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Proof of Product Defect*

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Defectiveness lies at the center of products liability law. Merely making and selling a product that causes accidental harm to another fails to provide a sufficient basis for moral or legal responsibility.[1] Instead, the defendant is liable in products liability law only if the defendant supplied a product that was *deficient* in some respect, rendering the product "defective." In Roman law, responsibility for product harm rested to a large extent on the notion of product defect, as it did under medieval church law and the law of early America.[2] Defectiveness continues to provide the core concept of modern products

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[1] *See* David G. Owen, *The Moral Foundations of Products Liability Law: Toward First Principles*, 68 NOTRE DAME L. REV. 427, 461 (1993) (making and selling products involved in product accidents is an insufficient basis for liability; moral philosophy requires more than a causal connection between production and another's harm to hold a producer accountable for harm) [hereinafter Owen, *Moral Foundations*].

[2] For an overview of products liability history, see DAVID G. OWEN, PRODUCTS LIABILITY LAW § 1.2 (2005) [hereinafter OWEN, PRODUCTS LIABILITY LAW].

liability law around the world.[3] Determining how defectiveness should be defined[4] and proved[5] has preoccupied courts, commentators, and products liability lawyers since the rise of modern products liability law in America during the 1960s. Apart from special claims involving misrepresentation,[6] negligent entrustment,[7] and certain others,[8] every products liability claim requires proof that an unnecessary hazard in the defendant's product caused the injury. Regardless of the underlying cause of action, plaintiffs in products liability cases ordinarily must establish that something was *wrong* with the product. Virtually every product is dangerous in some manner and to some extent, at least when put to certain uses. But most such dangers are simple facts of physics, chemistry, or biology. There is no reasonable way to avoid them. For such natural risks of life, product users, rather than product suppliers, properly bear responsibility for avoiding and insuring against any injuries that may result.[9] But some products carry excessive risks that users and consumers should not fairly be required to shoulder, either because the risks are unexpected, or because they feasibly can be avoided by manufacturers or other product suppliers. And so the law properly requires that a product contain some *excessive* level of danger before shifting the loss to the seller. The label that the law attaches to products carrying such excessive risks is "defective."[10]

At least implicitly, each of the three major causes of action in products liability law requires that the product be defective. First, negligence claims are predicated on the defectiveness of a product, because its supplier ordinarily cannot be faulted for selling a product that

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[3] For an overview of modern products liability law in other nations, see *id.* § 1.3.

[4] *See id.* § 4.3 (implied warranty), §§ 5.5–5.9 (strict liability in tort), & §§ 7.2, 8.2–8.7, & 9.2.

[5] *See id.* §§ 6.3–6.4.

[6] *See id.* ch. 3.

[7] *See id.* § 15.1.

[8] Other claims include those based on the implied warranty of fitness for particular purpose (under U.C.C. § 2–315), or possibly the violation of a product safety statute, such as a prohibition on the sale of fireworks to children or unlicensed persons (a species of unlawful entrustment). Yet many products liability statutes, such as pure food acts, are designed to prevent the sale of defective products. *See id.* §§ 1.1 & 7.5.

[9] *See* Owen, *Moral Foundations*, *supra* note 1, at 461.

[10] *See, e.g.*, Prentis v. Yale Mfg. Co., 365 N.W.2d 176, 182 (Mich. 1984) ("[T]he plaintiff must, *in every case, in every jurisdiction*, show that the product was defective."); Phillips v. Kimwood Mach. Co., 525 P.2d 1033, 1036 (Or. 1974) ("To impose liability there has to be something about the article which makes it dangerously defective."); RESTATEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY § 1 (2004) (discussing liability for harm from commercial sale of defective product).

is not defective.[11] Second, a breach of the implied warranty of merchantability occurs when a product is "unfit" for ordinary use,[12] meaning virtually the same thing as "defective."[13] Finally, strict liability in tort is based explicitly on the sale of a defective product.[14] The centrality of the concept of defectiveness to products liability law is reflected in the *Restatement (Second) of Torts* and *Restatement (Third) of Torts*, both of which ground liability on the notion of product defect.[15] In short, product defectiveness is the heart of products liability law.

In most products liability cases, the plaintiff's basic claim is that a defective condition in the defendant's product proximately caused the plaintiff's harm. The plaintiff has the burden of proving each element of such a case, including the product's defectiveness.[16] Sometimes the precise reasons for harm caused by a product will be a mystery, but the circumstances may logically suggest that the product was defective and perhaps that the manufacturer was negligent in selling it in that condition. In such cases, the doctrines of product malfunction[17] and *res ipsa loquitur*[18] may help the plaintiff establish the product's defectiveness and the liability of the manufacturer. In other cases, a plaintiff may introduce evidence that the product violated an industry or

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[11] *See, e.g.*, Merrill v. Navegar, Inc., 28 P.3d 116, 124 (Cal. 2001) (stating that under both negligence and strict liability, plaintiff must prove a defect caused the injury and, under negligence, "plaintiff must also prove 'an additional element, namely, that the defect in the product was due to negligence of the defendant'" (citing William Prosser, *Strict Liability to the Consumer*, 18 HASTINGS L.J. 9, 50–51 (1966))); Oanes v. Westgo, Inc., 476 N.W.2d 248, 253 (N.D. 1991) ("In negligent design claims it is well established that a manufacturer or seller is not liable in the absence of proof that a product is defective. . . . Thus, an element of a negligent design case is that the product is defective or unsafe."). The *Products Liability Restatement* makes this point: "Negligence rests on a showing of fault leading to product defect. Strict liability rests merely on a showing of product defect." RESTATEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY § 2 cmt. n.; *see also* OWEN, PRODUCTS LIABILITY LAW, *supra* note 2, §§ 2.1 & 5.9.

[12] *See* U.C.C. § 2–314(2)(c) (2004) (stating goods must be "fit for ordinary purpose").

[13] *See, e.g.*, Spectron Dev. Lab. v. Am. Hollow Boring Co., 936 P.2d 852 (N.M. Ct. App. 1997) (manufacturing defect); *see also* OWEN, PRODUCTS LIABILITY LAW, *supra* note 2, §§ 4.3 & 5.9.

[14] *See* RESTATEMENT (SECOND) OF TORTS § 402A (1997) (strict liability for sale of product in "defective condition unreasonably dangerous" to user or consumer); OWEN, PRODUCTS LIABILITY LAW, *supra* note 2, at ch. 5).

[15] *See* RESTATEMENT (SECOND) OF TORTS § 402A; PRODUCTS LIABILITY RESTATEMENT §§ 1 & 2.

[16] *See* PRODUCTS LIABILITY RESTATEMENT § 2 cmts. c (manufacturing defects), d & f (design defects), & i (instruction and warning defects).

[17] *See* OWEN, PRODUCTS LIABILITY LAW, *supra* note 2, § 7.4.

[18] *See id.* § 2.4.

government safety standard to establish the product's defectiveness[19] and possibly the manufacturer's negligence as well.[20] On the other hand, the defendant may rely on its *compliance* with such standards as evidence of the product's *non*–defectiveness.[21] Sometimes a plaintiff may rely in part upon similar accidents involving the defendant's other similar products. Likewise, a defendant may demonstrate that the *absence* of similar accidents—that is, the product's record of safe performance—proves the reverse.[22] Finally, a plaintiff may try to prove a product's defectiveness or the defendant's negligence by showing that the defendant acknowledged the problem by remedying the hazard after the plaintiff's injury.[23] This article addresses these recurring issues of proof.[24]

I. SAFETY STANDARDS

Proof that a product violates or conforms to certain safety standards pertaining to the hazard that caused the plaintiff's harm may be probative of whether the product was defective. Such standards may be adopted by the industry, perhaps through standard–setting organizations such as the American National Standards Institute (ANSI), the National Safety Council (NSC), or the Society of Automotive Engineers (SAE). Safety standards may also be promulgated by the government through a statute, or through the regulatory standards of a governmental agency, like the Federal Food and Drug Administration (FDA) or the National Highway Traffic Safety Administration (NHTSA). In general, evidence that a products liability defendant violated or complied with an applicable safety standard is admissible on the issue of defectiveness.

The role of such evidence in proving or disproving defectiveness derives from and parallels the law governing its use in proving and disproving negligence, a topic examined elsewhere.[25]

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[19] *See* discussion *infra* Part I.

[20] The effect on a negligence claim of proof that a defendant violated a safety standard, often referred to as the doctrine of negligence per se, is addressed in OWEN, PRODUCTS LIABILITY LAW, *supra* note 2, § 2.3.

[21] Defendant may also demonstrate its compliance with such standards to help disprove its negligence. *See id*; *see also* discussion *infra* Part I.A., II.B.

[22] *See* discussion *infra* Part II.C.

[23] *See* discussion *infra* Part III.

[24] Special issues in proving negligence are examined in OWEN, PRODUCTS LIABILITY LAW, *supra* note 2, ch. 2; *see also* David G. Owen, *Proof of Negligence in Modern Products Liability Litigation*, 36 ARIZ. ST. L. REV. (forthcoming Spring 2005).

[25] *See* OWEN, PRODUCTS LIABILITY LAW, *supra* note 2, § 2.4.

A. Industry Standards—Custom

A common type of evidence introduced during a defect dispute is an industry's prevailing safety standard with respect to the particular product characteristic at issue.[26] For example, in an effort to prove a product's defectiveness, a plaintiff may seek to demonstrate that other manufacturers in the industry regularly use a safer design or a warning that the defendant failed to adopt. Conversely, in an effort to show that its product is *not* defective, a defendant manufacturer may seek to introduce evidence that other manufacturers customarily use the same design or warnings as the defendant on similar products. The admissibility of customary industry standards derives from the use of this type of evidence for nearly two centuries in negligence law—a good place to start unraveling the custom-as-evidence conundrum in the context of strict liability in tort.[27]

Industry safety standards for products often develop informally over time, as a matter of custom, as engineers and other technical experts around the nation (and the world) migrate between companies and exchange ideas in papers, at conferences, and otherwise. Many industry safety provisions are spawned more formally by organizations that specialize in developing practicable standards of efficacy and safety, such as the American National Standards Institute (ANSI),[28] the American Society for Testing and Materials (ASTM),[29] the American Standards Association

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[26] *See generally* PRODUCTS LIABILITY RESTATEMENT § 2 cmt. d. (2004). On the very similar rules applied in most jurisdictions to strict liability in tort, see 3 AM. LAW. PROD. LIAB. § 30:47 (3d ed. 1996); 3 LOUIS R. FRUMER & MELVIN I. FRIEDMAN, PRODUCTS LIABILITY § 18.04[1] [hereinafter FRUMER & FRIEDMAN, PRODUCTS LIABILITY]; OWEN, PRODUCTS LIABILITY LAW, *supra* note 2, § 6.4; DAVID G. OWEN, M. STUART MADDEN, & MARY J. DAVIS, MADDEN & OWEN ON PRODUCTS LIABILITY § 27:6 (3d ed. 2000) [hereinafter MADDEN & OWEN ON PRODUCTS LIABILITY]; James Boyd & Daniel E. Ingberman, *Should "Relative Safety" Be a Test of Products Liability?*, 26 J. LEGAL STUD. 433 (1997); Steven Hetcher, *Creating Safe Social Norms in a Dangerous World*, 73 S. CAL. L. REV. 1 (1999); David A. Urban, Comment, *Custom's Proper Role in Strict Product Liability Actions Based on Design Defect*, 38 UCLA L. REV. 439 (1990).

[27] *See* OWEN, PRODUCTS LIABILITY LAW, *supra* note 2, § 2.4.

[28] *See, e.g.*, DiCarlo v. Keller Ladders, Inc., 211 F.3d 465, 468 (8th Cir. 2000) (interpreting Missouri law with regard to stepladder standards); Clarke v. LR Sys., 219 F. Supp. 2d 323, 334 (E.D.N.Y. 2002) (guarding standard for grinders); Potter v. Chicago Pneumatic Tool Co., 694 A.2d 1319, 1326 (Conn. 1997) (vibration limits for tools).

[29] *See, e.g.*, Emody v. Medtronic, Inc., 238 F. Supp. 2d 1291, 1294 (N.D. Ala. 2003) (standards for chemistry, hardness, and microstructure for rod in spinal fusion device); Ford v. Nairn, 717 N.E.2d 525, 530 (Ill. App. Ct. 1999) (trampoline warnings).

(ASA),[30] the National Safety Council (NSC),[31] Underwriters Laboratories (UL),[32] and the Society of Automotive Engineers (SAE).[33] There are also a host of more arcane and specialized organizations, including the American Society of Agricultural Engineers,[34] the National Spa and Pool Institute,[35] the Scaffolding and Shoring Institute,[36] the Industrial Stapling and Nailing Technical Association,[37] and the American Conference of Governmental and Industrial Hygienists.[38] Although sometimes referred to as "quasi–public," these are actually private organizations, many of which derive from and are essentially controlled by the industries they serve. Thus, while some of these organizations are actually quite independent,[39] other organizations produce standards that are little more than formal versions of standards already established by the industry. As a result, though an industry may rely on these safety standards,[40] most courts treat them the same as less formally recognized types of industry standards.[41]

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[30] *See, e.g.*, Poches v. J.J. Newberry Co., 549 F.2d 1166, 1167 (8th Cir. 1977) (S.D. law) (specifications for speed and angle of power mower blade).

[31] *See, e.g.*, Hutchison v. Urschel Labs., Inc., 157 F.3d 613, 615 (8th Cir. 1998) (Mo. law) (guarding standards for chicken dicer); Brown v. Clark Equip. Co., 618 P.2d 267, 275–76 (Haw. 1980) (concerning allowable blind spot on front–end loader).

[32] *See, e.g.*, Brodsky v. Mile High Equip. Co., 69 Fed. App. 53, 55 (3d Cir. 2003) (Pa. law); Moulton v. Rival Co., 116 F.3d 22, 26 (1st Cir. 1997) (Me. law).

[33] *See, e.g.*, Alfred v. Caterpillar, Inc., 262 F.3d 1083 (10th Cir. 2001) (Okla. law) (design of asphalt paver's speed control as lever rather than as rotary dial).

[34] *See* Masters v. Hesston Corp., 291 F.3d 985, 991 (7th Cir. 2002) (Ill. law) (American Society of Agricultural Engineers standards relevant to setting standard of design safety for hay baler).

[35] *See* Ryan v. KDI Sylvan Pools, Inc., 579 A.2d 1241, 1243–44 (N.J. 1990) (pool depth standards).

[36] *See* McNeal v. Hi–Lo Powered Scaffolding, Inc., 836 F.2d 637, 642–43 (D.C. Cir. 1988) (standards for scaffolding clips).

[37] *See* Baier v. Bostitch, 611 N.E.2d 1103, 1108 (Ill. App. Ct. 1993) (contact trip on nailer should prevent tool from discharging under its own weight).

[38] *See* Potter v. Chicago Pneumatic Tool Co., 694 A.2d 1319 (Conn. 1997) (vibration limits for tools). These and other standards–setting organizations are described in 6 FRUMER & FRIEDMAN, PRODUCTS LIABILITY, *supra* note 26, §§ 76.01 & 76.03.

[39] *See, e.g.*, Fayerweather v. Menard, Inc., No. 01–2414, 2003 WL 238788, at *2 (Wis. Ct. App. Feb. 11, 2003) (ANSI's ladder committee membership comprised of one–third industry, one–third users, and one–third chosen from CPSC, OSHA, labor organizations, and "outside specialists").

[40] *See* Del Cid v. Beloit Corp., 901 F. Supp. 539, 545 (E.D.N.Y. 1995), *aff'd*, No. 96–7009, 1996 U.S. App. LEXIS 15842 (2d Cir. July 24, 1996) ("ANSI standards are relied upon by the manufacturers of machinery and by experts in various fields to conduct evaluations of the safety of machinery and processes.") (citation omitted).

[41] However, because some standards–setting groups are comprised of members outside the industry, and because their standards are voluntary guidelines of minimum safety, they are not to be equated with "industry custom." *See Fayerweather*, 2003 WL

A great majority of courts allow use of relevant evidence of industry custom.[42] To be relevant, normally a standard must have existed at the time the defendant manufactured the product[43] and must otherwise be germane to the particular characteristic of the specific type of product involved in the dispute.[44] For example, to prove a design defect, a plaintiff may introduce evidence that a defendant–manufacturer failed to comply with an applicable industry standard for the design of a speed control mechanism of an asphalt paver,[45] a grader back–up alarm that was not tamper–proof,[46] power tools that vibrated excessively,[47] aircraft actuators that could mistakenly be installed backwards,[48] or the guarding of pinch points on industrial machinery.[49] Similarly, in seeking to prove a warning is defective, a plaintiff may demonstrate that the warning is inadequate for failing to comply with industry standards concerning, for example, the risk that a crane operator might be shocked if the crane were to hit electrical wires,[50] that a kitchen cleaning chemical might cause severe burns,[51] or that a winch should use a safety–latched hook.[52]

238788, at *3 (because two–thirds of ANSI ladder standards committee members came from outside the industry, "the standards are not evidence of 'custom and usage' within an industry as contemplated" by standard jury instructions, so that court's failure to give it was not error).

[42] *See* 3 FRUMER & FRIEDMAN, PRODUCTS LIABILITY, *supra* note 26, § 18.04 [1]. Industry "custom," meaning prevailing use of technology, differs from the higher standard of "state of the art," meaning the best technology reasonably available at the time. *See* OWEN, PRODUCTS LIABILITY LAW, *supra* note 2, §§ 2.4 & 10.4.

[43] *See, e.g.*, Hutchison v. Urschel Labs., Inc., 157 F.3d 613, 615 (8th Cir. 1998) (Mo. law); Bottignoli v. Ariens Co., 560 A.2d 1261, 1266 (N.J. Super. Ct. App. Div. 1989).

[44] *See, e.g.*, Chapman v. Bernard's Inc., 167 F. Supp. 2d 406, 422–23 (D. Mass. 2001) (industry standards that plaintiff sought to use as evidence pertained to cribs, toddler beds, and bunk beds, not daybeds like the one causing baby's death when he slipped between its mattress and side rail).

[45] *See* Alfred v. Caterpillar, Inc., 262 F.3d 1083 (10th Cir. 2001) (Okla. law) (Society of Automotive Engineers ("SAE") standards called for control to be a lever rather than a rotary dial; operator backed up, pinning plaintiff to tree, rather than proceeding forward as intended).

[46] *See* Bohnstedt v. Robscon Leasing, LLC, 993 P.2d 135 (Okla. Civ. App. 1999).

[47] *See* Potter v. Chicago Pneumatic Tool Co., 694 A.2d 1319 (Conn. 1997).

[48] *See* Nesselrode v. Executive Beechcraft, Inc., 707 S.W.2d 371 (Mo. 1986).

[49] *See, e.g.*, Masters v. Hesston Corp., 291 F.3d 985, 991 (7th Cir. 2002) (Ill. law) (hay baler); Del Cid v. Beloit Corp., 901 F. Supp. 539, 545 (E.D.N.Y. 1995) (plastic–injection molding machine), *aff'd*, No. 96–7009, 1996 U.S. App. LEXIS 15842 (2d Cir. July 24, 1996).

[50] *See* Evanoff v. Grove Mfg. Co., 650 N.E.2d 914, 919 (Ohio Ct. App. 1994).

[51] *See* Westley v. Ecolab, Inc., No. Civ. A.03–CV–1372, 2004 WL 1068805, at *1 (E.D. Pa. May 12, 2004).

[52] *See* Beneway v. Superwinch, Inc., 216 F. Supp. 2d 24, 30 (N.D.N.Y. 2002).

By the same token, a manufacturer seeking to establish that its product's design is *not* defective[53] may show that its product complied with industry standards regarding, for example, a stepladder,[54] a chair,[55] the fuel system of a pickup truck,[56] the protective guard of a log skidder[57] or a grinder.[58] To refute a defective warnings claim, the manufacturer may present evidence that it adequately complied with industry standards for warnings and instructions for its product, such as a hot water heater[59] or a trampoline.[60] A manufacturer may also utilize compliance with industry customs to prove that its product was free of manufacturing defects.[61]

A great majority of jurisdictions maintain that a manufacturer's compliance or noncompliance with industry custom is some evidence that the

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[53] PRODUCTS LIABILITY RESTATEMENT § 2(b) cmt. d (2004) explains the relevance of industry custom to the feasibility requirement of design defect determinations:

> This Section states that a design is defective if the product could have been made safer by the adoption of a reasonable alternative design. If such a design could have been practically adopted at time of sale and if the omission of such a design rendered the product not reasonably safe, the plaintiff establishes defect under Subsection (b). When a defendant demonstrates that its product design was the safest in use at the time of sale, it may be difficult for the plaintiff to prove that an alternative design could have been practically adopted. The defendant is thus allowed to introduce evidence with regard to industry practice that bears on whether an alternative design was practicable. Industry practice may also be relevant to whether the omission of an alternative design rendered the product not reasonably safe. While such evidence is admissible, it is not necessarily dispositive. If the plaintiff introduces expert testimony to establish that a reasonable alternative design could practically have been adopted, a trier of fact may conclude that the product was defective notwithstanding that such a design was not adopted by any manufacturer, or even considered for commercial use, at the time of sale.

Id.

[54] *See* DiCarlo v. Keller Ladders, Inc., 211 F.3d 465, 468 (8th Cir. 2000) (Mo. law) (ANSI standards; affirming judgment on verdict for manufacturer).

[55] *See* Delery v. Prudential Ins. Co. of Am., 643 So. 2d 807, 813 (La. Ct. App. 1994) (ANSI standards).

[56] *See* Ake v. Gen. Motors Corp., 942 F. Supp. 869, 874 (W.D.N.Y. 1996) (Federal Motor Vehicle Safety Standards for frontal crash barrier).

[57] *See* Westfall v. Caterpillar, Inc., 821 P.2d 973, 976 (Idaho 1991).

[58] *See* Clarke v. LR Sys., 219 F. Supp. 2d 323, 334 (E.D.N.Y. 2002) (ANSI guarding standard for grinders).

[59] *See* Moore v. Miss. Valley Gas Co., 863 So. 2d 43, 46 (Miss. 2003) (American Gas Association and ANSI standards for scald warnings).

[60] *See* Anderson v. Hedstrom Corp., 76 F. Supp. 2d 422, 450 (S.D.N.Y. 1999) (discussing ASTM standards' relevance in deciding motion for summary judgement); Ford v. Naim, 717 N.E.2d 525, 530 (Ill. App. Ct. 1999) (ASTM Standard F381–84; affirming summary judgment for defendant).

[61] *See, e.g.*, Emody v. Medtronic, Inc., 238 F. Supp. 2d 1291, 1294 (N.D. Ala. 2003) (holding that "rod [in spinal fusion device] met ASTM standards for chemistry, hardness, and for microstructure").

product was or was not defective.[62] Occasionally, courts give such evidence somewhat greater weight.[63] A few state products liability reform statutes address the topic. At least one provides that evidence of industry custom and nongovernmental standards is admissible,[64] while another accords a presumption of *non*–defectiveness to products that "conformed to the generally recognized and prevailing standards."[65] However, a small number of courts altogether refused to allow evidence of industry custom on the issue of product defect in strict liability cases. These courts reason that evidence of the manufacturers' customary behavior with respect to safety issues improperly injects into a strict liability case issues of conduct and due care that are irrelevant to the legal standard of product defectiveness.[66] Finally, borrowing from

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[62] *Compare* Alfred v. Caterpillar, Inc., 262 F.3d 1083, 1088 (10th Cir. 2001) (Okla. law), *with* WASH. REV. CODE ANN. § 7.72.050 (West 2004); *Emody*, 238 F. Supp. 2d at 1294; Ake v. Gen. Motors Corp., 942 F. Supp. 869, 874 (W.D.N.Y. 1996). *See also* Hobson v. Waggoner Eng'g, Inc., No. 2001–CA–00908–COA, 2003 WL 21789396, at *12 (Miss. Ct. App. Aug. 5, 2003) (affirming summary judgment for defendant where plaintiff offered no evidence of industry standards, customs, or expert testimony as to availability of safer alternative design).

[63] *See, e.g.*, Jordan v. Massey–Ferguson, Inc., No. 95–5861, 1996 WL 662874, at *2 (6th Cir. Nov. 12, 1996) (Ky. law) ("[A] manufacturer rarely 'will be held liable for failing to do what no one in his position has ever done before.'" (quoting W. PROSSER, HANDBOOK OF THE LAW OF TORTS § 33, at 167 (4th ed. 1971))); Del Cid v. Beloit Corp., 901 F. Supp. 539, 545–49 (E.D.N.Y. 1995), *aff'd*, No. 96–7009, 1996 U.S. App. LEXIS 15842 (2d Cir. July 24, 1996); Mears v. Gen. Motors Corp., 896 F. Supp. 548, 551 (E.D. Va. 1995) (noting that while compliance with industry practices does not conclusively establish product's safety, manufacturer will seldom be liable for failing to adopt safety measures no other member of industry employs); *see also* PRODUCTS LIABILITY RESTATEMENT § 2(b) cmt. d (2004) ("When a defendant demonstrates that its product design was the safest in use at the time of sale, it may be difficult for the plaintiff to prove that an alternative design [required for a finding of design defect] could have been practically adopted."); Vermett v. Fred Christen & Sons Co., 741 N.E.2d 954, 971 (Ohio Ct. App. 2000) ("compliance with ANSI is a compelling factor").

[64] *See* WASH. REV. CODE ANN. § 7.72.050(1) (West 2004) (stating that trier of fact may consider such evidence with respect to design, warnings, or manufacturing defects).

[65] *See* KY. REV. STAT. ANN. § 411.310(2) (Banks–Baldwin 2004) ("[I]t shall be presumed, until rebutted by a preponderance of the evidence to the contrary, that the product was not defective if the design, methods of manufacture, and testing conformed to the generally recognized and prevailing standards or the state of the art in existence at the time the design was prepared, and the product was manufactured.").

[66] *See, e.g.*, Rexrode v. Am. Laundry Press Co., 674 F.2d 826, 831–32 (10th Cir. 1982) (Kan. law); Grimshaw v. Ford Motor Co., 174 Cal. Rptr. 348, 378 (Ct. App. 1981) ("In a strict products liability case, industry custom or usage is irrelevant to the issue of defect."); Lay v. P & G Health Care, Inc., 37 S.W.3d 310, 332 (Mo. Ct. App. 2000); Lewis v. Coffing Hoist Div., Duff–Norton Co., 528 A.2d 590, 594 (Pa. 1987) (holding that evidence of customary design of control box for hoist not admissible in strict products liability action because such evidence introduces concepts of negligence, focuses on manufacturer's conduct rather than condition of product, and distracts jury; concurring judge, *id.* at 595, remarked that "a manufacturer cannot avoid liability to its

negligence law's *T.J. Hooper* rule,[67] courts in strict liability cases almost universally maintain that evidence of a defendant's compliance[68] or noncompliance[69] with industry safety standards does not conclusively establish whether a product is defective.[70] Yet, in unusual cases, proof of a defendant's compliance[71] or noncompliance[72] may conceivably be a proper basis for a dispositive determination of a product's defectiveness.

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consumers that it injures or maims through its defective designs by showing that 'the other guys do it too.'").

New York cannot make up its mind. *Compare* Jemmott v. Rockwell Mfg. Co., 628 N.Y.S.2d 184, 185 (App. Div. 1995) (stating that ANSI standards are inadmissible in strict liability claims), *with* Anderson v. Hedstrom Corp., 76 F. Supp. 2d 422, 450 (S.D.N.Y. 1999) (admissible); *Ake*, 942 F. Supp. at 874 (W.D.N.Y. 1996) (same).

[67] *See* The T.J. Hooper v. N. Barge Co., 60 F.2d 737, 740 (2d Cir. 1932) (discussed in OWEN, PRODUCTS LIABILITY LAW, *supra* note 2, § 2.4).

[68] *See, e.g.*, Clarke v. LR Sys., 219 F. Supp. 2d 323, 334 (E.D.N.Y. 2002) (stating that, because compliance with ANSI standard was not dispositive of design defect issue, other evidence on design and safety of machine may be considered); Brooks v. Beech Aircraft Corp., 902 P.2d 54, 64 (N.M. 1995) ("[I]n assessing whether a manufacturer was negligent in adopting a particular product design or whether the product design poses an unreasonable risk of injury, a court should not be restricted to determining whether the manufacturer's design complied with any applicable government regulations and industry standards. Such regulations and standards, while probative of what a reasonably prudent manufacturer would do, should not be conclusive.").

[69] *See, e.g.*, Alfred v. Caterpillar, Inc., 262 F.3d 1083, 1088 (10th Cir. 2001) (Okla. law); Poches v. J.J. Newberry Co., 549 F.2d 1166, 1168 (8th Cir. 1977) (S.D. law).

[70] *See, e.g.*, Del Cid v. Beloit Corp., 901 F. Supp. 539, 545 (E.D.N.Y. 1995) ("Compliance or lack of compliance with industry standards . . . is not dispositive of the issue of a design defect and other evidence concerning the design and safety of the machine may be considered.") (citations omitted), *aff'd*, No. 96–7009, 1996 U.S. App. LEXIS 15842 (2d Cir. July 24, 1996); Allen v. Long Mfg. NC, Inc., 505 S.E.2d 354, 358 (S.C. Ct. App. 1998) (suggesting that compliance with an industry safety standard conclusively establishes product's non–defectiveness is "unsound since it would allow the industry to set its own standard of safety, a proposition which finds no support from other jurisdictions, and which is antithetical to the underlying premise of strict liability"). *See generally* 3 FRUMER & FRIEDMAN, PRODUCTS LIABILITY, *supra* note 26, § 18.04[1].

[71] *See* Wilder v. Toyota Motor Sales, U.S.A., Inc., 23 Fed. App. 155, 157 (4th Cir. 2001) (Va. law) ("While conformity with industry custom does not absolve a manufacturer or seller of a product from liability, such compliance may be conclusive when there is no evidence to show that the product was not reasonably safe.").

[72] *See generally* James A. Henderson & Aaron D. Twerski, *Achieving Consensus on Defective Product Design*, 83 CORNELL L. REV. 867 (1998) (arguing that a defendant's violation of a clear industry standard should be conclusive proof of a product's defectiveness).

B. *Governmental Standards and the Doctrine of Defectiveness Per Se*

1. *Violation*

The effect of a manufacturer's violation of a safety statute or regulation on the issue of negligence in a products liability case is controlled by the doctrine of negligence per se. This doctrine states that a defendant's breach of an applicable statute or regulation—one addressing the type of risk that harmed the plaintiff or a person in a similar position to the plaintiff—is at least evidence (and possibly conclusive) of the negligence issue.[73] The question examined here is whether the law recognizes an equivalent method of proving product defectiveness for purposes of strict products liability in tort, a doctrine that might be labeled "defectiveness per se."[74]

It is useful to remember that a finding of product defectiveness is typically a kind of "lesser included offense" in a negligence determination, since the latter normally requires a conclusion that the defendant negligently made or sold a defective product.[75] In other words, a finding of negligence (whether by normal proof or negligence per se) usually implies a finding of defectiveness. So, if a plaintiff establishes negligence per se, logically the plaintiff has also demonstrated that the product was defective.[76] This is the premise of the *Restatement (Third) of Torts: Products Liability ("Restatement")*, which sets out a defectiveness per se principle in terms of traditional negligence per se.[77] Section 4(a) of the *Restatement* provides that "a product's noncompliance with an applicable product safety statute or administrative regulation renders the

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[73] *See generally* OWEN, PRODUCTS LIABILITY LAW, *supra* note 2, § 2.4.

[74] *See* RESTATEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY § 4(a) (2004); 1 AM. LAW PROD. LIAB., *supra* note 26, § 12:10–38; 2 FRUMER & FRIEDMAN, PRODUCTS LIABILITY, *supra* note 26, § 10.03; 5 FRUMER & FRIEDMAN, PRODUCTS LIABILITY, *supra* note 26, § 55.02[3]; MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 26, § 27.7; *see generally* Christopher Scott D'Angelo, *Effect Of Compliance With Applicable Governmental Product Safety Regulations On A Determination Of Product Defect*, 36 S. TEX. L. REV. 453 (1995); Malcolm E. Wheeler, *The Use of Criminal Statutes to Regulate Product Safety*, 13 J. LEGAL STUD. 593 (1984); Joseph H. Ballway, Jr., Note, *Products Liability Based Upon Violation of Statutory Standards*, 64 MICH. L. REV. 1388 (1966).

[75] This is especially true with defendant manufacturers. Other types of negligence claims that are much less common include negligent misrepresentation and negligent entrustment. *See* OWEN, PRODUCTS LIABILITY LAW, *supra* note 2, §§ 2.2, 5.9, & 15.2.

[76] *See* Elsworth v. Beech Aircraft Corp., 691 P.2d 630, 632 (Cal. 1984) (applying negligence per se doctrine to find defective design).

[77] The formulation is traditional except that it conflates the conventional two-pronged test—protecting (1) persons like plaintiff from (2) risks that caused harm—into a single scope-of-risk prong.

product defective with respect to the risks sought to be reduced by the statute or regulation."[78] Acknowledging that the rule derives from the doctrine of negligence per se,[79] the *Restatement* extends the principle to products liability theories, whether based on strict liability or traditional negligence.[80]

a. Rationale

While a doctrine of defectiveness per se might appear logically embedded in the concept of negligence per se, the underlying rationale of *any* type of per se liability for breach of statute is unclear. Negligence per se itself has always been theoretically suspect,[81] and it is uncertain why a statutory or regulatory violation should establish a product defect. The idea may be that governmental product safety standards necessarily rest on implicit determinations of product defectiveness by taking into account consumer expectations and the costs and benefits of alternative safety approaches. Or perhaps the notion is that consumers can reasonably expect manufacturers to obey the law, but they cannot reasonably expect more.[82] Rationales like these seem rather contrived. The *Restatement*'s purported policy explanation for the rule is tautological,[83] which may reflect the fact that most courts that have applied the per se principle to defectiveness in strict liability have borrowed this approach from negligence law without critical consideration.[84] Case law on the issue is sparse, and the few courts that

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[78] RESTATEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY § 4(a).

[79] *See id.* Reporters' Note to cmt. d.

[80] Treating products liability doctrine broadly, without regard to distinctions between the traditional claims (negligence, implied warranty, and strict liability in tort), his consistent with the Third Restatement's "functional" approach to products liability which seeks to transcend the different causes of action, melding them into simple products liability claims. *See id.* §§ 1–4.

[81] *See, e.g.*, PROSSER & KEETON ON THE LAW OF TORTS § 36, at 220–22 (W. Page Keeton et al. eds., 1984).

[82] *See* Soproni v. Polygon Apartment Partners, 971 P.2d 500, 505–06 (Wash. 1999) (en banc) ("Whether or not a product was in compliance with legislative or administrative regulatory standards is merely relevant evidence that may be considered by the trier of fact [together with the availability of feasible alternative designs, in determining] if the product was unsafe to an extent beyond that which would be expected by an ordinary consumer."); *see also* Eriksen v. Mobay Corp., 41 P.3d 488, 494 (Wash. Ct. App. 2002) (stating that customers expect designs to comply with legislative regulations).

[83] "The rule in [§ 4(a)] is based on the policy judgment that designs and warnings that fail to comply with applicable safety standards established by statute or regulations are . . . defective." RESTATEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY § 4 cmt. d.

[84] The courts are not alone in assuming that the per se principle for breach of statute may be transferred from negligence law to strict products liability. *See, e.g.*, Robert L. Rabin, *Reassessing Regulatory Compliance*, 88 GEO. L.J. 2049, 2051 (2000) ("If, in fact,

apply the doctrine are often federal courts sitting in diversity, sometimes drawing support dubiously from one another.[85] In short, the doctrine of defectiveness per se balances on a slender reed. But a couple of state statutes,[86] a handful of scattered opinions,[87] and the *Restatement* do support this method of proving a product defect. For whatever reason, in the final analysis a product's failure to meet minimal government safety rules does seem somehow relevant, perhaps very relevant, to a defectiveness determination.[88]

b. Relevance

To be admissible in a product defect dispute, evidence of a statutory violation must be *relevant* to that issue, which is another way of stating that the plaintiff must have been injured by the risk the statute sought to prevent.[89] Probably the most contentious issue on the question of relevancy concerns OSHA regulations that govern the guarding of machinery and many other workplace safety matters.[90] OSHA's machinery–guarding regulations are directed solely at *employers* rather than manufacturers, which renders such regulations immensely suspect in the halls of relevance.[91] Even so, both plaintiffs and defendants may

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a regulation is taken to set a minimum standard of safety, a violation can surely be taken to import responsibility as a matter of law.").

[85] *See id.*

[86] *See* COLO. REV. STAT. ANN. § 13-21-403(2) (West 2004) (violation creates a rebuttable presumption of defectiveness); KAN. STAT. ANN. § 60-3304(b) (2004) (violation renders product defective unless manufacturer establishes that violation was appropriate).

[87] *See, e.g.*, Stanton v. Astra Pharm. Prods., Inc., 718 F.2d 553 (3d Cir. 1983) (Pa. law) (holding that manufacturer of Xylocaine anesthetic was negligent per se for failing to file adverse reaction reports required by FDA regulation; violation also rendered drug defective under § 402A since FDA was unable to assure that warnings of adverse reactions were disseminated to doctors); Lukaszewicz v. Ortho Pharm. Corp., 510 F. Supp. 961 (E.D. Wis. 1981), *amended by* 532 F. Supp. 211 (E.D. Wis. 1981) (holding that manufacturer of Ortho–Novum birth control pills was negligent per se and liable under § 402A for failure to warn user directly of side effects pursuant to FDA regulation).

[88] "Indeed, it seems anomalous to accord such a standard of conduct, promulgated by the community through its elected representatives, anything less than the force of law . . . in the context of a civil suit." Ballway, *supra* note 74, at 1391.

[89] *See, e.g.*, Hagan v. Gemstate Mfg., Inc., 982 P.2d 1108, 1112 (Or. 1999) (requiring, in a trailer–accident case the lower courts look to a regulation's purpose when determining relevance).

[90] *See* 3 FRUMER & FRIEDMAN, PRODUCTS LIABILITY, *supra* note 26, § 18.05[3].

[91] *See, e.g.*, Gray v. Navistar Int'l Corp., 630 N.Y.S.2d 596, 598 (App. Div. 1995) (truck not equipped with back–up beeping device; OSHA standards inadmissible); Jemmott v. Rockwell Mfg. Co., 628 N.Y.S.2d 184 (App. Div. 1995) (finding OSHA standards regarding press guarding inadmissible).

seek to have such standards admitted into evidence in a products liability case.[92] Quite naturally, a plaintiff will want to demonstrate that the manufacturer failed to adopt the pertinent OSHA standard. Machine-guarding and most other OSHA safety regulations are not directed at manufacturers,[93] so that their breach by employers cannot establish a manufacturer's liability per se. However, such standards may prescribe the types of safety devices a federal workplace safety agency deems necessary for the safety of particular machinery and thus help define the standard of acceptable safety practices—the prevailing custom—in the industry of machinery manufacturers.[94] Therefore, while plaintiffs sometimes introduce evidence of OSHA standards, manufacturers will do so as well.[95] Arguing that it cannot violate a safety regulation that applies only to employers, a manufacturer of industrial machinery may seek to use such a regulation to inform the jury (if indirectly) of two important points: 1) that the employer, which is not a party in a products liability action,[96] was primarily responsible for the accident because it owed and breached a duty under federal law to protect the worker;[97] and

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[92] *See, e.g.*, Hannah v. Gregg, Bland & Berry, Inc., 840 So. 2d 839 (Ala. 2002) (OSHA standards admissible to show that defendant, who reconfigured machinery, should have noticed that absence of barrier guard was safety hazard); Couch v. Astec Indus., 53 P.3d 398, 403–04 (N.M. 2002) (OSHA standards admissible as custom).

[93] Note that other OSHA regulations, such as the OSHA Hazard Communication Standard, 29 C.F.R. § 1910.1200(g)(6)(i) (2004), requiring manufacturers and importers of chemicals to supply purchasers with Material Safety Data Sheets, are indeed directed at employers. *See, e.g.*, Messer v. Amway Corp., 210 F. Supp. 2d 1217, 1230 (D. Kan. 2002), *aff'd*, 2004 U.S. App. LEXIS 16445 (10th Cir. 2004).

[94] *See, e.g.*, *Couch*, 53 P.3d at 403–04 (admitting OSHA standards as evidence of custom); *Hannah*, 840 So. 2d at 849 (admitting OSHA standards to show that defendant, who reconfigured machinery, should have noticed that absence of barrier guard was safety hazard). *See generally* DAN B. DOBBS, THE LAW OF TORTS § 133, at 313 (2000). *But cf.* 29 U.S.C. § 653(b)(4), (providing that the OSHA statute does not affect the common law "rights, duties, or liabilities of employers and employees").

[95] *See, e.g.*, Sims v. Washex Mach. Corp., 932 S.W.2d 559, 565 (Tex. Ct. App. 1995) (stating that machine's compliance with OSHA regulations was "strong evidence" that it was not defective); Slisze v. Stanley–Bostitch, 979 P.2d 317, 321 (Utah 1999) (allowing introduction of OSHA standards to establish rebuttable presumption of nondefectiveness).

[96] Workers' compensation statutes protect employers from tort suits by employees in exchange for providing workers compensation insurance benefits. *See* OWEN, PRODUCTS LIABILITY LAW, *supra* note 2, § 15.6.

[97] *See, e.g.*, Brodsky v. Mile High Equip. Co., 69 Fed. App. 53, 56–57 (3d Cir. 2003) (Pa. law) (admitting evidence that OSHA imposed fines upon decedent's employer for failing to properly train employee to show that employer's intervening negligence was a superseding cause of employee's death); Porchia v. Design Equip. Co., 113 F.3d 877, 881 (8th Cir. 1997) (Ark. law) (admitting this information to help determine whether employer's actions were the sole proximate cause of injury). *But see* Colegrove v.

2) that the injured worker is already being compensated by workers' compensation benefits and thus will not be left destitute if the jury finds the product not defective. Deciding how best to mesh workers' compensation and products liability law is an exceedingly complex issue.[98] Clearly, however, violations of OSHA regulations applicable only to employers simply cannot establish product defectiveness per se.[99] While some courts bar the admission of such evidence as irrelevant[100] or confusing,[101] others allow it against manufacturers to portray the environment in which industrial machines are sold and used.[102]

c. Application

Most strict liability in tort cases concerning noncompliance with safety statutes and regulations involve alleged defects in a product's warnings[103] or design.[104] The *Restatement* limits the per se principle to

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Cameron Mach. Co., 172 F. Supp. 2d 611, 617–18 (W.D. Pa. 2001) (irrelevant and inadmissible).

[98] See OWEN, PRODUCTS LIABILITY LAW, *supra* note 2, § 15.6.

[99] *See, e.g.*, Jemmott v. Rockwell Mfg. Co., 628 N.Y.S.2d 184, 185 (App. Div. 1995) (OSHA press guarding standards inadmissible).

[100] *See, e.g.*, *Colegrove*, 172 F. Supp. 2d at 617–18.

[101] *See, e.g.*, Byrne v. Liquid Asphalt Sys., Inc., 238 F. Supp. 2d 491, 493 (E.D.N.Y. 2002) (refusing to admit OSHA standards, which are not intended to impose duties upon manufacturers, because they would likely mislead or confuse jury).

[102] *See, e.g.*, Messer v. Amway Corp., 210 F. Supp. 2d 1217, 1230 (D. Kan. 2002); Couch v. Astec Indus., Inc., 53 P.3d 398, 403–04 (N.M. Ct. App. 2002); Hagan v. Gemstate Mfg., Inc., 982 P.2d 1108, 1113 (Or. 1999). For a discussion of a manufacturer's use of OSHA standards against plaintiffs, see OWEN, PRODUCTS LIABILITY LAW, *supra* note 2, § 14.3.

[103] *See, e.g.*, Stanton v. Astra Pharm. Prods., Inc., 718 F.2d 553, 565 (3d Cir. 1983) (Pa. law) (holding that manufacturer of Xylocaine anesthetic was properly found liable under § 402A for failing to file adverse reaction reports required by FDA regulation, since FDA was unable to assure that warnings of adverse reactions were disseminated to doctors); Lukaszewicz v. Ortho Pharm. Corp., 510 F. Supp. 961 (E.D. Wis.) (finding a manufacturer of Ortho–Novum birth control pills negligent per se, and liable under § 402A, for failure to warn user directly of side effects pursuant to FDA regulation, 21 CFR § 310.501), *amended by* 532 F. Supp. 211 (E.D. Wis. 1981); Toole v. Richardson–Merrell Inc., 60 Cal. Rptr. 398, 409 (Ct. App. 1967) (same result with drug MER/29).

[104] *See, e.g.*, Ellis v. K–Lan Co., 695 F.2d 157, 161–62 & n.5 (5th Cir. 1983) (Tex. law) (dictum) (discussing whether drain–cleaner cap design complied with or violated Special Packaging of Household Substances for Protection of Children Act, 15 U.S.C. §§ 1471–76, and regulations thereunder; such evidence was admissible but not conclusive on design defectiveness); Bennett v. PRC Pub. Sector, Inc., 931 F. Supp. 484, 501 (S.D. Tex. 1996) (discussing NIOSH standards for design of work station that caused repetitive motion injury); McGee v. Cessna Aircraft Co., 188 Cal. Rptr. 542, 547 (Ct. App. 1983) (finding that aircraft firewalls between engine and passenger compartment failed to meet FAA requirement that they resist flame penetration for at least fifteen minutes); Brooks v.

these types of cases, [105] but a safety statute or regulation may pertain to manufacturing defects as well. For example, a regulation may prescribe the maximum level of contamination or flaws allowable in products (such as food,[106] drugs,[107] or lumber[108]) or the appropriate manufacturing processes for medical materials.[109] In this context, the *Restatement's* per se principle would seem to apply with equal force and logic.

d. Restatement

The *Restatement* provides that a products liability defendant generally may not avail itself of the array of excuses and justifications for violating a statute or regulation allowed in ordinary negligence law,[110] reasoning that excuses are not applicable where a manufacturer has occasion to know the facts and safety standards and has time to conform its behavior to the standard's provisions.[111] It is true that valid justifications for violating safety statutes and regulations will arise less frequently in the products liability context than in ordinary negligence contexts, where emergencies and reasonable mistakes more commonly occur without notice of clear safety standards. But case authority for the *Restatement's* dual position is ephemeral, to say the least,[112] and courts might well be leery of adopting a truly "strict" form of liability for

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Beech Aircraft Corp., 902 P.2d 54, 64 (N.M. 1995) (arguing that absence of shoulder harnesses in private airplane rendered it uncrashworthy); Hall v. Fairmont Homes, Inc., 664 N.E.2d 546, 556 (Ohio Ct. App. 1995) (discussing whether levels of formaldehyde fumes emitted by mobile home construction materials exceeded HUD regulations).

[105] *See* discussion *supra* notes 77–80 and accompanying text.

[106] *See* Coffer v. Standard Brands, Inc., 226 S.E.2d 534, 538 (N.C. Ct. App. 1976) (examining case where plaintiff injured teeth biting down on unshelled nut in bottle of shelled nuts; statute and regulation allowing 1.00% to 2.50% unshelled peanuts per unit of shelled peanuts).

[107] *See* St. Louis Univ. v. United States, 182 F. Supp. 2d 494, 498 (D. Md. 2002) (holding that polio vaccine did not meet federal "neurovirulence" standards).

[108] *See* Holder v. Keller Indus., No. 05–97–01168–CV, 2000 WL 141070 (Tex. Ct. App. Feb. 9, 2000) (suggesting that low density wood may have violated ANSI standards).

[109] *See* Reiter v. Zimmer Inc., 897 F. Supp. 154 (S.D.N.Y. 1995) (discussing how blending times for loads of prosthesis implant cement met FDA "good manufacturing processes").

[110] *See* PRODUCTS LIABILITY RESTATEMENT § 4(a) cmt. d (2004).

[111] *Id.*

[112] *See* D'Angelo, *supra* note 74, at 469 (asserting that only one state, Alaska, accords such violations conclusive effect). The Reporters cite another Alaska case, *Bachner v. Rich*, 554 P.2d 430 (Alaska 1976), but *Bachner* was a workplace safety action against a contractor in which the court acknowledged the general availability of excuses to negligence per se, but found them inapplicable to the facts.

design and warnings cases without allowing truly justifiable violations of statutory and regulatory safety standards.[113]

Jurisdictions vary in the weight given to a finding of noncompliance with a governmental safety standard. Most of the few opinions on point treat the violation of a safety standard as evidence of a product's defectiveness.[114] In a few states, such a violation gives rise to a presumption of defectiveness that may shift the burden of proof.[115] At least one court holds that breach of such a provision conclusively establishes that the product is defective,[116] a position endorsed by the

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[113] *Cf.* St. Louis Univ. v. United States, 182 F. Supp. 2d 494 (D. Md. 2002) (noting that some of nation's best scientists, employed by NIH to enforce polio vaccine "neurovirulence" standards, approved a vaccine that did not comply with those standards because they believed the standards, subsequently abolished, were unreasonably high).

[114] *See, e.g.*, Redman v. John D. Brush & Co., 111 F.3d 1174, 1177–78 (4th Cir. 1997) (Va. law) (stating, in dictum, that courts should consider whether a product's design meets relevant standards); Ellis v. K–Lan Co., 695 F.2d 157, 161 (5th Cir. 1983) (Tex. law) (discussing federal child–packaging rules for household substances); (violation or compliance with federal child–packaging rules for household substances; "while plainly relevant, would not have been conclusive of its product's defectiveness or fitness"); *see also* WASH. REV. CODE ANN. § 7.72.050(1) (West 2004); Gibson v. Wal–Mart Stores, Inc., 189 F. Supp. 2d 443, 447 (W.D. Va. 2002) (finding no violation of relevant federal regulations governing packaging of charcoal lighter fluid: "[I]n determining what constitutes an unreasonably dangerous defect, a court will consider safety standards promulgated by the government or the relevant industry, as well as the reasonable expectations of consumers.") (quoting Alevromagiros v. Hechinger Co., 993 F.2d 417, 420 (4th Cir. 1993)); Bennett v. PRC Public Sector, Inc., 931 F. Supp. 484, 501 (S.D. Tex. 1996) (holding that government standards are relevant to, but not conclusive of, worker's claim that workstation was defectively designed); Quay v. Crawford, 788 So. 2d 76, 84 (Miss. Ct. App. 2001) (discussing a federal trucking regulation requiring effective rear–underride guard); Hall v. Fairmont Homes, 664 N.E.2d 546, 551 (Ohio Ct. App. 1995) (finding that formaldehyde emissions from materials used in mobile home exceeded HUD standards).

[115] *See, e.g.*, COLO. REV. STAT. ANN. § 13-21-403(2) (West 2004) (rebuttable presumption); KAN. STAT. ANN. § 60-3304(b) (2003) (deeming product defective unless manufacturer shows that violation was reasonably prudent action); McGee v. Cessna Aircraft Co., 188 Cal. Rptr. 542, 457 (Ct. App. 1983) (discussing the FAA specification that aircraft firewalls between engine and passenger compartment resist flame penetration for at least fifteen minutes). *See also* OWEN, PRODUCTS LIABILITY LAW, *supra* note 2, § 14.3 (discussing the rebuttable presumption approach in the context of the regulatory compliance defense).

[116] *See* Stanton v. Astra Pharm. Prods., Inc., 718 F.2d 553, 569–71 (3d Cir. 1983) (Pa. law) (finding manufacturer of Xylocaine anesthetic failed to file adverse reaction reports required by FDA regulation rendering drug defective under § 402A, since FDA was unable to assure that warnings of adverse reactions were disseminated to doctors).

Restatement,[117] which parallels what was thought to be the conventional rule in negligence per se.[118]

In sum, the putative doctrine of "defectiveness per se" is undeveloped and ethereal. To the extent that this doctrine does exist, the cases suggest that a defendant's noncompliance with an applicable safety statute or regulation may be considered evidence, though not dispositive, of a product's defectiveness.

2. *Compliance*

The rule regarding a manufacturer's compliance with governmental safety standards largely mimics the rule regarding violations: compliance with a safety standard is widely considered proper, but inconclusive, evidence of a product's *non*–defectiveness.[119] Notwithstanding such compliance, a jury normally is free to find a warning or design "defective" because governmental safety requirements generally are set at minimally acceptable levels.[120] Section 4(b) of the *Restatement* is in

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[117] *See* PRODUCTS LIABILITY RESTATEMENT § 4(a) (2004).

[118] *See* OWEN, PRODUCTS LIABILITY LAW, *supra* note 2, § 2.4. Most assertions to this effect draw their support from other sources from the 1940s, 1930s, or earlier. Research has uncovered no recent jurisdictional tally.

[119] *See, e.g.*, Clark v. Chrysler Corp., 310 F.3d 461, 473–74 (6th Cir. 2002), *vacated and remanded on other grounds*, 157 L. Ed. 2d 12 (2003) (Ky. law) (holding that compliance with door latch test did not exempt defendant from liability); Quintana–Ruiz v. Hyundai Motor Corp., 303 F.3d 62, 74 (1st Cir. 2002) (P.R. law) ("States may impose liability under their products liability statutes even if the manufacturer or seller meets the minimum federal standards.") (quoting Rivera–Santana, 1992 P.R.–Eng. 754830, 1992 WL 754830 D.P.R. Dec. 9, 1992); Moss v. Parks Corp., 985 F.2d 736, 741 (4th Cir. 1993) (CPSC labeling regulations for paint thinner, under Federal Hazardous Substances Act); O'Gilvie v. Int'l Playtex, Inc., 821 F.2d 1438, 1443 (10th Cir. 1987) (holding that compliance with FDA–mandated warning of toxic shock syndrome on tampons was evidence of nondefectiveness, but was not conclusive); Ferebee v. Chevron Chem. Co., 736 F.2d 1529, 1540 (D.C. Cir. 1984) (discussing EPA–approved label for paraquat herbicide, under Federal Insecticide, Fungicide, and Rodenticide Act); Contini v. Hyundai Motor Co., 840 F. Supp. 22, 23 (S.D.N.Y. 1993) (compliance with NHTSA seat–belt regulations); Stevens v. Parke, Davis & Co., 507 P.2d 653, 661 (Cal. 1973) (FDA). *See also* WASH. REV. CODE ANN. § 7.72.050(1) (West 2004); Burch v. Amsterdam Corp., 366 A.2d 1079, 1085 (D.C. 1976) (Federal Hazardous Substances Act); Gable v. Vill. of Gates Mills, 784 N.E.2d 739, 747–48 (Ohio Ct. App. 2003) (holding that compliance with airbag regulation may be a guide but is not conclusive of nonliability), *rev'd*, 816 N.E.2d 1049 (Ohio 2004); Soproni v. Polygon Apartment Partners, 971 P.2d 500, 505–06 (Wash. 1999) (finding that design of window, through which child fell, complied with building and fire codes; compliance merely evidence of nondefectiveness).

[120] *See, e.g.*, Kurer v. Parke, Davis & Co., 679 N.W.2d 867, 875 (Wis. Ct. App. 2004), *review denied*, 684 N.W.2d 137 (Wis. 2004) (drug warnings). Perhaps the classic examples of extraordinarily minimal standards in a federal "safety" act are the flammability standards in the Flammable Fabrics Act; Raymond v. Riegel Textile Corp.,

accord, providing that, in connection with liability for defective design or warnings:

> a product's compliance with an applicable product safety statute or administrative regulation is properly considered in determining whether the product is defective with respect to the risks sought to be reduced by the statute or regulation, but such compliance does not preclude as a matter of law a finding of product defect.[121]

Some states provide that a manufacturer's compliance with an applicable statute or regulation gives rise to a rebuttable presumption that the product is not defective.[122] In unusual situations, a court may rule as a matter of law that a defendant's conformity to a statutory or regulatory safety standard amounts to due care.[123] This principle of special applicability surely applies to claims for strict liability torts as well.

II. OTHER SIMILAR ACCIDENTS

A common, and often persuasive, form of proof of defectiveness is evidence of other similar accidents.[124] Plaintiffs commonly offer such

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484 F.2d 1025, 1027 (1st Cir. 1973) (N.H. law); Gryc v. Dayton–Hudson Corp., 297 N.W.2d 727, 733–35 (Minn. 1980). Needham v. Coordinated Apparel Group, 811 A.2d 124, 131 (Vt. 2002).

[121] PRODUCTS LIABILITY RESTATEMENT § 4 (b).

[122] *See, e.g.*, COLO. REV. STAT. ANN. § 13-21-403(1)(b) (West 2004); IND. CODE ANN. § 34-20-5-1(2) (West 2004); KAN. STAT. ANN. § 60-3304(a) (2003); Gen. Motors Corp. v. Harper, 61 S.W.3d 118, 124 (Tex. Ct. App. 2001) (in considering design of seatbelt restraint system in 1990 GM pickup truck in which driver's spine was fractured in head–on collision "[c]ompliance with NHTSA regulations provides a presumption of no design defect."), *petition for review denied*, 2004 Tex. LEXIS 454 (Tex. May 14, 2004); *see also* Cansler v. Mills, 765 N.E.2d 698 (Ind. Ct. App. 2002) (reversing where presumption was rebutted; summary judgment for manufacturer); McClain v. Chem–Lube Corp., 759 N.E.2d 1096 (Ind. Ct. App. 2001) (stating that evidence of compliance supports finding a genuine issue of material fact).

[123] *See, e.g.*, Ramirez v. Plough, Inc., 863 P.2d 167, 172 & 176–77 (Cal. 1993) (holding that compliance with FDA's English–language–only warning requirement shielded drug manufacturer from also having to warn in Spanish that giving aspirin to children might cause Reyes Syndrome); Beatty v. Trailmaster Prods., Inc., 625 A.2d 1005, 1014 (Md. 1993) (compliance with bumper–height statute was complete defense); *see also* RESTATEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY § 16 cmt. e (Tentative Draft Nov. 1, 2001) (stating that in "unusual situations," statutory or regulatory compliance may be conclusive); *cf.* Taylor v. Smithkline Beecham Corp., 658 N.W.2d 127 (Mich. 2003) (upholding as constitutional a Michigan statute shielding drug manufacturers from liability if their drugs comply with FDA regulations).

[124] *See generally* 3 AM. LAW PROD. LIAB., *supra* note 26, §§ 14:28–46; KENNETH S. BROUN, ET AL., MCCORMICK ON EVIDENCE § 200 (John Strong ed., 5th ed. 1999)

evidence to show, circumstantially, that a product has a dangerous or defective condition, the defendant had notice of it, and the defect caused the plaintiff's injury. Less often, defendants offer evidence to prove the *absence* of other similar accidents: that a product's condition was *not* especially dangerous, that the defendant had no reason to know about it, or that it did *not* cause the plaintiff's harm. In addition, such evidence is sometimes allowed to rebut or impeach the other party's witness.[125] Plaintiff attorneys consider other–accident evidence to be an especially powerful form of proof,[126] while defense attorneys view it as largely, if not entirely, irrelevant and prejudicial to the fair adjudication of a products liability case.[127]

[hereinafter MCCORMICK ON EVIDENCE]; 3 FRUMER & FRIEDMAN, PRODUCTS LIABILITY, *supra* note 26, § 18.02; G. LILLY, AN INTRODUCTION TO THE LAW OF EVIDENCE § 5.17 (3d ed. 1996) [hereinafter LILLY ON EVIDENCE]; 2 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 26, § 27:4; 2 JACK B. WEINSTEIN & MARGARET A. BERGER, WEINSTEIN'S FEDERAL EVIDENCE § 401.08[2] (Joseph M. McLaughlin ed., 2d ed. 2002) [hereinafter WEINSTEIN'S FEDERAL EVIDENCE]; 2 JOHN HENRY WIGMORE, EVIDENCE IN TRIALS AT COMMON LAW § 458 (Chadbourn rev. 1979) [hereinafter WIGMORE ON EVIDENCE]; 22 CHARLES WRIGHT & KENNETH GRAHAM, JR., FED. PRAC. & PROC. § 5170 (2004) [hereinafter FED. PRAC. & PROC.]; Clarence Morris, *Proof of Safety History in Negligence Cases*, 61 HARV. L. REV. 205 (1948); Robert A. Sachs, *"Other Accident" Evidence in Product Liability Actions: Highly Probative or an Accident Waiting to Happen?*, 49 OKLA. L. REV. 257 (1996); Thomas R. Maila, Annotation, *Products Liability: Admissibility of Evidence of Absence of Other Accidents*, 51 A.L.R. 4TH 1186 (1987).

[125] *See, e.g.*, Samuel v. Ford Motor Co., 112 F. Supp. 2d 460 (D. Md. 2000), *aff'd sub nom.* Berger v. Ford Motor Co., 95 Fed. App. 520 (4th Cir. 2004) (admitting expert evidence to rebut evidence disparaging vehicle performance); Hale v. Firestone Tire & Rubber Co., 820 F.2d 928, 934–35 (8th Cir. 1987) (allowing evidence of other explosions of identical multi–piece tire rims to impeach defendant's expert), critically noted in Anthony Frazier, Note, *The Admissibility of Similar Incidents in Product Liability Actions*, 53 MO. L. REV. 547 (1988).

[126] *See, e.g.*, Francis H. Hare, Jr., *Admissibility of Evidence Concerning Other Similar Incidents in a Defective Design Product Case: Courts Should Determine "Similarity" by Reference to the Defect Involved*, 21 AM. J. TRIAL ADVOC. 491 (1998); *see also* Tab Turner, *Proving Design Defects with Other Similar Incidents Evidence*, 35 TRIAL 42 (1999) (discussing techniques for finding and using such evidence in auto cases).

[127] *See, e.g.*, Kevin Reynolds & Richard J. Kirschman, *The Ten Myths of Product Liability*, 27 WM. MITCHELL L. REV. 551, 570–72 (2000) (finding other–accident evidence peculiarly subject to misuse by jury; discussing limiting instructions and strategy for exclusion). *See generally* Ronald L. Carlson, *Is Revised Expert Witness Rule 703 a Critical Modernization for the New Century?*, 52 FLA. L. REV. 715 (2000); Sachs, *supra* note 124, at 257.

An analogous evidentiary issue concerns "comparative risk" evidence. Defense attorneys in ATV and other high–risk product cases sometimes attempt to introduce studies comparing the risks of ATVs to other recreational off–road vehicles such as snowmobiles, minibikes, and trail bikes. These studies sometimes compare ATVs to such dissimilar products and activities as flying, skydiving, scuba diving, swimming, skiing, boating, bicycling, and horseback riding. Some courts have allowed such evidence for

A. Relevance

Other–accident evidence may be relevant to any of the following three factual matters commonly disputed in products liability litigation: (1) the nature and extent of a product's dangerous condition,[128] (2) the defendant's awareness of that condition,[129] and (3) the causal relationship between the condition and the plaintiff's harm.[130] Assume, for example, that a driver is injured in a rollover of a sport utility vehicle ("SUV").[131] Each of these three matters might be controverted, for example, in an action against the SUV's manufacturer for injuries in a rollover that occurred during a particular steering maneuver on a particular grade at a particular speed. Evidence of one hundred accidents involving the same model SUV under similar circumstances might tend to show all three facts: (1) that this model SUV is especially prone to rolling over under these particular conditions; (2) that the manufacturer was informed of this danger because of the large number of similar accidents; and (3) that certain aspects of the vehicle's design (and perhaps the absence of adequate warnings and instructions) may have contributed to the accidents. In short, other–accident evidence may be probative of a product's dangerous condition,[132] notice to the manufacturer of the

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some purposes. *See, e.g.*, Kava v. Am. Honda Motor Co., 48 P.3d 1170, 1173–76 (Alaska 2002); Bittner v. Am. Honda Motor Co., 533 N.W.2d 476, 479–87 (Wis. 1995). *See generally* 3 FRUMER & FRIEDMAN, PRODUCTS LIABILITY, *supra* note 26, § 18.01.

[128] These factors comprise the P x L side of the Hand risk–utility formula for negligence and defectiveness, examined in OWEN, PRODUCTS LIABILITY LAW, *supra* note 2, at chs. 2, 5, & 8.

[129] More particularly, this is the issue of notice, actual or constructive (that defendant knew or should have known), which commonly includes foreseeability.

[130] *See* Arabian Agric. Servs. Co. v. Chief Indus., Inc., 309 F.3d 479, 485 (8th Cir. 2002) (Neb. law) (allowing evidence that other silos of manufacturer also collapsed because "'[e]vidence of other accidents may be relevant to prove the defendant's notice of defects, the defendant's ability to correct known defects, the magnitude of the danger, the product's lack of safety for intended uses, or causation.'") (citation omitted); Nissan Motor Co. v. Armstrong 32 S.W.3d 701, 710 (Tex. Ct. App. 2000) (holding that 750 reports of others incidents of unintended acceleration of Nissan 300ZX is admissible to rebut manufacturer's claim that driver error caused accident and to show notice), *rev'd*, 145 S.W.3d 131 (Tex. 2004).

[131] *Cf.* McCathern v. Toyota Motor Corp., 23 P.3d 320, 327 (Or. 2001) (finding that, in the case of a Toyota 4Runner rollover, the existence of fifteen other substantially similar incidents was relevant to understanding expert's opinion).

[132] *See, e.g.*, Lovick v. Wil–Rich, 588 N.W.2d 688, 697–98 (Iowa 1999), *modified*, 588 N.W.2d 688 (Iowa. 1999) (involving a cultivator wing that fell on plaintiff after he removed a pin; evidence of other accidents showed dangerous location of wing lock bracket subjecting operator to risk from collapse); Santos v. Chrysler Corp., 715 N.E.2d 47, 53 (Mass. 1999) (holding that similar occurrences of rear of minivan skidding after hand application of the brakes is relevant to dangerousness, defect, and notice).

condition,[133] or causation linking the condition to the accident.[134] Moreover, because punitive damages may be based upon a defendant's failure to address a serious hazard of which it is aware,[135] evidence of other similar accidents may be relevant to this issue as well.[136]

Some courts may admit other-accident evidence as proof of either a manufacturer's negligence or the product's defectiveness.[137] While such evidence may indeed help prove these things, it logically establishes only foreseeability, notice, and the type and level of danger of the similar products.[138] At best, such evidence provides only circumstantial proof that a shared design feature or absence of a warning (including the one that harmed the plaintiff) was *dangerous*, or that the danger was a

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[133] *See, e.g.*, Toole v. Baxter Healthcare Corp., 235 F.3d 1307 (11th Cir. 2000) (ninety-two breast implant complaints relevant to fragility of product, although only thirteen resulted from rupture by closed capsulotomy); Jones v. Ford Motor Co., 559 S.E.2d 592, 601 (Va. 2002) (sudden acceleration of vehicle); Gerow v. Mitch Crawford Holiday Motors, 987 S.W.2d 359, 364–65 (Mo. Ct. App. 1999) (crashworthiness); Waddill v. Anchor Hocking, Inc., 27 P.3d 1092 (Or. Ct. App. 2001), *vacated and remanded on other grounds*, 538 U.S. 974 (2003) (discussing notice that fish bowl might shatter in one's hands; failure to warn of necessity to inspect fish bowl for small dings or cracks); *see also* McClure v. Walgreen Co., 613 N.W.2d 225, 234 (Iowa 2000) (holding that thirty-four reports of misfilled prescriptions over three-year period admissible for punitive damages to show notice of problem without effort to cure it).

[134] *See, e.g.*, *Arabian*, 309 F.3d at 485 (allowing evidence that other silos of manufacturer also collapsed because "[e]vidence of other accidents may be relevant to prove the defendant's notice of defects, the defendant's ability to correct known defects, the magnitude of the danger, the product's lack of safety for intended uses, or causation") (quoting Lovett v. Union Pac. R.R., 201 F.3d 1074, 1081 (8th Cir. 2000)); *Nissan Motor*, 32 S.W.3d at 712 (holding that 750 reports of others incidents of unintended acceleration of Nissan 300ZX are admissible to show notice and rebut manufacturer's claim that driver error caused accident); Newman v. Ford Motor Co., 975 S.W.2d 147, 152 (Mo. 1998) (holding that evidence of five other rear-end collisions was properly admitted in case involving ejection from seat that collapsed despite passenger's wearing seatbelt, with limiting instruction that jury consider the evidence only for determining seatbelt's effectiveness in restraining occupants, not for determining defectiveness).

[135] *See* OWEN, PRODUCTS LIABILITY LAW, *supra* note 2, at ch. 18.

[136] *See, e.g.*, Preston v. Mont. Eighteenth Jud. Dist. Ct., 936 P.2d 814, 819 (Mont. 1997). *But see* Kopczick v. Hobart Corp., 721 N.E.2d 769, 776 (Ill. App. Ct. 1999) (reversing $20 million punitive damages verdict against manufacturer of meat saw because, while notice of prior accidents is relevant to punitive damages, thirty prior accidents are insufficient to put manufacturer of widely used, inherently dangerous product on notice that it was unreasonably dangerous).

[137] *See, e.g.*, Carballo-Rodriguez v. Clark Equip. Co., 147 F. Supp. 2d 66, 73–74 (D.P.R. 2001) (design defect, warnings defect, negligence, and notice); Smith v. Ingersoll-Rand Co., 214 F.3d 1235, 1248–49 (10th Cir. 2000) (N.M. law) (defectiveness); Santos v. Chrysler Corp., 715 N.E.2d 47, 52–53 (Mass. 1999) (defectiveness).

[138] *See, e.g.*, Melton v. Deere & Co., 887 F.2d 1241, 1245 (5th Cir. 1989) ("The question is not simply danger itself but unreasonable dangerousness as measured by consumer expectations.").

common *cause* of the accidents. However, to prevail in a strict products liability or negligence action, a plaintiff must go beyond simply proving that the product that injured him was dangerous. In strict products liability, the plaintiff must also prove that the product's design or the absence of warning was *defective*. In a negligence action, the plaintiff must further prove that the defendant was negligent for selling the product in such a dangerous condition.[139]

In addition to evidence that a product's condition was dangerous, both negligence and strict liability generally require additional proof that the dangerous condition was both foreseeable and reasonably preventable.[140] Other–accident evidence may help establish foreseeability because a manufacturer is likely to have learned about such accidents, particularly if they are numerous or severe. Indeed, the more numerous and serious the similar accidents caused by a product, the more likely it is that the manufacturer knew or should have known of the product's danger, thus providing the manufacturer with actual or constructive notice of the danger. But other–accident evidence does not help establish the second requirement: the availability of a reasonable alternative design or warning that could have prevented the plaintiff's accident. For this, the plaintiff must provide other types of proof.[141]

B. Substantial Similarity

The relevancy of other–accident evidence depends largely on whether other accidents are "substantially similar" to the plaintiff's accident.[142] First, the product involved in the other accidents must be the same as or similar to the product claimed to have injured the plaintiff.[143]

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[139] *See* OWEN, PRODUCTS LIABILITY, *supra* note 2, at ch. 2.

[140] *See id.* chs. 2, 5, & § 10.4.

[141] In particular, proof by expert testimony that a reasonable alternative design or warning was available when the product was made and sold. *See id.* § 6.3.

[142] "In products liability cases, the 'rule of substantial similarity' prohibits the admission into evidence of other transactions, occurrences, or claims unless the proponent first shows that there is a 'substantial similarity' between the other transactions, occurrences, or claims and the claim at issue in the litigation." Cooper Tire & Rubber Co. v. Crosby, 543 S.E.2d 21, 23 (Ga. 2001); *see also* Lovick v. Wil–Rich, 588 N.W.2d 688, 697 (Iowa 1999) ("[A] foundational showing must indicate the prior accidents occurred under substantially the same circumstances.").

[143] *See, e.g.*, Ray v. Ford Motor Co., 514 S.E.2d 227, 230–31 (Ga. Ct. App. 1999) (holding that 546 other incidents of inadvertent vehicle movement were properly excluded where database was not limited to any year or model of vehicle). *But see* Smith v. Ingersoll–Rand Co., 214 F.3d 1235, 1248 (10th Cir. 2000) (N.M. law) (discussing different models, but with same design problem: "The substantial similarity rule does not require identical products; nor does it require us to compare the products in their entireties [but only as to] variables relevant to the plaintiff's theory of defect."); Santos v.

The relevance of such evidence also rests on the similarity between the principal causative facts and circumstances involved in the other accidents and those in the plaintiff's case. Accordingly, evidence of other accidents generally is admissible if the plaintiff establishes their substantial similarity to the plaintiff's accident in both the product type and usage contexts.[144] Such evidence will be excluded in the absence of such qualifications.[145] But "similar" does not mean identical,[146] and evidence of other accidents is admissible if the facts and circumstances surrounding the accidents are shown to be reasonably similar.[147] The jury

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Chrysler Corp., 715 N.E.2d 47, 53 (Mass. 1999) (holding that six other incidents of rear-wheel lockup in minivan admissible, although five minivans were from different model years and four had braking systems with different design features); *see also* Preston v. Mont. Eighteenth Jud. Dist. Ct., 936 P.2d 814 (Mont. 1997) (finding that trial court erred in restricting discovery of similar accidents to those involving specific model involved in plaintiff's accident).

[144] *See, e.g.*, Arabian Agric. Servs. Co. v. Chief Indus., Inc., 309 F.3d 479, 485 (8th Cir. 2002) (Neb. law) (allowing other silos manufactured by defendant which collapsed in similar manner as plaintiff's); *Santos*, 715 N.E.2d at 52–53 (using other instances of minivans skidding due to hard application of breaks); Newman v. Ford Motor Co., 975 S.W.2d 147, 152 (Mo. 1998) (involving situation where other occupants were thrown from seats despite wearing seatbelts); Uniroyal Goodrich Tire Co. v. Martinez, 977 S.W.2d 328 (Tex. 1998) (allowing other accidents with 16" tire, although the plaintiff's tires had a pictographic warning); Jones v. Ford Motor Co., 559 S.E.2d 592, 602 (Va. 2002) (using prior accidents from cars accelerating without warning).

[145] *See, e.g.*, Lovett v. Union Pac. R.R., 201 F.3d 1074, 1080–81 (8th Cir. 2000) (involving four other vehicular accidents); Pickel v. Automated Waste Disposal, Inc., 782 A.2d 231, 237 (Conn. App. Ct. 2001) (involving other incident of lid suddenly closing on person using dumpster); *Cooper Tire*, 543 S.E.2d at 23 (involving tire failure from separation of radial belting; adjustment data for all types of tires manufactured at same plant over nine years with no substantial similarity of design, manufacturing process, defect, or causation); Mercer v. Pittway Corp., 616 N.W.2d 602, 616 (Iowa 2000) (involving 116 consumer complaints of failure of same model fire alarm); Palmer v. Volkswagen of Am., No. 2001-CA-00875-COA, 2003 WL 22006296, *28 (Miss. Ct. App. Aug. 26, 2003) (holding that two other accidents in which person was killed by airbag were not substantially similar to plaintiff's accident), *aff'd in part and rev'd in part*, 2005 Miss. LEXIS 21 (Miss. Jan. 13, 2005); Gable v. Vill. of Gates Mills, 784 N.E.2d 739, 745 (Ohio Ct. App. 2003) (holding that airbag injury incidents, to be relevant, must involve victims of similar size, gender, and position in same seat; evidence of previous airbag injury involved female driver rather than male passenger), *rev'd*, 816 N.E.2d 1049 (Ohio 2004).

[146] *See, e.g.*, Clark v. Chrysler Corp., 310 F.3d 461, 473 (6th Cir. 2002), *vacated and remanded on other grounds*, 540 U.S. 801 (2003) (Ky. law) ("In order to prove . . . that an accident occurred under similar circumstances, it is not necessary to prove that the prior accidents involved a vehicle identical to the one driven by [decedent] or that all of the circumstances of the accidents are identical."); *Smith*, 214 F.3d at 1248–49.

[147] *See, e.g.*, Moulton v. Rival Co., 116 F.3d 22, 26–27 (1st Cir. 1997) (Me. law) (holding that reports to potpourri pot manufacturer of previous burns to young children were admissible despite difference in circumstances); *Lovick*, 588 N.W.2d at 697–98 (involving several prior instances of farm cultivator wings falling on farm workers); Ulm v. Ford

may also consider any dissimilarities when evaluating the weight of the evidence.[148] It is sometimes noted that the substantial similarity requirement is heightened if the other incidents are offered to prove defectiveness or causation. Likewise, the requirement is relaxed if the evidence merely reveals the defendant's notice of the possibility that its product is dangerous or defective.[149]

Ultimately, the question of substantial similarity is a matter for the sound discretion of the trial court, reversible only for abuse of discretion.[150] As with other forms of evidence, a court should exclude other–accident evidence, even if relevant, "if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury, or by considerations of undue delay, waste of time, or needless presentation of cumulative evidence."[151] In

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Motor Co., 750 A.2d 981, 988 (Vt. 2000) (finding that breakage of steering gear sector shaft on Bronco caused loss of steering control; Ford's engineering investigations into complaints of accidents alleging loss of steering control relevant under business–record exception of hearsay rule).

[148] *See, e.g.*, Nissan Motor Co. v. Armstrong, 32 S.W.3d 701, 711–12 (Tex. Ct. App. 2000), *rev'd*, 145 S.W.3d 131 (Tex. 2004); *Santos*, 715 N.E.2d at 53.

[149] *See, e.g.*, *Smith*, 214 F.3d at 1248–49; Weir v. Crown Equip. Corp., 217 F.3d 453, 457–58 (7th Cir. 2000). *See generally* MCCORMICK ON EVIDENCE, *supra* note 124, § 200, at 707–08 (arguing that the similarity between the accidents need not be great when used to prove notice); 2 WEINSTEIN'S FEDERAL EVIDENCE, *supra* note 124, § 401.08[2], at 401–52 (requiring less similarity for notice, while a very high degree of similarity is necessary to prove product was unreasonably dangerous).

[150] *See, e.g.*, *Lovett*, 201 F.3d at 1080 (finding no abuse of discretion in exclusion of other–accident evidence); *Cooper Tire*, 543 S.E.2d at 25 (holding that trial court did not abuse discretion in excluding adjustment data regarding tire failure without a showing of substantial similarity because "[a]bsent clear abuse, the trial court's exercise of discretion is entitled to deference."); *Palmer*, 2003 WL 22006296, at *28 (finding that trial court was within its discretion); *see also* Andrews v. Harley Davidson, Inc., 796 P.2d 1092, 1096 (Nev. 1990) (seeming less deferential in finding it was error not to allow evidence of other accident, where difference was trivial between motorcycle hitting parked vs. moving vehicle).

[151] FED. R. EVID. 403; *see, e.g.*, *Weir*, 217 F.3d at 458 (involving other brake failures on same type of forklift); Drabik v. Stanley–Bostitch, Inc., 997 F.2d 496, 510–11 (8th Cir. 1993) (overtuning $7.5 million punitive damages award); Brooks v. Chrysler Corp., 786 F.2d 1191, 1198 (D.C. Cir. 1986) (affirming trial court's exclusion of evidence of consumer complaints because of minimal probative value and substantial delay, but remarking that "Chrysler would have attempted to rebut the substance of *each* of the 330 complaints or to distinguish the nature of the complaints contained therein from the alleged defect in this case."); Blevins v. New Holland N. Am., Inc., 128 F. Supp. 2d 952, 961 (W.D. Va. 2001) (excluding prior accident on hay baler under Rule 403 because "to explore the similarities and dissimilarities of the Hornsby case with the present accident will prolong the trial and risk jury confusion and prejudice"); Gen. Motors Corp. v. Moseley, 447 S.E.2d 302, 307 (Ga. Ct. App. 1994) (overturning punitive damages verdict of $101 million).

balancing the probative value of this form of evidence, a court may allow evidence of only those other accidents deemed most similar and exclude the rest.[152]

C. *Absence of Other Accidents*

Because plaintiffs are normally permitted to use similar–accident evidence to prove dangerousness, notice, and causation, it is only logical and fair to allow defendants to use the absence of such evidence to prove their case.[153] Generally, defendants may introduce the absence of similar accidents to help establish that a product was not dangerous or defective, that the defendant had no notice of danger or defect, or that causation was absent.[154] This reverse type of other–accident evidence, called "safe–use" evidence, also requires a proper foundation of substantial similarity: a defendant must demonstrate the safe use[155] of the same type of product under conditions substantially similar to those of the plaintiff's accident.[156]

It may be that evidence of the absence of prior accidents is less probative than evidence of the existence of prior accidents since proof of the absence of accidents really shows only that none have been discovered, not that they did not occur.[157] Thus, it has been asserted "that proving a negative by the lack of accidents is 'more complex' than

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[152] *See, e.g.*, Carballo–Rodriguez v. Clark Equip. Co., 147 F. Supp. 2d 66, 74 (D.P.R. 2001); *Weir*, 217 F.3d at 459; Jones v. Ford Motor Co., 559 S.E.2d 592, 603 (Va. 2002).

[153] *See, e.g.*, Schaffner v. Chicago & N. W. Transp. Co., 515 N.E.2d 298, 309 (Ill. App. Ct. 1987), *aff'd*, 541 N.E.2d 643 (Ill. 1989); Schaefer v. Cedar Fair, L.P., 791 A.2d 1056, 1057 (N.J. Super. Ct. App. Div. 2002).

[154] *See, e.g.*, Varano v. Jabar, 197 F.3d 1, 5 (1st Cir. 1999) (causation); Benson v. Honda Motor Co., 32 Cal. Rptr. 2d 322, 325 (Ct. App. 1994); Spino v. John S. Tilley Ladder Co., 696 A.2d 1169, 1173 (Pa. 1997) (same), *noted in* Lance A. Whiteman, Note, Spino v. John S. Tilley Ladder Co.: *The Pennsylvania Supreme Court Permits Defendant to Admit Absence of Prior Accidents in Products Liability Action*, 60 U. PITT. L. REV. 297 (1998). *See generally* MCCORMICK ON EVIDENCE, *supra* note 124, § 200; Morris, *supra* note 124, at 205; Kenneth A. Ross, *A Good Accident Reporting System Can Help in Defending Product Liability Cases*, 7 PROD. LIAB. L. & STRATEGY 1 (2000) (stating that admissibility may be dependent on existence of effective accident reporting system); Malia, *supra* note 124, at 1186 (discussing admissibility of absence of other product accidents).

[155] The reliability of this kind of evidence requires similar use by a large number of other persons. *See, e.g.*, Watkins v. Toro Co., 901 S.W.2d 917, 920 (Mo. Ct. App. 1995).

[156] *See, e.g.*, Pandit v. Am. Honda Motor Co., 82 F.3d 376, 380 (10th Cir. 1996); Espeaignnette v. Gene Tierney Co., 43 F.3d 1, 9–10 (1st Cir. 1994).

[157] *See* MCCORMICK ON EVIDENCE, *supra* note 124, § 200, at 709; LILLY ON EVIDENCE, *supra* note 124, § 5.17, at 189.

proving the happening of an accident."[158] Notwithstanding, while case law on the admissibility of the absence of accidents is less voluminous, a number of cases have allowed evidence of a product's good safety history to help refute a plaintiff's other–accident evidence[159] and consequently disprove dangerousness,[160] causation,[161] or notice.[162] But evidence of the absence of other accidents normally is relevant only in cases involving design and warnings defects, not in manufacturing defect cases.[163]

D. Subsequent Accidents

Most other–accident evidence admitted in products liability litigation involves accidents that occurred *before* the plaintiff's accident. While some courts disagree,[164] a number of courts allow evidence of other accidents that occurred *after* the defendant's product was sold or involved in the plaintiff's accident.[165] These courts reason that the probative force of such evidence for demonstrating causation or a product's dangerous (or defective) condition in no way depends on when the other accidents occurred. It is clear, however, that evidence of

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[158] *Schaefer*, 791 A.2d at 1064 (discussing the distinction between other–accident and no–accident evidence).

[159] *See, e.g., id.*

[160] *See, e.g., Espeaignnette*, 43 F.3d at 10 (1st Cir. 1994); Emerson Elec. Co. v. Garcia, 623 So. 2d 523, 524 (Fla. Dist. Ct. App. 1993).

[161] *See* Varano v. Jabar, 197 F.3d 1, 4–5 (1st Cir. 1999); Spino v. John S. Tilley Ladder Co., 696 A.2d 1169, 1173 (Pa. 1997).

[162] *See* Jimenez v. Sears, Roebuck & Co., 885 P.2d 120, 122–23 (Ariz. Ct. App. 1994), *vacated in part on other grounds*, 904 P.2d 861 (Ariz. 1994) (discussing whether defendant's detailed offer of proof of company's thorough accident information gathering system satisfied rigorous admissibility test).

[163] *See, e.g.*, Jones v. Pak–Mor Mfg. Co., 700 P.2d 819, 827 n.4 (Ariz. 1985) (finding safety history of entire line of products irrelevant to whether product was mismanufactured); McKenzie v. S K Hand Tool Corp., 650 N.E.2d 612, 619–20 (Ill. App. Ct. 1995) (finding that trial court erred in admitting evidence of absence of other accidents).

[164] *See, e.g.*, Mercer v. Pittway Corp., 616 N.W.2d 602, 615 (Iowa 2000) ("[T]he rule allowing evidence of similar incidents is generally limited to incidents occurring prior to the one in question.").

[165] *See, e.g.*, Smith v. Ingersoll–Rand Co., 214 F.3d 1235, 1248 (10th Cir. 2000) (N.M. law) (defectiveness); Carballo–Rodriguez v. Clark Equip. Co., 147 F. Supp. 2d 66, 73 (D.P.R. 2001) (latching defect in crane; notice and negligent design); Simon v. Coppola, 876 P.2d 10, 14 (Colo. Ct. App. 1993); Preston v. Mont. Eighteenth Jud. Dist. Ct., 936 P.2d 814, 820 (Mont. 1997); Robinson v. G.G.C., Inc., 808 P.2d 522, 525 (Nev. 1991); Slyke v. Sunterra Corp., No. 183382, 2001 WL 543419, at *1 (Va. Cir. Ct. Mar. 21, 2001) (allowing incidents with showerhead for purposes of proving causation).

subsequent accidents can have no relevance to the issue of notice,[166] and the relevance of such evidence rests upon the substantial similarity between subsequent accidents and the plaintiff's accident.[167] At least one jurisdiction allows evidence of subsequent similar accidents to show a defendant's culpability for purposes of punitive damages.[168]

III. SUBSEQUENT REMEDIAL MEASURES

The longer a product is on the market, the more a manufacturer learns about the product's hazards and how best to eliminate them. Over time, a manufacturer with due concern for product safety will tend to improve its manufacturing processes, enhance the design safety of its products, and provide consumers with better information on product dangers and how to avoid them. This natural evolution of product safety gives rise to an important issue as to the admissibility of evidence that a manufacturer, after making and selling the product that injured the plaintiff, improved the product's safety in a manner that would have prevented the injury.

The fact that a manufacturer has eliminated the very danger responsible for a plaintiff's injury is powerful evidence that the particular safety enhancement was both practicable and otherwise reasonable at the time the safety change was made. So, by improving a product's design safety or by providing additional warnings or instructions, a manufacturer acknowledges the fact that, at that time, the benefits of the safety improvement exceeded the costs. Absent a technological breakthrough between the time the product causing the plaintiff's injury was manufactured (or when the plaintiff is injured) and the time the product's safety is improved, evidence of such a safety enhancement may well suggest that, prior to its improvement, the product was defective. This in turn may show that the manufacturer was negligent. Therefore, evidence that a manufacturer adopted a subsequent remedial measure would normally be relevant to liability and presumptively admissible in a products liability case.[169]

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[166] *See, e.g., Smith*, 214 F.3d at 1248.

[167] *Compare* Crowston v. Goodyear Tire & Rubber Co., 521 N.W.2d 401, 411–12 (N.D. 1994) (upholding exclusion of subsequent accident evidence not substantially similar to plaintiff's accident), *with* Gowler v. Ferrell–Ross Co., 563 N.E.2d 773, 777–78 (Ill. App. Ct. 1990) (allowing such evidence where subsequent accidents were similar, though not identical).

[168] *See Smith*, 214 F.3d at 1249 (N.M. law). *But see* Burke v. Deere & Co., 6 F.3d 497, 507–09 (8th Cir. 1993) (Iowa law), *amended by* 1993 U.S. App. LEXIS 21878.

[169] *See* FED. R. EVID. 402 ("All relevant evidence is admissible . . . .").

A. Development of the Repair Doctrine

Evidence that an actor cured a dangerous condition after it injured a plaintiff may be relevant to both the condition's defectiveness and the actor's negligence, but it establishes neither. The use of such evidence may unjustly punish persons for their care and prudence and diminish safety by providing parties in control of dangerous conditions a disincentive to reduce or cure existing hazards.[170] For these reasons, at an early date courts developed a special rule of relevancy called the "repair doctrine,"[171] which bars evidence of a defendant's post–accident repairs used to prove the defendant's negligence. The doctrine spread from Britain[172] to America[173] and was announced by the United States Supreme Court in an 1892 case in which the Court explained:

> [I]t is now settled . . . [that post–accident repair] evidence is incompetent for the purpose of proving negligence, because the taking of such precautions against the future is not to be construed as an admission of responsibility for the past, has no legitimate tendency to prove that the defendant had been negligent before the accident happened, and is calculated to distract the minds of the jury from the real issue, and to create a prejudice against the defendant.[174]

Today, the rule barring evidence of subsequent remedial measures to prove negligence is the law in almost every state[175] by common law or

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[170] A post–accident repair

> afford[s] no legitimate basis for construing such an act as an admission of previous neglect of duty. A person may have exercised all the care which the law required, and yet in the light of his new experience, after an unexpected accident has occurred, and as a measure of extreme caution, he may adopt additional safeguards. The more careful a person is, the more regard he has for the lives of others, the more likely he would be to do so, and it would seem unjust that he could not do so without being liable to have such acts construed as an admission of prior negligence. We think such a rule puts an unfair interpretation upon human conduct, and virtually holds out an inducement for continued negligence.

Morse v. Minneapolis & St. L. Ry., 16 N.W. 358, 359 (Minn. 1883).

[171] It is also known as the "subsequent repair," "subsequent remedial measure," and "post–accident corrective measure" rule or doctrine.

[172] In *Hart v. Lancashire & Yorkshire Ry.*, 21 L.T.R. 261, 263 (Ex. 1869), Lord Bramwell of the Court of Exchequer explained that it would be "barbarous . . . to hold, that because the world gets wiser as it gets older, therefore it was foolish before."

[173] *See, e.g.*, Terre Haute & Indianapolis R.R. v. Clem, 23 N.E. 965, 966 (Ind. 1890).

[174] Columbia & Puget Sound R.R. v. Hawthorne, 144 U.S. 202, 207 (1892).

[175] Rhode Island appears to be the only state that liberally allows the admission of evidence of subsequent remedial measures. *See* R.I. R. EVID. R. 407.

formal rule of evidence.[176] The doctrine applies to products liability litigation by barring evidence of subsequent safety improvements to prove negligence and, in some jurisdictions, product defectiveness.

It is a controversial rule because of the myriad exceptions that swallow the general rule of exclusion,[177] as well as for the logic of its premises, the ambiguity of its formulation, and its economic and other policy implications.[178] The repair doctrine applies to products liability litigation, barring evidence of subsequent safety improvements to prove negligence and, in some jurisdictions, product defectiveness.[179]

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[176] *See, e.g.*, Ray v. Am. Nat'l Red Cross, 685 A.2d 411, 420–21 (D.C. Cir. 1996), *amended by* 696 A.2d 399 (D.C. Cir. 1996) (refusing to admit evidence that, after plaintiff contracted HIV, Red Cross began to screen donors by directly questioning them); Fernandez v. Higdon Elevator Co., 632 N.Y.S.2d 546 (App. Div. 1995) ("[Such evidence] is never admissible as proof of admission of negligence.") (citations omitted). *See generally*, MCCORMICK ON EVIDENCE, *supra* note 124, § 267; DAVID P. LEONARD, THE NEW WIGMORE: A TREATISE ON EVIDENCE, SELECTED RULES OF LIMITED ADMISSIBILITY ch. 2 (2002); LILLY ON EVIDENCE, *supra* note 124, § 5.18; WEINSTEIN'S FEDERAL EVIDENCE, *supra* note 124, ch. 407; 2 WIGMORE ON EVIDENCE, *supra* note 124, § 283; 23 FED. PRAC. & PROC., *supra* note 124, § 5282; Thomas M. Fleming, Annotation, *Admissibility of Evidence of Repairs, Change of Conditions, or Precautions Taken After Accident—Modern State Cases*, 15 A.L.R. 5TH 119 (1993); Marjorie A. Shields, Annotation, *Admissibility of Evidence of Subsequent Remedial Measures Under Rule 407 of Federal Rules of Evidence*, 158 A.L.R. FED. 609 (1999) (Fed. R. Evid. 407).

[177] *See, e.g.*, 1 MICHAEL H. GRAHAM, MODERN STATE AND FEDERAL EVIDENCE: A COMPREHENSIVE REFERENCE TEXT 480 (1989) ("[T]he opportunities for admissibility may fairly be said to come close to swallowing up the rule [of exclusion].").

[178] *See generally* J. WEINSTEIN & M. BERGER, WEINSTEIN'S EVIDENCE MANUAL, § 7.04[1] (same) [hereinafter WEINSTEIN'S EVIDENCE MANUAL]; 23 FED. PRAC. & PROC. EVID., *supra* note 124, § 5282 (2002) (challenging the justifications of Fed. R. Evid. 407); C. Paul Carver, *Subsequent Remedial Measures 2000 and Beyond*, 27 WM. MITCHELL L. REV. 583, 587 (2000) (criticizing the rule on all these grounds and characterizing the current rule as "a post hoc litigation artifice for clever lawyers to use to their client's advantage").

[179] *See generally* AM. LAW. PROD. LIAB. 3D, *supra* note 26, §§ 14:53 et seq. & §§ 54:9–11; Carver, *supra* note 178 (citing the large body of literature at n.5); 3 FRUMER & FRIEDMAN, PRODUCTS LIABILITY, *supra* note 26, § 18.06; 2 MADDEN & OWEN ON PRODUCTS LIABILITY, *supra* note 26, § 27:5; Thomas S. Stewart & Stacy H. Andreas, *Subsequent Remedial Measures: An Analytical Model for Product Liability Cases*, 26 TORT & INS. L.J. 74 (1990); Randolph L. Burns, Note, *Subsequent Remedial Measures and Strict Products Liability: A New—Relevant—Answer to an Old Problem*, 81 VA. L. REV. 1141 (1995); Lev Dassin, *Design Defects in the Rules Enabling Act: the Misapplication of Federal Rule of Evidence 407 to Strict Liability*, 65 N.Y.U. L. REV. 736 (1990); Note, *Products Liability & Evidence of Subsequent Repairs*, 1972 DUKE L.J. 837; David Wadsworth, Casenote, Forma Scientific v. Biosera, *960 P.2d 108* (Colo. 1998), 71 U. COLO. L. REV. 757; John E. Theuman, Annotation, *Products Liability: Admissibility of Evidence of Postinjury Warning Measures Undertaken by Defendant*, 38 A.L.R. 4TH 583 (1985) (admissibility of post–injury warnings); John S. Herbrand, Annotation, *Products Liability: Admissibility, Against Manufacturer, of Product Recall Letter*, 84 A.L.R. 3D

B. Federal Rule of Evidence 407

The general rule prohibiting evidence of post–accident repairs to prove negligence was adopted in Federal Rule of Evidence 407, "Subsequent Remedial Measures," which originally provided:

> When, after an event, measures are taken which, if taken previously, would have made the event less likely to occur, evidence of the subsequent measures is not admissible to prove negligence or culpable conduct in connection with the event. This rule does not require the exclusion of evidence of subsequent measures when offered for another purpose, such as proving ownership, control, or feasibility of precautionary measures, if controverted, or impeachment.[180]

In this original iteration, Rule 407 generated interpretative problems concerning: (1) whether the rule barred evidence of subsequent remedial measures in strict liability cases, or was limited to negligence claims;[181] and (2) whether, regardless of the theory of recovery, the rule applied to safety measures a manufacturer adopted after the date of manufacture and sale but before the plaintiff was injured, or applied only to measures adopted after the plaintiff's injury. To resolve these questions, the first sentence of Rule 407 was amended in 1997 to read:

> When, after an injury or harm allegedly caused by an event, measures are taken that, if taken previously, would have made the injury or harm less likely to occur, evidence of the subsequent measures is not admissible to prove negligence, culpable conduct, a defect in a product, a defect in a product's design, or a need for a warning or instruction.[182]

1220 (1978) (recall letters); Bruce I. McDaniel, Annotation, *Admissibility of Evidence of Subsequent Repairs or Other Remedial Measures in Products Liability Cases*, 74 A.L.R. 3D 1001 (1978) (admissibility in products liability cases generally).

[180] FED. R. EVID. 407 (original 1975 version).

[181] The interpretive question was whether "culpable conduct" included strict products liability.

[182] FED. R. EVID. 407. Thais L. Richardson, Comment, *The Proposed Amendment to Federal Rule of Evidence 407: A Subsequent Remedial Measure that Does Not Fix the Problem*, 45 AM. U. L. REV. 1453 (1996) (criticizing proposed amendment). Apart from the treatises cited previously, the amendment is also examined in Eric L. Vinson, Note, *Applying Federal Rule of Evidence 407 in Strict Liability: A Discussion of Changes to the Rule*, 16 REV. LITIG. 773 (1997) (supporting amended Fed. R. Evid. 407).

In federal court, the revised rule makes it clear[183] (1) that it applies and bars evidence of safety improvements in strict products liability cases, as well as negligence, and that it applies to all three types of defect;[184] and (2) it excludes only evidence of safety improvements adopted *after* the plaintiff's injury, leaving the admissibility of safety improvements made after manufacture but before the plaintiff's injury to the general rules of relevancy and prejudice.[185] While a large number of other issues remain unresolved,[186] the revisions to Federal Rule of Evidence 407 clarify considerably how the repair doctrine applies to products liability cases under federal law.

C. *Strict Liability Claims Under State Law*

While a few states already have adopted the clarifications of the new federal rule,[187] the evidence codes and common law of most states still track the repair doctrine's traditional formulation in terms of negligence and culpability.[188] The states agree that the repair doctrine applies to

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[183] Most federal courts hold that the federal rule, rather than state law, applies in diversity cases. The Tenth Circuit is an exception. *See, e.g.*, Call v. State Indus., No. 99–8046, 2000 WL 1015076, at *5 (10th Cir. July 24, 2000) (Wyo. law); Garcia v. Fleetwood Enters., 200 F. Supp. 2d 1302, 1303 (D.N.M. 2002) (N.M. law). *See generally* 3 FRUMER & FRIEDMAN, PRODUCTS LIABILITY, *supra* note 26, § 18.06[3][g]; Wadsworth, *supra* note 179, at 779–86 (excellent discussion); Andrea Lynn Flink, Note, *Admissibility of Subsequent Remedial Measures Evidence in Diversity Actions Based on Strict Products Liability*, 53 FORDHAM L. REV. 1485 (1985).

[184] *See, e.g.*, Stahl v. Novartis Pharm. Corp., 283 F.3d 254, 271 n.10 (5th Cir. 2002) (warning added to package insert after plaintiff's injury is not admissible to show that earlier warning was defective); J.B. Hunt Transp., Inc. v. Gen. Motors Corp., 243 F.3d 441, 445 (8th Cir. 2001) (holding that GM's subsequent safety improvements in seat integrity are inadmissible to prove that earlier design was defective).

[185] *See, e.g.*, Carballo–Rodriguez v. Clark Equip. Co., 147 F. Supp. 2d 66, 77 (D.P.R. 2001) (admitting evidence of pre–accident service bulletin and warning decal on crane); United States Fid. & Guar. Co. v. Baker Material Handling Corp., 62 F.3d 24, 27 (1st Cir. 1995) (refusing to apply Rule 407 to evidence of pre–accident design change). *See generally* Rule 407 advisory committee's note to 1997 Amendment: "Evidence of subsequent measures that is not barred by Rule 407 may still be subject to exclusion on Rule 403 grounds when the dangers of prejudice or confusion substantially outweigh the probative value of the evidence."

[186] On Fed. R. Evid. 407, see Shields, *supra* note 176.

[187] *See* FLA. STAT. ANN. § 90.407 (West 2004) (omitting "defect in product's design, or a need for a warning or instruction"); IDAHO R. EVID. 407; ME. R. EVID. 407; N.D. R. EVID. 407.

[188] Although many states have some version of the federal rules of evidence, most have not formally amended their rules to conform to the 1997 change to Rule 407, which explicitly applies to strict products liability claims. *See, e.g.*, PA. R. EVID. 407, *construed in* Duchess v. Langston Corp., 769 A.2d 1131, 1137–50 (Pa. 2001) (traditional rule providing that evidence of subsequent remedial measures is not admissible to prove

products liability claims based on negligence, but they split on whether the rule should be expanded to shield manufacturers against evidence of subsequent remedial measures in products liability claims. Many states, by formal rule of evidence[189] or judicial opinion,[190] limit the exclusionary rule to negligence claims and so allow a plaintiff to introduce evidence of subsequent remedial measures in strict liability cases. The classic case adopting this view is *Ault v. International Harvester Co.*, which rejected the empirical assumptions underlying the rule in the modern products liability context:

> The contemporary corporate mass producer of goods, the normal products liability defendant, manufactures tens of thousands of units of goods; it is manifestly unrealistic to suggest that such a producer will forego making improvements in its product, and risk innumerable additional lawsuits and the attendant adverse effect upon its public image, simply because evidence of adoption of such improvement may be admitted in an action founded on strict liability for recovery on an injury that preceded the improvement.[191]

Ruling to the contrary, many other states have opted to broaden the rule beyond its traditional negligence basis by also *excluding* evidence of subsequent remedial measures in the strict liability context.[192] These

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culpable conduct or negligence also applies in strict products liability cases); Hyjek v. Anthony Indus., 944 P.2d 1036, 1040 (Wash. 1997) (same).

[189] *See, e.g.*, ALASKA R. EVID. 407; HAW. REV. ST. ANN. § 626-1 (2004); HAW R. EVID. 407; IOWA CODE ANN. R. 5.407; KY. R. EVID. 407; TEX. R. EVID. 407(a), *applied in* Uniroyal Goodrich Tire Co. v. Martinez, 977 S.W.2d 328, 341 (Tex. 1998).

[190] *See, e.g.*, Call v. State Indus., No. 99–8046, 2000 WL 1015076, at *5 (10th Cir., July 24, 2000) (Wyo. law); Ault v. Int'l Harvester Co. 528 P.2d 1148, 1150 (Cal. 1974); Forma Scientific, Inc. v. Biosera, Inc., 960 P.2d 108, 114 (Colo. 1998); Wagner v. Clark Equip. Co., 700 A.2d 38, 51–52 (Conn. 1997); Gen. Motors Corp. v. Mosley, 447 S.E.2d 302, 310 (Ga. Ct. App. 1994), *overruled on other grounds*, Webster v. Boyett, 496 S.E.2d 459, 463 (Ga. 1998); Sutkowski v. Universal Marion Corp., 281 N.E.2d 749, 753 (Ill. App. Ct. 1972); Ford Motor Co. v. Fulkerson, 812 S.W.2d 119, 126–27 (Ky. 1991); Barnett v. La Société Anonyme Turbomeca France, 963 S.W.2d 639, 651–52 (Mo. App. 1997); Robinson v. G.G.C., Inc., 808 P.2d 522, 526 (Nev. 1991); McFarland v. Bruno Mach. Corp., 626 N.E.2d 659, 664 (Ohio 1994); Klug v. Keller Indus., 328 N.W.2d 847, 851–52 (S.D. 1982) *overruled in part by* First Premier Bank v. Kolcraft Enters., 686 N.W.2d 430 (S.D. 2004); Friederichs v. Huebner, 329 N.W.2d 890, 907–08 (Wis. 1983); Green v. Smith & Nephew AHP, Inc., 617 N.W.2d 881, 892–93 (Wis. Ct. App. 2000), *aff'd*, 629 N.W.2d 727 (Wis. 2001); Caldwell v. Yamaha Motor Co., 648 P.2d 519, 525 (Wyo. 1982).

[191] *Ault*, 528 P.2d at 1152.

[192] *See, e.g.*, Garcia v. Fleetwood Enters., Inc., 200 F. Supp. 2d 1302, 1305 (D.N.M. 2002) (N.M. law); Hallmark v. Allied Prods. Corp., 646 P.2d 319, 325–26 (Ariz. Ct. App. 1982); Lawhon v. Ayres Corp., 992 S.W.2d 162, 166 (Ark. Ct. App. 1999); Smith v. Black & Decker (U.S.), Inc., 650 N.E.2d 1108, 1113 (Ill. App. Ct. 1995) (noting

courts reason that the policies that support excluding such evidence in negligence cases—the questionable relevance of safety measures taken subsequent to a product's manufacture, the undesirability of discouraging safety improvements, and the risk of juror confusion—are equally applicable to strict products liability cases.[193] Oddly, New York straddles the issue by excluding evidence of subsequent remedial measures in strict liability cases regarding design and warning defects (unless feasibility is contested),[194] while allowing such evidence in the less typical context of manufacturing defects.[195]

D. Feasibility, Impeachment, and Other Limitations

The repair doctrine is subject to various exceptions. The post–accident repair rule bars the use of such evidence only for the purpose of proving the defendant's negligence, culpability, or, in many jurisdictions, the product's defectiveness. By its terms, the doctrine does not affect the admissibility of post–accident repair evidence "when offered for another purpose."[196] In particular, the rule does *not* require the exclusion of evidence of subsequent remedial measures to prove "the feasibility of precautionary measures, if controverted,"[197] or to impeach a witness.[198] These exceptions often overlap.[199]

"potential chilling effect on safety improvements"); Moldovan v. Allis Chalmers Mfg. Co., 268 N.W.2d 656, 660 (Mich. Ct. App. 1978); Kallio v. Ford Motor Co., 407 N.W.2d 92, 98 (Minn. 1987); Rix v. Gen. Motors Corp., 723 P.2d 195, 202 (Mont. 1986); Cyr v. J.I. Case Co., 652 A.2d 685, 694–95 (N.H. 1994); Krause v. Am. Aerolights, Inc., 762 P.2d 1011, 1013 (Or. 1988); *Duchess*, 769 A.2d at 1132–50 (5–2 decision) (allowing such evidence only under both feasibility and impeachment exceptions); Hyjek v. Anthony Indus., 944 P.2d 1036, 1040 (Wash. 1997); *see also* TENN. R. EVID. 407.

[193] *See, e.g.*, *Duchess*, 769 A.2d at 1138–50 (5–2 decision) (examining applicability of traditional rationales to strict products liability).

[194] *See* Demirovski v. Skil Corp., 610 N.Y.S.2d 551 (App. Div. 1994).

[195] *See id.*; Cover v. Cohen, 461 N.E.2d 864, 868 (N.Y. 1984).

[196] FED. R. EVID. 407.

[197] *Id.* Note that the question of the *feasibility* of a safety improvement may give rise to another evidentiary issue: the admissibility of state–of–the–art evidence. In cases where technology has advanced between when the product was manufactured and when the manufacturer adopted a safety improvement, the state–of–the–art doctrine is likely to bar evidence of the safety enhancement if the enhancement was practicably unavailable at the time of manufacture. *See, e.g.*, Patton v. Hutchison Wil–Rich Mfg. Co., 861 P.2d 1299, 1312–13 (Kan. 1993) (interpreting KAN. STAT. ANN. 60-3307(a)(1) (1992)). *See generally* OWEN, PRODUCTS LIABILITY LAW, *supra* note 2, § 10.4.

[198] *See, e.g.*, Traylor v. Husqvarna Motor, 988 F.2d 729, 733–34 (7th Cir. 1993); Wilson Foods Corp. v. Turner, 460 S.E.2d 532, 535 (Ga. 1995).

[199] The overlap is most pronounced when a manufacturer denies the feasibility of a safety measure it adopted shortly after the plaintiff's accident.

The significance of the "feasibility" and "impeachment" exceptions depends largely on how narrowly or widely they are interpreted and applied. The integrity of this rule depends upon the exceptions not swallowing the general rule of exclusion. A manufacturer, of course, must be deemed to have controverted feasibility if it denies the technological possibility of a safety measure it subsequently adopts, even if it does so only implicitly, as by asserting that the product was already the safest possible.[200] So, too, a manufacturer obviously controverts the feasibility of a safety measure if it explicitly denies that fact.[201] By the same token, if a manufacturer explicitly *admits* the feasibility of precautionary measures, proof that it subsequently adopted them normally should be excluded.[202]

The more difficult question is whether a manufacturer controverts the feasibility of safety measures (or may have its witnesses impeached) by defending the safety, reasonableness, or acceptability of its earlier design or warning. While a defendant's arguments along these lines might result in admissibility under one or both exceptions, most courts have narrowly construed these exceptions to prevent their swallowing the general rule of exclusion.[203] The repair doctrine rests on the premise that a defendant normally should be allowed to assert that both its product and its actions were safe and reasonable at the time of manufacture without having to deal with proof that it later decided to improve the product. This suggests that the exceptions should not be interpreted so broadly as to allow a plaintiff to use a back door exception to introduce evidence of a type and for a purpose that the general rule bars at the front. So, if a manufacturer

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[200] *See* 3 FRUMER & FRIEDMAN, PRODUCTS LIABILITY, *supra* note 26, § 18.06[1][f].

[201] *See, e.g.*, Reese v. Mercury Marine Div., 793 F.2d 1416, 1428 (5th Cir. 1986) (defendant denied feasibility of warnings subsequently added to instruction manual); Dixon v. Int'l Harvester Co., 754 F.2d 573, 584 (5th Cir. 1985) (defendant's witness asserted that plaintiff's proposed design was not feasible because it would block tractor operator's view).

[202] *See, e.g.*, J.B. Hunt Transp., Inc. v. Gen. Motors Corp., 243 F.3d 441, 445 n.3 (8th Cir. 2001) (defendant stipulated feasibility of stiffer seats by admitting that it had "tested proposed seating systems that were both stronger and not as strong as the seating system in the 1991 Camaro"); Kallio v. Ford Motor Co., 407 N.W.2d 92, 98 (Minn. 1987) (defendant conceded feasibility of altering transmission design).

But a manufacturer may be too clever in first admitting "feasibility" and then attempting to limit its definition to technological possibility. *See* Duchess v. Langston Corp., 769 A.2d 1131, 1145–50 (Pa. 2001) (rejecting defendant's effort to avoid evidence of subsequent safety measures by admitting its feasibility, but only in terms of technological possibility, and arguing that its use would preclude the product from functioning properly).

[203] *See Duchess*, 769 A.2d at 1145–50; 3 FRUMER & FRIEDMAN, PRODUCTS LIABILITY, *supra* note 26, § 18.06[1][f].

concedes the economic and technological feasibility of a particular safety enhancement that it eventually adopted, it still may argue that "the safety problem was not great enough to warrant the trade–off of consumer frustration, increased complexity of the product, and risk of consumer efforts to disconnect the safety device" without opening the door to proof that it adopted the enhancement under the feasibility or impeachment exceptions.[204] Thus, the feasibility and impeachment exceptions normally should be applied, and evidence of a subsequent corrective measure admitted, only if a manufacturer asserts that the measure was impracticable at the time of manufacture.[205]

A variety of other issues lurking within the repair doctrine may restrict or expand its use, and the resolution of such issues in state court may rest upon the particular state's formulation of the repair doctrine. While a great majority of the subsequent repair cases involve design or warning defects, the doctrine may also apply to defects in a product's manufacture.[206] One important issue that continues to divide the states is whether the exclusionary rule should be limited to remedial measures adopted after the plaintiff's accident,[207] as under the revised federal rule, or whether it should be applied more broadly to exclude evidence of any safety improvements made after the date a product is manufactured or sold.[208] Another question is whether the repair doctrine applies to safety measures taken by a third party, such as an employer who adds a safety

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[204] *See* Gauthier v. AMF, Inc., 788 F.2d 634, 638 (9th Cir. 1986) (admitting evidence of subsequent remedial measures was improper in view of manufacturer's concession of feasibility).

[205] *Compare Duchess*, 769 A.2d at 1145–50 (applying both exceptions and holding that trial court erred in excluding evidence of subsequently adopted interlock safety device where defendant challenged practicability of that device), *with* Keating v. United Instruments, Inc., 742 A.2d 128, 130–31 (N.H. 1999) (finding that trial court properly excluded evidence of subsequent safety measure in aircraft altimeter because measure did not "directly" impeach defendant's expert).

[206] *But see, e.g.*, Rix v. Gen. Motors Corp., 723 P.2d 195, 202 (Mont. 1986) (disallowing such evidence in manufacturing defect claim); *see also* FED. R. EVID. 407 (barring admission of subsequent remedial measures to prove, inter alia, "*a defect in a product*, a defect in a product's design, or a need for a warning or instruction" (emphasis added)). For an early example of a court disallowing subsequent measures in a manufacturing defect case, see *Foley v. Coca–Cola Bottling Co.*, 215 S.W.2d 314, 316–18 (Mo. Ct. App. 1948) (tacks in soft drink).

[207] *See, e.g.*, Myers v. Hearth Techs., Inc., 621 N.W.2d 787, 792 (Minn. Ct. App. 2001) (rule did not apply to, and so did not bar admission of, safety enhancement made before accident); Tucker v. Caterpillar, Inc., 564 N.W.2d 410, 413 (Iowa 1997) (same).

[208] *See, e.g.*, ARIZ. REV. STAT. ANN. § 12-686(2) (West 2004) (applying rule to corrective measures adopted after sale); Brown v. Ford Motor Co., 714 N.E.2d 556, 559 (Ill. App. Ct. 1999) (applying same policy considerations after sale or manufacture); Cover v. Cohen, 461 N.E.2d 864, 868 (N.Y. 1984) (after manufacture).

feature to a product after an employee is injured. While most courts hold that the doctrine is limited to manufacturers and does not bar evidence of safety improvements by third parties, at least two courts have extended the exclusionary rule beyond manufacturers to remedial measures adopted by third parties.[209] Another issue on which the courts are split is whether the rule applies to remedial measures required by the government, such as mandatory safety improvements ordered by NHTSA or another federal agency in charge of safety regulation. Here, the safety–disincentive rationale disappears.[210]

IV. CONCLUSION

In litigating a products liability case, the plaintiff's most fundamental task is to prove that the product was defective; typically, there is no case without a product defect. Proof that a product violated some safety standard promulgated by the industry or the government is often compelling proof that the product's dangers were excessive, that the product was defective, and possibly that the manufacturer was negligent in selling it in that condition. So, too, a manufacturer or other defendant may rely on its *compliance* with such a standard as evidence of the absence of a defect, although such evidence often is less probative when used to prove a negative. Evidence that a product failed previously in a similar manner logically points to an inference of product defect, just as

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[209] *Compare* Ford Motor Co. v. Nuckolls, 894 S.W.2d 897, 900–01 (Ark. 1995) (evidence that employer improved product's safety after accident was properly admitted), *and* Wagner v. Clark Equip. Co., 700 A.2d 38, 51–52 (Conn. 1997) (same), *with* Padillas v. Stork–Gamco, Inc., No. 95–7090, 2000 WL 1470210 (E.D. Pa. Oct. 2, 2000) (same), *and* Torrens v. Delta Int'l Mach. Corp., 696 N.Y.S.2d 230, 231 (App. Div. 1999) (evidence that employer, subsequent to accident, fashioned safety guard that would have prevented injury was properly excluded). *See generally* James L. Johnson, *Subsequent Remedial Measures May Not Be Admissible to Establish Product Design Defect*, 3 No. 7 LAW. J. 6 (summarizing *Padillas*); Karen K. Peabody, Annotation, *Products Liability: Admissibility of Evidence of Subsequent Repairs or other Remedial Measures by Third Party Other than Defendant*, 64 A.L.R. 5TH 119 (1998).

[210] *See generally* E. Lee Reichert, Note, *The "Superior Authority Exception" to Federal Rule of Evidence 407: the "Remedial Measure" Required to Clarify a Confused State of Evidence*, 1991 U. ILL. L. REV. 843 (1991); Shields, *supra* note 177, § 5 (citing cases that address a "superior authority" exception to Rule 407).

Evidence of product recalls, which are sometimes voluntary and at other times ordered by a regulatory agency, raise various evidentiary issues including the subsequent repair doctrine. *See generally* WEINSTEIN'S EVIDENCE MANUAL, *supra* note 178, § 7.04[3]; AM. LAW PROD. LIAB. 3d, *supra* note 26, §§ 14:64–14:66; Herbrand, *supra* note 179 (admissibility of recall letter by defendant–manufacturer). On product recalls, see OWEN, PRODUCTS LIABILITY LAW, *supra* note 2, § 10.7.

a product's long history of safe use suggests the opposite: that the product in fact contains no design or warnings defects. Finally, a manufacturer's subsequent removal of a product hazard tends to suggest its recognition that the hazard was a problem and that its remedy was feasible, which often goes far to prove defectiveness and negligence. But the law has properly struggled with whether to allow such evidence of subsequent remedial measures when such a rule of evidence might deter manufacturers from repairing product hazards. These are among the more prominent issues of proof of defectiveness that recur in modern products liability litigation.