



ASABE Standards: Plastic Recycling Progress and Opportunities

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TPSA

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ASABE

- Q: Who is ASABE?
- A: The American Society of Agricultural & Biological Engineers – founded in 1907 as ASAE - a professional & technical society consisting of individual members.
- Q: Who founded ASABE?
- A: A group that saw an unmet need – many from the land grant universities and active agricultural publishers.



ASABE as a SDO

- Q: What is a SDO?
- A: “a Standards Developing Organization”
- Q: When did ASABE begin standards work?
- A: Almost immediately after formation. In 1913, “Conventional Signs for Agricultural Engineers” was first published.



ASABE: Standards vs. Codes

- ASABE only publishes voluntary consensus standards.
- Specific ASABE Standards are codified by governmental agencies in a variety of applications: Post-Frame Construction and Agricultural Equipment Safety are the most recognized examples.
- It is further noted that standards, based on sound science, can serve as the basis for legislation.

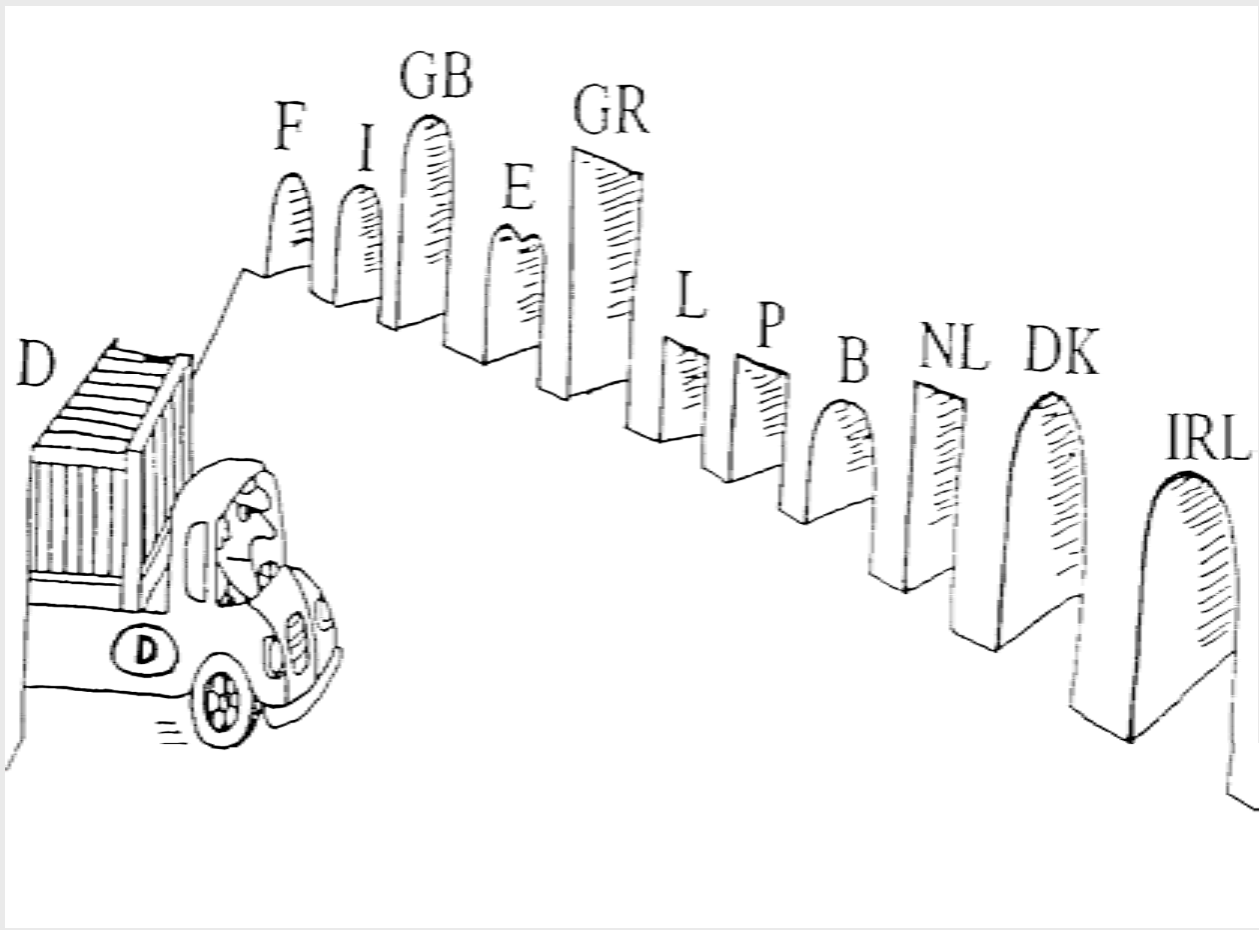


Why do we need standards?

- “Standards bring order to chaos....”
 - Dr. Jim Dooley
 - Current ASABE President



A picture says a thousand words....





ASABE and ANSI

- Q: Is ANSI the government?
- A: No, ANSI – the American National Standards Institute – is not with the government. They are a federation with organization, company, and government membership. ASABE is an organizational member of ANSI. ANSI accredits ASABE as a standards developer and audits our activities on a periodic basis. ANSI is also the conduit for participation in international standards work in ISO.



ASABE Technical Committees

- ASABE has ~200 established technical committees covering a wide range of technical topics and interests. Many of these committees develop standards.
- ASABE currently has ~235 published standards with many more in the pipeline.
- Amidst these activities are standards key to agricultural spray equipment and natural resources/stewardship topics.
- New committees form, and established committees disband, on an ongoing basis.



Specific Examples of ASABE Standards and Projects

- S592: Best Management Practices for Boom Spraying
 - Additional BMPs under discussion
- S613: Environment Within Agricultural Vehicle Enclosures
 - Part 1 => with additional parts envisioned
 - S525 => Existing cab standards have been withdrawn
- S386.2: Calibration and Distribution Pattern Testing of Agricultural Aerial Application Equipment
- S553: Collapsible Emitting Hose (Drip Tape) – Specifications and Performance Testing



A Few More Examples

- EP498.2: Safety Devices for Chemigation
- S315.3 Twine for Automatic Balers
- EP460: Commercial Greenhouse Design and Layout
- S572: Spray Nozzle Classification by Droplet Spectra
- S596: Recycling Plastic Containers from Pesticides and Pesticide Related Products



In the “Standards Pipeline”

- ASABE has a current active project for on-farm energy audits. This was initiated by the USDA NRCS National Agricultural Engineer. Draft language is being considered by the committee.
- There are also many active projects:
 - **Ongoing revision to S315.2 (X315.3): Twine for Automatic Balers**
 - **Additional project beyond twine.**
 - **X532: Net for Round Balers**



Status of New Revisions

- ASABE periodically publishes press releases regarding newly approved standards and new projects.
- A listing of activities is maintained on the ASABE website at the link provided below:
 - <http://www.asabe.org/standards/proposed.html>



Agricultural Material Handling and Plastics

- Emerging needs are expanding options for plastics in agriculture - beyond traditional uses:
 - Biomass Feedstocks
 - Cotton
 - And what would a presentation be without a few pictures.....



Integrated Harvest Equipment and Baler





The bales remain on the handler until the end of the row.





The bales are transferred to the cotton gin.





Bioenergy

- Energy from biological sources has been a hot topic lately... to say the least....
- 2 main classifications:
- Liquid Fuels
 - Now: Ethanol from grain
 - Now: Biodiesel from oil crops
 - Future: Liquid fuels from biomass derived sources
- Solid Fuels
 - Biomass for direct combustion



Handling Biomass

- Numerous ongoing studies focusing on harvesting/handling the vast quantities of biomass envisioned.
- Densification is critical for shipment.
- Many harvest and handling methods utilize plastic.
- Many end users are not able to blend the plastic material in their process stream.



Twine at stationary densification baler





Baled Waste Material





Baled “Wood Straw” from Waste Material





Inevitable Leftovers





Opportunities

- The ASABE Standardization Procedures and Process are open and based on the ANSI Essential Requirements
- Formation of a new working group to develop new standards is a routine occurrence. A balanced committees of subject matter experts is a cornerstone requirement.
- The Agriculture Industry has many areas that would benefit from standardization.



Case Overview: S596

- S596: Recycling Plastic Containers from Pesticides and Pesticide Related Products
 - This standard was a cooperative effort between ASABE, the Agricultural Container Recycling Council (ACRC), CropLife and volunteers from a wide swath of organizations.



S596 Continued

- From one of the press releases following publication of the document:
 - This standard specifies the best management practices for recycling used, non-refillable, plastic pesticide containers and paves the way for all pesticide industry segments to recycle plastic containers and for regulatory bodies to evaluate such programs.



S596

- Project completed in ~1 year
- Chaired by committed leadership
- Augmented by retired ASABE Staff
- Opportunity for involvement widely communicated within the industry – both to those that supported recycling efforts and those that were not involved
- Resulting document, ANSI/ASABE S596 is available as a reference and a tool



International Standards

- ASABE administers the US position for 10 distinct ISO Technical Committees or Subcommittees
- 8 of the 10 are associated with ISO/TC 23, Tractors and Machinery for Agriculture and Forestry
- Plus 2 newer additions:
 - ISO/TC 234, Aquaculture and Fisheries
 - ISO/TC 238, Solids Biofuels



Specific ISO Subcommittees of Interest to TPSA

- There are 2 specific, and very active, ISO/TC 23 Subcommittees worthy of note:
 - ISO/TC 23/SC6, Equipment for Crop Protection
 - Covers equipment design, testing, cleaning, and drift issues
 - ISO/TC 23/SC19, Agricultural Electronics
 - Covers a wide range of issues – most covered under the umbrella of precision agriculture



ISO/TC23 SC/6

- Established Working Groups
 - **WG AT: Advisory Group**
 - **WG 5 : “Knapsack sprayers”**
 - **WG 6 : “Sprayer cleaning”**
 - **WG 7 : “Drift classification procedure”**
 - **WG 11 : “Induction Hopper”**
 - **WG 12 : “Crop deposit measurement”**
 - **WG 13 : “Droplet size classification”**
 - **WG 14 : “Products to stimulate pesticides”**
 - **WG 15 : Traceability**
 - **WG 16 Spray drift measurement -test bench method**
 - **WG 17 Reciprocating positive displacement pumps**
- ISO Working Groups experts are nominated by a specific country.
- The Working Groups are somewhat autonomous.



ISO/TC 23/SC19

- **Working groups**
- **WG 1: Mobile equipment**
- **WG 2: Stationary equipment**
- **WG 3: Identification (animal RFID)**
- **WG 5: Wireless Sensor Networks**
- **WG 6: Safety of electronic control systems**
- **WG 7: Testing procedures for positioning and guidance systems in agriculture**



More Opportunities

- For each ISO Committee and Subcommittee, there is an assigned ASABE Committee that works to develop the US position.
- Each participating country gets one vote.
- The ASABE Committee is open to additional participants – voting members and observing members.



Obtaining Standards

- ASAE and ASABE Standards are available as single copies or compilations from the Society. We are the only source for historical standards.
 - <http://www.asabe.org/pubs/PubCat02/std.html>
 - Call toll-free 800-695-2723 or call 269-428-6324 between 8 am and 4:30 pm Eastern time, Monday through Friday.
 - **E-mail** Sandee Martin: martin@asabe.org



Alternative Access

- ASABE Members have 24-7 electronic access to all current standards, via the Technical Library, as a Member benefit.
- The USDA, via the National Ag. Library, and most land grant universities, have site license agreements for access.
- Specific trade associations have site license access as well.



Other Standards

- A common question is how to obtain non-ASABE Standards easily.
 - ANSI => The American National Stds. Inst.
 - <http://webstore.ansi.org/>
 - I.H.S. => Information Handling Service
 - <http://www.ihf.com/>
 - Other resellers
 - ❖ Note: The resellers usually allow topical searches for applicable documents



Thanks!

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