

Codes and Standards

1 The building shall meet the following codes and standards:

- A ACI-318-83, "Building code requirements for reinforced concrete."
- B Concrete Reinforcing Institute, "Manual of Standard Practice."
- C ANSI "Building Code Requirements for Minimum Design Loads in Buildings and Other Structures."
- D Fabricator must be certified by the Canadian Standards Association (CSA) for the production of structural concrete.
- E Fabricator must be a producer member of the National Precast Concrete Association (NPCA).
- F Building can be modified to address applicable local, provincial and federal codes based on the material to be stored and your specific storage needs.

Dimensions and Design Loads

MODEL TYPE #: HY-GRADE 4/12 PRECAST PITCHED ROOF

- 1 Dimensions: **21' x 8' x 10'2" (9'8" Interior) Building to have 4/12 precast pitched roof c/w painted simulated metal seam finish. (Roof colour TBD)**
- 2 The building structure shall be designed by a professional engineer: Engineering load calculations carrying a professional engineer's stamp shall be available.
- 2.1 Standard Live Roof Load: 60 PSF
- 2.2 Standard Wind Loading: 27 PSF
- 3 Noise Reduction Coefficient: The building shall provide a noise reduction coefficient of at least 55 DB, attenuating noise transmission from interior to exterior.
- 4 Resistance to Penetration: The precast concrete building shall be capable of withstanding 150 grain, 30-06 calibre rifle fire from 50 feet without penetration.
- 5 Concrete Strength – 30 MPA (28 days).
- 6 Cement Type – Type 30 – Mix design MD-5 -

Materials

- 1 Concrete: Steel-reinforced, polypropylene fibre reinforced 4000 psi minimum 38 day comprehensive strength, air-entrained (ASTM C260).
- 2 Reinforcing Steel: ASTM A615, grade 400 unless otherwise indicated.
- 3 **Reinforcing Fibre** : Fibrillated polypropylene fibre, Fibermesh, or equal @ 1.6 pounds per cubic yard, or equal.
- 4 **Post-tensioning strand** : 41K polystrand CP50, .50" 270 KSI, 7 wire strand, greased plastic sheath, (ASTM A416). Roof and floor each to be post-tensioned by a single continuous tendon. Said tendon shall form a substantially rectangular in roof configuration having three gently curving corners and a fourth corner where the tendon members are anchored. Tendons shall be greased and enclosed within a sheath.
- 5 Panel Connections: All panels shall be securely fastened together with ¼" thick steel brackets. Steel is to be of structural quality, hot-rolled carbon complying with ASTM A283, Grade C. All fasteners to be ½" diameter bolts. Cast-in anchors used for panel connections to be Dayton-Superior #F-63 or equal.
- 6 Doors and Frames: As per quote: Shall comply with Steel Door Institute, "Recommended Specifications for Steel Doors and Frames" (SDI-100) and as herein specified. The building shall be equipped with 3 -3'-0" x 7'-0" x 1-3/4" -18 gauge metal doors with lockseam construction and honeycomb insulation or equal. Door frames shall be 16 gauge wipe coat galvanized and painted on coat of Industrial Grey, unless colour is specified.
 - A Hinges: Stanley #1409, 4'-1/2" x 4" x NRP x PT with Non-removable pins.
 - B **Lockset**: 2- Ingersoll-Rand R160N x 626, or equal & 2-vandal metal covers
 - C Threshold: K.N. Crowder CTG x 4" Aluminum.
 - D Door Sweep: K.N. Crowder W13-S Aluminum with Neoprene inserts, or equal.
 - E Astragal: P4441 / 68R, or equal.
- 7 **Curing & Sealing**:
 - A All precast concrete surfaces will be treated with Sealtite CS-309, non-yellowing curing compound.
 - B All exposed aggregate exterior precast surfaces will be treated with Hydro-Tight invisible silicone coating.
 - C All non-exposed aggregate exterior surfaces will be treated with Externit #50 special grey coating.

Finish

1 Concrete Finish:

- A Smooth steel form finish on all interior surfaces.
- B Exterior – Ashlar Stone or Exposed Aggregate

Site Preparation & Installation

Clear and level an area approximately 1 foot larger than the building size 30-36" deep with Granular A, level and compact to 95' proctor. Top with 6" of screening and level.