

# Transcript of CPSC Podcast 2020- Overview of U.S. Strollers and Carriages Requirements

## **Slide 3**

Hi, my name is Sylvia Chen, and I want to welcome you to this podcast presentation today.

## **Slide 4**

As CPSC's Director of International Programs, Richard O'Brien stated: "design of safe products at the outset is critical." CPSC is a United States federal government agency charged with protecting the public from unreasonable risks of injury or death associated with the use of consumer products under the agency's jurisdiction. We have developed this podcast series not only to inform about regulations, standards, and other safety requirements, but also to emphasize the importance of designing products with safety considerations in mind, and to offer best practices for enhancing the safety of a variety of common consumer products.

## **Slide 5**

The series covers seven common consumer products and the requirements for keeping consumers safe, focusing on products affecting millions of consumers, such as electronics, apparel, bicycles, mattresses, infant and toddler products, carriages and strollers, and toys. In this podcast series, you can expect to learn about the key hazards and risks of the product, important design and manufacturing considerations, regulations and standards that CPSC uses to ensure product safety, best practices you can employ, and what resources are available to assist you in understanding and implementing the requirements.

The podcasts include English and Chinese slide decks and Chinese narration to make this important safety information as accessible as possible. Additionally, CPSC has established a dedicated email box, where listeners, at their convenience, can send in any questions, in English or Chinese. Our staff will monitor the email box and respond to your questions. Transcripts in English are available on this site.

## **Slide 6**

The slides used in this podcast are not a comprehensive statement of legal requirements or policy, and thus, should not be relied upon for that purpose. You should consult official versions of U.S. statutes and regulations, as well as published CPSC guidance, when making decisions that could affect the safety and compliance of products entering U.S. commerce. Note that references are provided at the end of the presentation.

## **Slide 8**

This podcast will cover:

- The definition of “carriage and stroller,” as defined by the ASTM standard, as well as the standard’s history
- Labeling and instructional literature requirements that apply to carriages and strollers, as well as the product registration requirement
- Chemical, physical, and mechanical testing requirements
- Common product hazards for importing a stroller, designing a new stroller, or making a design change to an existing one.
- The seven sections of the children’s product certificate requirements, and what they may look like in a hypothetical situation for a stroller carriage
- Two recall examples
- Some general CPSC resources, as well as requirements specific to carriages and strollers

### **Slide 9**

Let's start with a little bit of history about the carriages and strollers standard.

- There is a previous carriages and stroller’s standard that incorporated ASTM F833-13B, with a modification to address head entrapment hazards associated with multi-positional or adjustable grab bars.
- The previous standard, ASTM F833-13B, applies to products manufactured from September 10, 2015 to October 1, 2016.
- A subsequent rule, 16 CFR part 1227 incorporated by reference ASTM F833-15 (without modification) and became effective on October 2, 2016 (for products manufactured on or after this date.)
- The current standard, the one we're talking about today, is 16 CFR part 1227. It incorporates by reference ASTM F833-19, without modification.
- The effective date of the current carriages and stroller’s standard is November 5, 2019. It applies to products manufactured on or after that date.

### **Slide 10**

It is important to define what a “carriage” is and what a “stroller” is, so we can distinguish between these two products.

The “carriage” definition comes straight from ASTM F833-19. A carriage is a wheeled vehicle generally used for the transport of an infant who is generally in a lying down position. The motive power is supplied by a person or persons pushing or pulling on a handle attached to the vehicle. A carriage may be capable of being folded for storage.

The “stroller” definition also comes from the ASTM 833-19 standard. A stroller is a wheeled vehicle for the transport of infants or children generally in a sitting up or semi reclined position. The motive power is supplied by a person moving at a walking rate while pushing on a handle attached to the stroller. A stroller generally is capable of being folded for storage. Strollers normally are used for children from infancy to 36 months of age.

Let's compare and contrast these two definitions. You'll see with carriages, they are mainly for the transport of an infant and generally in a lying down position. This is contrasted with a stroller, where the occupant is generally in a sitting up or semi-reclined position.

### **Slide 11**

Let's take a look at some examples.

These photos are for illustration purposes only.

- On the top left of your screen, there is a full-size 2D stroller that folds on itself.
- Next to it is a 3D umbrella stroller that folds like an umbrella, hence the term.
- Then we have a travel system, which is a car seat that is snapped into a frame.
- Then we have a carriage or pram that appears on the top right of your screen.
- On the bottom line, there is a tandem stroller that holds three occupants.
- Next to it is a side-by-side stroller holding two occupants
- Next to that is a multi-occupant stroller that can hold eight occupants
- Finally, there is a jogging stroller on the bottom right.

All of these examples fall under the carriages and strollers standard that we will discuss in this podcast.

### **Slide 12**

Per ASTM F833-19 and applicable law:

- Marking and labeling needs to be placed permanently on the product and its packaging.
- The labeling must include the manufacturer, distributor or seller's name, and their place of business (which means city, state, U.S. mailing address, including ZIP code, and a U.S. telephone number). This is per our regulation 16 CFR section 1130.4.
- A code or mark that identifies the date of manufacturing must be placed permanently on the product and the packaging. This means the month and year of manufacturing. The batch or a run number should also be included, if the manufacturer is using batches or runs. This requirement comes from the Consumer Product Safety Improvement Act's tracking information requirement.
- Additionally, the maximum weight of the intended user needs to be listed on the packaging.

### **Slide 13**

Warning requirements are extensive.

Before I start, I want to show you the triangle with the exclamation point in yellow that is required on all warning labels, this is called a safety alert symbol.

Warnings need to be placed permanently on the product. All strollers and carriages must state the warning: "never leave a child unattended."

For products that are manufactured with a restraint system, they must state the following warning permanently on the product and packaging:

- “Warning, avoid serious injury from falling or sliding out. Always use seat belt” or a manufacturer has the ability to insert other words to describe their restraint system.”

For products with a reclined carriage position, they must state the warning:

- “Child may slip into leg openings and strangle. Never use in reclined carriage positions, unless . . .,” (and *here the manufacturer has the ability to insert product specific instructions*).

Note: This is not required on units that do not have openings, or that automatically reduce the size of openings. For example, if you are making a reclined carriage that does not have openings, or those openings automatically reduce in size, you would not need to post this warning.

Products with removable wheel-fork assemblies, or three-wheeled strollers with a locking front swivel wheel, have additional warning requirements.

Additionally, ASTM F833-19 requires that a tray or grab bar should not contain foam material. Otherwise, the bar covering should be able to prevent exposure of the underlying foam material when tested in accordance to the newly added removal test method.

A tray or grab bar protective covering is defined as the component designed and intended to prevent exposure of any underlying accessible foam material. The covering materials include woven, knit, coated, laminated, extruded, or calendared textile-based materials and leathers.

Any bar with a removal covering must have a specific warning on the foam as below: “WARNING Children can choke on foam. Only use with cover installed.”

Finally, Section 8.2.2.6 states that if the warning statements: never leave a child unattended, the restraint warning, and the warning for products with reclined carriage positions are combined into one or two labels, the safety alert symbol and the word WARNING are only needed once per label. This must appear with each individual warning for your product.

## **Slide 14**

Let's talk about instructional literature requirements.

According to ASTM F833-19, instructional literature can be on the package or included in a leaflet with the carriage or stroller. Instructions must be easy to read and understand and in English.

Instructions also need to include:

- assembly instructions
- information about how to maintain the product
- how to clean the product

- how to operate the product, including how to fold it
- A statement of the maximum weight of the intended user of the product.

Depending on the design of the product, warning statements related to arm bar foam may also be needed.

### **Slide 15**

For units manufactured with a restraint system, you must include instructions describing the use of the restraint system, as well as the following warning: “Avoid serious injury from falling or sliding out. Always use seatbelt . . .” (or the *manufacturer may insert additional words here to describe their restraint system*).

Convertible carriages or strollers requiring manual operation to comply with occupant retention requirements must include the following warning: “Warning, child may slip into leg opening and strangle. Never use in reclined carriage positions.”

*Please note that carriages are not allowed to have a restraint system.*

### **Slide 16**

Here are more instructions that must be included on products.

Products with a removable fork assembly need to describe the proper assembly and maintenance procedures for these mechanisms.

Products supplied with packages carrying accessories that come with the original equipment, meaning the stroller or carriage comes with package carrying accessories, also need to have instructions for proper assembly and maintenance procedures.

There needs to be instructions on the maximum weight recommended. It is also necessary to warn users that excessive weight may cause a hazardous/unstable condition to exist.

For products that are not supplied with package carrying accessories: these are carriages or strollers that are sold without the package carrying accessory. They need to warn that unstable hazardous conditions may exist if these accessories are added onto the product after the fact.

### **Slide 17**

The product registration requirement applies to all manufacturers of durable infant or toddler products. Strollers and carriages fall into this category of durable infant or toddler products.

Each manufacturer or importer must provide consumers with a postage-paid registration form that includes the manufacturer’s name, model name and number, and date of manufacture, as required under 16 CFR part 1130. The registration form must be attached to the product.

Manufacturers need to maintain records of the names, addresses, emails, and other contact information on consumers that register their products. The manufacturers must also provide a method of registering their products on the internet.

The manufacturer name and U.S.-based contact information (address and telephone number), model name and number, and date of manufacturing, must be placed permanently on the durable product. Please note, even if your company is located outside of United States, you must have a U.S. contact.

The product registration requirement, which falls under our Regulation 16 CFR part 1130, exists to improve overall recall effectiveness, and to help manufacturers provide safety alert warnings to consumers more effectively.

Part 1130 includes two illustrative templates at the end of the regulation. Here is a hyperlink to that information on our Product Registration FAQ site. You can simply copy the templates and print them out if you wish. Just make sure you update your website address.

Finally, on the bottom right of your screen, there is a product registration for a safety alert, a recall-only block with some text underneath it. This statement is required on the registration form. The information provided must not be used for any purpose other than to facilitate a recall or safety alert regarding that product.

### **Slides 18-20**

The next three slides provide additional examples of what the product registration card should look like.

### **Slide 21**

Next, I will discuss the testing requirements. We will start with the chemical ones first.

Per 15 U.S.C. § 1278 A, lead content testing applies to all children's products.

The lead content limit is 100 ppm in any accessible parts of children's products, and this includes strollers and carriages.

There's a list of materials that will not exceed that lead limit, as long as they are in an untreated and un-adulterated state. This list of materials comes from our regulation 16 CFR section 1500.91, which is hyperlinked in red on your screen.

If a carriage or stroller is completely comprised of materials that are in an untreated unadulterated state, as listed in section 1500.91, then the carriage or stroller would not require testing for lead content.

Some examples of materials that do not exceed the lead limit are:

- wood and paper products
- process printing inks that fully absorb into the substrate
- natural fibers, both dyed and undyed that including, but not limited to, cotton, linen, hemp, bamboo, sisal, silk, wool (sheep).
- manufactured fibers, both dyed and undyed, including but not limited to that list that appears at the bottom of your screen.

For a full list of materials, go to the hyperlink located on the screen.

## **Slide 22**

Let's discuss chemical testing requirements on strollers and carriages.

Lead in paint, and similar surface coating testing, comes from our Regulation 16 CFR part 1303. The limit is no more than 90 ppm in those paints and surface coatings. This includes screen printing, or surface printing that doesn't absorb into the material itself, and sits on the surface. Painted metal parts are also subject to the 90 ppm limit.

While carriages and strollers are generally used for transport of an infant or child, plasticized component parts of carriages and strollers that are designed, marketed or promoted, or intended by the manufacturer to facilitate sleeping, such as if you advertise that the product will help the child sleep, may require phthalates testing under our Regulation 16 CFR Part 1307. Phthalates testing is also required for products that facilitate eating. For example, a stroller with a food tray.

Accessible plasticized component parts cannot contain more than 0.1% each of the eight phthalates that are listed on your screen.

## **Slide 23**

On September 29, 2017, the CPSC removed seven plastics from requiring independent third party testing for compliance with phthalates prohibitions.

This is under our Regulation 16 CFR part 1308. The seven plastics are listed on your screen: PP, PE, HIPS, ABS, GPPS, MIPS and SHIPS.

This means that if you are a manufacturer or importer of a carriage or stroller that either is intended, marketed, or designed to facilitate sleeping, eating, or feeding, and your product is completely comprised of any combination of the seven plastics that are listed in the regulation, you would not need to conduct phthalates testing on these plastics.

## **Slide 24**

Let's move on to physical and mechanical testing requirements for carriages and strollers.

We will start with small parts. "Small parts" are defined in our regulation 16 CFR part 1501. A small part is an object that fits entirely into a small part cylinder, as specified in the regulation.

Because carriages and strollers are products that are primarily intended for use by children under the age of 3, there can be no small parts included with the stroller or the carriage before testing, and no small parts can be liberated during testing. This means that during the "use and abuse" testing or physical and mechanical testing on the strollers and carriages, the products cannot produce any small parts.

For products that have exposed wood parts, the wood must be smooth and free of splinters. There also cannot be hazardous sharp points or edges, before or after testing, as defined by our regulations in section 1500.48, and section 1500.49.

For products that may contain an exposed coil spring, or any kind of exposed coils that might be accessible to the occupant, these coils need to be covered or designed to prevent injury from entrapment. For example, children's hands cannot get caught in the coils.

Restraint systems are required on all products, except carriages designed only for infants. The restraint system needs to include a waist and a crotch restraint, and must meet the performance specifications that are outlined in ASTM F833-19.

### **Slide 25**

For latching mechanisms, you need to make sure that units that fold have a latching device that prevents the unit from unintentional folding when placed in the manufacturer's recommended use position.

In terms of scissoring, shearing, and pinching, the unit needs to be designed to prevent injuries such as finger amputations, laceration, and crush injuries to the occupant when members or components rotate or move relative to one another.

Toy accessories included with the product need to meet the U.S. toy standard ASTM F963.

For cords or straps: There's a limitation on loop perimeter length and free stretched lengths of cords and straps that originate within or extend into the occupant space to prevent strangulation in the cord. If this is something that the child who is inside the stroller or carriage can access, then there are limitations on the loop length and the stretched length of those cords and straps. Please note, restraints used to secure an occupant are exempt from this requirement.

### **Slide 26**

Regarding physical and mechanical performance requirements:

- There needs to be a parking brake to address the fall hazard due to strollers rolling away unexpectedly - especially on an incline.
- A static load performance requirement exists that addresses tip overs and collapses due to structural failures/units breaking.
- There's a stability requirement that addresses tip overs.
- There's a restraint system requirement that addresses a fall hazard.
- There are occupant retention requirements for carriages and convertible carriages and strollers that address strangulation due to entrapment and falls.
- There are requirements for a combination unit of a car seat on a stroller that address falls and tip overs due to detachment, and collapses.

### **Slide 27**

Here are some more performance requirements:

- There is an impact test that addresses car seat detachment as well as ensures fold locking and latching mechanisms stay intact.
- There is a passive containment and foot opening requirement that addresses strangulation due to head and torso entrapment that can occur if the child slides down through the foot opening
- For wheel and swivel assemblies, detachment to address falls and tip overs.
- And then for car seats on a stroller or convertible carriage/stroller, there is a test that is intended to address head entrapment.
- The tray/grab bar has requirements for a protective coating to prevent the child from ingesting any foam under the coating.

What do these requirements actually mean for designing a safer carriage or stroller, and how can you make sure that the ones that you are importing into the United States meet this requirement?

### **Slide 28**

I will now go through some common product hazards and highlight things to look for.

Our first product hazard has to do with a collapsed stroller.

On the left hand side of your screen, there is a picture of a Cami doll in a stroller. (Please note, we are showing these products with the Cami dolls inside for illustration purposes only. It's not meant to promote or not promote any products here.)

In this picture on the left, the stroller has collapsed on the doll. This issue is addressed by the latching mechanisms testing, and it is meant to prevent unintentional folding and stroller collapse.

Wheel issues and fall hazards are another product hazard associated with strollers.

The stroller on the right is a jogging stroller whose front wheel came off.

Wheel and swivel assemblies have a required detachment test. There is also a warning label requirement on jogging strollers, which warns users to lock the front swivel wheel before you start jogging, if the front swivel wheel can be locked.

### **Slide 29**

Pinch points present another product hazard.

In the left picture, you can see one of our testing engineer's fingers. This is the point in the frame that could be a pinch point for an occupant or a caregiver when the stroller is folded up. This could cause a finger amputation or a finger injury.

In the middle picture, part of the saddle hinge actually has a divot that a finger or part of a hand could easily fit into. This is a pinch point.

Then in the right picture, there is a canopy attached to a stroller and the hand of a doll. This shows that there is space between the canopy frame and the closing or the expansion mechanism on the canopy. This could be a pinch point.

This hazard is common in strollers and carriages. It is addressed in the scissoring, shearing, and pinching testing requirements of ASTM F833-19.

### **Slide 30**

To address the product hazard of entrapment, there is a required passive containment or foot opening test using head and torso probes. The dimensions of a head and torso probe are outlined in ASTM F833 19.

On this slide, we have three examples of an entrapment hazard.

- The first one shown is a food tray. As you can see, the doll slipped down the stroller and became entrapped with its head stuck between the food tray and the base of the stroller.
- The middle picture shows a car seat that is snapped into a frame. In this case, the doll's legs are dangling below the handle of the stroller. This occurred because the child tried to work its way out of the stroller and was entrapped between the stroller handle and the foot end of the car seat.
- Finally the picture on the right shows a doll that has slipped down the stroller. This is a stroller with an adjustable grab bar with the grab bar in its lowest position. The doll became trapped at the neck in that grab bar.

### **Slide 31**

Now that we've gone through the testing requirements, let's take a look at how to find a lab that can conduct testing for you.

All children's products need to be tested by a CPSC-accepted lab.

We have a lab search page available via our website, which you can reach by clicking on the first hyperlink. The webpage lists all the labs around the globe that CPSC currently accepts. When you visit this site, you can narrow your search by region, by country, or by scope for the specific product testing you need.

To narrow the search to carriages and strollers, search the scope 16 CFR part 1227, which is the safety standard for carriages and strollers.

There is a pretty extensive list of labs available in the United States and China. If you are looking to find a testing lab or hoping to compare prices between CPSC-accepted labs, you can find labs that do the testing on our lab search page.

### **Slide 32**

I will now go over the required frequency of testing for products.

The periodic testing rule, which applies to products that are in continuous production, is found in our Regulation 16 CFR § 1107.21.

The rule states that initial testing must always be done. This means that before a carriage or stroller enters U.S. commerce for the first time, testing to all the applicable CPSC safety regulations must be conducted.

After that initial testing is done, periodic testing is required at a minimum of once per year, every 2 years if there's a production testing plan in place, or every 3 years, if you're using a testing lab that's accredited to the ISO standard.

In general, the vast majority of manufacturers and importers must test children's products once per year.

There is a caveat to this rule if you have a material change to your product. A “material change” is defined in our regulation at section 1107.23, which appears on your screen: “Material change is one that a manufacturer makes to their products design, to the manufacturing process, or to the source of component parts for the product, which a manufacturer, exercising due care, knows, or should know, could affect the product's ability to comply with the applicable children's product standard.”

Ultimately, if you make changes to the product design, the manufacturing process, or source of your component parts, and you believe that is going to impact the product's ability to comply with all the requirements that are covered in this podcast, then that is considered a material change and you need to retest. Many avoidable problems have resulted from the failure to conduct appropriate testing after changing to a new source of parts.

### **Slide 33**

Children's product certificates are required for all children's products. This would include all carriages and strollers.

We abbreviate children's product certificates as CPC. Please visit the hyperlinked site for more information.

The site has two sample children's product certificates that can be used as a guide. In terms of certificates, there are three things you must consider:

- Certificates need to accompany each product or shipment of the product that's covered by the same certificate.
- A copy of the certificate must be furnished to each distributor or retailer of the product. However, there's no requirement to provide the certificate to the ultimate consumer.
- A copy of the certificate needs to be made available to our Commission, or U.S. Customs and Border Protection, upon request.

Electronic certificates have been approved by our Commission as an acceptable means of complying with the children's product certificate requirement. Electronic certificates must be

created in advance and made available to the Commission or to the Customs authorities as soon as the product or shipment is available for inspection.

### **Slide 34**

All children's product certificates have the same seven elements.

The first element is a description of the products covered by the certificate.

In bullet point 2, sections A through E refer to safety rules that apply to carriages and strollers.

- A is about total lead content.
- B is about lead in paint and similar surface coatings. If this applies to your product because you have paint or surface coating of some sort, or even screen printing, this requirement would apply.
- C refers to the ban on phthalates and toys and child care articles that are used to facilitate sleeping or eating. This depends on whether or not this applies to your product, based on how it's designed, intended for use and marketed.
- And then the Small Parts Regulation at part 1501 requires compliance for all carriages and strollers.
- And finally, the physical and mechanical testing requirements, and also, the chemical testing requirements, are incorporated into our regulation at part 1227 and the ASTM Standard F833 19 for carriages and strollers.
- Again, the only ones that may not apply to you are B, the lead in paint and surface coatings, depending on whether your product has that, and C, the banned phthalates in toys and childcare articles. This depends on whether your product facilitate sleeping or eating and has plasticized parts.

Number three is importer, domestic manufacturer, or contact information. Include as much detail here as you can.

Number four is contact information for the person who maintains your test records.

Number five is the date and place of manufacture.

Number six is the location of testing and date of tests on which the certification is based.

Number seven is the contact information of the testing laboratory that you've used.

### **Slide 35**

We will now go through two recall examples. Please note, the recall examples here are for educational purposes only.

The first recall is a child stroller.

This recall happened in December 2016. There were two issues with this stroller: a laceration hazard and a fall hazard. The hazard on this stroller was that there was a gap in the stroller's

folding side hands that could pinch a caregiver's hand during the unfolding, thus posing laceration hazard.

In addition, the stroller could fold unexpectedly during use, which posed an injury/fall hazard risk to the caregiver and child.

The remedy here was to replace the stroller.

### **Slide 36**

The next example is a stroller and rumble seat that was recalled due to a choking hazard.

The recall date here is July 2015. The hazard was that the strollers and rumble seats bumper bar posed a choking hazard when a child would bite the bumper bar and remove a piece of the foam covering. You can see a picture of the foam bumper bar on the bottom right hand side of your screen. The remedy here was repair.

### **Slide 37**

Thank you, and we hope you enjoyed this podcast. If you have any questions on the presentation, please do not hesitate to submit your questions in English or Chinese to the mailbox mentioned earlier: [CPSCinChina@cpsc.gov](mailto:CPSCinChina@cpsc.gov). This mailbox is routinely monitored.

### **Slides 38-42**

We also wish to remind viewers that CPSC has many technical documents and resources available in Chinese. At the conclusion of this presentation, we provide many links to resources viewers may find useful.

### **Slides 43-44**

We encourage viewers to be sure to check out CPSC's Regulatory Robot, available in English, Chinese, and several other languages. The Regulatory Robot is an automated tool that can help identify safety requirements for many different types of products. Many companies have found this tool to be extremely helpful.

### **Slides 45**

Please also see the following slide to view a variety of carriages and strollers specific resources. Thank you for downloading this presentation.