



How Can You Discern QUALITY in a STORM SHELTER ?



www.nssa.cc

Expectations

A storm shelter should offer a high degree of protection and complete peace of mind to the owner. This brochure offers guidelines in quality assurance for storm shelters.

Members of the National Storm Shelter Association (NSSA) have subjected their products to rigorous testing and evaluation to assure quality. They have met or exceeded stringent quality considerations and pledged sound business practices. Hence you may confidently do business with NSSA members. If the shelter provider is not a member of NSSA, then reviewing the checklists below should illuminate quality issues that should be discussed before purchasing or approving a storm shelter.

Quality Verifications

■ *Is the shelter provider a member of NSSA, verifying compliance with standard?*

- If yes, the provider should show evidence of membership such as a membership acceptance letter or a shelter seal. You may then proceed with confidence.

■ *If the provider is not a member of NSSA, has it been verified by an independent, registered engineer that the shelter complies in all respects to existing quality standards?*

- If so, the provider should show the sealed engineering report or verification letter.
- If no to both questions, the following questions should be addressed and confirmed.



Above-Ground Shelters

■ *Have all exposed elements been tested for debris impact resistance?*

■ *Does the shelter have structural integrity?*

- Has the structure been designed to handle maximum anticipated wind forces?
- Is the roof connected adequately to the walls?
- Are the walls adequately anchored to the floor?
- Will the shelter be anchored to a slab that has steel reinforcement and is in good condition?
- Is the shelter separate from the other load-resisting elements in the structure?

■ *Is the door designed to meet the impact and wind requirements?*

- Are there three latching mechanisms?
- Do marketing materials and signage clearly designate the shelter as a tornado shelter or both? Are design wind speeds specified?
- Do the locking mechanisms engage without undue force?
- Can the locks be operated from the outside?
- Is the door provided with three heavy-duty hinges capable of withstanding wind-induced forces?
- Is the door frame adequately connected to the structure and capable of carrying the wind-induced forces?

■ *Is the shelter adequately vented to provide breathing air for maximum occupancy and to relieve atmospheric pressure changes accompanying tornadoes?*

- Are the vents protected from intrusion of wind-borne debris?



Below-Ground Shelters

- *Have all exposed or near-surface elements been tested for debris impact resistance?*
- *Does the shelter have structural integrity?*
 - Has the structure been designed to handle hydrostatic pressures?
 - Is the shelter ballasted to prevent uplift from buoyancy of saturated soils?
 - Is the shelter able to resist deterioration from moisture and/or corrosive soils?
 - Is the shelter adequately sealed to prevent water leakage?
- *Is the door designed and tested to resist debris impacts and wind-induced uplift forces?*
- *Is the shelter adequately vented to provide breathing air for maximum occupancy and to relieve atmospheric pressure changes accompanying tornadoes?*
 - Are the vents protected from intrusion of wind-borne debris?
- *Do the steps or ladders comply with the NSSA standard or OSHA standards for access/egress?*

Emergency Provisions

- *Does the shelter contain a required battery-powered emergency radio transmitter or signal-emitting device?*

Site Location

- *Is the shelter located outside flood zones or surge zones?*
- *Is the shelter located to permit quick access without outdoor exposure?*
- *Is the shelter location free from large falling objects such as towers, tall chimneys, or large trees?*

Business Practices

- *Are the installation personnel bonded or do they otherwise show responsibility?*
- *Does the company provide certification that its storm shelter has been manufactured and installed to comply with a recognized storm shelter standard?*
- *Has the company consistently demonstrated willingness to promptly correct customer problems related to storm shelter shipping and installation?*
- *Does the company ship and/or install storm shelters promptly after customer payment?*
- *Has the company filed for bankruptcy to avoid customer claims?*

What Does NSSA Offer You?

To a shelter consumer, NSSA offers:

- Identity of shelter producers who provide quality-verified products
- Labels on quality-verified products to recognize quality
- ICC/NSSA standard that establishes quality criteria
- Information and education via seminars, web pages, and responses to inquiries
- Checklists of important elements of shelter quality
- Advocacy for incentive programs for shelter construction

To a shelter producer, NSSA offers:

- Reinforcement that you are “doing it right”
- Industry standard that delineates quality essentials
- Test procedures for verifying debris impact resistance
- Quality verification by an independent third-party engineering firm to verify standard compliance
- Identification and visibility as a producer of quality shelters through the NSSA seal program and web listing
- Improved position with respect to liability issues through NSSA process for standards compliance verification
- Education programs



To a policy decision-maker, NSSA offers:

- Quality verification of manufactured shelters or site-built shelters
- Industry leaders available for guidance on mitigation strategies and policies
- Involvement with International Code Council to develop a comprehensive shelter standard, ICC-500, available for building code adoption in 2007

To a shelter inspector, NSSA offers:

- Quality essentials checklist
- Storm shelter quality standard
- Educational programs to identify essentials of quality construction/installation

Look for the NSSA Seal of Quality



ICC-500 Standard may be ordered from ICC or from NSSA. To order, consult www.nssa.cc. The standard is consistent with FEMA guidelines as followed in FEMA 320, *Taking Shelter from the Storm – Building a Safe Room Inside Your House*, with FEMA 361, *Design and Construction Guidance for Community Shelters*, and with ASCE 7.

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