



ROHN® CONCRETE EQUIPMENT SHELTERS GENERAL SPECIFICATIONS

1.0 Scope

The specifications contained herein encompass the labor, equipment and materials for the fabrication of a transportable, prefabricated, bullet resistant, vandal resistant concrete equipment shelter.

The shelter shall withstand 30/06 rifle fire at 15' distance per UL 752 standards.

The shelter shall be designed for the explicit use of housing electronic equipment, fiberoptics equipment, measuring devices and other related components, within a controlled atmosphere required for the proper operating conditions for the equipment.

2.0 General

2.1 Shelter type

2.1.1 The shelter shall be precast, preassembled concrete.

2.1.2 Manufacturing of the precast concrete shelters shall occur inside an enclosed plant building in a controlled environment.

2.2 Shelter size

2.2.1 Width and length shall be to outside of finished walls. Width shall be 8'-0", 10'-0", or 11'-8". Length shall be 8'-0" to 36'-0" in 2'-0" increments.

2.2.2 Heights shall be approximately 8'-0", 9'-0" or 9'-8" from finished floor to finished ceiling.

2.3 Operating environment

2.3.1 The shelter shall be sealed to resist dust infiltration and be watertight.

2.3.2 The optimum operating temperature of the equipment to be installed shall be assumed to be 78 degrees F (25.6 degrees C) unless otherwise specified by the Purchaser. The heating and cooling requirements for a shelter shall be based upon the outside ambient temperature and equipment operating heat output specified by the Purchaser.

3.0 Structural

Structural design and manufacturing shall conform to requirements of ACI 318-89.

3.1 Floor section

3.1.1 Floor section shall be an 8" waffled structural precast concrete section. Ribs shall be 2'-0" O.C. transverse and 4'-0" O.C. longitudinal. All surfaces shall be smooth.

3.1.2 The interior surface shall be covered with 1/8"x12"x12" square vinyl floor covering, bonded with a waterproof contact adhesive.

3.2 Roof section

3.2.1 Roof section shall be concrete with 1/8" per foot drainage slope.

3.2.2 Ceiling insulation and finish to be foamboard insulation with 3/8" vinyl coated board. Plastic joint or corner trim shall be installed at all panel joints.

3.2.3 Roof section shall provide a 2" overhang on all sides. The roof will be a hip type sloping 4 directions. It shall be a cap and fit over the walls, leaving no exposed roof to wall joint.

3.3 Wall section

3.3.1 Wall section shall be 4" solid concrete, cast in one piece to minimize joints, with an exterior exposed aggregate finish.

3.3.2 Wall insulation and finish shall be foamboard insulation covered with 3/4" thick board, surfaced with fiberglass reinforced plastic. Plastic joint or corner trim shall be installed at all panel joints.

3.3.3 Floor/wall intersection shall be finished with 4" vinyl baseboard.

3.3.4 The walls shall overhang the floor a minimum of 7" from the top floor surface. There shall be no exposed wall to floor joint.

4.0 Thermal

4.1 Insulation

4.1.1 Standard wall and ceiling panels - 4" of foam. The calculated system value is R9.6 with 4" thick lightweight concrete wall/roof panels, 1" extruded styrofoam and 1/2" polyisocyanurate foam. (Thicker insulation and higher R values are available and must be specified.)

5.0 Specifications

5.1 Concrete specifications

5.1.1 Compressive strength shall be 4000 PSI at 28 days.

5.1.2 Mix design shall be 114-118 lb./cu. ft. structural lightweight concrete using expanded shale or expanded clay aggregate. Mix shall be homogeneous. Seeding of aggregates for exposed aggregate finish is not allowed.

5.2 Materials specifications

5.2.1 Manufacturer shall submit a quality Control Program for review. The Quality Control supervision shall be independent of manufacturing.

5.2.2 Cement used in concrete shall be standard portland cement conforming to the requirements of the "Standard Specifications for Portland Cement," ASTM Designation C150.

5.2.3 Concrete aggregates shall conform to one of the following specifications:

5.2.3.1 "Specifications for Concrete Aggregates," ASTM Designation: C33.

5.2.3.2 "Specifications for Lightweight Aggregates for Structural Concrete," ASTM Designation C330.

5.2.4 Water shall be free from injurious quantities of oil, alkali, vegetable matter and salt. Non-potable water shall not be used in mixing concrete.

5.2.5 Reinforcement bars shall be deformed steel bars conforming to the requirements of the "Specifications for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement," ASTM Designation: A615.

5.2.6 Welded smooth wire fabric shall be steel wire fabric conforming to the requirements of the "Specifications for Welded Steel Wire Fabric for Concrete Reinforcement," ASTM Designation: A185.