

## New Standard for Adult Portable Bed Rails

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Adult portable bed rails (APBR) and related bedside products are the subject of a new ASTM standard\* that is aimed at reducing entrapment, strangulation and associated deaths of bed occupants. APBRs are generally designed to be used with a consumer type bed rather than a hospital-type bed. As such they may be used with a variety of bed types, a variety of mattresses, and have a variety of mechanisms for temporarily attaching the product to the bed, often with components that go under the mattress. This temporary attachment is linked to the use of the word “portable”, although portability may not be relevant in many home applications. In addition to more traditional products that look like the familiar bed rail, products here include single post designs commonly called handles or canes. The effectiveness of this standard, as with almost all standards, depends first on its adoption and then on seeing whether or not entrapment injuries are actually reduced.

In the absence of specific medical claims for these products they are generally considered to not be medical devices. Therefore they are not regulated by the Food and Drug Administration (FDA) but instead fall under the jurisdiction of the Consumer Products Safety Commission (CPSC). Neither of these agencies have created specific requirements for this type of product despite them being regularly involved in the entrapment deaths of users. Whether there being two interested agencies is better than there being just one is uncertain since divided jurisdiction can result in neither party adequately asserting their authority.

The danger of entrapment can be roughly divided into two major areas. One is entrapment within openings in the product such as between the rails in a multi-rail design. The second is between the product and the mattress or bed frame, including headboards and foot boards. This includes entrapment by the support posts of the product as well as under or adjacent to the product. These entrapment zones are the same as those identified by the FDA for hospital bed rails, and the testing required in the new ASTM specification makes direct reference to the FDA guidelines. The ASTM standard also requires the manufacturer to specify the types and sizes of beds and mattresses for which it has tested its product because the bed/mattress combination can be a key part of whether an APBR passes or fails the standard.

APBRs have another risk that is generally not present with more permanently installed hospital bed rails. This risk is that the nature of the attachment of the APBR to the bed can be of low security such that the product can move from its “correct” position to a different position in which an entrapment zone is created that was previously not present. One example of such unstable attachment is a product with components that slide under the mattress but which are not otherwise attached to the bed. When close to and tight against the mattress such a product might pass the entrapment tests, but if the product moves it might not pass. This type of design for one particular product was the subject of a 2014 CPSC recall of products sold through 2007. After 2007 the manufacturer added a strap for additional security but it did not, for the next 7 years, recall products already in the market. Even when recalled there were other similar designs from different manufacturers on the market but these were recalled then, and have not been since. Such products can be easily found from physical and web retailers.

The addition of a strap meant to hold an APBR properly in place presents two additional challenges. One is that if the product appears to be useful when less than fully assembled (ie without the strap) it may be the case that consumers will not consistently proceed to properly installing the strap, and reinstall it whenever the APBR is moved, even if temporarily. There is good reason to believe that in many cases they won't, especially if it is viewed as unnecessary and an inconvenience. The second issue is whether or not a securing strap or other component will remain secure over time. This is addressed in the ASTM standard by repeated load testing. Consumer compliance can be addressed by designs that do not rely on the consumer to do something that may appear to be optional. It can also be addressed by conspicuous and permanent labels that, by definition, remain visible while the product is in the use. The ASTM standard includes such labeling requirements as well as appropriate warnings on the packaging and in the instructions. The on-product label must state:

#### WARNING-SUFFOCATION/STRANGULATION/ENTRAPMENT HAZARD

If product is installed incorrectly or moves from its initial position gaps can occur which can entrap and kill. People with Alzheimer's disease, dementia or other neurological conditions, or those who are sedated, confused, or frail, are at increased risk of entrapment, suffocation and strangulation.

- NEVER use unless product is tight against mattress, without gaps, and at least 12 ½" from headboard and footboard.
- NEVER use with children.
- NEVER use on toddler, bunk, water, or inflatable beds, or on beds with mattress toppers or soft compressible pads.

The ASTM standard addresses entrapment but not other hazards that are associated with bed rails. For example, falls from the bed can still occur and full rails may make falls worse if they occur while the bed occupant is trying to climb over a rail. For this reason, there are many who advocate against the use of any rail and instead suggest that a lowered bed and/or bed side floor pads are a safer alternative. Some advocate an outright ban on APBRs in the belief that they cannot be designed to be safe, even by meeting this standard.

ASTM standards are voluntary unless and until a government agency mandates their use. For example, CPSC could make the APBR standard a legal requirement as it has for ASTM standards for various juvenile products including juvenile bed rails. Unless and until that happens, those suggesting bed rail use, and those selecting and buying such products, should be aware of entrapment issues, pressure manufacturers to comply with F3186 by asking about whether or not their products meet the requirements of the standard, reject manufacturer assertions that the standard does not apply to them, and in time, only buy products that cite compliance with this ASTM standard. Ultimately, it should not be your bed or its accessories that kills you.

Note: The author is the committee chair for the F3186 standard.