of design drawings for final acceptance of materials and layout.

3. Capable of fabrication within 3/8 inch tolerance for each overall modular bathroom dimension, such as length, width and height.
 4. Capable of furnishing transportation and as well as all customized bathroom moving equipment for facilitating jobsite delivery installation.
- B. Installer's Qualification: Minimum 3 years experience installing modular bathrooms and acceptable to the modular bathroom manufacturer.
 - C. Regulatory Requirements: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.
 - D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
 - E. Testing: Factory test major components, including plumbing lines, exhaust fans and electrical wiring prior to shipment.
 - F. Fire Performance: Fire performance of interior wall and ceiling finishes shall meet ASTM E84 Smoke Development Index class rating in accordance with the IBC 2006 Table 803.5.
 - G. Preinstallation Conference: Conduct pre-installation conference with general contractor.

1.05 PROJECT CONDITIONS

- A. Scheduling and Coordination: Installer shall examine project conditions at the site with regard to access and dimensions as they exist and the general areas of work, and shall perform work in such a manner as required to deliver, install and connect the prefabricated modular bathrooms in close coordination with work done on site by other trades. Final installation locations shall be broom swept with no debris, and no piles of materials in the way, which could hinder installer's progress. Drainage pipes pre-installed in the deck should be cut flush unless otherwise specified in the design drawings. The final installation locations should be flat and level, with flatness defined as no more than 3/16 inch floor variation over a 10 foot span, and levelness defined as no more than 1/8 inch slope over an 8 foot span.
- B. Non-compliant project conditions are the responsibility of the General Contractor to remedy before bathrooms can be installed.

1.06 WARRANTY

- A. Manufacturer's Warranty: Provide 1 year warranty for all assembly and workmanship, all plumbing and electrical devices shall have pass through warranties specified by manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. Prefabricated Modular Bathroom Manufacturer: Oldcastle SurePods 2300 Principal Row Orlando, FL (407) 859-7034, www.oldcastlesurepods.com 2.02

MATERIALS

- A. Materials, General: Comply with material specifications in referenced specification sections and the following.
- B. Light Gage Metal Framing: 16, 18 and 20 gage as determined by manufacturer.
- C. Gypsum Board: 1/2 or 5/8 inch, Type X, mold and mildew resistant, ASTM D3273.
- D. Fasteners: Corrosion resistant Type S-12 bugle-head fasteners.

2.03 FABRICATION

- A. Modular bathroom units shall be fabricated as indicated on the Drawings and Specifications, including room layout, fixture and finish selection, design of plumbing, HVAC, and electrical systems, and design of accessible rooms.
 - 1. Prefabricated bathroom unit designs and shop drawing packages shall be reviewed with the architect of record on a project prior to production to ensure compliance with all applicable State and Local Codes.
- B. Units shall be manufactured without exterior gypsum panels to allow for HVAC, Plumbing and Electrical inspections. Pre-Manufactured Bathroom units shall be constructed using securely interlocking shear panel walls or equivalent to form a fully braced box structure.
- C. ADA compliant roll-in showers shall be provided as required. Units shall have an additional floor drain, and shipped floorless for field installation of ADA compliant flooring by onsite flooring contractor. Floorless bathrooms shall contain all the finishes that are mounted on the walls and ceilings including wall tile, sinks, grab-bars, lighting and electrical outlets.
 - 1. Include tie-in terminations for floor waterproofing membranes to wall intersection where required.
- D. Bathroom floor finishes shall be factory-installed using approved materials and adhesives per the flooring manufacturer's recommendations. Precision cut and install per manufacturer's recommendations and ANSI A108 installation standards, using epoxy grout at all locations.
- E. Door thresholds shall be included, either factory-installed or field-installed as applicable.
- F. Wall tile shall be installed over approved tile backer wall panels to assure proper adhesion and moisture resistance. Use latex modified adhesives to assure proper tile adhesion throughout delivery as well as the life of the bathroom. Tile shall be professionally installed with specified tile/grout line spacing and quality inspected prior to leaving the factory. The interface between the tile surround and adjacent surfaces shall be moisture sealed with specified sealants.
- G. Simulated tile tub/shower surrounds meeting ASTM E84 shall be installed over approved wall panels assuring proper adhesion and moisture resistance. Manufacturer recommended adhesives shall be used to assure proper adhesion throughout delivery, installation and during service life. Surrounds shall be professionally installed and quality inspected prior to leaving the factory. Moisture seal interface between the surround and adjacent surfaces, including tub, walls, and ceiling, shall be moisture sealed with specified sealant.
- H. Ceilings making up the top horizontal structure of the prefabricated modular bathrooms shall consist of 16 to 20 gage steel framing of typical profile with gypsum panels installed on the interior side only. Gypsum panels shall be installed in accordance with manufacturer's instruction and in compliance with IBC 2006 Table 2508.5 for framing spacing and screw spacing. Manufacturer shall provide redundant fastening by using construction adhesive in addition to screws. Bathroom ceiling assemblies shall rest atop and be fastened to the top wall tracks to increase wall rigidity and fully block the ceiling perimeter.
- I. Painted ceilings shall be properly prepared, smooth and free of imperfections, primed and painted with specified color and gloss level paint. Painted ceiling surfaces shall comply with IBC 2006 Section 803 specified NFPA 286 flame spread requirements.
- J. Sealants shall be applied to all applicable interior bathroom seams with the exception of the caulk around the bottom edge of base tile and front skirt of the tub or shower pan, which are to have sealant installed on site.
- K. Vanity tops specified shall be furnished and installed. Adequate blocking shall be installed as required and stone surfaces polymer sealed in the factory as specified.
- L. Permanent interior bathroom mirrors shall be mechanically fastened and bonded to the wall surface using mastic.

- M. Toilet and bath accessories shall be installed inside the bathroom. Adequate support blocking shall be incorporated for all fixtures and accessories.
- N. Vertical freestanding glass panels and doors shall in most cases (dependent on design) be pre-installed in the factory and blocked/secured for shipping to prevent breakage.
- O. Factory installed plumbing components shall be code compliant. All bathroom supply lines shall be routed to two common supply hookups, one hot and one cold water connection labeled in the factory.
- P. Tubs, countertops, sinks, faucets, sink p-traps, angle stops with trim, shower valves, shower heads, tub spouts, and all related interior trim shall be included and installed with the unit. Except for sink p-traps, all bathroom drainage shall be field installed per the design as shown on the Shop Drawings.
- Q. Water supply lines shall be consistent with state and local plumbing codes of 1/2 to 2 inch copper "L" tubing with NSF-61 and UPC listed Viega crimp fittings. Copper supply lines are supported at a minimum of 6 feet per UPC 1-2003 Table 3-2. Alternately where local jurisdictions allow, WaterPEX NSF compliant fittings and piping may be used and properly supported at a minimum spacing of 32 inches per UPC 1-2003 Table 3-2. Foam or fiberglass (depending on code) pipe insulation is factory installed. Water closets shall be of approved GPF capacity and of correct height, and properly installed per local accessibility codes and ADA regulations where required. All plumbing systems shall pass manufacturer's standard air test. Factory pressure test results shall be documented on a tag affixed to the bathroom unit. The standard factory pressure test is 100psi held for 20 minutes or as defined by project. The drainage components of the pre-built unit are limited to a tub or shower drain, a toilet flange, and a vanity sink drain with p-trap.
 - 1. These components shall be connected to the buildings waste/vent risers by the plumbing contractor in the field and site tested as normal.
 - 2. The prefabricated modular bathroom manufacturer shall be responsible for any inspection failures or leaks found within the bathroom supply lines during inspection and on-site testing.
 - 3. The plumbing contractor shall be responsible for all drainage and vent connections.
- R. Plumbing fixtures shall be installed according to plumbing fixture manufacturer's instructions.
- S. The prefabricated modular bathroom manufacturer shall provide for proper installation of ventilation components including, bath fan, HVAC horn with grill, and ducting within the bathroom as required by the Shop Drawings, and the HVAC specifications. Either flexible or rigid ducting may be installed on the roof of the pod to facilitate easier connection to building HVAC system.
- T. Light fixtures and exhaust fans shall be installed in the unit as specified. Electrical and HVAC trim shall be installed where possible with glass trim packaged inside the unit for on-site installation by Oldcastle SurePods. Fixture boxes shall be installed in the wall and factory wired to switches. Electrical supply whips shall be routed to bathroom ceiling for connection into a local junction box. MC cable or conduit shall be used according to local code.
- U. Electric circuits servicing the bathroom unit shall be code compliant as specified in the electrical specifications. Internal bathroom circuits shall consist of a GFCI power circuit, and a lighting circuit, or as specified on the Drawings. Both circuits shall have a ceiling mounted point of connection which shall be connected to the building's electrical service lines by the electrical contractor.
- V. Alarms, strobe lights, and sprinkler heads or other fire suppression systems are not pre-installed in the bathroom units and shall be installed by the appropriate contractor. Electrical rough in boxes, conduit, and pre-cut holes in the gypsum can be supplied by the manufacturer as documented on the Shop Drawings.

PART 3 EXECUTION

3.01 EXAMINATION

- A. General Contractor to examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
 - 1. Inspect rough-in for Plumbing, HVAC, and Electrical Services to verify actual locations of services before pre-manufactured bathroom unit installation.
 - 2. Confirm that adjacent fire and smoke rated floor/ceiling assemblies and partitions have been installed and accepted prior to installation of prefabricated bathrooms.
- B. Verify that construction affecting work of this Section are inspected prior to delivery of bathrooms. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION – GENERAL

- A. Store finished bathroom with weatherproof wrapping in a secure location until the time of site delivery. Manufacturer shall coordinate bathroom shipments to arrive on a schedule for immediate placement into the building to be coordinated with General Contractor.
 - 1. A joint inspection of the units shall be done by the manufacturer and owner's representative when the units have been moved into final position. Damages incurred due to shipping or final installation shall be documented during this inspection by manufacturer and will be manufacturer's responsibility to rectify
 - 2. Units shall be secured with a door locking mechanism where possible to assure limited inside access, only to required trades and site managers, and to preserve the security and cleanliness of interior finishes.
- B. Installer shall use a certified lifting apparatus and lifting straps as provided by the pre-fabricated bathroom unit manufacturer for hoisting bathroom units into the building.
- C. Units shall be inserted into the building structure prior to closing off rooms with interior framing. Units shall be shipped with a weather resistant wrapping designed to protect the units until the building is weather sealed. Units shall be blocked up off the floor, and roughly placed in the center of the guestroom.
- D. After the building is dry and plumbing risers are complete, protective packaging may be removed and the bathrooms positioned into final location. The manufacturer shall supply air powered lifting and positioning tools to efficiently place units. The subfloor of the unit may then be mechanically or chemically secured to the underlying deck structure as needed.
 - 1. Coordinate inspection by local code authorities having jurisdiction before final placement.
- E. Install units in accordance with manufacturer's recommendations and final approved shop drawings.

3.03 FINAL HOOK-UP

- A. Plumbing hookups shall be by the Plumbing Contractor. Supply connections to hot and cold stub outs; furnish and connect drain lines to all plumbing fixtures; furnish and install all venting as needed. All connections as specified per the Drawings.
- B. Mechanical hookups shall be by the HVAC Contractor. Provide all final HVAC connections to exhaust fans, air grilles or duct work as specified per the Drawings.
- C. Electrical hookups shall be by the Electrical Contractor. Provide all final electrical connections including connections to electrical circuits as specified per the Drawings.

- D. Refer to applicable specification sections for plumbing, mechanical, and electrical utility requirements.
- E. All MEP points of connection to be coordinated by manufacturer and communicated via clear integration drawings provided prior to MEP rough-ins.

3.04 FIELD QUALITY CONTROL

- A. Test all plumbing, mechanical and electrical items for proper operation. All site testing to be the responsibility of appropriate MEP contractor.
- B. Repair or remove and replace defective work, finishes and accessories as directed upon completion of installation.

3.05 ADJUSTING, CLEANING AND PROTECTION

- A. Installer shall clean all exposed and semi-exposed surfaces, touch-up finish as required in accordance with manufacturer's written instructions. Installer shall remove and refinish or replace damaged finishes, accessories, and fixtures
- B. Adequately protect the work from damage until final acceptance by the Architect and Owner.

END OF SECTION