

# **Safety Tips for Consumer Product Suppliers: Mattress Safety (Video Series)**

## **Part 1: Scope, Prototypes/Pooling, Recordkeeping, and Labeling**

### **Disclaimer**

*This video is intended to highlight some considerations for designing safe products. The video is not a comprehensive statement of legal requirements or policy and 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.*

***This presentation was prepared by CPSC Staff. It has not been reviewed or approved by the Commission and may not reflect its views.***

*Sylvia*

*Hello, my name is Sylvia Chen. I'm here to talk about the importance of designing safe products for consumer use. A product designed with safety in mind serves consumers best and gives them peace of mind. In contrast, poor design can lead to the production of defective and/or noncompliant products that could be hazardous. The consequences of manufacturing a defective product are serious because a "substantial product hazard" or an "unreasonable risk" of serious injury or death could result.*

*At CPSC's National Product Testing and Evaluation Center, scientists and engineers test products to identify hazards to determine whether a product is defective or hazardous. If a product creates a "substantial product hazard" or poses an "unreasonable risk" of serious injury or death, CPSC will seek a recall.*

*Joining me today are Ms. Lisa Scott, Senior Fire Protection Engineer in CPSC's Directorate for Laboratory Sciences and Mr. Justin Jirgl, Senior Compliance Officer in CPSC's Office of Compliance and Field Operations.*

***Lisa***

***Hello, I am Lisa Scott. I am the Senior Fire Protection Engineer in the Flammability Lab. I have been with the agency for more than 20 years, and I have been the mattress flammability testing team leader since 2007.***

*Justin*

*Hello, I'm Justin Jirgl. I am a Senior Compliance Officer in the Office of Compliance and Field Operations. I have been with the Commission for more than 12 years, and I have been responsible for enforcing CPSC's mattress flammability requirements for 6 years.*

*Sylvia*

*In the United States, deaths and injuries associated with mattress fires account for an annual average of 330 deaths. According to U.S. National Estimates of Fires, Deaths,*

*Injuries, and Property Losses from Unintentional Fires, mattress fires are one of the leading contributors to fire deaths in the home.<sup>1</sup>*

*Lisa*

*In this three-part video series titled, Safety Tips for Consumer Product Suppliers: Mattress Safety, we want to emphasize the importance of complying with U.S. laws and regulations for mattresses. The U.S. Code of Federal Regulations, Part 1632 details the federal requirements governing the flammability of mattresses and mattress pads exposed to smoldering ignition sources, while Part 1633 details the federal requirements governing the flammability of mattress sets exposed to open flame.*

*Justin*

*We also want to help manufacturers avoid poor designs that may lead to defective or noncompliant mattress products posing hazards to consumers. Part 1 explains the Scope, Prototypes and Pooling, Recordkeeping, and Labeling for both regulations. Part 2 addresses the Test Method for Part 1632 – Smoldering Ignition; and Part 3 explains the Test Method for Part 1633 – Open Flame Ignition.*

*Sylvia*

*This video is Part 1 of the series.*

## **Scope, Prototypes/Pooling, Recordkeeping, and Labeling**

*Presented by*

*Justin Jirgl*

*Senior Compliance Officer*

*Division of Regulatory Enforcement*

*Office of Compliance and Field Investigation*

*U.S. Consumer Product Safety Commission*

*Sylvia: What statutes give CPSC authority to regulate consumer products and mattresses and mattress pads specifically?*

*Justin*

*CPSC's requirements for mattresses fall under three different statutes. Flammability requirements are under the *Flammable Fabrics Act*. Lead content requirements are under the *Federal Hazardous Substances Act*. Crib mattress requirements, as well as those for phthalates, product registration cards, product certification tracking label, and lead in paint and surface coatings are all under the *Consumer Product Safety Act*.*

*The *Flammable Fabrics Act* dictates flammability requirements for a variety of textile-related products, such as apparel, children's sleepwear, and carpets and rugs. As mentioned, mattresses and mattress pads fall under Parts 1632 and 1633 of this Act.*

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<sup>1</sup> [Annual Fire Loss Report \(cpsc.gov\)](https://www.cpsc.gov/announcements/annual-fire-loss-report)

*Sylvia: How does CPSC define “mattresses”? And what is the scope of CPSC’s mattress flammability regulations?*

Justin

Two products fall within the scope of CPSC’s mattress flammability regulations: mattresses and mattress pads.

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## CPSC Mattress Requirements

16 CFR part 1632

Cigarette Ignition

Mattresses and Mattress Pads

Excludes Foundations

16 CFR part 1633

Open Flame Ignition

Mattresses and Mattress Sets

Excludes Mattress Pads

16 CFR part 1241

Crib Mattresses Only

Excludes All Other Mattress

Sizes

CPSIA REQUIREMENTS

Certification

Children’s Products

Lead

Phthalates

Tracking information

Product Registration Card

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Mattresses are subject to both of the flammability regulations we will discuss.  
Mattress pads are subject to Part 1632 only.

Mattresses are a product familiar to most people. CPSC’s regulations specifically define “mattresses” as products that are intended or promoted for sleeping upon. In addition to traditional mattresses, crib mattresses, futons, sleeper sofas, and camper mattresses, water beds and air mattresses are also considered mattresses that must meet flammability requirements. We want to point out that renovated mattresses are considered mattresses and are subject to both flammability regulations.

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## Mattress (part 1632 and part 1633)



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A “mattress pad” is a thin, flat mat or cushion, used on top of a mattress. As I mentioned, mattress pads are subject to Part 1632 only.

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## Mattress Pad (part 1632 only)



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In addition to the differences in products covered, the two flammability regulations have very different testing criteria. The test for Part 1632 uses a smoldering ignition source, a standard cigarette, to evaluate the products’ resistance to smoldering ignition. Part 1633 uses an open-flame ignition to evaluate the fire test response after ignition with two propane burners. These tests have been designed with common ignition scenarios of consumer mattresses in mind.

Lisa will discuss the two test methods in more detail in Part 2 & Part 3 of this *Mattress Safety* video series.

*Sylvia: What’s the purpose of each flammability regulation for mattresses?*

Justin

The regulation covering Flammability of Mattresses and Mattress Pads, 16 CFR Part 1632, has been in effect since 1972. The regulation was intended to increase the safety of residential mattresses, by improving their resistance to smoldering ignition sources, such as cigarettes.

Although Part 1632 addressed the common fire scenario of a smoldering ignition source, such as a cigarette, mattresses still provided dangerous sources of fuel that were susceptible to ignition through open flame inside homes. Data showed that such fires were contributing to a high number of deaths and injuries. An unprotected mattress can take just minutes to reach flash-over conditions, a point where a room and its contents spontaneously combust. To address that hazard, the regulation covering *Flammability (Open Flame) of Mattress Sets*, 16 CFR Part 1633, was developed to limit the intensity of mattress-involved fires, thereby, increasing the time of fire discovery and improving the chances for consumers to escape a deadly fire. The regulation was issued in 2006, with an effective date of July 1, 2007. The regulation applies only to mattresses, not mattress pads, because our data showed that the high fuel load of the mattresses we sampled was a key factor in the incidents we studied.

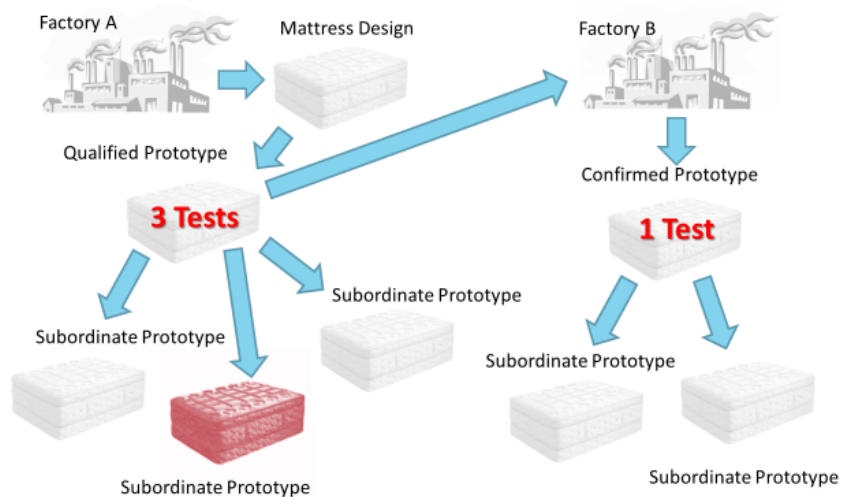
Both regulations specify a prototype testing scheme, where a representative design is tested and used as the basis for determining compliance of the resulting production units. Any changes in design require testing to determine the impact the change has on compliance with the regulation.

*Sylvia: Could you show us some examples of how prototype testing works?*

Justin:

Sure. In this example, Factory A designs and manufactures a mattress. Three mattresses of this design are made for Part 1633 testing and two mattresses are made for Part 1632 testing. If they pass all of the tests consecutively with no failures, the mattress design becomes a qualified prototype.

## Mattress Sets (1633) – Prototyping



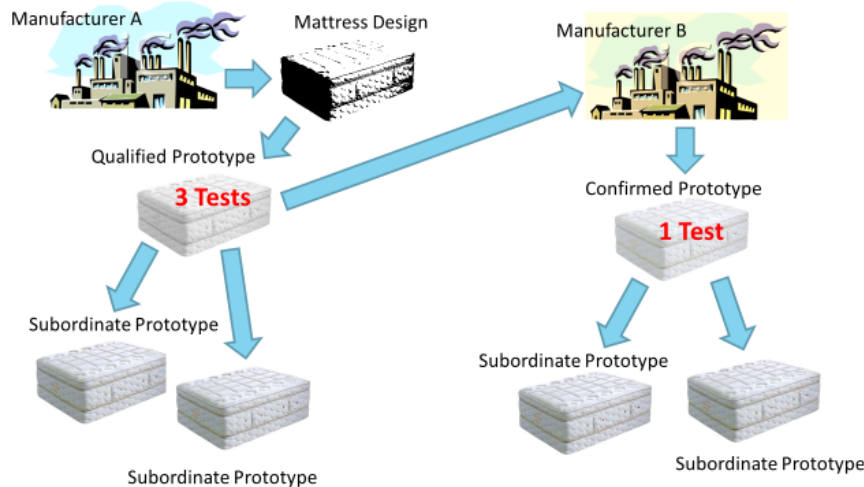
Factory A can continue making exactly that mattress or can use reasonably objective criteria to make small changes and manufacture subordinate prototypes. A subordinate prototype does not need to be tested, because it is represented by the qualified prototype. Examples of small changes under Part 1633 include mattress size changes, most changes to ticking—*i.e.*, the mattress covering fabric—and some component or design changes.

Part 1632 uses slightly different terms, but the concept is similar. Once a prototype is qualified, Factory A can continue making exactly that mattress. One difference is that Part 1632 does require additional cigarette ignition testing if the ticking or tape edge in the qualified design is changed.

Based on the qualified prototype of Factory A, Factory B can make and test a confirmed prototype. A confirmed prototype is exactly the same as the qualified prototype. Once it passes the Part 1633 test, Factory B can continue making the confirmed prototype, or it can use reasonably objective criteria to make small changes and manufacture subordinate prototypes. Manufacturers should be mindful that any changes made using reasonably objective criteria under Part 1633 must comply with both standards, Part 1633 and Part 1632.

Now let's look at a pooled prototype scenario. Prototype pooling is when a manufacturer uses a qualified prototype developed by another manufacturer. A confirmation test must be conducted on the pooled prototype.

## Mattress Sets (1633) – Pooling prototypes



In this scenario, Manufacturer A would test three specimens to qualify its prototype by conducting three tests for Part 1633. Manufacturer B would obtain the details of the qualified prototype from Manufacturer A and test one specimen to confirm the prototype. Both Manufacturers A and B could build subordinate prototypes and no testing would be required as long as reasonably objective criteria were used when making small design changes.

This example shows how prototype pooling can help decrease testing costs.

*Sylvia: Can you explain what records are required?*

Justin: Yes. Recordkeeping is required for both of the flammability regulations we've been discussing. The manufacturer must maintain records in English. The types of records that are needed are test results, quality assurance, and detailed production information. Prototype records are also required, which include a record of all of the materials and construction methods used to produce any prototype. Records for subordinate prototypes must clearly document any changes from the qualified prototype. All records must be maintained at the place of manufacture. For mattresses manufactured outside the United States, copies of the records must be maintained at a U.S. location, and the importer is responsible for compliance. Any required records must be kept while the prototype is in use and for 3 years after discontinuing its use. This means that if any product is relying on testing based on a particular prototype, those records must be maintained as long as the relevant product or products are being manufactured and for an additional 3 years after production has ended. Children's products may have additional recordkeeping requirements. For more information on recordkeeping, see Section 1633.11 and the *CPSC Mattress Information* page on our web site.



*Sylvia: Are there labeling requirements for mattresses?*

Justin

Yes. Both flammability regulations have labeling requirements. Labeling requirements in Part 1633 are more detailed and supersede the labeling requirements for mattresses under Part 1632. Mattresses must be labeled with a permanent, conspicuous, and legible label in English with the following information:

- 1) The name of the domestic manufacturer or importer and foreign manufacturer;
- 2) Address of the domestic manufacturer or the address of the importer and foreign manufacturer;
- 3) Month and year of manufacture;
- 4) Model identification;
- 5) Prototype ID;
- 6) A certification statement; and
- 7) A statement identifying whether the mattress is intended to be sold alone, or with a foundation, including information on what foundation is intended.

More information on labeling can be found in Section 1633.12.

By meeting the labeling requirements of Part 1633, a manufacturer satisfies the labeling requirements for mattresses in Part 1632. There is no need for a separate label for Part 1632 on mattresses.

The following slide shows two label templates, one for mattresses intended to be used either alone, or with a specific foundation (left), and one for mattresses intended to be used without foundations (right).

## Mattress Sets (1633)

1633.12(a)

Manufactured by:  
Foreign Company Name  
Street  
City, State  
Country

Date of Manufacture:  
MM/YYYY

Importer/U.S. Records Location:  
Importer Name  
Street  
City, State ZIP

Model: <Model ID>  
Prototype ID: <Prototype ID>  
                  <Prototype ID>

This mattress meets the requirements of  
16 CFR §1633 (Federal flammability (open  
flame) standard for mattress sets) when  
used without a foundation or with  
foundations <ID>

**THIS MATTRESS  
IS INTENDED TO BE USED  
WITHOUT A FOUNDATION  
OR  
WITH FOUNDATION(S):  
<FOUNDATION ID>**

## Labeling: Mattresses

1633.12(a)

Manufactured by:  
Foreign Company Name  
Street  
City, State  
Country

Date of Manufacture:  
MM/YYYY

Importer/U.S. Records Location:  
Importer Name  
Street  
City, State ZIP

Model: <Model ID>  
Prototype ID: <Prototype ID>

This mattress meets the requirements of  
16 CFR §1633 (Federal flammability (open  
flame) standard for mattress sets) when  
used without a foundation.

**THIS MATTRESS  
IS INTENDED TO BE USED  
WITHOUT A FOUNDATION**

*Sylvia: Are there labeling requirements for mattress pads?*



Justin

Yes, all mattress pads must be labeled with the month and year of manufacture, as well as the manufacturing location. If a mattress pad has been treated with a flame-retardant chemical, the treated mattress pads must bear a label marked with the letter “T,” and instructions must be included to make sure that consumers understand how to launder and care for the mattress pad so that it can maintain its flammability performance.

Mattress manufacturers should be aware that many states and local jurisdictions have additional labeling requirements for mattresses and mattress pads. Manufacturers should be knowledgeable about those requirements if they plan to sell mattresses in those states.

*Sylvia: If a mattress or mattress pad fails to meet Part 1632, what would CPSC do?*

Justin

CPSC takes actions against products that fail to meet the requirements of Part 1632. Although this regulation has been in place for several decades, we still find mattress pads for sale in the United States that do not meet these requirements. Here is an example of a mattress/mattress pad recall.

## Mattresses and Mattress Pads (1632)

Hollander Sleep Products Recalls Mattress Pads Due to Violation of Federal Flammability Standard; Sold Exclusively at Bed Bath & Beyond



Name of product:  
Wamsutta Mattress Pads

Hazard:  
The mattress pads fail to meet the mandatory federal flammability standard for mattresses and mattress pads, posing a fire hazard.

Remedy:  
Refund

Recall date:  
May 26, 2016

Recall number:  
16-100

Wamsutta Dream Zone cotton 600 thread count mattress pads

**Hazard:**  
The mattress pads fail to meet the mandatory federal flammability standard for mattresses and mattress pads, posing a fire hazard.

*Sylvia: Does CPSC also see cases where mattresses do not comply with Part 1633?*

Justin

Yes, CPSC does find mattresses that fail to meet the requirements of Part 1633, and CPSC takes action in those cases too.

Here is an example recall of a foam mattress.

## Mattress Sets (1633)

### Quality Foam Recalls Mattresses Due to Violation of Federal Mattress Flammability Standard



Recalled Quality Foam mattress (Black)

**Name of product:**  
Quality Foam mattresses

**Hazard:**  
The mattresses fail to meet the mandatory federal flammability standard for mattresses, posing a fire hazard.

**Remedy:**  
Replace  
Repair

**Recall date:**  
July 25, 2017

**Recall number:**  
17-194

**Remedy:**

Consumers should immediately stop using the recalled mattresses and contact Quality Foam or the place of purchase for instructions on receiving a free mattress cover to bring the mattress into compliance with the federal standard.

*Sylvia: What other requirements apply to mattresses and mattress pads?*

Justin

As mentioned, there are additional requirements for children's mattresses and mattress pads. Any mattress or mattress pad designed or intended for children, must meet the requirements below:

- Lead Content (FHSA)
  - Products designed and intended primarily for children 12 years or younger
  - Concentration may not exceed 100 ppm
- Lead in Paint and Surface Coatings (CPSA)
  - Products designed and intended primarily for children 12 years or younger and some general use furniture
  - Concentration may not exceed 90 ppm
- For crib mattresses and mattress pads: Phthalate Content (CPSA)
  - Children's toys and *child care articles* (products used to facilitate sleeping and feeding for children 3 years or younger)
  - Only certain phthalates
  - Concentration may not exceed 0.1 %

*For these child safety requirements, the testing must be done by a CPSC-accepted, third party laboratory.*

Children's Product Certificates, or CPCs, must be issued for children's products intended for ages 12 and under, indicating that they have passed all required testing. A CPC relies on testing performed by a CPSC-accepted, third party laboratory for all the

requirements to which the product is subject. Crib mattresses and potentially other mattresses intended specifically for children require a CPC.

The U.S. importer is the party legally responsible for providing testing certifications. However, manufacturers outside the United States can have the testing performed and provide the results to the U.S. importer. The importer can rely on this testing to issue a certificate, if all requirements are met and due care is exercised, meaning the degree of care that a prudent and competent person engaged in the same line of business or endeavor would exercise under similar circumstances. Due care does not permit willful ignorance.

In addition, the importer or domestic manufacturer must also meet tracking label requirements.

Children's products that are designed or intended primarily for use by children ages 12 or younger must have distinguishing permanent marks, generally referred to as "tracking labels."

These labels must be:

- affixed to the product and its packaging,
- visible and legible, and
- provide certain identifying information.

Tracking labels must contain certain basic information, including:

1. The name of the manufacturer or private labeler;
2. The location and date of production of the product;
3. Detailed information on the manufacturing process, such as a batch or run number, or other identifying characteristics; and
4. Any other information to facilitate ascertaining the specific source of the product.

*All tracking label information should be visible and legible.*

Compliance with the tracking label requirement will help improve the effectiveness and response rates for any future recalls. It also helps CPSC staff and companies in the chain of commerce. When a component has been identified as the source of a hazard or violation, the tracking label helps identify other products that may contain the same component.

*Sylvia: What are some best practices that manufacturers should remember?*

Justin: We have a list of best practices that manufacturers should follow when designing a mattress or mattress pad to meet CPSC requirements.

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## Designing for Safety-Mattresses

Comply with all applicable safety requirements

Conduct required testing

- Flammability
- Requirements for children's products

Maintain procedures and retain records

Monitor components and suppliers

Confirm materials and component specifications

Maintain consistent methods of assembly

Report problems early

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*Sylvia: If a manufacturer viewing this video wants to learn more about CPSC mattress flammability requirements, are there other resources available?*

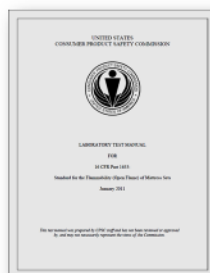
Justin

CPSC maintains a *Mattress Flammability Information* page with links to a variety of topics. Links to both Parts 1632 and 1633 can be found on the Code of Federal Regulations page. The page also includes our staff laboratory test manuals for each regulation and links to previous presentations on a variety of mattress flammability topics. There is a link to sign up for the CPSC subscription service for Mattress Information, and when there is a pertinent update, we send a message to our listserv subscribers. Subscribing to our listserv and checking CPSC's website are the best ways to stay current with news about mattress flammability requirements from CPSC.

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## CPSC Resources

- Regulations and test methods
- Laboratory test manuals
- Business resource page
- Mattress information webpage
- E-mail listserv
- [www.CPSC.gov](http://www.CPSC.gov)



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Finally, if you have questions, you could always contact us.

Here's our contact information:

## Contact Information

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*Sylvia: Thank you, Justin. Thank you, Lisa. In Part 2, we will focus on the Test Method for Part 1632 – Smoldering Ignition. Stay tuned.*

## [Mattress Flammability Information | CPSC.gov](#)

[床垫可燃性信息 | CPSC.gov](#)

<https://www.cpsc.gov/zh-CN/FAQ/%E5%BA%8A%E5%9E%AB>

## **16 Code of Federal Regulation, Part 1632**

**16 联邦法规第 1632 部分**

<http://www.ecfr.gov/cgi-bin/text->

[idx?SID=59ceb81a60d382bcc84bf00de2828ad9&node=16:2.0.1.4.98&rqn=div5](http://www.ecfr.gov/cgi-bin/text-idx?SID=59ceb81a60d382bcc84bf00de2828ad9&node=16:2.0.1.4.98&rqn=div5)

## **16 Code of Federal Regulation, Part 1633**

**16 联邦法规第 1633 部分**

<https://www.ecfr.gov/cgi-bin/text->

[idx?SID=80fb5cb965175b6f41f2637cf585bad1&mc=true&node=pt16.2.1633&rqn=div5](https://www.ecfr.gov/cgi-bin/text-idx?SID=80fb5cb965175b6f41f2637cf585bad1&mc=true&node=pt16.2.1633&rqn=div5)

## **LABORATORY TEST MANUAL**

For 16 CFR Part 1632:

***Standard for the Flammability of Mattresses and Mattress Pads***

**实验室测试手册**

联邦法典 16 卷 1632 部分  
床垫和床褥垫阻燃标准

[https://www.cpsc.gov/s3fs-public/pdfs/blk\\_media\\_testmatt.pdf](https://www.cpsc.gov/s3fs-public/pdfs/blk_media_testmatt.pdf)

## LABORATORY TEST MANUAL

FOR 16 CFR Part 1633:

Standard for the Flammability (Open Flame) of Mattress Sets

实验室测试手册

联邦法典 16 卷 1633 部分

床垫套组阻燃（明火）标准

[https://www.cpsc.gov/s3fs-public/pdfs/blk\\_media\\_labmanual.pdf](https://www.cpsc.gov/s3fs-public/pdfs/blk_media_labmanual.pdf)

## Regulatory Robot in Chinese

法规机器人

<https://business.cpsc.gov/robot/>

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