

**DIVISION 13 - SPECIAL CONSTRUCTION****CONTROLLED ENVIRONMENT ROOMS****13 21 00**

Controlled Environment Rooms are defined as rooms requiring precise environmental control, including temperature, humidity, air distribution or specialized lighting, etc. Additional requirements may include alarm systems, the ability to record and store data, control of the room remotely, and various outputs.

The Campus has developed a Standard Specification Section 13 21 00 Controlled Environment Rooms. The specification shall be modified by the Design Professional to meet project requirements. An electronic copy (Word document) is available, contact the University's Representative. End user requirements shall be verified prior to implementing this standard.

**COLD STORAGE ROOMS****13 21 26**

- A. General Requirements:
1. Consult University's Representative for operating temperatures.
  2. Construction shall conform, as applicable, to the requirements of the National Sanitation Foundation (NSF) Testing Laboratory, Underwriters Laboratories (UL), and Class One Building Type construction of Factory Mutual Approval Standard #4880 for insulated wall construction and shall be listed on panels for cold rooms and freezer applications.
  3. Provide at least one exterior fire extinguisher if room is non-sprinklered
- B. Construction Requirements:
1. Exterior applications shall have an insulated concrete foundation
  2. ADA compliant access ramp
  3. Door:
    - a. Flush design
    - b. Consult University's Representative for door size.
    - c. Entire door shall be insulated, including hardware areas.
    - d. Door, door frame, and viewing windows shall be electrically traced.
  4. Hardware:
    - a. Provide three hinges per door
    - b. Provide 36-inch high armor plate on push side
  5. Finishes:
    - a. Flooring shall be appropriate for use, consult the University's Representative
    - b. All surfaces shall be easily cleaned and maintained.
- C. For mechanical requirements, refer to Division 23 60 00
- D. Electrical Requirements:
1. Outdoor exterior light with photocell near entrance
  2. Indoor lighting appropriate for low temperatures and wet locations
    - a. Install the interior light switch in proximity or on to the interior door frame. A pilot light or lighted type switch shall be utilized. The switch or pilot light

shall be illuminated when the interior lights are off. No light switch shall be provided on the exterior of the door frame or structure. The intended purpose of this design shall be to prevent someone from accidentally shutting off the interior light while occupied.

- b. All interior light wiring shall be in rigid conduit concealed inside the door section and terminated at a surface mounted junction box on the exterior of the door frame.
  3. Electrical heat tracing on dedicated circuit(s) shall be provided at door, door frame, viewing windows, relief vent openings, and condensate drain lines located within the unit.
  4. Room temperature local or remote monitoring system, consult the University's Representative to determine if the system shall be connected to the campus Silent Knight alarm system.
  5. Power loss monitoring system
  6. Indoor panic button alarm with Silent Knight monitoring to notify department personnel. Optional, consult the University's Representative.
    - a. A red mushroom panic button located such that the bottom of the button is a minimum of 15-inches above the finished floor on the latch/handle side of the door frame.
    - b. Provide a stationary, stainless steel guard over the panic button to prevent accidental depression. The button shall be easy to reach under the guard and shall not harm the hand of the person trying to activate the button.
    - c. A combination Horn/Strobe device dedicated to the panic alarm, labeled in red. For exterior applications, the horn shall be 120 db to notify any area occupants. Mount the weatherproof horn/strobe device outside of box, just above or next to the main door to the box. For interior applications, consult the University's Representative for db level and installation location.
    - d. A relay(s) that will activate upon the panic alarm. The relay(s) shall perform the following three functions:
      - i. (1) Activate Horn and Strobe device
      - ii. (2) Break the refrigeration and evaporator fan circuit so that the refrigeration system pumps down and shuts off and the evaporator fans inside the box shut off. Lighting inside the box shall remain enabled during a panic alarm condition.
      - iii. (3) Provide a dry contact single-pole double-throw (SPDT) relay for remote Silent Knight alarming.
  7. For exterior units, provide a non-metallic weatherproof box on exterior wall to house the temperature remote monitoring controller and a 120V duplex outlet. For indoor applications, surface mount controller on enclosure door.
  8. Hard wiring and weatherproof NEMA 3R junction box for electrical heat tracing
  9. Provide a dedicated 120V, 20Amp GFCI duplex outlet with weatherproof box on exterior for servicing of the condensing unit. The outlet must be located within 25 ft of the condensing unit.
- E. Signage:
1. Provide room identification sign, refer to the campus Sign Program.

2. Provide equipment sign indicating the location of the condensing unit, type of refrigerant used, pounds of refrigerant, and the unit's design temperature.
  3. Provide a red sign with white lettering to identify the location of the panic button.
- F. Warranty
1. Insulated panels shall have a minimum of 10-year warranty.
  2. Compressors shall have a minimum of 5-year warranty.

End of Division 13