



WHEN IT NEEDS TO BE RIGHT – IT NEEDS TO BE THERMALRITE

GENERAL

All walk-in coolers and freezers shall be prefabricated, of modular design and construction and are designed for convenient and accurate field assembly and future expansion.

SIZE AVAILABILITY

Thermalrite is a custom manufacturer and will build to any requested size. You don't have to accept a nominal size room that doesn't fit your need, we can provide you with a room that fits your exact dimensions with no additional costs. We stock raw materials, not pre-made panels. Special angles or notches are standard. Thickness of 2", 4", 5" and 6" and lengths up to 30' are available.

TRADE APPROVALS

Underwriters Laboratories

Thermalrite all foam panels up to 5" thick with painted or unpainted steel or aluminum facings generated a flame spread of 25 and smoke developed of 450 or less. UL file: R13780

Factory Mutual

Thermalrite manufactures panels up to 5" thick that meet the approval requirements of the FM Standard 4880. Thermalrite panels are approved for use as insulated core walls and ceiling panels up to a maximum height of 30 feet (9.1 meters) without the need for sprinkler protection in and of themselves. The end use of the panel would determine if sprinklers are required.

Underwrites Laboratories- Door Assemblies

Thermalrite door assemblies are listed under U.L file numbers: E61954 and E225993.

State of Wisconsin: Thermalrite is listed under evaluation # 200200-I

State of Oregon: Thermalrite has been granted approval to construct and ship closed component refrigeration panels for use within the State of Oregon.

City of Los Angeles: Thermalrite panels carry general approval under Research Report number 24543.

City of Houston: Thermalrite is registered as an approved walk-in panel fabricator under registration number 654.

New York City: Thermalrite panels are approved by the New York City Department of Buildings under MEA number 203-02-E.

California Bureau of Home Furnishings and Thermal Insulation: License ID 1342.



Montreal Protocol: Thermalrite uses only class 1 non-cfc urethane insulation that is compliant with the rulings of the Montreal Protocol.

NSF

Thermalrite walk-ins carry the NSF mark to certify that they meet the requirements of NSF Standard #7.

United States Department of Agriculture (USDA)

Thermalrite walk-in coolers and freezers with smooth or stucco stainless steel, galvanized steel, white painted galvanized steel, Kemlite Glassboard, Glassboard L, Glassboard P, Glassboard Fire-X and Kemply are acceptable for incidental food contact in federally inspected establishments.

Energy Independence and Security Act of 2007 (H.R. 6)

Products manufactured on or after January 1, 2009 will meet or exceed the prescriptive standards of the act.

WARRANTY

Thermalrite warrants to the original purchaser of the foamed in place panels manufactured and sold by it, to be free from defects in materials and workmanship under normal use and service for a period of ten years from the date of original installation by an authorized representative, but not to exceed ten years and six months from date of shipment.



ARCHITECTURAL SPECIFICATIONS

1. **PANEL CONSTRUCTION**

2", 4", 5" or 6" panels (select desired panel thickness) shall consist of foamed-in-place polyurethane insulation sandwiched between the interior and exterior metal pans that have been die formed and gauged for uniformity. Perimeter panel framing shall be Thermalrite high-density urethane tongue and groove rails with cam locking fasteners to assure airtight joints and structural strength to the panels. Cam locks shall be no more than 48" apart. All panels shall have factory applied NSF approved gasket. Panels shall all be manufactured to exact dimensions (Thermalrite also offers wood frame construction as an option.)

2. **INSULATION**

Non-CFC urethane insulation shall have a 97% closed cell structure Class 1 rated urethane foam has thermal conductivity (K factor) of .106-.136 depending on the operating temperature BTU/hr./sq. ft. per degrees Fahrenheit/inch. Four-inch panels have a K-value of 33. All foam panels are supplied with class 1 fire rated insulation and complete panel assembly is certified by Underwriters Laboratory (UL) as having a flame spread of 25 or less and smoke generation of 450 or less when tested in accordance with ASTM-E-84. This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

3. **FLOOR CONSTRUCTION**

A. Floor Panels shall be fabricated similar to other panels and are reinforced to readily withstand uniformly distributed loads of 1000 lbs. per square foot. Floor (will; will not) be recessed. Floor (will; will not) be covered by tile and grout, or concrete wearing floor.

B. All pre-fabricated floor panels as manufactured by Thermalrite shall have a built in integral NSF radius cove and all wall panels shall lock to the floor panels using the same cam lock systems.

4. **METAL FINISHES**

A. Exterior floor and ceiling shall be 26 gauge-acrylume

- B. Exterior walls shall be: (select one)
- 26 gauge stucco-embossed acrylume
 - 26 gauge stucco-embossed white galvanized
 - 26 gauge galvalume
 - .032 or .040 stucco embossed aluminum
 - 430RO smooth or embossed stainless steel
 - 22 gauge stainless steel
 - 20 gauge stainless steel



- 22 gauge galvanized (Minimum G-90 coating)
- Other gauges and finishes are available upon request

C. **Interior walls and ceiling** shall be: (select one)

- 26 gauge stucco-embossed acrylume
- 26 gauge stucco-embossed white galvanized
- 26 gauge galvalume
- .032 or .040 stucco embossed aluminum
- 430RO smooth or embossed stainless steel
- 22 gauge stainless steel
- 20 gauge stainless steel
- 22 gauge galvanized (Minimum G-90 coating)
- Other gauges and finishes are available upon request

D. **Interior floor** shall be: (select one)

- 18 gauge stainless steel
- 16 gauge stainless steel
- .063 aluminum diamond treadbrite
- .100 aluminum diamond treadbrite
- .050 smooth aluminum
- 14 gauge galvanized steel (Non NSF)
- Other gauges and finishes are available upon request
- 2" ADA compliant floor

5. **PANEL LOCKING ASSEMBLIES**

Assembly of walk-ins shall be accomplished by cam locking fasteners, which shall be foamed-in-place and activated by a hex wrench provided by the manufacturer. Access ports shall be on interior of panels to allow assembly of walk-in from the inside and shall be covered by snap caps.

6. **PANEL GASKETS**

Flexible N.S.F gaskets shall be applied on the interior and exterior edge of the "tongue" rail. Gaskets shall be impervious to stains, greases, oils and mildew.

7. **ENTRANCE DOORS**

A. Standard Thermalrite cold storage door is 36" x 78", however, doors can be fabricated to fit any size opening.

B. The standard door construction shall be flush-mount type, finished interior and exterior, to match the wall in which it is located. Door and door section shall be listed by UL and equipped with the following:

- ◆ Magnetic gasket
- ◆ "Posi-Seal" door closer
- ◆ Polished chrome deadbolt latch and cam-lift spring-loaded hinges



- ◆ Latches shall have a safety release to prevent entrapment of personnel within the box
- ◆ Latches also have padlocking provisions
- ◆ Self-closing hardware also available upon request

C. The door perimeter shall be constructed to incorporate a fiberglass molded pultrusion no less than 1/8" thickness, which is permanently foamed in place. Bottom of door shall have a double sweep gasket. Magnetic gasket shall be of a dart and ridge design that will allow for easy replacement by the end user without the use of any tools. The door jamb shall be constructed of a fully welded anodized aluminum rigid frame. The perimeter of the frame shall be no less than two inches wide to provide integral backing to accommodate all required hardware. Freezer door jambs shall also have a 120-volt jamb and threshold heater with a snap-on easily removable stainless steel channel and a heated pressure relief vent assembly listed by UL

D. Each entrance door shall be provided with a 3-way rocker light switch with an indicating pilot light exterior. All switches are pre-wired and factory tested per UL. All light fixtures are optional.

E. When required, a threshold shall be provided with the door section. Heater wire shall continue beneath the threshold (freezer) in a raceway.

F. A digital thermometer shall be included with each door section to indicate inside temperature.

8. **PARTITIONS**

Fabrication and finish of partition walls shall be the same as the walk-in walls and shall lock into wall, ceiling, floor panels, (if used) with cam locking assemblies. Tongue and groove foam surfaces shall provide the thermal break between cooler and freezer compartments.

9. **NSF**

All walk-ins shall be fabricated to comply with National Sanitation Foundation Standard No. 7. The NSF label shall be affixed to the interior door jamb. Interior corners and floor shall be coved to meet NSF specifications.

10. **INSTALLATION INSTRUCTIONS**

A Complete set of installation instructions shall be included with the walk-in. These instructions shall cover the erection and assembly of the walk-in and the installation of refrigeration systems. Shop drawings shall be included.

11. **RAMPS** (Select Interior, Exterior, ADA, or no ramp required.)

A. **Interior Ramp**- To eliminate a step up into the walk-in for limited light duty roll-in traffic; a built-in ramp shall be supplied. Ramp shall be NSF listed, have



non-skid strips or Aluminum Tread Plate. Ramp will be as wide as finished door opening with standard depth of 23”.

B. **Exterior Ramp**- For use with standard floor application and heavy usage roll-in traffic, an exterior ramp shall be supplied. It shall provide flush entrance, have non-skid strips or Aluminum Tread Plate finish and fasten to front of walk-in floor. Ramp will be as wide as door and 24” deep, special size ramps are available as well.

C. **ADA Ramp**- An interior or exterior ramp constructed as described above except the rise/slope is designed in compliance with the Americans with Disabilities Act.

OPTIONAL FEATURES (IF SPECIFIED):

- A. **Dual 3-Way or 4-Way Switches**- An exterior and interior 3-way press switch with pilot lights on each entrance door shall be provided. Pre-wired switches control interior light. Exterior pilot light indicates lights are “on”. Interior pilot light is constant burning.
- B. 2 ½” dial thermometer
- C. 4 ½” dial thermometer
- D. **ALARM SYSTEMS**- A digital alarm thermometer which includes the following:
- ◆ LED display.
 - ◆ Remote electronic sensor.
 - ◆ Adjustable alarm set points.
 - ◆ Flashing light when the walk-in temperature goes beyond acceptable operating limits.
 - ◆ Reset button to silence the audible alarm. The alarm will automatically revert to normal mode once temperature conditions are satisfied.
 - ◆ Battery backup to guard against power interruption.
 - ◆ Door ajar sensors.
 - ◆ Motion sensor to shut off lights when no movement is detected.

OPTIONAL DOOR ASSEMBLY ACCESSORIES (If SPECIFIED)

- A. **VIEW-THROUGH WINDOW**- To provide vision into the walk-in room, a 14”x24” triple-pane window will be used. For freezer applications or humid conditions, heated glass will be used. Window will be neatly trimmed and designed for replacement in the field. 14”X 14” view-through window also available.
- B. **LOCKING BAR**- Locking bar prevents opening of the door even if hinges and latch are removed. Locking bar assembly will be provided with inside safety release. (Padlocks by others.)



- C. **DEAD BOLT LOCK**- Lock mechanism will be located on exterior of door with key access on exterior. Inside safety release will be provided with dead bolt. Lock can be provided for a removable core to be installed on-site.
- D. **CYLINDER LOCK**- A cylinder-locking device will be installed on reach-in doors as required. It consists of a cylinder lock and a locking cam with a non-conductive housing.
- E. **SPRING HINGE**- A spring hinge to assist in closing the door. Spring hinge will be of a torsion-compression design.
- F. **STRIP CURTAIN**- A clear strip curtain will be installed behind all entrance doors and withstand operating extremes of -20°F + 160°F.
- G. **THRU-CEILING ELECTRICAL**- A thru-ceiling electrical assembly supplied at the entrance door to allow the door electrical components to be pre-wired through to the exterior ceiling.
- H. **KICK PLATE**- 16 Ga. stainless steel or aluminum diamond treadbite kick plate on interior and/or exterior of all entrance doors.
- I. **JAMB GUARDS**- Protective jamb guards are available on the exterior and/or interior of door jamb.
- J. Rack & Pinion door closer with hold open feature.
- K. Door fan switch to shut off evaporator coils when door is open.
- L. Panic alarm to prevent personnel entrapment.
- M. Additional heater in bottom of door.

OPTIONAL FEATURES AND ACCESSORIES (IF SPECIFIED)

- A. **TREAD PLATE**- Aluminum diamond tread plate 1/8", 3/16" or ¼" thick flat sheets shipped loose (select one) to be installed as shown on drawing. All necessary fasteners, sealants, and instructions to be provided by Thermalrite. (Note: this may not meet all sanitation requirements.)
- B. **U-SHAPED VINYL FLOOR SCREED**- A variety of locking floor screeds are available including 1.5" PVC and 4" PVC.
- C. **VAPOR-PROOF LIGHTS**- 26w CFL lights
- D. **FLUORESCENT & LED LIGHTS**- Fluorescent light fixtures as shown on drawing. Fixture will operate in temperatures to -20°F.



- E. **ALL PROTECTORS**- To prevent damage to walk-ins in heavy traffic areas, the following bumper rail can be supplied (select one)
1. 1- ½" wide extruded aluminum rail with vinyl insert. Field-mounted with unexposed sheet metal screws. Supplied with end caps.
 2. Hat-shaped bumper rail 2" deep. It will be fabricated of 16-gauge stainless steel or .080 aluminum (select one). The ends of the bumper will be closed and sealed.
 3. Wall panels with .100 aluminum tread plate wainscoting up to 48" high on all required surfaces.
- F. **CLOSURE PANELS**- Removable closure panels to enclose the area between the building and the walk-in ceilings. Panels to be fabricated of same material as walk-in exterior.
- G. **TRIM STRIPS**- Trim strips between walk-in and building walls provided where shown on drawings. Constructed and finished of same material as exterior of walk-in.
- H. **CORNER GUARD**- 16 gauge stainless steel corner guards 6" x6" x60" high on exposed exterior corner of walk-in.
- I. **BASE COVE**- Base cove to seal walk-in to building floor and facilitate easy cleaning. Base cove is constructed of same material and finish as walk-in wall.
- J. **ROOF CAPS**- A flat or tapered membrane roof cap (select one) to provide a moisture tight seal for walk-ins installed outdoors. It is secured to the walk-in with concealed stress plates and fasteners which are supplied. Necessary trim provided for a uniform termination of roof cap at ceiling edge. Consult factory for other types of roof systems, such as metal standing seam, etc.
- K. **OUTDOOR PACKAGE**- (Note: Required when door section is located outside.) A heavy gauge door hood to keep rain and/or snow out of door gasket (field installed). Includes rain hood, heated air vent cover for freezer and weatherproof light, switch and thermometer.



REFRIGERATION SYSTEMS SPECIFICATIONS

Pre-assembled refrigeration systems shall consist of two major assemblies. One is the condensing unit assembly with all the necessary components, factory installed and wired, including the electrical box, time clock, drier, sight glass, pressure control and necessary tubing. The other is the refrigeration coil assembly with expansion valve, solenoid and temperature control, all factory mounted.

1. Condensing unit shall be hermetic, air coolers with rigid structural base, receiver, OSHA metal fan guard with venturi openings, waterproof electrical system, exhaustible fusible plugs, internal inherent motor protection, suction line shut-off valves, liquid line shut-off valves, crankcase heaters.
2. Cooler evaporating coils shall be low-profile, UL listed, NSF approved with in-line fans, cross fin staggered copper tubing, aluminum fan coils, aluminum cased, permanently lubricated motors with thermal overload protection, waterproof electrical system pre-wired to single connection, and slotted channel hangers. Coils are to be designed to operate above 34°.
3. Freezer evaporating coils shall be low-profile UL listed, NSF approved with in-line fans, cross fin staggered copper tubing, aluminum fan coils, aluminum cased, heavy-duty motors with thermal overload protection, electrical defrost system, pre-wired water-proof electrical system, and slotted channel hanger. Coils are to be designed to operate from +34 ° to -20 ° temperature.
4. Refrigerant shall be type R-404A in low and medium temperature systems.
5. Refrigerant circuits shall have liquid line sight glasses, filter driers, expansion valves, room thermostats interlocked with liquid line solenoid valves.
6. Coil drains shall be 1" I.P.S. copper. Route and pitch ½" per foot to drain. Provide electric heaters on freezer drains.
7. Refrigeration line insulation shall be minimum ½" thickness Armaflex AP pipe insulation, sealed with adhesive foam insulation. Tape fittings to sufficient thickness to prevent condensation.
8. The entire system shall be cleaned and dehydrated by maintaining a vacuum of 500 microns, or lower, for a minimum period of five (5) hours. The vacuum pump used shall itself be capable of developing a vacuum of 50 microns with its valve in a closed position. The required operating charge of refrigerant and oil shall be added, and each system shall be tested for performance.
9. Our pre-assembled systems are manufactured by Russel Refrigeration and/or Heatcraft Refrigeration in accordance with our specifications as listed above.
10. EC Motors included for DOE compliance.
11. Other refrigeration systems and options available upon request.



Hotels & Casinos

Cosmopolitan-Las Vegas
Four Seasons-Honolulu
Hilton Hotel-various
Hyatt Regency-Houston
M Resort-Henderson
MGM Grand-Las Vegas
Rio Suites Hotel-Las Vegas
Wilshire Plaza-Las Vegas

Restaurants

Capital Grill
Denny's
Hard Rock Café
Jamba Juice
Planet Hollywood

Correctional Facilities

California State Prison-Atwater
California State Prison-Avenal
California State Prison-Delano
California State Prison-Taft
Montana State Prison-Deer Creek

Theme Parks & Zoos

Disney Land
Knott's Berry Farm
Magic Mountain
Hollywood Park
Los Angeles Zoo
San Diego Zoo

Schools & Universities

California Polytechnic State University
Chesterfield Schools-Virginia Art
Institute
Eastlake High School
MIT Massachusetts
Oxnard High School
San Diego State University
Stanford University
UCLA

Stadiums & Arenas

Anaheim Arena-The Pond
Bridgewater Stadium-VA
Diamondbacks Training Facility-AZ
Dodger Stadium-Los Angeles
Jiffy Lube Stadium-Missouri
Miller Park-Milwaukee
Pac-Bell Stadium-San Francisco
Paul Brown Stadium-Cincinnati
Pepsi Center-Denver
Staples Arena-Los Angeles

Other

Allied Signal
Bakersfield Country Club
Frigid Coil-Specialty Housing
Houston Convention Center
Huges Aircraft
Kaiser Hospital
Kraft Foods
Las Posas Country Club
Ogden In-Flight Kitchens
Pontrelli & Larchia Meat Packing
Facility
Sisters of St. Joseph St. Luke's
Hospital Thermodynamics-
Environmental Rooms
US Foodservice