

# Understanding Tip-Over Prevention as related to the STURDY Act.



The threat of injury and death from furniture, television, and appliance tip-over incidents has been an alarming safety issue for decades. Tragically, from 2000 to 2020, there were 581 reported fatalities involving such tip-overs in the United States, with children under 18 years old accounting for a staggering 81% of those deaths. The majority (91%) occurred in residential settings, with 45% taking place in bedrooms where children spend a significant amount of time. In recognition of this ongoing hazard, the U.S. Congress took decisive action by passing the Stop Tip-overs of Unstable, Risky Dressers on Youth (STURDY) Act, signed into law by President Biden on December 23, 2022. This legislation tasked ASTM with adopting a new robust safety standard, leading to the development and enactment of ASTM F2057-23 as the mandatory standard to be enforced by the U.S. Consumer Product Safety Commission (CPSC).

## What is ASTM F2057-23?

The ASTM F2057-23 standard applies to freestanding storage units, including but not limited to chests, chests of drawers, drawer chests, armoires, bureaux, door chests, and dressers, that meet the following criteria: Height  $\geq$  27 inches; Weight  $\geq$  30 lbs; Enclosed storage volume  $\geq$  3.2 cubic feet.

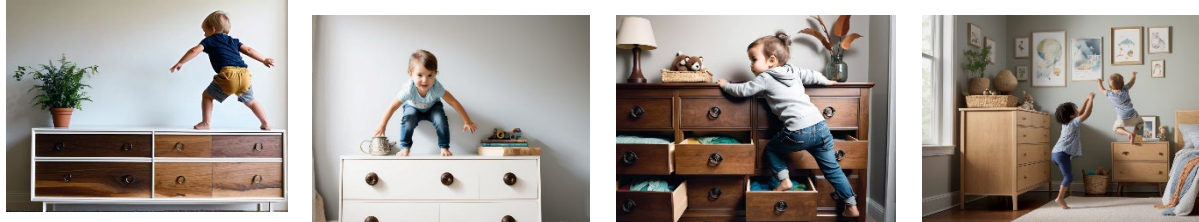
## Performance test methods & requirements:

As manufacturers test their products, they will undergo three stability tests. The tests are a Simulated Clothing Load test, a Simulated Horizontal Dynamic Force test, and a Reaction on Carpet with a Child test. If the piece passes all these, it will be certified to be on the market.

1. Loaded drawer test – all extendable components extended containing 8.5lbs per cubic ft
2. Simulated dynamic force – all components extended, a 10lb horizontal force applied force 30 secs at a maximum height of 56 in.
3. Simulated child weight on carpet – all components extended, 0.43” test blocks positioned beneath the back legs/supports, a 60lb force is hung from the top drawer

Full requirements can be found on the ASTM website.

The STURDY Law specifically states that “An anti-tip kit that meets ASTM F3096 must be packaged with the clothing storage unit, but that **does not exempt** the manufacturer or importer from meeting applicable testing requirements under the standard (ASTM F2057-23). The clothing storage unit must meet the stability testing requirements of the standard without the anti-tip kit installed.” (<https://www.cpsc.gov/FAQ/Clothing-Storage-Units>)



### How the industry is addressing the new standards:

To address the hazards of furniture tip-overs and meet the requirements of the new ASTM F2057-23 safety standard, furniture manufacturers are incorporating several solutions into their product designs. These include drawer interlocks to prevent multiple drawers from being opened simultaneously, restricted drawer glides that limit how far drawers can be extended, dimensional changes to increase stability, thicker backwall panels for added weight, and the use of counterweights to improve the center of gravity and resist tipping forces.



Drawer interlocks and restricting how far the drawers will open will bring improvement to the test results for stability under ASTM 2057-23; however, usually not sufficient to pass the tests. These actions also negatively impact customer perception.

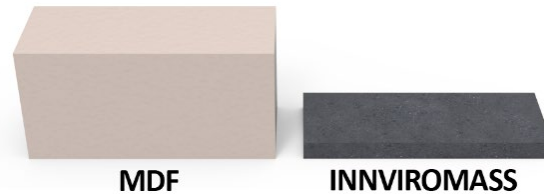
### The use of Counterweights

To enhance tip-over resistance, counterweights are increasingly being incorporated into clothing storage units like dressers and chests. These counterweights can be added to the interior back panel near the bottom of the unit, maximizing their effect in lowering the center of gravity and reducing tipping risk. By strategically positioning these concentrated masses, manufacturers can significantly improve the stability and safety of clothing storage furniture in compliance with the new ASTM F2057-23 standard requirements. The effective use of counterweights is an important engineering solution to prevent devastating tip-over incidents.

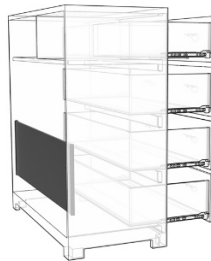
### Counterweight Materials & Density Comparisons:

MDF	43 lb/ft <sup>3</sup>
Concrete	140 lb/ft <sup>3</sup>
Innviromass <sup>®</sup>	216 lb/ft <sup>3</sup> (5X the density of MDF)
Steel	480 lb/ft <sup>3</sup>

Innviromass<sup>®</sup> offers high density, reducing the required space for installation of counterweights.



MDF (Medium-Density Fiberboard) is a material that is readily available to most manufacturers, but it has the least density among all the available options. Steel, on the other hand, has the highest density among all the options, but it is considerably more expensive compared to other materials.



### More about Innviromass<sup>®</sup> counterweight

Innviromass<sup>®</sup>, a patented product by Innotec, is designed to provide stability and prevent tipping of furniture and accessories, ensuring a safe environment for users. Innotec's passion is creating a safer world through innovative design and engineering. For over 15 years, we have provided proven tip-over prevention solutions to the largest commercial office furniture manufacturers, safeguarding workplaces across the world. Drawing upon our extensive experience serving commercial clients, we stand ready to deliver robust, field-tested solutions tailored specifically to the residential market's unique needs and challenges. 100% recycled materials make Innviromass<sup>®</sup> an environmentally sustainable choice.

### Conclusion:

At Innotec, we believe in combining innovation with responsibility. Innviromass<sup>®</sup> Counterweights exemplify this philosophy, offering a solution that prioritizes safety, sustainability, and cost-effectiveness. Join us in creating a safer, more sustainable future by incorporating our counterweights into your products and processes. By incorporating Innviromass<sup>®</sup> Counterweights into your furniture designs, you can ensure compliance with these important safety regulations while also promoting a safer environment for families.