Close to 1,000 ASTM International members participate in the work of Committee F15 on Consumer Products, which has been developing standards since 1973. Those standards, just a few of which are highlighted here, help ensure the reliability and safety of familiar household items.

WINDOW DEVICES

The residential building codes from the International Code Council cite, among others, two ASTM International standards that make a difference in helping to prevent children from falling out of windows. The standards, from Subcommittee F15.38 on Window Fall Prevention Devices, part of Committee F15 on Consumer Products, set requirements that help distinguish between devices that possess needed functional safety features and those that simply claim to do so.

Consumer Product Standards

(Egress) Release Mechanisms, came about through a request from the U.S. Consumer Product Safety Commission.

In the mid-1990s, CPSC asked ASTM to develop standards for devices that would protect younger children from the possibility of falling out of windows; CPSC had found that the injuries and fatalities to children from window falls largely occurred among those age 5 and younger. To reduce these incidents, F15.38 organized in 1995 and developed F2006 and F2090.

F2006 covers devices for windows not designated for emergency escape or rescue above 75 ft (23 m) above the ground in multi-family buildings; F2090 covers devices used on windows that could be used for escape or rescue.

Devices covered by the standards, updated in 2010, fall into one of three groups:

- Fall prevention window guards, which consist of closely spaced bars in the device designed to fit into or onto the window frame and keep children from falling through it;
- Window fall prevention screens, which are an attached mesh or material that fits into or onto a window, must possess sufficient strength to prevent a child from falling through an open window and are totally different in design, look and function from standard insect screens; and
- Window opening control devices, which limit windows opening to 4 in. (102 mm) or less unless a release mechanism (one that resets) is deliberately undone.

F2006 and F2090 also detail warning label requirements and tests to help ensure that devices perform as intended.

Kathryn Coen, F15.38 chairman, says that current child window fall data shows that window fall accident numbers have been decreasing over the past 10 years since the standards were originally completed, but the need for awareness continues. To increase the understanding that such devices must allow escape and rescue as well as prevent falls, an ad hoc task group consisting of associations and window manufacturer representatives is working in conjunction with the National Safety Council to further educate people about both window and fire safety.
FURNITURE TIPOVER
The curiosity of small children may lead them to try to climb up a chest of drawers, and thousands have been injured each year by furniture tipover accidents, according to monitoring by the U.S. Consumer Product Safety Commission. More than half of the injuries involve children under the age of 5.

Subcommittee F15.42 on Furniture Safety, part of F15 on Consumer Products, responded to the CPSC accident data by developing F2057, Safety Specification for Chests, Door Chests and Dressers, first approved in 2000. Its most updated edition came out in 2009. The standard includes requirements that reduce the possibility of clothing storage units – chests, door chests, bureaus and armoires – tipping over if a child up to the age of 5 tries to climb on one.

Warning labels and wall attachments distinguish the chests and other clothing storage units that meet the requirements of F2057. The label explains the hazards of furniture tipover and includes warnings not to place televisions on chests, not to allow children to climb on the chest and never to open more than one drawer at a time. In addition, chests, door chests and dressers now must include a tip restraint feature that consumers can use to attach the furniture to a wall. Units in compliance with the standard also must pass two tests, one that determines the stability of an empty chest and one that simulates a child trying to climb on the chest.

Through compliance with F2057, companies can check their products using its tests, and parents can help ensure their little ones’ safety by checking for labels that indicate the furniture meets F2057 requirements.

CANDLES AND ACCESSORIES
A June 2010 report from NFPA analyzing several years of data notes that candle-related fires have gone from a high of 18,900 in 2001 to 12,700 in 2007. And, according to James Becker, president of Candle Solutions in Corbin, Ky., and chairman of F15.45 on Candle Products in Committee F15 on Consumer Products, standards developed by F15.45 have helped.

Becker says that candle fires had been on the rise more than 10 years ago because of the increased use of candles accompanied by an increase in imported hazardous candles, including glass candle containers that broke due to the candle’s heat. To address the problem, the U.S. Consumer Product Safety Commission and the National Candle Association approached ASTM International in the late 1990s to develop standards that would help reduce such hazards.

The subcommittee first worked to standardize terminology and then approached how to label candles for fire safety. The latter work resulted in ASTM F2058, Specification for Candle Fire Safety Labeling, which came out in 2000. This specification has particular significance, according to Becker, because it details the text of labels warning that you shouldn’t burn a candle if you’re not in the room, that you shouldn’t let kids play around candles and that you shouldn’t put candles near flammable goods.

F2417, Specification for Fire Safety for Candles, represents another important standard because its requirements address such candle hazards as high flames, secondary ignition, instability (tipover) and issues at the end of the candle’s useful life. F2179, Specification for Annealed Soda-Lime-Silicate Glass Containers that Are Produced for Use as Candle Containers, ensures that the glass has the proper annealing and thermal shock strength.

In the marketplace today, says Becker, you’ll find more compliant products — ones that conform to the ASTM standards. That contributes to safety.
**PLAYGROUND EQUIPMENT**

Compliance with ASTM standards for both public and residential playground equipment promotes safety for the children who play on it. And because many large retailers require compliance with the relevant ASTM standards, consumers should look to purchase playground equipment that meets the standards.

With ASTM F1148, Consumer Safety Performance Specification for Home Playground Equipment, Committee F15 on Consumer Products began to provide standards for equipment for home use. F1148 details safety requirements for swings, slides and other play items for children more than 18 months through 10 years old. F1487, Consumer Safety Performance Specification for Playground Equipment for Public Use, provides safety and performance requirements for public playground equipment for children 2 to 12 years of age.

The F15 standards address injuries identified by the U.S. Consumer Product Safety Commission and cover such known hazards as head entrapment, protrusions, entanglements, sharp edges and small parts; they also ensure a minimum level of structural integrity and durability.

Teri Hendy, president of Site Masters Inc., Cincinnati, Ohio, and chairman of Subcommittee F15.09 on Home Playground Equipment, says, “The standards are developed looking at the age and abilities of the intended user in relation to the product.” She adds that the subcommittee considers both the abilities and the anthropometric (size and proportion) measurements of children in what is covered by the standards.

Meant as tools to improve equipment safety, the standards cannot eliminate every possibility of injury. Hendy notes that the F15 subcommittees can quickly add to the standards if needed. “Based upon industry experience as well as injury patterns, we can modify our standards based upon new information that becomes available,” Hendy says.

**SHOPPING CARTS**

In grocery and big-box stores across the United States, shopping carts come equipped with safety restraints and warning labels. The labels alert cart users about possible hazards and include these warnings:

- Always buckle up child in cart seat and fasten securely;
- Stay with your child at all times; and
- Do not allow child to ride in basket.

These features are detailed in the requirements of ASTM F2372, Consumer Safety Performance Specification for Shopping Carts, developed to reduce the numbers of children injured by shopping carts each year. According to data from the U.S. Consumer Product Safety Commission National Electronic Injury Surveillance System, an estimated 20,000+ children under 5 years of age are injured by shopping carts; 83 percent of those injuries are falls.

F2372, first issued in 2004, addresses restraint system functionality, with integrity and retention tests to check their effectiveness. Such systems also must be equipped with child-resistant buckles or closures.

As a result of the standard, warning labels have become more consistent, restraints have greater functionality and performance requirements are uniform. “The standard put everyone on the same page, and compliance with the standard is very high,” says Paul Giampavolo, president of Safe-Strap Co., Wharton, N.J., and chairman of F15.56 and of Committee F15 on Consumer Products.

According to Giampavolo, more still needs to be done. He notes that retailers across the board need to inspect and maintain restraints regularly, and that they need to educate customers further about keeping children safe through using restraints. The subcommittee is working to increase its retailer participation to help address these concerns.