

Dirk Zedler

# Why the industry should celebrate the Product Safety Act's 20th birthday

Happy Birthday to the European Product Safety Act, which turns 20 this year! Is this reason for the bicycle industry to celebrate? The answer, I believe, is "yes." Here's why, along with key things the industry needs to know about the law.



The CE mark is simple, but the rules for using it are not.

At the end of the 1980s, the European Parliament set out to harmonize the laws and regulations that protect EU citizens. Their work led to the 1989 Product Liability Act, a precursor to the Product Safety Act.

Under the Product Safety Act, a manufacturer is liable for a product's safety over 10 long years. Consumers have the right to expect that a product is suitably safe during its intended or reasonably expected life.

Eight years later, in 1997, the more comprehensive, far-reaching Product Safety Act went into effect. Like the Product Liability Act, the Product Safety Act was adopted by member EU states and codified in their national laws.

So far, so good, because the laws apply only when a major loss occurred. Because court proceedings take a long time, and because most cases are settled out of court, only a few bicycle-related cases have gone all the way to a court ruling.

From my experience as an expert witness before many courts, however, I know that a few of these rulings required manufacturers to pay considerable monetary damages. Fortunately, other manufacturers have never been subjected to such legal actions under the Product Liability or the Product Safety Acts.

**The "e" changes everything.** The Product Safety Act stipulates that manufacturers are prohibited from bringing a product to market if it, or its packaging or documentation, bears a CE mark, but the product doesn't comply with the requirements of CE marking. Nor can a manufacturer sell a product that does not have a CE mark.

The act also gives market surveillance authorities the power to prohibit the marketing or display of a non-conforming product. If one is on the market, authorities have the right to order that it be withdrawn or recalled.

A conventional bicycle is not, and never has been, covered by the law because it can be sold without a CE mark.

Put an electric motor on that bike, however, and everything changes. Pedelecs — e-bikes that have a maximum speed of 25 kph (15.5 mph) and use a motor rated at 250 watts — must have CE

marking. No ifs, ands or buts.

Anyone who rents or sells pedelecs or otherwise makes them available on the market is required to comply with this law. Before a manufacturer can put a pedelec on the market, it must meet all requirements stipulated by the harmonization legislation of the European Union.

**Dangerously wrong.** Manufacturers who believe a pedelec frame merely has to comply with relevant EN or ISO standards are not just wrong, but dangerously wrong, because that can make them vulnerable to enforcement actions.

It is not enough for manufacturers to ensure that all components have passed mechanical tests. They must also ensure, for example, that all electrical components have been tested for environmental influences and electromagnetic emissions. Rechargeable batteries must be tested in accordance with UN transport regulations.

**The sum, not just the parts.** As a first step, manufacturers must ensure that a pedelec does not use any component that has not been properly documented. In other words, every component must be tested.

However, it's not enough to only test individual parts. Manufacturers also have to test the complete bike.

Hand on heart, bike manufacturers: Have you ever carried out reach tests on brake levers; confirmed a bike's ground clearance; examined what happens when a mudguard gets clogged; or determined how much pressure it takes to burst a tire when it is on the bike?

The problem is that, after years of experience making conventional bicycles, many manufacturers have adopted the unofficial motto, "it will fit somehow."

Such blind faith is not an option with pedelecs. Only after successfully testing and documenting each component, as well as the complete bike, can a manufacturer legally offer a pedelec for sale in the EU.

That includes tests for electromagnetic compatibility. Again, manufacturers can't just check individual components, but must test the complete pedelec in the electrical engineer's laboratory.

Because frames, handlebars, seatposts and other components act as antennas, electromagnetic emissions from a complete bike may be much higher than from its individual parts.

**Ghosts in the Machinery Directory.** These are just some of the legal requirements for pedelec manufacturers. They also have to comply with the Machinery Directive 2006/42/EC. The Directive outlines a wide-ranging set of rules that admittedly are poorly suited to pedelecs, yet parts of it still must be strictly followed.

For example, manufacturers have to perform a comprehensive risk analysis for the pedelec's expected lifecycle. Potential risks range from hauling cargo to lubricating the chain.

It quickly becomes clear that simply testing a pedelec under the EN 15194 standard is insufficient because it requires that manufacturers test up to a total weight — pedelec, rider, and cargo combined — of only 100kg (220 pounds).

A pedelec risk analysis also requires that each component be specified on a parts list. This means parts can't be replaced willy-nilly.

Dealers, for example, can't just swap the handlebar on one pedelec with one from a different brand or manufacturer because they don't know if the replacement offers the same level of safety when used with the existing stem.

Finally, laws require manufacturers to offer manuals in the language of the country where the pedelec is sold. The manual must include a declaration of conformity, another legal requirement for selling the machine.

**This time, it's personal.** So far, most successful claims have resulted in monetary damages paid to the injured party. Damages are usually covered by a manufacturer's insurance policy.

But because pedelecs are covered by the laws and regulations that come with CE marking, responsible parties now can be held personally liable, i.e. convicted by the courts. The person who signs the declaration of conformity confirms that the manufacturer has complied with all applicable rules. If this is not the case, and if the pedelec failed or never underwent any of these mandatory tests, the person signing the declaration may be held personally liable.



Every pedelec model sold in the EU must undergo extensive testing, or manufacturers can be held personally liable.

**Reason to celebrate.** For bicycle dealers and manufacturers these challenges are quite new; other industries have had to comply with these regulations for years. Setting up the necessary compliance systems within a company is admittedly time-consuming and costly. It doesn't happen overnight.

The good news is that bike manufacturers that have faced up to these challenges — either voluntarily, or because authorities forced them to — are starting to reap cost savings. By creating a quality assurance system for pedelecs, many manufacturers are applying it to conventional bikes as well.

Consistent testing of all components, either in a company's own lab or at a European testing company, has slashed complaints concerning faulty products to near zero. By investing in testing, manufacturers find they are saving money by cutting the number of product failures and complaints.

This, then, is why the bicycle industry should commemorate the birthday of the Product Safety Act. The Act is forcing our industry to professionalize, which means better products and, eventually, higher profits. And that's something to celebrate!

■ DIRK ZEDLER

## The Zedler Institute

Since 1993, Dirk Zedler has been an analyst and expert witness for bicycle accidents and product failures on behalf of courts, bike and insurance companies, and private individuals. He holds an advanced degree in engineering.

Since 1994, courts have recognized Zedler as an officially appointed and sworn expert on bicycles and, since 2014, on electric bicycles. His staff prepares some 800 expert's reports every year.

Zedler – Institut für Fahrradtechnik und -Sicherheit GmbH (the Zedler Institute for Bicycle Technology and Safety) has used this wealth of knowledge, derived from its work in thousands of court proceedings and expert's reports, to enhance research and development in the bicycle industry.

The Institute makes testing equipment that helps manufacturers improve the riding quality of their bikes, and prepares user manuals for

bicycles and pedelecs.

These manuals, now available in more than 35 languages, help consumers use their bikes properly — and in many cases have protected manufacturers from liability.

In recent years, the Zedler Institute has been involved in cases across Europe where authorities halted bicycle sales. Many of these issues were created by manufacturers that failed to perform sufficient risk analyses or equipment tests, or published flawed user manuals or conformity declarations.

These are problems that the Zedler Institute can typically resolve within three or four weeks.

For more information, visit [www.zedler.de](http://www.zedler.de).