

History of Tethers and LATCH

The story of tethers begins long before the introduction of LATCH. Tethers were used on forward-facing child restraints (CRs) in the United States, Canada, and Australia as early as 1970. They have been required equipment for all forward-facing CRs made since 1974 in Australia and since 1980 in Canada. In the U.S., however, though tethers were featured on some early CRs, they weren't required. The challenges caregivers faced if they tried to retrofit their vehicles with tether anchors (TAs) led to very low levels of tether use, and tethers were eventually phased out of nearly all U.S. CR models by the mid-1980s.

Early federal standards and tethering

Testing of early CRs involved only a static pull test (1972 version of FMVSS 213). In 1981, a tougher federal standard for CRs (FMVSS 213-80) came into effect, requiring dynamic sled testing that simulates a crash. That standard specified a dummy head excursion (forward head movement) limit of 32 inches when forward-facing CRs were tested in a simulated 30-mph crash. CRs, at the time, were allowed to meet this requirement with or without a tether.

The low prevalence of tether use in the real world—and the failure in dynamic testing of many CRs when installed without the tether attached—led to a change in the federal standard in July 1985. After that point, all CRs were required to pass the dynamic test with a maximum of 32 inches of head excursion *without* a tether.

With this rule change in 1985, tethers virtually disappeared from the U.S. market, as CRs were redesigned so they would perform to meet these new parameters without a tether. (Harness-only products and CRs for children with special needs were, and still are, exempt from this nontethered test. They are required to pass only a 32-inch test *with* a tether attached.)

Starting in 1995, tethers gained renewed attention in the U.S. due to their ability to solve many of the installation problems that hindered proper CR installation when using the seat belt systems of that era. Impressive safety statistics in countries requiring tethers (especially Australia) also contributed to the renewed interest. Luckily, most vehicles sold in the U.S. were equipped with tether anchor points since they also were sold in Canada, where TAs had been required since 1989. For the same reason, tether anchor retrofit kits were available to install in most vehicle models manufactured since 1989.

Development of universal anchorage

Meanwhile, throughout the 1990s, an International Standards Organization (ISO) committee of auto and CR makers and researchers from around the world was developing a universal child restraint anchorage system that would allow CRs to be installed without using seat belts. The original design, ISOFix, had two bars in the seat bight and rigid LA attachments on the CR. Methods of limiting forward rotation, such as tethering, were not specified.

As the ISOFix system evolved, U.S. auto companies led a push for flexible LA attachments, and Transport Canada (TC) pressed for tethers and TAs to be part of the universal standard. The standard regulating the U.S. system became FMVSS 225 (the LATCH standard). The counterpart standards for Canada's Universal Anchorage System (UAS) are CMVSS 210.1 and 210.2.

In Europe today, ISOFix differs from LATCH and UAS in that CRs that feature ISOFix typically have rigid LA attachments. For both CRs and vehicles, tethering hardware is not required, but various alternatives to limit forward rotation are commonly found on CRs sold in Europe, such as a foot on the CR that extends to the floor.

LATCH Phase-In Schedule

(A table version of this information is on page 13.)

CR requirements (See table below for exceptions.)

I. Tether straps

- All forward-facing CRs made on or after September 1, 1999, must meet the 28-inch head excursion test limit. (All current CRs use a tether strap to comply.)

II. Lower anchor attachments

- 100% of CRs made on or after September 1, 2002.

Vehicle requirements (See table below for exceptions.)

I. Tether anchors

- 80% of new cars made on/after September 1, 1999.
- 100% of new cars and light trucks made on/after Sept. 1, 2000.

II. Lower anchors

- 20% of all vehicles made on/after September 1, 2000.
- 50% of all vehicles made on/after September 1, 2001.
- 100% of all vehicles made on/after September 1, 2002.

When LATCH requirements <i>must be followed</i>	
CRs	<ul style="list-style-type: none"> • Rear-facing-only CRs sold with or without a detachable base. • Convertible (rear- and forward-facing) CRs. • Forward-facing CRs with a harness (including combination CRs that can also be used as a booster).
Vehicles	<ul style="list-style-type: none"> • Passenger vehicles, trucks, vans, and SUVs with a gross vehicle weight (GVW) equal to or under 8,500 pounds. • School buses equal to or under 10,000 pounds GVW.
When LATCH requirements <i>do not apply</i>	
CRs	<ul style="list-style-type: none"> • Car beds, vest/harness products, belt-positioning boosters. • Rear-facing-only CR models with a base only need to have an LA attachment on the base.
Vehicles	<ul style="list-style-type: none"> • Passenger vehicles over 8,500 pounds GVW. • School buses over 10,000 pounds GVW. • Exempt from tether anchor requirement only: convertible vehicles and small school buses under 10,000 pounds GVW. MY 00-04 SUVs were not required to include a third tether anchor (the one not included with the two required LATCH systems). • Exempt from LA requirement only: Cars with a very small or no back seat and no air bag on-off switch.
<p>Note: There are many examples of CRs and vehicles that are exempt from LATCH regulations, but do voluntarily include LATCH parts. When provided, parts must meet the requirements of any standard that applies.</p>	

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