

New – Design Parameters for future Grain Handling facilities

The American Society of Agricultural & Biological Engineers (ASABE) has initiated a project to develop a new standard regarding processes and design parameters relative to **Grain Bin Entry** referred to as (x624).

Scope of project: This proposed standard was drafted initially in the Summer of 2012 to share issues with bin manufactures in hopes of **identifying anchorage points** in bins that will allow the user to attach safety equipment and lifelines to prevent them from falling through crusted grain or be pulled into flowing grain if they ignore other safety instructions.

ASABE is an international scientific and educational organization dedicated to the advancement of engineering applicable to agricultural, food, and biological systems. ASABE is recognized worldwide as a standards developing organization for food, agricultural, and biological systems, with more than 240 standards currently in publication. Conformance to ASABE standards is voluntary, except where required by state, provincial, or other governmental requirements, and the documents are developed by consensus in accordance with procedures approved by the American National Standards Institute (ANSI).

As Dr. Carol Jones with the Oklahoma State University points out, ASABA is generally perceived as an academia based environment. However, these design Grain Bin Entry standards have been largely proposed and driven by the users themselves and the steel bin firms. However, the academic group will be asked to review them and make suggestions. In fact, there will be ultimately over 31 voting members and 10 – 15 non-voting parties comprised of people from various groups, such as Consultants, Users, **Producers (Steel Bin Firms)**, Safety, and Academia that will have input into this process involving these new design parameters for future grain bins.

The proposed - **X624 – Grain Bin Entry – Consensus Standard** was to address some of the following:

I. Bin Access Points

- A. Dimensions of access doors
- B. Requirement for work platforms
- C. Provisions next to openings to support a device that can be used to extricate a patient.
- D. Roof access openings located at 1 or 5 o'clock positions

II. Restraint Anchors

- A. Access to anchor point that must support a minimum of 1800 pounds

III. Bin Entry Operational Procedures

- A. Observer must be present at all times
- B. Restraint system must be attached to the individual entering the bin that will keep them above the grain in case of a collapse of the grain mass.
- C. The observer shall have provisions available to call for help if required.
- D. Observer should have access to retrieval line and be able to maintain a minimum amount of slack in the line and have it secured properly.
- E. The persons serving as an entrant or an observer shall be properly trained in the use of all equipment and safety procedures.

IV. Safety Signs

For more information on the proposed standards – X624 – for Grain Bin Entry, please contact Scott Cedarquist with ASABE at:

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For additional information regarding the ASABE – Society, please contact ASABE at (269) – 429 – 0300, e-mailing hq@asabe.org or visiting www.asabe.org/

The entire approval process involves a variety of groups and committees, who study the proposed standards and review any and all comments offered. Voting members are notified of any steps taken to resolve any disapproval. This entire process can take at least 6-12 months, depending upon the number and type of issues that need to be resolved.

We need to thank Harmon Towne, retired from Brock, Dr. Carol Jones, with Oklahoma State University, and Dan Wambeke, with Scafco Corp. for their time and assistance in helping to draft something initially to look at and start the discussion in this area.

The proposed (x624) - Grain Bin Entry Standard was built around the following outline:

1. Purpose & Scope
2. Background
3. Definitions
 - 3.1 Access point: This may be an opening in the sidewall of the bin or an opening in the roof either of which is large enough to allow a person to enter the structure.
 - 3.2 Restraint: A method to restrain a person in the bin from being drawn into flowing grain or from falling through crusted grain.
 - 3.3 Safety decals: Refers to any safety or warning decals posted at the entry locations. These warning and safety decals are to be made in conformance with ASABE standard S441.3.
4. Bin Access
5. Restraint Anchor
6. Bin Entry Operational Procedures
7. Safety Sign

Based upon comments received in January 2013, during the voting process, the group involved will likely discuss the idea of handling the following issues in separate documents in the future:

1. **Design Parameters** or specifications for steel bin storage will be much narrower in scope and treat it as a simple guidance document, not a Consensus Standard.
2. **Operating procedures** or Best Management Practices
3. Anything relative to **rescue procedures** or emergency response