



Staying Home Corporation
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PREFABRICATED TORNADO / STORM SHELTERS SPECIFICATION

PART 1 GENERAL

1.1 PRODUCT SUMMARY:

- A. Prefabricated steel FEMA 320 / 361 Deployable folding tornado shelter
- B. Prefabricated steel FEMA 320 / 361 Fixed structure tornado shelter.

1.2 REFERENCES:

Shelter shall be designed, manufactured and installed in accordance with the following standards:

- A. FEMA 320 Taking Shelter From the Storm
- B. FEMA 361 Design and Construction for Community Safe Rooms
- C. ICC 500 Standard for Design and Construction of Storm Shelters
- D. American Welding Society (AWS)
- E. ADA Accessibility Guidelines (ADAAG)
- F. International Building Code (IBC)
- G. American Society for Testing Materials (ASTM)
- H. ANSI A117.1
- I. National Electrical Code (NEC) (When optional electrical items are required)
- J. Texas Tech University Test for Debris impact
- K. Certified Structural PE design approval.

1.3 DESIGN REQUIREMENTS:

- A. Tornado Shelter: Provide factory prefabricated shelters capable of withstanding the effects of an F5 tornado.
- B. Tornado Shelter Design Loads: Determine loads based on following minimum requirements:
 - 1. Wind Load: 3-second gust of 250 mph (standard).
 - 2. Debris impact 2"x4" and weight of 15 LB projectile at 100mph.
 - 3. Impact permanent deformation not greater than 3"
 - 4. Anchoring bolts at pull out point of 45,000 lb. force.
- C. Tornado Shelter Concrete Anchoring Criteria:
 - 1. Base anchoring points to be secured to a Concrete pad / floor minimum design criteria 4" thick 4000 PSI reinforced concrete.
 - 2. Minimum base anchoring points to be at each corner and each side of door with additional anchors as required per manufactures design.

1.4 PERFORMANCE REQUIREMENTS:

- A. Cooperate with local regulatory agency or authority and provide data as requested by authority having jurisdiction.
- B. Prefabricated shelters specified herein shall be handicapped accessible in accordance with ICC/ANSI A117.1 and other state and local requirements as applicable.

1.5 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used, product metals & finishes available upon request.
- B. Preparation instructions and recommendations.

- C. Storage and handling requirements and recommendations.
- D. Manufactures installation instruction methods.
- E. Shop Drawings: Include plan views, sections, door details, and anchor detail.
- F. Selection Samples: For each finish product specified, two complete sets of standard color samples "Desert Sand", and or color charts with full range of optional colors.
- G. Certificates: Product certificates signed by the testing agency or laboratory and material certifications as required.
- H. Warranty Documentation: Manufactures standard year limited warranty.

1.6 QUALITY ASSURANCE:

- A. Manufacturer Qualifications: Company specializing in manufacturing prefabricated shelters with a minimum of twenty years' experience in manufacturing and fabrication processes. A quality assurance program utilizing an independent third party to test each system design to industry standards.
- B. Prefabricated Components: Comply with manufacturer's published literature for products meeting indicated design loads in accordance with state and local requirements as applicable.
- C. DELIVERY, STORAGE, AND HANDLINGS: Store products in manufacturer's unopened packaging until ready for installation.
- D. Protect all components and accessories from corrosion, deformation, damage and deterioration when stored at job site. Keep materials free from dirt and foreign matter.

1.7 PROJECT CONDITIONS:

Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.8 WARRANTY:

- A. Manufacturer's Warranties: Provide manufacturer's limited warranty on products to be free of defects in materials and workmanship from date of shipment.
- B. Provide copies of the third party manufacturer's warranties on all optional accessory items provided such as, but not limited to, UPS battery backup power, lights, phone, radio.

PART 2 PRODUCTS

2.1 MANUFACTURERS:

- A. Staying Home Corporation, 1503 Vine Street, PO Box 37, Harrisonville, MO 64701 www.stayinghome.com
Phone: 877-378-4275 / 816-380-2427

Hide-Away™ Storm Shelter Fixed and or Folding/Deployable Tornado Shelter

- B. Substitutions: Not permitted.

2.2 MATERIALS:

- A. Grade 50 - ¼" grade 50 laser quality steel
- B. 1" cold rolled steel slide locks
- C. 2" x 2"x 3/16" steel tubing
- D. 1- ¾" OD, 1" ID-DOM Hinges
- E. 1" dia CRS hinge pins

2.3 STORM SHELTERS SYSTEM DESCRIPTION:

- A. Prefabricated Hide-Away Storm Shelter, as manufactured by Staying Home Corp.
 - 1. Size: Deployable 3 feet 6 inches by 6 feet
 - 2. Size: Deployable 3 feet 6 inches by 4 feet.
 - 3. Size: Fixed structure 2 feet 6 inches by 4 feet 10 inches
 - 4. Size: Fixed structure 5 feet 4 inches by 4 feet 10 inches
 - 5. Size: Optional custom, _____ by _____.
- B. Height: Nominal inside height 6 feet 6 inches to 6 feet 4 inches.
- C. Doors:
 - 1. Doors: Two layer reinforced ¼" grade 50 steel plate with 32" minimum opening and height 66" with low overhead signage.
 - 2. Frame: Construction ¼" steel with 3/16" and 1/4" reinforcement interior frame.
 - 3. Locks: Three interior locks comprised of 1" dia. positive latch points.

4. Continuous 1- 3/4" OD, 1" ID-DOM Hinges
 5. Tornado shelter door has outside emergency unlocking device
- D. Finish:
1. Standard Color "Desert Sand" powder coating finish.
 2. Optional custom color as selected by the Architect from optional RAL powder coating color chart.
 3. Optional Bed-Liner coating "Desert Sand"
- E. Capacity:
1. As determined by code and size of shelter - 3 ft²/ person residential & 5 ft²/ person commercial
 2. Folding 3 feet 6 inches by 6 feet shelter. 7 person residential & 4 person for commercial use.
 3. Folding 3 feet 6 inches by 4 feet shelter. 4 person residential & 2 person for commercial use.
 4. Fixed structure 2 feet 6 inches by 4 feet 10 inches. 4 person residential & 2 person commercial use
 5. Fixed structure 5 feet 4 inches by 4 feet 10 inches. 8 person residential & 5 person commercial use
- F. Optional features available:
1. 115vac - 4"x4" electrical box, power supply by others.
 2. Fan – power supply by others.
 3. Phone – land line by others.
 4. Interior Light – Power supply by others.
 5. Custom order options contact manufacture for pricing.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine supporting foundations for compliance with manufacturer's requirements, including installation tolerances and other conditions affecting performance of supporting members.
- B. Check installed anchor bolts for accuracy. Verify that bearing surfaces are ready to receive the work.
- C. Verify the rough-in of required mechanical and electrical services prior to placement of the structure.

3.2 PREPARATION

- A. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.
- B. Do not proceed with installation until substrates have been properly prepared and deviations from manufacturer's recommended tolerances are corrected. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions. Clean surfaces thoroughly prior to installation.
- C. Commencement of installation constitutes acceptance of conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions & specifications.
- B. Place on prepared concrete foundations and slabs provided as specified by manufacture.
- C. Anchor securely in place USING ANCHORS SUPPLIED BY MANUFACTURE.
- D. Connect optional mechanical equipment as specified.
- E. Connect optional electrical equipment.

3.4 PROTECTION & DEMONSTRATION

- A. Protect installed products until completion of project
- B. Clean and wax all metal surfaces.
- C. Lightly lubricate all hinge points and clean any excess.
- D. Demonstration: Installer to demonstrate proper use and deployment method to owner and representatives.

END OF SECTION