

MORTUARY WALK-IN COOLERS & FREEZERS



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Walk-in Mortuary Coolers and Freezers provide the best solution for most cadaver storage needs. They can be custom sized to your available space and can be fitted with various types of cadaver racks to suit the smallest to largest of facilities.

Units can be fabricated with a variety of metal finishes, door types, alarm systems, refrigeration controls and dehumidifier systems.

Provide us with your available space, cadaver storage requirements and budget. We will provide a solution which meets your criteria.

GENERAL

Walk-in scientific coolers and freezers shall be designed with prefabricated modular, precision formed, metal clad insulated panels to facilitate easy assembly and disassembly for relocation and expansion.

PREFABRICATED MODULAR PANEL CONSTRUCTION

All panel sections, to ensure permanent uniformity, will be precisely shaped with metal pans processed through a state-of-the-art, fully automated, leveling, cut-to-length and forming lines and roll-forming equipment with steel dies. Metal pans will be fastened to tongue-and-groove high-density foam rails (8.5 lb/cu ft density minimum) with lever acting, eccentric hooked camlocks and mating pins securely anchored to assure alignment and provide a positive seal. Insulation will be UL Listed, Class 1, non-CFC polyurethane, foamed-in-place to adhere to the inner and outer metal pans when confined within temperature controlled fixtures and molds.

Walk-in panels to be constructed of 4" or 5" thick prefabricated panels. Panels shall be modular in design for quick field assembly and future modification flexibility. Cooler ceiling panels shall be designed to span 22 ft. without the use of structural support or hangers. NSF gasket shall be secured to perimeter panel edges to insure seams and

joints are air tight and vapor proof. Corner panels will be constructed with an NSF approved radius on the interior pan. Partition, or T-panels, will be of the same construction with radius on interior pans.

PANEL LOCKING DEVICES

Steel cam-action locking devices shall be precisely positioned and firmly anchored in each panel, not to exceed 48" on center. All locks will have integral rear flanges to permanently anchor their position without the use of metal strapping. Cam-locks will be placed at exact matching locations on the tongue-and-groove side to insure compression of the perimeter gasket in a uniform manner.

The cam-action locking devices shall consist of lever acting, eccentric hooked camlocks in the tongue edge and mating pins securely anchored in the groove side to assure alignment and provide a positive seal. All camlocks shall be accessible from the interior by means of a hex wrench furnish with the cooler or freezer. Access ports for cam locks will be covered with snap-in cap plugs.

INSULATION

Insulation shall be polyurethane foamed-in-place. Polyurethane shall be injected in place to a minimum density of 2.2 pounds per cubic foot resulting in a compression strength of 29 PSI, K-Factor of .12, and R-value 8.49 per inch. Non CFC blowing agent shall be used as an expanding agent in the manufacturing process.

Polyurethane foam shall be listed under UL Certification Foamed Plastic and examined for ignition characteristics in accordance with ASTM D 1929-91. Finished foam plastic at 6" max thickness formed from Isocyanate component and resin component at a nominal density of 2.30 pcf.

METALS AND FINISHES

Interior and exterior finish will be selected from the following metal options. A combination of metal finishes can be selected to satisfy cosmetic and economic design requirements.

Walls & ceilings: Standard metal finish is 26-gauge stucco embossed galvanized steel interior/exterior. Minimum acceptable steel thickness is 0.019" with G-90 galvanized coating. Optional metal finishes include 26-Ga. white painted smooth or stucco embossed galvanized steel, .032 stucco-embossed aluminum, .040 stucco embossed aluminum, .040 smooth aluminum painted white, and 20-Ga & 22-Ga. stainless steel Type 304, #4 finish.

Floors: Standard metal finish is .040 textured aluminum. Optional metal finishes include .040 smooth aluminum, .100 aluminum diamond tread plate, and 22-Ga stainless steel, Type 304, 2B finish.

Matching NSF approved metal cove base shall be provided as necessary.

FLOOR CONSTRUCTION

Insulated floor panels, when required, shall be 4" thick and constructed with metal bonded to exterior grade plywood and then foamed-in-place. All insulated pre-fabricated floors shall be true NSF Certified with integral radius ledge and cam-up cam-locks to wall panels. Floors shall be designed and manufactured to support uniformly distributed loads up to 700 pounds per square foot.

Insulated sub-floor may be substituted for floor panels. Provide minimum 4" thick Styrofoam board insulation consisting of two 2" x 24" x 96" medium density board, 25 lb per sq ft minimum, alternating layer direction. Sub-floor details, if required, to be furnished with quotation submittal.



DOORS

Doors shall be infitting flush or overlap design. Standard door size is 36" x 80". Oversize and custom door sizes are also available. The door edge shall consist of a PVC perimeter into which the interior and exterior metal skins are secured and shall create a thermal break between metal facings. The PVC frame includes a PVC bulb type compression gasket with magnetic steel core to maintain an airtight seal and to allow quick replacement as needed. Freezer doors have concealed heated jamb in stainless steel and galvanized steel channel and threshold heater, easily accessible for replacement or service. Heated pressure relief vent port shall be provided and shall be of an adequate size for easy door opening and closing. An NSF approved digital thermometer shall be flush mounted in the door frame. Acceptable alternate is a light switch with 2" dial thermometer with visible safety range, NSF Certified. All electrical parts must be UL Listed or UL Recognized Components.

The door hinges shall be heavy-duty cam lift design in bright chrome finish. Hinges have steel pins with nylon bushings and shall be of sufficient size and number to support twice the weight of the door. The lockable (cylinder) door latch shall be made of similar materials and finish as the door hinges. The latch shall incorporate an inside safety release that complies with OSHA standards. Doors shall be self-closing without assistance when opened up to 90 degrees and shall remain open when opened more than 90 degrees. The bottom of the door shall have a flexible dual sweep.

Each door shall be factory mounted in a vinyl extruded door frame to prevent thermal conduction. Polyurethane foamed-in-place insulation of this frame will be the same as described for all panels.

Hydraulic door closer shall be provided to close door noiselessly and insure a positive door seal.

Two-way heated pressure/vacuum relief vent port will be provided on all low temperature applications. The vent port will be factory installed in the door frame header and pre-wired at the factory. Vent ports are made of corrosion-proof material with screening to prevent vermin and insect transit. If required, non-heated vent ports can be provided for medium temperature rooms.

LIGHTING

Single-pole light switch rated 15 amp @ 120VAC (3-way & 4-way switches to be provided with multiple entry doors) with pilot light shall be factory installed and will be flush mounted on each exterior door frame. A compact fluorescent vapor-proof light fixture will be provided for each door section for field mounting on the interior door header section foamed-in-place J-box. Room shall have a sufficient number of vapor-proof compact fluorescent light fixtures or 48" low-temp fluorescent fixtures with T-5 light bulbs (bulbs included), shipped loose, for field installation; light fixture quantity will be based on specifications approved by the customer. Each light fixture shall include a shatterproof cover. All wiring within the door section, heater, switch, and light fixture, is factory installed in conduit and terminates at a junction box in the header above the door or through the ceiling panel as required. If conduit terminates through ceiling panel, coring of ceiling panel to be performed in field to insure proper location. Field connection by others is required for complete operation 120 volt, 60 cycle, 1-phase. All components are to be UL Listed or UL Recognized Components.

CEILING PANEL SUPPORT SYSTEM

Hanger Bracket Support: Hanger bracket supports can be provided on indoor rooms exceeding 20'-0". The ceiling panel weight will be supported from existing building structure. Threaded rods and beam clamps are also available. Note: building design/structural by others.

C-Channel Support: Exterior C-Channel support system can be provided. The ceiling panel weight will be suspended by hanger brackets from steel exterior C-Channel. C-Channel rests on steel angles which distribute the weight of the ceiling panels to the walls of the insulated room.

Interior Steel Support: Insulated rooms installed outdoors or inside building which do not allow for ceiling suspension can be provided with interior steel support assemblies. Steel assembly will be complete and include all posts, beams and joists, and hardware. Standard finish is one coat primer.

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REFRIGERATION SYSTEMS

ACCESSORIES & OPTIONAL EQUIPMENT

Doors: Hinged, sliding doors, single slide and bi-parting, manual and electric, insulated doors are available.

Door Closer: Rack and pinion type door closer with hold open feature.

Kickplates: Aluminum diamond tread (min .080) or stainless steel kickplates, if required, are to be 36" high x width of door, interior and exterior of each entry door.

View Window: Standard sizes are 14" x 14" and 14" x 24" triple pane glass; non-heated for coolers and with heated frame and heated glass for freezers.

Vinyl Strip Curtain: Vinyl strip curtains can be provided for each walk-in door to maximize operating efficiency by reducing air infiltration. Vinyl strips overlap a minimum 2" with adjacent strips and door jamb.

Air Curtain: Factory assembled black or white powdered coating, or stainless steel casing; complete with tangential fan wheel, uniform velocity across the entire length of the discharge area and micro-switch.

Temperature Alarm: Audible/visual, high/low temperature alarm & monitor with power failure alarm (weekend battery backup with built in recharging circuitry); digital temperature display.

- Lead-lag controller (optional for redundant systems only)
- Field Adjustable High and Low Alarm Temperature Set-points
- Field Selectable High / Low Temperature Alarm Display in °F or °C.
- Field Adjustable Time Delay
- Audible Visual and Remote Alarm Notification (dry contact outputs)
- Built-In Power Supply
- Surface or Flush Mount available
- Probes: 14-25 foot leads included
- Flush mounted for indoor use; face mounted with weather-proof enclosure for outdoor use
- Illuminated personnel panic button available
- Datahub software with automatic telephone dialer (note: requires integration & programming with telecom system)

Custom Control Panels:

Panels can range from relay logic controls to PLC/HMI touch screens controls with or without a chart recorder.

Enclosure Panel: Metal of material matching the exposed walk-in exterior is available to close off space between the box top and the ceiling with or without track; maximum 24" high without support.

Ramp: Interior or exterior ramp is available for walk-ins with insulated floor for roll-in traffic.

Screed Wall: Metal clad foamed-in-place screeds are available in custom heights to be used in floorless applications. Foam screeds will have a groove top configuration and pins to accept bottom corner and wall tongue cam-locks.

Wire Partition: If required, a wire partition shall be provided, location per drawing. Wire mesh will be diamond patterned, 10-ga woven wire in frame for additional strength. Includes locking swing door (door swings out) or sliding door as required. Accessories include corner post, line post, wall mounting kit, as needed. Color is dark gray.

Condensate Pan: If a floor sink or drain to sanitary sewer is not available, a UL Listed or UL Recognized Component condensate evaporator pan of adequate capacity is available.

Outdoor Roof Membrane: Custom prefabricated reinforced thermoplastic membrane, leak-proof, resistant to chemicals, fire and high winds; used with or without sloped foam insert. Square footage exceeding 2,500 square foot area requires heat welding. Roof membrane will overhang room by approximately 6" all around and flashed to the walls with rigid vinyl strips.

Note: Roof membrane must be installed by factory authorized contractor.

Occupancy Sensor: Low temperature (as low as -40 degrees °F) occupancy sensor in gasketed watertight enclosure, passive infrared sensor; dual-element temperature compensated pyroelectric sensor; includes power pack, swivel mount bracket, digital time delay settings of 15 sec, 5 min, or 10 min, 4 sensitivity settings.

Chart Recorder: 7-Day temperature chart recorder with K-thermocouple probe and digital display. User selectable recording times and temperature ranges. Included accessories; AC adapter, red pen, four AA batteries, quick start guide, 4" bead-wire probe and 6 ft. power cord. Comes with (100) 8" charts. Note: For field mounting.

REFRIGERATION

Remote Refrigeration System: Provide a national brand of indoor & outdoor self-contained or outdoor remote condensing units. Outdoor condensing units include weatherized cabinets; redundant refrigeration systems may be required (see also specifications for temperature alarm). Each room is calculated for BTUH load and the refrigeration system is selected based on cooling requirements and system capacity.

Condensing units will be new and UL Listed pre-assembled, including factory mounted discharge service valve, encapsulated auto-reset high/low-pressure controls, defrost timer, crankcase heater, and liquid line drier/sight glass assembly, and shall operate using R-404A and R-407C refrigerants. Matching evaporator coils come separate from condensing units and will be UL Listed and NSF Certified, pre-wired and with factory installed thermal expansion valve (TXV), thermostat, solenoid valve, and EC motors.

Notes: Dual pressure switch recommended for high ambient temperatures. In low ambient locations where temperatures fall below -10 degrees °F, provide a low ambient kit with heated and insulated receiver, suction accumulator, and 12" snow legs. If line runs exceed 100 ft, an oil separator may be required.



Packaged Refrigeration System:

System combines both condensing unit and evaporator coil onto one unit that field installs in a factory cut opening in ceiling panel(s). System mounts flush in 4" ceiling panel and does not require a condensate drain line (indoor top mount systems only). Systems are fully assembled, evacuated, charged, run-tested, and wired at the factory. Controls are pre-set at the factory for +35 degrees °F for coolers and -10 degrees °F for freezers.

Redundant Refrigeration Systems:

Systems to be provided according to remote refrigeration system guidelines. Each walk-in room will have two complete refrigeration systems capable of handling the total BTUH load requirements and will operate independently of each other. Rooms are equipped with switch-over controls to operate each system equally for 3.5 days each week. An alarm is provided to alert personnel of system failures and will automatically start the other system to maintain temperature of the room.

Hot Gas By Pass System:

Continuous running system providing the ability to control temperature in the room environment to a plus or +/- .05 °C. Available upon request.

Hot Gas or Electric Defrost System:

Designed for temperatures below 33 °F. Available upon request.

Dehumidification System:

Design to control humidity in environmental control rooms. Available upon request.

DELIVERY and INSTALLATION

Delivery will be made to job sites by factory truck or common carrier with installation instructions provided.

When installation is included, complete installation will be provided by experienced factory personnel or approved contractor.

WARRANTY

Ten (10) year warranty on walls and ceiling panels. Refrigeration condensing units come with factory one (1) year compressor warranty (no labor). An optional four (4) year extended compressor exchange warranty is available.

Note: To promote continuous improvement, specifications are subject to change without notice.