Storm Shelter Quality Verification

Compiled by

Ernst W. Kiesling[1], P.E., Ph.D.

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Use of this document is intended to verify and improve the quality of storm shelters offered by builders and manufacturers. It is intended for use by funding agencies, building inspectors, or others in positions to influence or require quality assurance in storm shelters. The form should be completed by any company or party offering shelters and having responsibility to the purchaser for the quality of the product. It may be used as a checklist by consumers to interact with shelter providers on the most fundamental quality issues.

Ability to answer "Yes" to the first question implies that all concerns following have been addressed in acquiring membership in NSSA and that the shelter design complies or exceeds the NSSA Standard.

Quality Verifications

Are you a MEMBER of NSSA, verifying compliance with the Standard?

ڤ **Yes** ڤ **No**

If yes, show evidence of membership such as a membership acceptance letter or a shelter seal.

OR

Has it been verified by an independent, registered engineer that the shelter you offer complies in all respects to existing quality standards, currently the National Storm Shelter Association (NSSA) Standard available at www.nssa.cc? This verification must include evidence of successful debris impact testing.

ڤ **Yes** ڤ **No**

If yes, show the sealed engineering report or verification letter.

If no to both questions, show documentation (e.g., engineering calculations, testing or reports) that the following questions have been addressed and affirmed.

Are the credentials provided for the persons involved? ڤ **Yes** ڤ **No**

Are reports provided? ڤ **Yes** ڤ **No**

Above Ground Shelters

Debris Impact Resistance

Have all exposed elements been tested for debris impact resistance? ☐ **Yes** ☐ **No**

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1 Professor of Civil Engineering at Texas Tech University. Director of the Storm Shelter Program of the Wind Science and Engineering (WISE) Center at Texas Tech.
Executive Director, National Storm Shelter Association

Structural Integrity

Has the structure been designed to withstand the pressures exerted by extreme winds ? ☐ **Yes** ☐ **No**

Is the roof adequately connected to the walls? ☐ **Yes** ☐ **No**

Are the walls adequately anchored to the floor? ☐ **Yes** ☐ **No**

Is the shelter anchored to a slab that has reinforcement and is in good condition? ☐ **Yes** ☐ **No**

Is the shelter separate from other load resisting elements of the building? ☐ **Yes** ☐ **No**

Doors

Has the door assembly been tested to meet impact loads and wind pressures ? ☐ **Yes** ☐ **No**

Are there three deadbolts with adequate strength to withstand the wind forces? ☐ **Yes** ☐ **No**

Do the locking mechanisms engage and disengage without undue force? ☐ **Yes** ☐ **No**

Can the locks be operated from the outside? ☐ **Yes** ☐ **No**

Is the door provided with three heavy-duty hinges capable of withstanding wind-induced forces? ☐ **Yes** ☐ **No**

Is the door frame capable of carrying the wind forces and adequately connected to the structure? ☐ **Yes** ☐ **No**

Venting

Is the shelter adequately vented to provide breathing air for maximum occupancy and to relieve atmospheric pressure changes? ☐ **Yes** ☐ **No**

Are the vents protected from intrusion of wind-borne debris? ☐ **Yes** ☐ **No**

Below Ground Shelters

Debris Impact Resistance

Have all exposed elements been tested for debris impact resistance? ☐ **Yes** ☐ **No**

Structural Integrity

Has the structure been designed to handle hydrostatic pressures? ☐ **Yes** ☐ **No**

Is the shelter ballasted to prevent uplift from buoyancy of saturated soils? ☐ **Yes** ☐ **No**

Is the shelter adequately sealed to prevent water leakage? ☐ **Yes** ☐ **No**

Is the shelter designed to resist deterioration from moisture and/or corrosive soils? ☐ **Yes** ☐ **No**

Doors

Is the door designed and tested to resist debris impacts and wind induced uplift forces? ☐ **Yes** ☐ **No**

Venting

Is the shelter adequately vented to provide breathing air for maximum occupancy and to relieve atmospheric pressure changes? ☐ **Yes** ☐ **No**

Are the vents protected from intrusion of wind-borne debris? ☐ **Yes** ☐ **No**

Access/Egress

Do the steps or ladders comply with the NSSA standard or OASHA standards? ☐ **Yes** ☐ **No**

Emergency Provisions

Does the shelter contain a required battery powered emergency radio transmitter or signal-emitting device? ☐ **Yes** ☐ **No**

Site Location

Is the shelter located to permit quick access without outdoor exposure? ☐ **Yes** ☐ **No**

Is the shelter location free from large falling objects such as towers or tall chimneys? ☐ **Yes** ☐ **No**

Business Practices

Does the company offering the shelter carry substantial liability insurance? ☐ **Yes** ☐ **No**

Are the installation personnel bonded or otherwise show responsibility? ☐ **Yes** ☐ **No**

Clarification or Additional Information

The National Storm Shelter Association posts it's industry standard on the web at www.nssa.cc It is consistent with FEMA guidelines as followed in FEMA 320, *Taking Shelter from the Storm -- Building a Safe Room Inside Your House* and with FEMA 361 *Design and Construction Guidance for Community Shelters.* Additional information may be obtained from Texas Tech University (806) 742-3476 and the National Storm Shelter Association at (806) 742-NSSA (6772). A national consensus standard, the International Code Council/National Storm Shelter Association (ICC/NSSA) Standard for Design and Construction of Storm Shelters is being developed. It is expected to be complete and available by 2007.