THE COLUMBIA
SCIENCE & TECHNOLOGY
LAW REVIEW

VOLUME 27 STLR.ORG NUMBER 2

ARTICLE

# AN INITIAL ASSESSMENT OF STANDARDS IN TECHNOLOGY TORT LITIGATION

Justin (Gus) Hurwitz[*] and Yike Lu[†]

*Standards are a central preoccupation of AI governance, yet the dominant policy conversation—focused on regulatory compliance and coordination—does not capture how standards actually function in the legal domain most likely to govern AI-related harms: tort law. This Article offers an empirical and doctrinal assessment of standards in technology tort litigation, surveying reported decisions to map how courts use standards across negligence and products liability contexts.*

*The central finding is that tort law consistently resists treating standards as dispositive. Compliance is almost never conclusive; noncompliance is rarely sufficient by itself. What matters is how a standard is used: what it is offered to prove, whether it applies to the defendant and the risk at issue, whether it reflects contemporaneous knowledge, and whether it is presented through reliable expert methodology. This pattern recurs across technological domains—from railroads and automobiles to medical devices and digital platforms—because tort law is structurally committed to contextual, fact-intensive evaluation rather than categorical rule-following.*

---

[*] Senior Fellow and Academic Director, University of Pennsylvania Carey Law School Center for Technology, Innovation and Competition. This article benefited from participants at the Columbia Science & Technology Law Review's (STLR) Fall 2025 Symposium. Particular thanks are owed to Catherine Sharkey for comments that have been both helpful and encouraging. In the spirit of this article's subject matter, and that of the STLR Fall Symposium, this article has been researched and drafted with the assistance of ChatGPT 5.2 Professional. Further detail about use of AI in preparing this work is presented in Part IV.

[†] J.D. 2026, University of Pennsylvania Carey Law School.

*These findings carry direct implications for AI. Because AI standards are emerging unusually early in the technological lifecycle—before stable engineering norms or accumulated accident experience exist—courts are unlikely to treat them as duty-defining baselines or safe harbors. Instead, they will enter tort litigation primarily as evidentiary tools: anchors for expert testimony, benchmarks for feasibility arguments, and reference points for evaluating warnings and governance practices.*

I. INTRODUCTION 357
II. THE RELEVANCE OF STANDARDS TO LAW 359
*A. What Are Standards? 360*
*B. When Do Standards Become Legally Salient? 361*
*C. Historical Illustrations 363*
*D. The Contemporary Moment: AI and the Pre-Standard Phase 365*
III. STANDARDS AS A TORT QUESTION 366
*A. The Role of Standards in Tort Law—Negligence 367*
1. The Reasonable Person Standard 367
2. Industry Custom and the T.J. Hooper Paradigm 368
3. Professional and Technical Standards 370
4. Statutory and Regulatory Standards: Negligence Per Se 372
5. Preemption and the Displacement of Tort Standards 375
6. Evidentiary and Procedural Roles 376
*B. The Role of Standards in Tort Law - Products Liability 378*
IV. A SURVEY OF STANDARDS CASES 380
*A. Theory of Liability as the First Sorting Mechanism 382*
1. Negligence: Standards as Evidence of Reasonableness, Not Substitutes for It 382
2. Products Liability: Standards at the Boundary Between "Product" and "Conduct" 383
*B. A Functional Typology: What is the Standard Being Offered to Prove? 385*
1. Duty and Duty-Adjacency: Standards as Rules Versus Standards as Context 385
2. Breach or Defect: Standards as Benchmarks for Reasonableness or Safety 385
3. Feasibility and Alternative Design: Standards as Evidence that "It Could Have Been Done" 386
4. Knowledge, Notice, and "What Was Known When": Standards as Windows into the Past 386

5. Causation and Comparative Fault: Standards as User-Facing Norms (and the Risk of Confusion) 387
6. Deception, Misrepresentation, and Warranty: Standards as Representational Anchors 387
7. Damages: Standards as Context for Punitive Damages and Regulatory Penalties 388
*C. Source and Rigor: Pedigree as an Implicit Relevance and Weight Variable 388*
1. Regulatory and Legally Adopted Standards 388
2. Consensus Standards from Standards-Setting Organizations 389
3. Internal Standards and Company Policies 389
4. Custom and Practice 390
*D. Applicability: To Whom Does the Standard Speak? 390*
1. Employer-Oriented Standards in Manufacturer Cases (OSHA as the Classic Flashpoint) 390
2. User-Oriented Standards and the Risk of Turning Advice into Law 391
*E. Timing: Contemporaneous Versus Post-Event Standards 391*
*F. Expertise and Method: Standards as Part of Rule 702 Gatekeeping, Not a Substitute for It 391*
*G. A Cautious Synthesis: The Categories as a Predictive Checklist for Emerging Tech 393*
V. STANDARDS AND AI LIABILITY—AND FUTURE QUESTIONS 394
*A. What "AI standards" will look like in tort litigation 395*
*B. Negligence claims: standards as evidence of reasonable precautions, not a substitute for reasonableness 398*
*C. Products liability: whether standards speak to "defect" depends on doctrine and framing 399*
*D. Standards as an evidentiary technology: the fight will often be about experts, not "the standard of care" 401*
*E. Two early illustrations: Character.AI and Tesla FSD 402*
*F. Open questions for "standards in AI torts" 404*
VI. CONCLUSION 406

## I. INTRODUCTION

Standards are an important topic in AI governance. They feature prominently in the European Union's AI Act[1] and both the Biden[2] and Trump[3] administrations' executive actions relating to AI. Industry actors have called for the development of AI standards to provide legal guidance.[4] Academics—including myself and others contributing to this symposium—have written about AI standards.[5]

The overwhelming focus on AI standards has been regulatory. Many in industry have embraced standards as a way to get legal certainty in a rapidly developing field and to assuage political concerns about the technologies they are developing. Governments want assurances about how AI technologies will work and that they will comport with political values. This is most clearly the case in the European Union, where the most advanced AI systems are subject to substantial regulatory scrutiny and firms can only be assured of compliance—and therefore the ability to operate or offer their services legally—if they adhere to formally adopted standards.[6] In other cases, standards might be used to address more narrow concerns, or even to advance the development of AI technologies.[7]

---

[1] Article 40 of the EU AI Act provides that, *inter alia*, "High-risk AI systems or general-purpose AI models which are in conformity with harmonized standards . . . shall be presumed to be in conformity with the requirements set out in . . . this Regulation, to the extent that those standards cover those requirements or obligations." Council Regulation 2024/1689, of 13 June 2024, art. 40, 2024 O.J. (L1689) 1, 76 (EU) [hereinafter EU AI Act].

[2] *See, e.g.,* Exec. Order No. 14,110, 88 Fed. Reg. 75,191 (Nov. 1, 2023) (describing the aim of the order). Section 4.1 of this Executive Order, for instance, calls for the establishment of "guidelines and best practices, with the aim of promoting consensus industry standards, for developing and deploying safe, secure, and trustworthy AI systems . . ."

[3] The Trump administration has issued several Executive Orders relating to specific AI-related initiatives. *See, e.g.,* Exec. Order No. 14,148, 90 Fed. Reg. 8,237 (Jan. 28, 2023); Exec. Order No. 14,179, 90 Fed. Reg. 8,741 (Jan. 23, 2023). The administration's "AI Action Plan" lays out their general roadmap for AI. It issues fewer calls for the development of standards than the Biden AI Executive Order, but nonetheless calls for, e.g., "several domain-specific efforts (e.g., in healthcare, energy, and agriculture), led by NIST at DOC, to convene a broad range of public, private, and academic stakeholders to accelerate the development and adoption of national standards for AI systems and to measure how much AI increases productivity at realistic tasks in those domains." *See* THE WHITE HOUSE, WINNING THE RACE: AMERICA'S AI ACTION PLAN (2025), https://www.whitehouse.gov/wp-content/uploads/2025/07/Americas-AI-Action-Plan.pdf [https://perma.cc/U6Y8-YHWP].

[4] *See, e.g.*, FRONTIER MODEL FORUM, *Our Mission*, https://www.frontiermodelforum.org/about-us/ [https://perma.cc/YP6D-7PB4] (identifying the top priority of this industry-supported group as being to "Identify best practices and support standards development for frontier AI safety and security").

[5] A Westlaw search for "AI Standards" in law reviews returns 80 articles published between 2023-2025. WESTLAW, "AI Standards", 86 results (Apr. 17, 2026) (filtered by "Secondary Sources", "Law Reviews and Journals", "Publish Date: 01/01/2023 - 12/31/2025").

[6] EU AI Act art. 40, *supra* note 1.

[7] The Biden AI Executive Order, for instance, specifically addresses the use of AI in Critical Infrastructure and in Cybersecurity (section 4.3), Chemical, Biological, and Nuclear Threats

This regulatory context is important. But it is not the only context in which standards matter. Standards are also important in civil litigation—particularly in tort law, where adherence (or non-adherence) to existing standards can affect liability determinations. Indeed, the current focus on the use of standards early in a technology's development to address legal concerns is a historical, and legal, abnormality. Standards more often become legally relevant later in a technology's maturation, in response to safety considerations—either as a formalization of best practices or to address concern about insufficiently safe practices.[8]

Already today we can see this in early AI-related litigation. Debates over the EU AI Act and the changing Executive Order landscape in the United States certainly grab headlines—and "AI Governance" is a great topic for an academic conference. But litigation over liability for AI chatbots when their teenage users harm themselves or drivers killed while driving autonomous vehicles are more likely to keep a general counsel up at night. Understanding whether, when, and how standards affect the outcomes in such cases is likely to matter far more to a general counsel than abstract debates over "AI governance."

This paper assesses the role of standards in technology tort litigation. It does so primarily on an empirical basis, surveying a sample of reported cases to understand how standards are used in those cases.[9]

Standards have long played an important role in tort law. Judge Hand's *TJ Hooper* opinion, on the role of industry custom (one form of standard) is a mainstay of first year torts courses.[10] So too is discussion of medical malpractice, which looks to a professional's community's standard practices in determining liability.[11] And most torts courses also discuss negligence *per se*, in which liability might be determined, in part, by reference to legislatively recognized standards.[12] One can list other examples where standards are considered just in a first year torts course, such as the relevance of standards in design defect litigation.[13] Indeed, the "reasonable person *standard*" is just that—a *standard*.

In a very real way, tort law is the law of standards—or the law of liability for harms that result when a relevant standard is not followed. This doesn't necessarily mean that questions of "AI standards" map neatly into tort law: classic tort cases about standards involve standards developed over a long time horizon or representing established fields of professional expertise. A central question that this paper explores is how standards apply in litigation involving new or rapidly

---

(section 4.4), and synthetic content such as deepfakes (section 4.5). Exec. Order No. 14,110, *supra* note 2.

[8] This statement reflects an intuition—it could well be the basis of future work.

[9] The universe of reported cases discussing standards considered in this project is relatively small, though sufficient to produce useful results. *See infra* Part IV. Future iterations of this work would engage with additional sources to include non-reported cases.

[10] The T. J. Hooper, 60 F.2d 737, 739-40 (2d Cir. 1932); *see infra* Part III.A.

[11] *See infra* Part III.A.

[12] *Id.*

[13] *See infra* Part III.B.

evolving industries, such that they do not necessarily represent a tested and evolved expert judgment so much as a judgment rendered as a matter of convenience or necessity. As AI matures and becomes embedded more deeply in our day-to-day lives—from affecting how products are designed or operate to how individuals engage with one another—accidents will occur. Tort law is how liability for these accidents will most often be assessed, and standards are central to how it will make those assessments.

Oliver Wendell Holmes famously explained law as "the prophecies of what the courts will do."[14] Yogi Berra famously warned that "it's tough to make predictions, especially about the future." Both are apt descriptions of this article's project—particularly where the technology at issue itself operates through prediction.

The clearest prediction that emerges from the cases surveyed here is that tort law will retain ultimate authority over liability determinations, delegating that judgment neither to engineers nor to standard-setting bodies unless it is expressly instructed to do so by positive law. And the most surprising observation—less a prediction than a description of existing practice—is that courts often treat standards first and foremost as an evidentiary problem. Disputes over standards routinely turn not on whether they define the standard of care, but on whether evidence of their existence or compliance will assist the factfinder or instead risk prejudicing or misleading the jury.

This paper proceeds in four parts. Part II situates "standards" as a legal artifact—what they are, how they arise (custom, consensus, internal policy, and positive law), and when they become legally salient, with particular attention to the historically unusual "standards-first" posture now associated with AI governance. Part III then translates that background into tort doctrine, distinguishing the different ways standards operate in negligence (as evidence of reasonable precautions, sometimes via negligence *per se*) and in products liability (where admissibility and weight often turn on defect theory and jurisdictional commitments about importing negligence concepts). Part IV provides the paper's empirical core: a survey of reported technology-tort decisions in which courts grapple with standards across procedural postures, using the cases to develop a functional typology organized around what the standard is offered to prove, its pedigree, applicability, timing, and its role in expert-method gatekeeping. Finally, Part V applies those lessons to emerging AI disputes—where standards are likely to enter first as process and evidentiary technologies (expert anchors, feasibility proof, and representational benchmarks) rather than as dispositive duty rules—while identifying the near-term doctrinal and institutional questions that will shape whether AI standards function as floors, ceilings, or something closer to neither.

## II. THE RELEVANCE OF STANDARDS TO LAW

[14] Oliver Wendell Holmes, Jr., *The Path of the Law*, 10 HARV. L. REV. 457, 461 (1897).

Part II builds the conceptual footing for the rest of the paper by treating "standards" as a category the law uses constantly but rarely pauses to define. In ordinary tort discourse, standards often arrive as if they are self-explanatory—an ASTM protocol, an OSHA rule, a "professional practice," a company policy, or simply "what everyone does." But those artifacts differ in kind, and those differences do legal work. A standard can be a consensus instrument or an internal aspiration; it can be a description of practice or a prescription for it; it can be voluntary, mandatory, or effectively mandatory through contracts, insurance, procurement, or regulation. And—critically for emerging technologies—it can be early and anticipatory rather than the product of long, cumulative learning. Making those distinctions explicit is a prerequisite for saying anything coherent about how standards will matter in technology tort litigation.

This Part proceeds in four steps. Section II.A clarifies what standards are and the main dimensions along which they vary (source, formality, voluntariness, and function), emphasizing that "standard" is an umbrella term rather than a single legal object. Section II.B then asks when standards become legally salient—when courts treat them as meaningful reference points for liability—and sketches the familiar lifecycle in which technical conventions become evidence of reasonableness and, sometimes, become embedded in positive law, with Section II.C offering historical examples. Section II.D closes by locating AI within that lifecycle: a pre-standard or early-standard environment in which frameworks and management-system approaches are proliferating faster than stable, widely adopted engineering norms, setting up the paper's central tension for tort—how courts should treat standards that are new, contested, and only partially connected to accumulated experience.

### *A. What Are Standards?*

Standards are a familiar but elusive legal artifact. I and others have written before about what standards are and the many forms that they take.[15] I will not reproduce discussion here other than to capture the general contours.

Generally, a standard is merely an agreed-upon way of doing something. They are sometimes developed formally, for instance by industry or other standards setting bodies. The International Organization for Standardization (ISO) and Institute of Electrical and Electronics Engineers (IEEE) are common examples of standards setting bodies.[16] They are sometimes developed privately. This is true

---

[15] *See, e.g.*, Justin (Gus) Hurwitz, *The AI Standards Alignment Problem*, 8 J. L & INNOVATION (forthcoming 2025) (providing a general introduction to the concept of standards and looking at a series of examples from both the AI context and the broader standardization efforts to unpack the various tensions inherent in relying on standards to address complex legal and social understandings of technology).

[16] *See, e.g.*, INTERNATIONAL ORGANIZATION FOR STANDARDIZATION, *About ISO*, https://www.iso.org/about [https://perma.cc/W7CE-U95S] (last visited Feb. 4, 2026) (developing international standards for sectors including IT, health, energy, and transport); INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, *IEEE Governing Documents*, https://www.ieee.org/about/corporate/governance [https://perma.cc/UF78-8LQZ] (last visited Feb.

both in the sense that any given organization might have practices that it standardizes as well as in the sense that privately-developed standards might gain widespread adoption. For instance, Adobe released the PDF standard in 1993;[17] in 2007, Adobe decided to submit its PDF design to the ISO for open standardization, which was completed in 2008.[18]

Standards may also be developed informally. Any society that shares common resources will likely develop customary practices for how to coordinate shared use of those resources, even without formal rules. For instance, even without any legal requirements a community of drivers sharing roads will develop norms about which side of the road to drive on.

Another common distinction is that standards may be voluntary or mandatory. Voluntary standards are relatively straightforward: no one is *required* to use Adobe's PDF standard for sharing documents. Standards may be made mandatory in several ways. For instance, a law or regulation could require use of a standard. Or adherence to certain standards might be made a requirement for membership of an organization. This is commonly seen in the technical setting with patent pools and technology-specific standards setting organizations, which might only make information or other assets (e.g., licenses to use patents) available to members who agree to abide by the group's standards.

Standards serve multiple purposes. They facilitate compatibility and interoperability. They can reduce costs by allowing for the production of components at an efficient scale, or by reducing engineering and development costs by allowing products to be developed using existing technologies. They can promote competition, for instance by encouraging competition along meaningful margins and discouraging competition along relatively meaningless ones; they can also stifle competition by coordinating the conduct of competitors and hampering the adoption of competing, non-standard, technologies. And, in the legal context, they can provide consumers or other counterparties with certainty and reduce information costs and help us to allocate burdens when one party deviates from accepted standards.

### *B. When Do Standards Become Legally Salient?*

---

4, 2026) (establishing technical standards and protocols for electrical, electronic, and computing technologies).

[17] *See* ADOBE SYSTEMS INC., PORTABLE DOCUMENT FORMAT REFERENCE MANUAL (1993), https://opensource.adobe.com/dc-acrobat-sdk-docs/pdfstandards/pdfreference1.0.pdf [https://perma.cc/G583-AJZU]. For more background on the history of the PDF format, *see The History of PDF*, PREPRESSURE, https://www.prepressure.com/pdf/basics/history [https://perma.cc/T8TY-GW2X] (last visited Feb. 4, 2026).

[18] James C. King, *Long Live ISO 32000-1 — The PDF Standard*, 6 No. 4 ISO FOCUS 24, 24 (2009), https://www.iso.org/files/live/sites/isoorg/files/archive/pdf/en/p.24__main_focus.pdf [https://perma.cc/A7CP-43Q7] ("In January 2007, Adobe decided. . . to submit PDF to ISO, with a view to it becoming a publicly-available International Standard. By January 2008, the project had been approved by the ISO membership, and the completed specification was published a few months' later.").

The significance of standards in tort law is not static; it evolves alongside the technologies they govern. Understanding when standards acquire legal salience—when they become reference points for liability rather than mere engineering conventions—helps illuminate both the history of tort law and its likely trajectory for AI and other emerging technologies.

Most technologies follow a predictable lifecycle. In the early stages, innovation proceeds faster than standardization. Competing designs and business models proliferate; knowledge is proprietary; and the risks are poorly understood. Formal standards are scarce because consensus is absent. Tort litigation during this phase tends to be highly fact-specific. Courts rely on common-law analogies, expert testimony, and the intuition of reasonableness rather than reference to established norms. Indeed, in the most extreme cases—where the use of a new technology outpaces understanding of its risks—courts might forgo the reasonableness inquiry altogether and hold use of the new technology that subjects society writ large to poorly-understood risks to a strict liability standard.[19]

The history of medical x-rays presents a fascinating case on point.[20] The use of x-rays in medical diagnosis was first demonstrated in 1895 by Wilhelm Conrad Rontgen. At the time, as today, cases involving medical injuries were governed by medical malpractice standards, which are generally very deferential to established medical practice.[21] But this was a new technology—and cautious medical practitioners were reluctant to embrace its use too quickly, especially as evidence in legal proceedings.[22] But as compared to asking jurors to decide cases without the benefit of x-ray evidence, courts rapidly embraced the use of x-rays as evidence in malpractice cases.[23] Soon thereafter, use of x-rays became standard medical practice, if only because of their powerful evidentiary value in the case of litigation.[24]

As the technological lifecycle continues, use of and practice around a technology matures, patterns of use stabilize and best practices emerge. Industry groups, insurers, and regulators begin codifying those practices into de facto standards. Courts start encountering those standards in litigation, often through

---

[19] The canonical example is the early development of aviation, which was viewed as an ultrahazardous activity and subjected to strict liability. *See* RESTATEMENT (SECOND) OF TORTS, §§ 519-520A (A.L.I. 1965).

[20] *See generally* Tal Golan, *The Authority of Shadows: The Legal Embrace of the X-Ray*, 24 No. 3 HIST. REFLECTIONS/RÉFLEXIONS HIST. 437, 437-38 (1998) (discussing the legal history of x-rays, focusing on the first American case where x-ray photographs were admitted into evidence).

[21] *See infra* Part III.A.

[22] Golan, *supra* note 20, at 438 (“The infant X-ray technology was considered, therefore, by most of the medical community as "more an interesting toy than a weapon of value in medicine.”).

[23] *Id.* at 455 (discussing the first cases that allowed use of X-ray evidence in 1897, and noting that “Soon, therefore, other judges began to follow [that court’s] reasoning and admitted X-ray photographs . . . .”).

[24] *Id.* at 457 (noting the advice that “in all obscure, complicated, and unusually difficult cases the help afforded by the Roentgen rays shall be secured by the surgeon, even if it is done chiefly with the view to his own protection.”).

expert testimony: "the accepted engineering practice is to include a redundant failsafe," or "the ASTM protocol requires this form of stress testing." Judicial opinions increasingly cite such standards as evidence of due care or negligence.

In the institutionalization stage, standards become embedded in contracts, insurance requirements, and regulations. Compliance may become mandatory. Tort law then treats them much like statutes: noncompliance is presumptive breach; compliance may define reasonableness. The process can take decades—as it did for automotive safety—but once complete, standards become a central mechanism of private governance within the tort system.

From this perspective, today's debates about AI standards are historically unusual. Policymakers are attempting to impose formal standardization early in the innovation cycle, before consensus on risks, use-cases, or best practices exists. Historically, the law of accidents has waited for experience to accumulate before crystallizing standards. The current "standards-first" approach reflects both regulatory anxiety and the perceived urgency of controlling AI's societal impact. Tort law's eventual engagement with these standards will test whether early, anticipatory standardization can play the same stabilizing role that ex post norms have traditionally served.

Indeed, this curiosity reflects an indeterminacy in that nature of standards. As said above, a general definition of "standard" is a commonly agreed-upon way of doing something. But agreed-upon by whom? When Sony developed the Betamax video cassette technology, they necessarily developed a specification for it. Had the Betamax technology succeeded in place of the VHS, that specification would have become the "standard."

### *C. Historical Illustrations*

A brief look at prior technological revolutions shows how standards migrated from informal to legal significance.

- *Railroads.* In the mid-nineteenth century, railroad accidents generated some of the earliest modern tort litigation.[25] Courts initially assessed negligence without reference to formal codes.[26] Over time, industry associations such as the Master Car Builders' Association developed technical standards for couplers, brakes, and signaling.[27] By the early twentieth century, those standards were incorporated into federal regulation through the Safety

[25] Gary T. Schwartz, *Tort Law and the Economy in Nineteenth-Century America: A Reinterpretation*, 90 YALE L.J. 1717, 1726, 1734-38 (1981); *See generally* Palsgraf v. Long Island Railroad Co., 248 N.Y. 339 (1928) (using a railroad platform accident to articulate foundational principles of duty and proximate cause in negligence law).

[26] Wex S. Malone, *The Formative Era of Contributory Negligence*, 41 ILL L. REV. 151, 152-57 (1946).

[27] *FRA Safety*, WCRS CORP. (2024), http://www.wcrscorp.com/wp-content/uploads/2024/03/frasafety.pdf [https://perma.cc/YDC2-KVXL] (last visited Mar. 7, 2026).

Appliance Acts.[28] Tort law followed suit, recognizing standards as setting a floor for reasonableness such that compliance with federally recognized standards offers an indicia of reasonableness while deviations supported a lack thereof.[29]

- *Automobiles*. Early automobile cases resembled early AI disputes today—fragmented, experimental, and rife with uncertainty. Manufacturers argued that safety features like seatbelts or airbags were impractical or unnecessary; plaintiffs countered that the technology was available.[30] Only after decades of use did consensus form, codified in Federal Motor Vehicle Safety Standards and SAE specifications.[31] Courts then treated those standards as the baseline for reasonable design.[32] The *T.J. Hooper* logic—that universal disregard is no excuse—bridged the gap between innovation and standardization.[33]

- *Pharmaceuticals and Medical Devices.* Drug and device safety followed a similar arc. Initially governed by common-law negligence, the field moved toward administrative standardization through the Food and Drug Administration's testing and labeling requirements.[34] Tort suits invoking failure to warn or design defects now routinely hinge on compliance with FDA or ASTM standards.[35] The Supreme Court's preemption decisions,

---

[28] Safety Appliance Act of 1893, ch. 196, 27 Stat. 531 (codified as amended at 49 U.S.C. §§ 20301-20306).

[29] *See* Mark A. Geistfeld, *Tort Law in the Age of Statutes*, 99 IOWA L. REV. 957, 993-94 (2014) (discussing the development of the use of regulatory compliance in tort law using railroads as a framing example).

[30] *See*, *e.g.*, Evans v. General Motors Corp., 359 F.2d 822, 825-27 (7th Cir. 1966) (addressing manufacturer arguments that automobile design need not account for collision injuries).

[31] National Traffic and Motor Vehicle Safety Act of 1966, Pub. L. No. 89-563, 80 Stat. 718 (codified as amended at 49 U.S.C. ch. 301); SAE INT'L, *About SAE Standards*, https://www.sae.org/standards [https://perma.cc/9TEM-8Z5Q].

[32] *See, e.g.*, Kim v. Toyota Motor Corp., 6 Cal. 5th 21, 42-43 (2018) (holding that evidence of noncompliance with VSC standards are relevant in a product liability case); Geier v. American Honda Motor Co., 529 U.S. 861, 866-67 (2000) (holding that FMVSS standards are relevant in a product liability case).

[33] The T.J. Hooper, 60 F.2d 737, 740 (2d Cir. 1932) (L. Hand, J.) ("Indeed in most cases reasonable prudence is in fact common prudence; but strictly it is never its measure; a whole calling may have unduly lagged in the adoption of new and available devices. It never may set its own tests, however persuasive be its usages. Courts must in the end say what is required; there are precautions so imperative that even their universal disregard will not excuse their omission.").

[34] *See, e.g.*, Thomas v. Winchester, 6 N.Y. 397, 397 (1852) (establishing a duty of care for manufacturers of products "in their nature dangerous to the lives of others," like mislabeled drugs); Federal Food, Drug, and Cosmetic Act, Pub. L. No. 75-717, 52 Stat. 1040 (1938) (codified as amended at 21 U.S.C. §§ 301-399).

[35] *See, e.g.*, Chambers v. Osteonics Corp., 109 F.3d 1243, 1248 (7th Cir. 1997) (noting that claims for defective design or failure to warn are preempted when they would add requirements in excess of those imposed by the FDA and discussing the role of ASTM standards in the FDA approval process).

such as *Riegel v. Medtronic*, confirm that once standards are formally adopted into regulation, they define the legal terrain of liability.[36]

These examples illustrate a consistent pattern: tort law lags behind technological change but eventually absorbs and enforces emerging standards. The process is iterative. Accidents reveal design weaknesses; litigation exposes those weaknesses to public scrutiny; industry responds by codifying improved practices; and courts incorporate those practices into the legal definition of reasonableness.

### *D. The Contemporary Moment: AI and the Pre-Standard Phase*

Artificial intelligence occupies the earliest, most fluid stage of this lifecycle. There is no consensus on taxonomy (what counts as "AI"), no uniform set of performance metrics, and no mature ecosystem of insurers or certifiers. Standard-setting bodies are racing to fill this vacuum: ISO/IEC 42001 (AI management systems), ISO/IEC 23894 (AI risk management), NIST's AI Risk Management Framework (NIST RMF), and various IEEE efforts all aim to provide guidance.[37] Yet few have been adopted by courts or incorporated into regulation.

Consequently, early AI tort cases—whether involving chatbots, generative models, or autonomous vehicles—resemble the pre-standard phase of earlier technologies. Courts must evaluate reasonableness without stable reference points. Some plaintiffs argue that the absence of safeguards or explainability mechanisms constitutes negligence; defendants respond that no accepted standard yet requires such features. Over time, as frameworks mature and are adopted by governments or trade associations, these same standards will likely become evidentiary benchmarks. A court may ask whether an AI developer followed the NIST RMF or an equivalent internal process—much as courts today ask whether an automaker followed ISO 26262 for functional safety.

The Tesla Autopilot litigation illustrates this dynamic vividly. A series of high-profile crashes involving vehicles equipped with Autopilot or "Full Self-Driving" (FSD) features has generated wrongful-death, consumer-protection, and product-liability suits alleging that Tesla overstated the capabilities of its driver-assistance systems and failed to implement adequate safeguards against foreseeable misuse.[38]

---

[36] Riegel v. Medtronic, Inc., 552 U.S. 312, 323-25 (2008).

[37] *See, e.g.,* INT'L ORG. FOR STANDARDIZATION & INT'L ELECTROTECHNICAL COMM'N, INFORMATION TECHNOLOGY — ARTIFICIAL INTELLIGENCE — MANAGEMENT SYSTEM, ISO/IEC 42001:2023 (2023); INT'L ORG. FOR STANDARDIZATION & INT'L ELECTROTECHNICAL COMM'N, INFORMATION TECHNOLOGY — ARTIFICIAL INTELLIGENCE — GUIDANCE ON RISK MANAGEMENT, ISO/IEC 23894:2023 (2023); NAT'L INST. OF STANDARDS & TECH., U.S. DEP'T OF COM., NIST AI 100-1, ARTIFICIAL INTELLIGENCE RISK MANAGEMENT FRAMEWORK (AI RMF 1.0) (2023); *See, e.g.*, IEEE, IEEE 7000-2021, IEEE STANDARD MODEL PROCESS FOR ADDRESSING ETHICAL CONCERNS DURING SYSTEM DESIGN (2021).

[38] *See* Associated Press, *Jury Orders Tesla to Pay More Than $240 Million in Autopilot Crash Case* (Aug 1, 2025), APNEWS, https://apnews.com/article/tesla-miami-musk-benavides-selfdriving-autopilot-autonomous-vehicles-c342f2716b1ec4e9ede09b8e958751b7 [https://perma.cc/C55H-4XE6] ("The plaintiffs' lead lawyer, Brett Schreiber, said Tesla's decision

Central to those disputes is whether Tesla's design, warnings, and marketing comported with prevailing understandings of automated-driving technology at the relevant time, or instead exploited ambiguity about what its systems could safely do.

For instance, in *Benavides v. Tesla*, Tesla sought to cite SAE J3016 (the taxonomy of driving-automation levels) as evidence that its FSD system was a "level 2" system that required full-time driver supervision; plaintiffs sought to exclude this evidence as unduly prejudicial.[39] The dispute is not only about engineering but about when a technical standard becomes a legal standard.

Understanding the timing of standards' legal salience has two implications for the study of technology torts. First, it provides a predictive framework: courts are unlikely to rely heavily on formal AI standards until those standards achieve at least partial consensus and adoption. Second, it cautions against assuming that early regulatory or policy enthusiasm for standards will translate immediately into tort relevance. Formal adoption does not guarantee legal uptake; what matters is whether the standards become embedded in professional practice and expert testimony.

The empirical analysis that follows in Parts IV and V seeks to test these propositions by examining how courts have cited standards across different technological domains—autonomous vehicles, medical AI, cybersecurity, and digital-platform safety. By mapping the trajectory of those citations, we can observe the process through which technical norms acquire legal force.

## III. STANDARDS AS A TORT QUESTION

Part III turns from timing and lifecycle to doctrine, asking how tort law uses standards that are legally salient. Tort doctrine does not treat standards as a monolith.[40] Instead, it deploys them through distinct doctrinal channels—sometimes as evidence of reasonable care, sometimes as proxies for professional judgment, sometimes as statutory baselines, and sometimes not at all.[41] Understanding these doctrinal pathways is essential for assessing what role emerging technology standards, including AI standards, can realistically play in litigation. Without this doctrinal map, debates over whether a standard is "voluntary"

---

to even use the term Autopilot showed it was willing to mislead people and take big risks with their lives because the system only helps drivers with lane changes, slowing a car and other tasks, falling far short of driving the car itself.").

[39] *See* Omnibus Order on Parties' Motions in Limine at 19, Benavides v. Tesla, 804 F.Supp.3d 1242, No. 21-cv-21940 (S.D. Fla. 2025) ("Plaintiffs seek to preclude Tesla from making any reference to, or use of, Society of Automotive Engineers ("SAE") J3016 Taxonomy and Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles ("SAE J3016") . . . . The Court will not preclude Tesla from relying on the SAE J3016 at trial, as the Court does not find any undue prejudice . . . .").

[40] W. PAGE KEETON ET AL., PROSSER AND KEETON ON THE LAW OF TORTS 173-75 (5th ed. 1984).

[41] RESTATEMENT (SECOND) OF TORTS §§ 283, 286, 299A; *See* The T. J. Hooper, 60 F.2d 737, 739-40 (2d Cir. 1932).

or "mandatory" risk obscuring the more consequential question: what legal work courts actually permit standards to perform in tort cases.

This Part proceeds in two steps. Section III.A examines the role of standards in negligence, focusing on how courts use standards to inform—but rarely to define conclusively—the standard of care, through doctrines such as the reasonable person standard, industry custom, professional malpractice, and negligence per se. Section III.B then turns to products liability, where the relationship between standards and liability is more contested, varies significantly across jurisdictions, and often depends on how claims are framed as design defects, manufacturing defects, or failures to warn. Together, these sections show that tort law does not treat standards as automatic shields or swords; rather, it treats them as context-dependent tools whose relevance turns on doctrinal framing, institutional competence, and the risk of importing negligence concepts where courts have chosen to resist them. This doctrinal groundwork sets up the case survey in Part IV, which examines how these principles operate in practice across a range of technology-related disputes.

### *A. The Role of Standards in Tort Law—Negligence*

If regulation is the law of *ex ante* prescription, tort is the law of *ex post* evaluation.[42] Tort law determines, after the fact, whether a defendant's conduct met the level of care that society demands.[43] That evaluation almost always depends, implicitly or explicitly, on standards—on some shared benchmark of appropriate behavior.[44] Indeed, the "standard of care" itself is a standard in the purest sense: a community-generated measure of proper conduct.[45] The ways in which tort law employs standards are multiple, but four are particularly salient: (1) the familiar "reasonable person" standard,[46] (2) the use of industry custom as evidence of reasonableness,[47] (3) the invocation of professional or technical practice to define the standard of care in specialized domains,[48] and (4) the reliance on statutory or regulatory standards to establish negligence per se.[49] Each reflects a different relationship between standardized practice and legal obligation.

#### 1. The Reasonable Person Standard

We need to start by recognizing, if only briefly, the familiar "reasonable person" standard—the standard standard of care in negligence.[50] This is a textbook example

---

[42] Steven Shavell, *Liability for Harm Versus Regulation of Safety*, 13 J. LEGAL STUD. 357, 357-60 (1984).

[43] RESTATEMENT (SECOND) OF TORTS § 283.

[44] *Id.*

[45] RESTATEMENT (SECOND) OF TORTS § 283 cmt. c.

[46] *Id.* at § 283.

[47] The T.J. Hooper, 60 F.2d 737, 739-40 (2d Cir. 1932).

[48] RESTATEMENT (SECOND) OF TORTS § 299A.

[49] Martin v. Herzog, 126 N.E. 814, 815 (N.Y. 1920).

[50] RESTATEMENT (SECOND) OF TORTS § 283.

of an informal standard, asking how a person of ordinary prudence, in similar circumstances as the defendant, would have acted.[51] This is an objective measure that reflects community norms of caution and foresight—that is, it reflects the implicitly agreed-upon understanding of how to conduct oneself in a community.[52]

Evidence of a relationship between the standard of care in negligence and questions of technical standards can be seen even in the earliest cases developing this standard of care. Consider *Vaughan v. Menlove*, commonly taught as the first case to introduce the modern reasonable person standard.[53] This case involved a hayrick—a pile of hay on a cart—that spontaneously combusted and caused fire damage to nearby buildings.[54] The question in the case was whether the defendant had acted reasonably in how he managed this hayrick.[55] His neighbors warned him repeatedly that it posed a fire danger; he believed that it did not.[56] At one level, this is a question of scientific knowledge and industrial practice. He deviated from common practice, and when injury subsequently happened, he was held liable for that injury as a result.[57] Had he heeded the warnings of his neighbors, and otherwise managed his hayrick as common practice dictated, it is likely that he would not have been held liable even had the rick combusted and injury to another party resulted.[58] There was no formal, or "industry," standard for how to manage piles of hay—though today such standards, such as those adopted by the American Society of Agricultural and Biological Engineers (ASABE), do exist—but the informal standard was effectively given power through the reasonable person standard.[59]

2. Industry Custom and the T.J. Hooper Paradigm

The "reasonable person" standard used in *Menlove* is not where most tort scholars would start a discussion of tort law's treatment of "standards." For that discussion, most would say that the canonical starting point is Judge Learned Hand's 1932 decision in *The T.J. Hooper*.[60] The case involved tugboats that lacked radio receivers and consequently failed to receive weather reports warning of an

---

[51] *See* Brown v. Kendall, 60 Mass. 292, 296 (1850) (establishing that ordinary care means what a reasonable person would do).

[52] *See* Pokora v. Wabash Ry. Co., 292 U.S. 98, 104-05 (1934) (holding that the standard of reasonable care turns on community judgment about how an ordinarily prudent person would act under the circumstances, rather than on rigid or universally prescribed rules of conduct).

[53] Vaughan v. Menlove, (1837) 132 Eng. Rep. 490, 492 (C.P.).

[54] *Id*. at 490.

[55] *Id*. at 492.

[56] *Id*. at 491.

[57] *Id.*

[58] *Id.* at 492 (comparing liability in this case to that for "burn[ing] weeds so near the boundary of his own land that damage ensues to the property of his neighbour," and noting that one would be liable "unless the accident were occasioned by a sudden blast which he could not forsee.").

[59] AM. SOC'Y OF AGRIC. & BIOLOGICAL ENG'RS, *ASABE Standards*, https://elibrary.asabe.org/standards.asp (last visited Apr. 7th, 2026).

[60] *See* The T.J. Hooper, 60 F.2d 737 (2d Cir. 1932).

approaching storm.[61] At the time, some tugboat crews carried such radios, while others did not.[62] Some prior cases had held that industry custom—or standard—are controlling in such cases.[63] The question in the case was whether the industry custom, being *not* to have such radios, dictated that it was reasonable for the tugboats not to have been so equipped.[64] Judge Hand held the owners negligent, famously observing that "a whole calling may have unduly lagged in the adoption of new and available devices."[65] The key insight is that industry custom is relevant but not dispositive: while custom may inform the standard of care, the law ultimately sets its own standard of reasonableness.

This principle—that legal standards are not reducible to industry standards—has been cited across domains from construction safety to software design.[66] Courts frequently admit evidence of custom to show what precautions are feasible or expected, but they reserve to themselves the ultimate authority to declare a common practice negligent.[67] In effect, the legal system treats custom as a floor of knowledge, not as a ceiling of obligation.[68] We saw this illustrated in stark relief with the example of medical X-rays, discussed in Part II. The *T.J. Hooper* thus remains a touchstone for debates about how rapidly the law should compel adoption of evolving technologies, including contemporary discussions about artificial intelligence and autonomous systems.[69]

Industry standards may also serve the opposite function: demonstrating due care.[70] Compliance with an established standard might be used to show that a manufacturer or professional acted prudently.[71] In product-defect litigation, discussed in further detail in Part II.B, for example, defendants routinely introduce evidence that their designs met all relevant SAE, ASTM, or Underwriters

---

[61] *Id*. at 737.

[62] *Id*. at 739.

[63] *Id*. at 740 (quoting Ketterer v. Armour & Co., 247 F. 921, 931 (2d Cir. 1917)); Spang Chalfant & Co. v. Dimon, etc., Corp., 57 F.2d 965, 967 (2d Cir. 1932)).

[64] *Spang Chalfant & Co*, 57 F.2d at 967.

[65] *Id*.

[66] RESTATEMENT (SECOND) OF TORTS § 295A.

[67] *See* Trimarco v. Klein, 436 N.E.2d 502, 505-06 (N.Y. 1982) (holding that customs do not define the standard of reasonable care, but they provide powerful evidence in determining the standard).

[68] RESTATEMENT (SECOND) OF TORTS § 295A, at cmt.b.

[69] *See* The T.J. Hooper, 60 F.2d 737 (2d Cir. 1932).

[70] RESTATEMENT (SECOND) OF TORTS § 295A.

[71] *Id.*

Laboratories specifications.[72] Courts often instruct juries that compliance is meaningful, but not conclusive, evidence of non-negligence.[73]

How that principle applies in AI-related cases is an important question. At most, adherence to NIST or ISO frameworks may suggest prudence but will not guarantee immunity.[74] But it may rightfully be even less persuasive than that—for the very reason that Judge Hand found negligence in *The T.J. Hooper*: the value of custom derives, in significant part, where custom represents collective and cumulative learning.[75] Where a custom does not, however, represent recent technical or scientific advances, however, that learning is suspect. That was the case in the *T.J. Hooper*. And where custom is new, as would necessarily be the case for customs surrounding a new technology such as AI, there is little collective or cumulative learning to have been captured by the standard.

### 3. Professional and Technical Standards

Another, and in many ways more entrenched, use of standards occurs in the realm of professional malpractice.[76] Medical negligence is the paradigmatic case—though similar approaches may be used in other contexts where conduct is scientific, highly technical, or otherwise beyond the court's generalist expertise.[77] The standard of care in such cases is defined by the practices "ordinarily possessed and exercised by members of the profession in good standing."[78] Determining whether a physician met that standard typically requires expert testimony—itself a process

---

[72] *See, e.g.*, Linden v. CNH Am., LLC, 673 F.3d 829, 838 (8th Cir. 2012) (holding that SAE J386 could be taken into consideration by the jury in determining whether the defendant was negligent); Palmer v. Lakeside Wellness Ctr., 798 N.W.2d 845, 851-52 (Neb. 2011) (holding that compliance with ASTM can be considered as evidence of non-negligence); Creadore v. Shades of Light, No. 01 Civ. 4110 (GBD), 2003 WL 152003, at *3 (S.D.N.Y. 2003) (where plaintiff introduces evidence of a violation of UL guidelines as proof of negligence).

[73] Alfred v. Caterpillar, Inc., 262 F.3d 1083, 1083-89 (10th Cir. 2001) (stating that while industry customs are "factors to be taken into account" in a negligence analysis, they "are not controlling where a reasonable man would not follow them"); *see also Linden*, 673 F.3d at 838 (holding that SAE J386 can be considered by the jury for negligence, but nonconformity itself is not conclusive).

[74] RESTATEMENT (SECOND) OF TORTS § 295A cmt. b; The T.J. Hooper, 60 F.2d 737, 739-40 (2d. Cir. 1932).

[75] The T.J. Hooper, 60 F.2d 737, 740 (2d Cir. 1932) (reasoning that while the value of industry custom stems from its role as a repository of "collective and cumulative learning," such custom is not the final measure of care because a "whole calling may have unduly lagged" in adopting available safety technologies).

[76] *See, e.g.,* Hall v. Hilbun, 466 So. 2d 856, 871-73 (Miss. 1985) (noting that while local resource availability may vary, the "standards of care" for medical professionals are increasingly nationalized due to the uniform "collective and cumulative learning" disseminated through medical literature and standardized technical training).

[77] *Id.* at 873 (noting that expert witness could be included to help the trier of fact to understand standards when the case involves "scientific, technical, or other specialized knowledge").

[78] Mercil v. Mathers, No. C3-93-140, 1994 WL 1114, at *1 (Minn. Ct. App. Jan. 4, 1994), *rev'd on other grounds*, 517 N.W.2d 328 (Minn. 1994).

of translating professional norms into legal language.[79] Similar structures govern engineering malpractice, legal malpractice, and other professions grounded in technical expertise.[80]

Professional standards perform two functions in these cases. First, they provide a source of epistemic authority: jurors and judges, lacking the relevant technical competence, rely on expert witnesses to explain what competent practice entails.[81] Second, they anchor the normative assessment of reasonableness within the expectations of the professional community.[82] In other words, they instantiate tort law's deference to community standards of expertise, subject again to judicial oversight.

Another important aspect of this professional standard of care is that it most often applies where defendants are members of a self-regulating profession.[83] Doctors, for instance, must be licensed to practice medicine in their state. They therefore face two sources of consequences for the malpractice—liability through the tort system and reprimand or disbarment through their profession's regulatory authorities.[84]

As technology becomes increasingly embedded in professional practice—consider radiology aided by machine learning, or autonomous surgical systems—the line between human and technical standards blurs. Courts will need to determine whether a professional met the standard of care when delegating tasks to or relying on AI systems, and whether compliance with technical performance standards for those systems suffices to show due care. The conceptual framework is not new—the example of judicial and medical embrace of medical X-rays is again illustrative—what is new is the complexity and opacity of the systems whose standards must be evaluated.

This complexity is compounded by the blurring of lines between professions—and especially by the blurring of lines between (self-)regulated and non-

---

[79] *See* Sheeley v. Mem'l Hosp., 710 A.2d 161, 165-66 (R.I. 1998) (holding that the applicable medical standard of care must ordinarily be established through expert testimony because it reflects professional norms beyond the common knowledge of lay jurors).

[80] *See, e.g.,* Smith v. Lewis, 530 P.2d 589, 595-96 (Cal. 1975) (legal malpractice), *overruled on other grounds by In re* Marriage of Brown, 544 P.2d 561 (Cal. 1976); Aetna Ins. Co. v. Hellmuth, Obata & Kassabaum, Inc., 392 F.2d 472, 476-77 (8th Cir. 1968) (engineering malpractice).

[81] RESTATEMENT (SECOND) OF TORTS § 299A cmt. d (noting that the standard of care for professionals is ordinarily proven through expert testimony regarding customary professional practice).

[82] The T.J. Hooper, 60 F.2d 737, 739-40 (explaining that while industry custom is relevant evidence of reasonable care, courts ultimately determine the standard of reasonableness and may find an entire industry negligent for failing to adopt available safety measures).

[83] RESTATEMENT (SECOND) OF TORTS § 299A.

[84] *Sheeley*, 710 A.2d at 166; FED'N OF STATE MED. BOARDS, *About Physician Discipline*, in *Guide to Medical Regulation in the United States*, U.S. Med. Regulatory Trends & Actions (FSMB), https://www.fsmb.org/u.s.-medical-regulatory-trends-and-actions/guide-to-medical-regulation-in-the-united-states/about-physician-discipline/ [https://perma.cc/6Y5T-WGV2] (last visited Jan. 26, 2026).

(self-)regulated professions. Many engineering fields are professional, requiring, for instance, licensure.[85] But others—most notably computer science and engineering, which develop AI technologies—are not. This is not a new question for the law. For instance, non-doctor pharmaceutical representatives or device representatives are often present during surgeries to provide real time guidance to doctors about their products.[86] This has, at times, created questions about what standard of care applies.[87] To the extent that such representatives are not licensed members of the medical profession it is hard to justify application of the professional standard to them.[88] On the other hand, to the extent that they are present precisely because they have greater substantive expertise about their medical products than the doctors themselves do, it is hard to argue that a lesser standard, which might require a judge or jury to make sense of complicated technical matters, should apply.[89]

#### 4. Statutory and Regulatory Standards: Negligence Per Se

A third pathway through which standards shape tort liability arises when legislatures or regulatory agencies specify requirements by rule.[90] Under the doctrine of negligence *per se*, a statutory or regulatory violation can establish the breach element of negligence if the statute was intended to protect the class of persons and the type of harm at issue.[91] And, even if not intended to address the type of harm at issue, the existence of a legislative or regulatory pronouncement on an issue can influence how a court evaluates the reasonableness of conduct.[92] This mechanism effectively transforms regulatory standards into tort standards.[93]

Classic examples include traffic-safety laws, workplace-safety codes, and building regulations.[94] In the technology context, standards incorporated by reference into federal regulations—such as FAA certification requirements or NHTSA's motor-vehicle safety standards—already play this role.[95] Compliance does not always preclude tort liability, but noncompliance is powerful evidence of

[85] *Aetna Ins. Co.*, 392 F.2d at 476-77.

[86] Kennedy v. Medtronic, Inc., 851 N.E.2d 778, 783-85 (Ill. App. Ct. 2006) (clinical specialist for Medtronic was presented at the patient's surgery and was involved in checking the wires, which caused harm to the patient).

[87] *Id*.

[88] *Id*. at 785.

[89] *Id*.

[90] RESTATEMENT (SECOND) OF TORTS §§ 286-288C.

[91] RESTATEMENT (SECOND) OF TORTS § 286; Martin v. Herzog, 126 N.E. 814, 815 (N.Y. 1920).

[92] RESTATEMENT (SECOND) OF TORTS § 288B(2); Tedla v. Ellman, 19 N.E.2d 987, 989-90 (N.Y. 1939).

[93] RESTATEMENT (SECOND) OF TORTS §§ 286, 288B(2).

[94] *See, e.g.*, *Martin*, 126 N.E. at 815 (N.Y. 1920) (traffic safety); Uhr v. E. Greenbush Cent. Sch. Dist., 720 N.E.2d 886, 889-90 (N.Y. 1999) (building safety).

[95] 5 U.S.C. § 552(a)(1); 49 U.S.C. §§ 30111-30112; 14 C.F.R. pts. 21, 23.

breach.[96] Where regulators adopt private standards (for instance, by incorporating an SAE or ISO specification into a federal rule), the boundary between public and private standard-setting dissolves.[97]

The different modalities of negligence *per se* bear heavily on how standards might affect tort liability.[98] Statutes that adopt specific conduct requirements, for instance, are more likely to be interpreted as defining the standard of care (that is, as either defining what a reasonable person would do or supplanting the reasonable person standard with the statutory standard altogether).[99] For instance, state laws that require the use of headlights at night (as in *Martin v. Herzog*), laws that require adherence to building codes, or laws that outlaw serving alcohol to already intoxicated patrons, are all routinely viewed as setting the standard of care.[100] Failure to abide by any of those statutory mandates is likely to be taken, *per se*, as violating the standard of care in a negligence claim.[101]

On the other hand less concrete statutory mandates, or concrete statutory mandates to abide by less concrete standards, might only inform judicial opinion.[102] This is often the case with regulatory mandates that are not paired with private rights or action, general safety requirements (such as OSHA's "safe workplace" requirements), or other statutory requirements that allow for flexibility in implementation.[103] A classic example is *Brown v. Shyne*, in which a doctor practicing medicine without a license injured, and was sued for negligence by, a patient.[104] The trial court instructed the jury that it could find negligence predicated on the theory that the laws of the state require a license in order to practice medicine.[105] This understanding was rejected on appeal, on the grounds that negligence can be inferred from the breach of a statute "only if there is logical

---

[96] *See Tedla*, 19 N.E.2d at 989-90 (holding that violation of a safety statute may be excused when compliance would increase danger, illustrating that statutory standards guide negligence analysis but do not mechanically determine liability).

[97] *See, e.g.,* Geier v. Am. Honda Motor Co.**,** 529 U.S. 861, 875-81 (2000) (analyzing a federal motor vehicle safety standard and illustrating how regulatory rules incorporating technical standards structure the legal framework governing product safety).

[98] RESTATEMENT (SECOND) OF TORTS §§ 286-288C.

[99] *Id.* § 286; *see, e.g., Martin*, 126 N.E. at 815 (N.Y. 1920).

[100] *Martin*, 126 N.E. at 815 (N.Y. 1920) (headlight statute); Uhr v. E. Greenbush Cent. Sch. Dist., 720 N.E.2d 886, 889-90 (N.Y. 1999) (building statute). For cases related to the Dram Shop Act, *see Kelly v. Gwinnell*, 476 A.2d 1219, 1224-26 (N.J. 1984) (alcohol service to intoxicated persons).

[101] RESTATEMENT (SECOND) OF TORTS § 286.

[102] *See Id.* § 288B(2); Tedla v. Ellman, 19 N.E.2d 987, 989-90 (N.Y. 1939) (explaining that statutory safety rules inform the negligence inquiry but do not mechanically determine liability where rigid compliance would defeat the statute's safety purpose).

[103] Melerine v. Avondale Shipyards, Inc., 659 F.2d 706, 710-11 (5th Cir. 1981) (holding that OSHA does not create a private right of action and that violations may serve at most as evidence of negligence); 29 U.S.C. § 654(a)(1).

[104] Brown v. Shyne, 242 N.Y. 176, 180 (1926).

[105] *Id*. at 179.

connection between the proven neglect of statutory duty and the alleged negligence."[106]

Consider Article 40 of EU AI Act, which allows that "High-risk AI systems or general-purpose AI models which are in conformity with" standards recognized under the Act "shall be presumed to be in conformity with the requirements set out" in various sections of the Act.[107] Setting aside for the time that this is a European regulation, it is unclear whether compliance or non-compliance with such recognized standards would satisfy such a logical connection.[108] For instance, if a firm has complied with comparable standards established by another jurisdiction, noncompliance with the EU's preferred standards might be akin to a trained doctor practicing medicine without a license (as in *Brown v. Shyne*).

Another important consideration—one that should bear heavily on firms in the AI industry—is that even in the strictest applications of negligence *per se*, statutorily-defined standards provide only a floor, not a ceiling, for the reasonableness of conduct.[109] In other words, not adhering to a statutory requirement might presumptively violate one's duty of care—but adhering to that requirement does not shield one from liability.[110] A reasonable person would not follow a law where doing so would unreasonably and foreseeably cause harm.[111] A dram shop law might make it illegal to provide alcohol to a child, but if that child has been injured and that same alcohol could be used as an antiseptic, following the letter of the law might be unreasonable.

Many firms in the AI industry likely are demanding the development of standards *both* to provide a path for navigating a complex regulatory thicket but also as a shield for potential future civil liability. Negligence *per se*, and statutory standards generally, only rarely act as such a shield—they generally have such effect only where it is specifically granted.

---

[106] *Id*. at 182.

[107] Council Regulation 2024/1689, art. 40, 2024 O.J. (L 1689) 1, 76 (EU).

[108] *Tedla*, 19 N.E.2d at 989-90.

[109] RESTATEMENT (SECOND) OF TORTS § 288C.

[110] *Id.* §§ 286, 288C.

[111] *See* Tedla v. Ellman, 19 N.E.2d 987, 989-90 (N.Y. 1939).

### 5. Preemption and the Displacement of Tort Standards

Statutory and regulatory standards can affect tort liability in a second, analytically distinct way: through preemption.[112] Where negligence *per se* asks whether regulatory requirements supply a standard of care for tort purposes, preemption asks whether regulatory law displaces state tort law altogether.[113] The two doctrines operate independently. A regulation may inform negligence analysis without preempting tort claims; conversely, a regulatory regime may preempt common-law liability even where it does not itself create a privately enforceable standard of care.[114]

Preemption may be express or implied.[115] Express preemption arises where Congress clearly states that federal law displaces state tort claims.[116] Implied preemption may take the form of conflict preemption—where compliance with both federal and state law is impossible, or where tort liability would frustrate federal objectives—or field preemption, where regulation is so pervasive that it occupies the field.[117] In technology-related litigation, defendants frequently invoke preemption where federal agencies regulate safety, performance, or labeling and where uniform national standards are thought to be especially important.[118]

Critically, however, the mere existence of regulatory standards does not itself preempt tort law. Courts have repeatedly rejected the view that comprehensive regulation alone suffices to displace common-law claims, emphasizing that preemption turns on statutory structure and congressional intent rather than regulatory detail.[119] As a result, regulatory standards often coexist with tort claims, functioning as evidence of due care or breach rather than as substitutes for tort law itself.[120]

---

[112] *See* Geier v. Am. Honda Motor Co., 529 U.S. 861, 869-74 (2000) (holding that a state tort claim alleging a design defect was preempted because it conflicted with a federal motor vehicle safety standard, illustrating how federal regulatory schemes may preempt state tort liability).

[113] *Id.*; RESTATEMENT (SECOND) OF TORTS § 286.

[114] Sprietsma v. Mercury Marine, 537 U.S. 51, 64-67 (2002).

[115] Riegel v. Medtronic, Inc., 552 U.S. 312, 321-25 (2008); Wyeth v. Levine, 555 U.S. 555, 573-81 (2009).

[116] *Id.*

[117] *See, e.g.*, *Geier*, 529 U.S. at 869-74 (holding that a state tort claim was impliedly preempted because it conflicted with the objectives of a federal motor vehicle safety regulation, illustrating how regulatory standards may displace state tort duties under conflict preemption).

[118] *See, e.g.*, *id.*; *Riegel,* 552 U.S. at 321-25 (holding that the Medical Device Amendments expressly preempt certain state-law tort claims challenging the safety or effectiveness of medical devices approved through the FDA's premarket approval process).

[119] *See, e.g.*, ***Wyeth,*** 555 U.S. at 573-81 (rejecting the argument that FDA regulation of drug labeling, standing alone, preempts state-law failure-to-warn claims and emphasizing that preemption depends on congressional intent and the structure of the statute rather than the mere comprehensiveness of federal regulation).

[120] *See id.* (holding federal regulatory compliance does not preempt state tort claims and that the standards themselves operate as relevant evidence of due care); RESTATEMENT (SECOND) OF TORTS § 288B(2).

This coexistence is particularly visible where statutes or regulations incorporate private or consensus standards.[121] When agencies adopt SAE, ISO, or similar specifications by reference, those standards may gain legal salience without extinguishing tort liability.[122] Absent an express safe harbor or preemptive clause, courts typically treat regulatory compliance as relevant but non-dispositive evidence of reasonable conduct,[123] while reserving tort law's independent evaluative role.

For emerging technologies, the practical implication is straightforward but often misunderstood. Firms may assume that regulatory compliance—especially compliance with regulator-recognized standards—will insulate them from tort exposure. That assumption is frequently mistaken. Preemption doctrine is cautious, and courts are reluctant to infer displacement of state tort law unless Congress or the regulator has spoken clearly.[124] As a result, regulatory standards are far more likely to shape tort outcomes indirectly—by influencing reasonableness determinations, expert testimony, or evidentiary presumptions—than to eliminate tort liability altogether.

This distinction has particular salience for AI governance. Even where regulatory frameworks rely heavily on standards and conformity assessments, those mechanisms are unlikely, without explicit preemptive force, to foreclose tort claims.[125] Instead, they will typically enter litigation through negligence *per se*, as contextual evidence of reasonable care, or as benchmarks for expert analysis.[126] In short, while preemption can transform regulatory standards into liability shields, it does so only exceptionally; in the ordinary case, standards supplement tort law rather than supplant it.

### 6. Evidentiary and Procedural Roles

Beyond their role in defining or informing substantive duties, standards play an important procedural and evidentiary role in tort litigation. Tort cases are, at bottom, exercises in factual reconstruction. Courts and juries are asked to determine what happened, what risks were foreseeable at the time, what precautions were feasible, and whether a defendant's conduct caused the plaintiff's injury.[127] Standards often

---

[121] Sprietsma v. Mercury Marine, 537 U.S. 51, 64-65 (2002).

[122] *Wyeth*, 555 U.S. at 573-81; *Sprietsma*, 537 U.S. at 64-67.

[123] *Cf.* Medtronic, Inc. v. Lohr, 518 U.S. 470, 485-91 (1996) (declining to find broad preemption of state tort claims despite federal medical device regulation, illustrating that regulatory compliance does not by itself foreclose common-law liability).

[124] *Compare Riegel,* 552 U.S. at 321-30 (holding that the Medical Device Amendments expressly preempt certain state-law tort claims challenging the safety or effectiveness of medical devices approved through the FDA's premarket approval process), with *Wyeth*, 555 U.S. at 574-81 (declining to find preemption of state failure-to-warn claims and emphasizing that courts should not infer preemption absent clear congressional intent).

[125] *Wyeth*, 555 U.S. at 565-66 (2009); *Sprietsma*, 537 U.S. at 64-65 (2002).

[126] *Id*.

[127] RESTATEMENT (SECOND) OF TORTS §§ 281, 291-293, 431.

enter this process not as rules of decision, but as aids to fact-finding—structures that help organize technical evidence and translate specialized practices into intelligible narratives.[128] Precisely because of that function, courts have long been attentive to the risk that standards, if misused, may distort rather than illuminate the factual inquiry.[129]

That concern is reflected throughout the law of evidence. Even relevant and probative evidence may be excluded if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury.[130] Formal standards—especially those that appear authoritative, scientific, or regulator-endorsed—pose a recurring version of this problem.[131] Their presentation can invite jurors to treat them as dispositive legal benchmarks rather than as contextual evidence bearing on reasonableness or defect.[132] As a result, courts frequently confront a calibration problem: how to admit standards in a way that assists factual understanding without allowing them to harden into *de facto* law through evidentiary overweighing.

The early judicial reception of X-ray evidence, discussed in Part II, illustrates this tension vividly.[133] When X-rays began appearing in tort and malpractice cases in the late nineteenth century, medical practitioners objected that juries would be unduly influenced by images whose scientific limitations they could not properly assess.[134] Courts nevertheless admitted X-ray evidence as early as 1897, reasoning that excluding it would deprive fact-finders of highly probative information and force them to resolve technical disputes with less reliable tools.[135] Rather than imposing categorical exclusions, courts responded by developing evidentiary safeguards—requiring authentication, expert explanation, and contextual testimony—while trusting juries to weigh the evidence appropriately.[136] What began as a controversial innovation thus became a routine evidentiary device, not

---

[128] *See* Trimarco v. Klein, 436 N.E.2d 502, 505-06 (N.Y. 1982) (holding that evidence of industry custom—there, the widespread use of shatterproof glass in shower doors—was admissible to help the jury determine whether the defendant exercised reasonable care, illustrating how prevailing standards can aid fact-finding in negligence cases).

[129] *See, e.g.,* The T.J. Hooper, 60 F.2d 737, 739-40 (2d Cir. 1932) (warning that industry custom does not conclusively establish reasonable care and that courts must guard against allowing an entire industry's lagging practices to define the legal standard of negligence).

[130] FED. R. EVID. 403.

[131] *See, e.g.,* Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579, 595 (1993) (holding that even authoritative-looking or widely accepted scientific standards can mislead); *see also* Kumho Tire Co. v. Carmichael, 526 U.S. 137, 148-49 (1999) (suggesting courts must independently test reliability of industry-accepted standards rather than defer to their apparent authority).

[132] As discussed in *Trimarco*, 436 N.E.2d at 505-06 (N.Y. 1982), industry standards, as customs, should only *inform* the assessment of due care.

[133] *Golan, supra* note 20.

[134] *See* Bruce v. Beall, 41 S.W. 445, 446-47 (1897).

[135] *Id.*

[136] *Daubert*, 509 U.S. at 595; FED. R. EVID. 901(a) (requiring evidence to be authenticated by "evidence sufficient to support a finding that the item is what the proponent claims it is").

because it dictated outcomes, but because it improved the factual substrate on which legal judgments were made.[137]

Modern standards disputes replay this same dynamic. Courts are rarely deciding whether a standard is "the law;" instead, they are deciding whether the standard meaningfully assists the trier of fact.[138] This explains why standards so often surface in Daubert challenges, motions *in limine*, and jury-instruction disputes rather than as pure questions of duty.[139] The central concern is methodological and evidentiary: does the standard help explain what risks were foreseeable, what precautions were feasible, or how a system was designed to operate, or does it risk misleading the jury into treating compliance or non-compliance as outcome-determinative?

For emerging technologies, this evidentiary role may be the primary channel through which standards acquire early legal salience. Just as X-rays entered tort law first as evidence rather than doctrine, AI standards are likely to appear initially as tools for explaining system design, risk management processes, and operational choices to courts and juries. The familiar challenge will reemerge: allowing technically sophisticated evidence that improves factual accuracy, while guarding against the prejudicial risk that standards—particularly those endorsed by regulators or framed as "best practices"—will be mistaken for legal absolutes. How courts strike that balance will shape not only outcomes in individual cases, but the incentives firms face when deciding whether, when, and how to adopt emerging standards.

### *B. The Role of Standards in Tort Law - Products Liability*

Negligence is only one portion of the traditional tort law triad: product liability is conceptually co-equal, and possibly more important in the product design and development context.[140] Importantly, most of the core law reflecting the relevance of standards in negligence cases developed prior to the development of products liability law—how standards apply in this newer setting is less doctrinally settled and may reflect different intuitions and concerns.

Products liability law generally divides into three categories: design defects, manufacturing defects, and warning defects.[141] Each category is explained in

---

[137] *See* Jennifer L. Mnookin, *The Image of Truth: Photographic Evidence and the Power of Analogy*, 10 YALE J.L. & HUMAN. 1 (1998) (explaining how courts increasingly treated X-ray images as reliable visual evidence once accompanied by expert interpretation).

[138] *See Daubert*, 509 U.S. at 591-95; FED. R. EVID. 702.

[139] A "Daubert challenge" refers to an effort to exclude the introduction of unqualified expert witness testimony to the judge or jury during Trial, deriving from *Daubert*; *s*ee*, e.g.,* Kumho Tire Co. v. Carmichael, 526 U.S. 137 (1999) (extending *Daubert*'s gatekeeping framework to technical and other specialized expert testimony and affirming the trial court's discretion to exclude unreliable expert evidence in response to a Daubert challenge, including testimony grounded in purported engineering or industry standards).

[140] RESTATEMENT (SECOND) OF TORTS §§ 281, 402A.

[141] RESTATEMENT (THIRD) OF TORTS: PRODS. LIAB. § 2 (AM. L. INST 1998).

general terms below—though it bears note that products liability law can show substantial variation across jurisdictions and is a far less settled area of law than negligence.[142] Liability for a design defect generally requires an injured consumer to show that a product did not work the way that a consumer would expect it to or that the risks created by a product are not justified by the utility offered by the product (the "risk-utility" test)—and, in more recent years courts have also considered a test offered in the Restatement (Third) of Torts, whether were reasonable alternative design for the product that would have avoided the injury.[143] Manufacturing defects require showing a deviation from the product's intended design with a causal relationship to the consumer's injury. And warning defects—the least concrete area of products liability law—are seen where injuries might have been avoided through the use of warnings about dangers that could not have been more reasonably been reduced through alternative product designs.[144]

It would make sense to expect standards to inform product liability determinations. For instance, if a product follows an industry standard design that suggests both that it is reasonable and that other designs—which may have been considered and rejected by the industry, or might simply be uneconomic or impractical due to the standardization of any alternative design—that might reasonably be expected to speak to the reasonableness of alternative designs.[145] Adhering to, or deviating from, industry standard manufacturing practices might be expected to inform whether a manufacture of a product was defective.[146] If, for instance, a design is silent on the threading of a screw to use in a product assembly, being able to point to industry standards that speak to that question would seem relevant. And, similarly, industry standards about warnings might seem to speak to the suitability of warnings used in a given product.

Many treatises and similar compendia of law, including the Restatement (Third) of torts, recognize this role for industry standards in products liability cases. Consider the Restatement:

> In connection with liability for defective design or inadequate instructions or warnings:
>
> (a) a product's noncompliance with an applicable product safety statute or administrative regulation renders the

---

[142] *See* RESTATEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY § 1 cmt. a (explaining the general framework of modern products liability law); David G. Owen & Mary J. Davis, *Products Liability and Safety* § 1:1 (7th ed. 2023) (observing that products liability law continues to evolve).

[143] RESTATEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY § 2(b) ("A product is defective in design when the foreseeable risks of harm posed by the product could have been reduced or avoided by the adoption of a reasonable alternative design . . . ."); *see* Barker v. Lull Eng'g Co., 573 P.2d 443, 455-56 (Cal. 1978) (articulating consumer-expectation and risk-utility approaches to design-defect liability); Vautour v. Body Masters Sports Indus., Inc., 784 A.2d 1178, 1182-83 (N.H. 2001) (applying risk-utility balancing in design-defect claims).

[144] *Id.*

[145] *Id*.

[146] *Id*. § 2(a).

> product defective with respect to the risks sought to be reduced by the statute or regulation; and
>
> (b) 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.[147]

It is, however, the case that state products liability law remains unclear on many of these issues. Consider the current state of law in Pennsylvania. In 2023 the Supreme Court of Pennsylvania held in *Sullivan v. Werner Company*,[148] reaffirming a long line of precedent, that "that evidence of a product's compliance with governmental regulations or industry standards is inadmissible in design defect cases to show a product is not defective under the risk-utility theory." Central to this view is that the Pennsylvania courts have so far declined to adopt the Restatement (Third) of Torts, including its adoption of the reasonable alternative design test.[149] The essence of the court's holding derives from product liability law's origins in strict liability as distinct from negligence, and reflects the court's concern that allowing evidence of compliance with industry standards introduces elements of negligence into what is inherently a strict liability theory of law.[150] As explained by the court: "Compliance evidence does not prove any characteristic of the product; rather, it diverts attention from the product's attributes to both the manufacturer's conduct and whether a standards-issuing organization would consider the product to be free from defects. Neither of these considerations are pertinent to a risk-utility analysis."[151]

## IV. A SURVEY OF STANDARDS CASES

The discussion so far treats standards as a familiar part of tort law's machinery—useful for translating technical practice into legal evidence and for anchoring (or contesting) what "reasonable care" and "reasonable safety" require. This Part takes a more modest step. Rather than asking what standards *should* do in tort litigation, it asks what a small set of reported cases suggests standards *often* do in practice.

Two caveats are important at the outset. First, the cases surveyed here are not a comprehensive dataset. Searches on Westlaw identified a collection of 107 cases

---

[147] *Id.* § 4.

[148] Sullivan v. Werner Co., 306 A.3d 846, 862 (Pa. 2023).

[149] *See* Tincher v. Omega Flex, Inc., 104 A.3d 328, 399-401 (Pa. 2014).

[150] *See* Azzarello v. Black Bros. Co., 391 A.2d 1020, 1025-27 (Pa. 1978), *overruled by* Tincher v. Omega Flex, Inc., 104 A.3d 328 (Pa. 2014).

[151] *Werner Co.*, 306 A.3d at 862.

discussing industry standards in a relevant way.[152] This sample, which is on file with the journal, is sufficient for considerable analysis, but is insufficient for, e.g., econometric analysis. These cases were identified and initially reviewed by the author and a research assistant. This included preparation of a summary of each case and memos identifying key issues developed or explored in each case. Detailed outlines of Parts IV and V were then prepared by the author. This material, including the outlines and cases survey, were then shared with ChatGPT 5.2 Pro, with instructions that it identify additional trends, patterns, or issues from the survey of cases and incorporate them into an initial draft of Parts IV and V based upon the outline provided to it.[153] This draft was then reviewed, revised, and edited by the author to prepare the present text.

Second, because the sample spans multiple jurisdictions and multiple doctrinal frameworks, it is better read as a set of useful categories and recurring questions than as a basis for categorical conclusions. Put differently: the goal is not to say "courts treat standards *this way*," but to identify a typology of how standards can become legally salient—and therefore to anticipate which questions are likely to recur as AI standards begin appearing more frequently in tort disputes.

One way to organize what emerges from the cases is to treat "standards" not as a single evidentiary object, but as a family of artifacts that courts evaluate along several axes: (1) theory of liability (negligence versus products liability, and within products liability, design/manufacturing/warnings); (2) function (what the proponent wants the standard to prove); (3) pedigree (regulatory, consensus, internal, customary); (4) applicability (to whom and to what conduct/product does the standard speak); (5) timing (contemporaneous versus later-adopted); and (6) procedural posture and expert methodology. A further axis that emerges in some

---

[152] Search terms included, for instance, adv: ("formal industry standard"), adv: (("industry standard") /s liability) and (negligen! or "design defect" or "defective design"), adv: ("industry standard") /s liability, adv: ("technical standard") /s liability, adv: ((IEEE /5 standard!) or (IETF /5 standard!)) and liab!, and adv: ("safer alternative design" OR "feasible alternative design" OR risk /s utility) & (ANSI OR ASTM OR "industry standard!" OR "safety standard!") & product!. The results of these searches were reviewed manually to identify cases with substantive discussion of the relevance of standards to the court's decision.

[153] This process involved a series of prompts that both asked ChatGPT to identify trends without specific direction and follow-up prompts asking it to look for specific patterns common in tort law and litigation. For instance, an initial prompt was: "I need to draft a discussion that outlines and discusses key findings about how courts have used standards in tort litigation. Please use the uploaded materials to give me a list of topics to include." Subsequent queries asked to identify cases using specific concepts, such as "Is there any discussion of "state of the art" technologies?", "Are there cases where the TJ Hooper is considered?", "Are there cases where a standard is dispositive, or given substantial weight?", and the like. Throughout this process "sanity checks" were implemented, for instance asking "Are you making any of the above information up? Or is it based upon the actual cases and discussion that I have provided you?" and "There is at least one incorrect citation, for instance to a case that does not exist or a quotation from a case that is not real. Please find an example of such an error." At the end of this process, I prompted "Can you draft the text of this section now? It should reflect the discussion that we have been having. A key feature is that it should have a clear structure and typology to the issues that it defines. My goal is to identify the important issues and patterns."

settings is (7) displacement (whether standards operate as "safe harbor" presumptions or as a basis for preemption, rather than merely as evidence). Each axis supplies a set of recurring questions that—across contexts—structure how courts admit, exclude, and weigh standards.

### *A. Theory of Liability as the First Sorting Mechanism*

#### 1. Negligence: Standards as Evidence of Reasonableness, Not Substitutes for It

In negligence cases, standards tend to appear as evidence bearing on reasonableness: what risks were foreseeable, what precautions were feasible, and what a reasonably careful actor in a technical domain would have done. Courts often treat standards as probative but resist transforming them into hard duty rules. *Saunders* is representative in the maritime negligence setting: industry standards (NESC) and internal standards were treated as relevant to whether the defendant exercised due care, but not as binding (and the court emphasized that in admiralty, industry standards are "mere evidence" of negligence).[154] *Walter Family Grain Growers* similarly rejected the idea that "the standard of care is set by applicable regulations," emphasizing that compliance with regulations is relevant but not dispositive of reasonable care.[155]

In this negligence posture, standards are frequently framed as a "floor" rather than a "ceiling:" compliance may be evidence of care, but not necessarily a complete answer, particularly for actors operating in high-risk domains (like electric utilities) where courts expect heightened precautions.[156] That framing resonates with the *T.J. Hooper* intuition without requiring courts to explicitly invoke *Hooper*: even widespread custom or code compliance may not exhaust reasonable care.[157]

At the same time, negligence is also the doctrinal setting in which standards are most likely to take on a duty-like quality—typically when they are embedded in positive law. *Saunders* illustrates this move not through a private standard but through a permit: failure to comply with a Corps of Engineers permit requirement contributed to the court's negligence-per-se analysis (via the Rivers & Harbors Act), while private industry standards remained evidentiary.[158] The broader point for this typology is that negligence cases often treat standards as evidence of breach, while reserving duty-setting effects primarily for statutes, regulations, and other legally

---

[154] Saunders v. Consumers Energy Co., 615 F. Supp. 3d 707, 722 (W.D. Mich. 2022).

[155] Walter Family Grain Growers v. Foremost Pump & Well Servs., LLC, 21 Wash. App. 2d 451, 464 (Wash. Ct. App. 2022).

[156] *See id.* at 463 (discussing code compliance as "minimal requirements" in utility context); Celiz & Sanchez' Estates v. Pub. Util. Dist. No. 1 of Douglas Cnty, 30 Wn. App. 682, 685, 638 P.2d 588 (1981) (applying highest degree of care due to power company's placement of high-voltage electrical wires).

[157] *See* The T.J. Hooper, 60 F.2d 737, 739-40 (2d Cir. 1932).

[158] *Saunders*, 618 F. Supp. 3d at 735.

incorporated requirements.[159] And in a different "embedding" move, some federal regulatory schemes can do more than supply evidence: they can limit state-law design claims that would impose a different safety choice, via conflict/obstacle preemption.[160]

### 2. Products Liability: Standards at the Boundary Between "Product" and "Conduct"

In products cases, the relationship between standards and liability is more explicitly contested because the doctrine itself is contested. The sample suggests that the admissibility and weight of standards often track whether the jurisdiction or court is concerned about importing negligence concepts into strict products liability.

At one pole is the exclusionary impulse: in *Estate of Hicks*, the court treated industry standards and governmental regulations as inappropriate in a strict liability case because they would inject negligence concepts and invite the jury to focus on the reasonableness of the manufacturer's conduct rather than the existence of a defect.[161] On that view, standards are not merely "not dispositive;" they are affirmatively suspect because they reframe strict liability as reasonableness review. Pennsylvania decisions illustrate the same impulse in especially explicit form: *Sullivan* treated evidence of compliance with "industry standards and governmental regulations" as inadmissible in strict products-liability design-defect litigation because it would "improperly import negligence concepts," and it cited *Webb* for the related proposition that (once negligence is removed) evidence of compliance with federal motor vehicle safety standards is not relevant in strict liability.[162]

At the other pole are cases that accept that design-defect and warning claims often require an evaluative inquiry that looks, in practice, like reasonableness balancing. *Church Insurance* draws a useful internal distinction: for manufacturing defects, industry standards are largely irrelevant because the question is whether the particular product deviated from intended design; for design defects, standards may help inform whether a product is "reasonably safe" and whether alternatives were feasible, so standards can be admissible (often with limiting instructions).[163] Likewise, consumer-expectations framing can pull standards back into the analysis: *Gillespie* treated OSHA/ANSI ladder criteria as relevant to whether truck steps were defectively designed and "unreasonably dangerous" under consumer-

---

[159] *Cf. Walter Family Grain Growers*, 21 Wash. App. 2d at 451 (noting jurisdictional choices about negligence *per se*).

[160] *See e.g.*, Geier v. Am. Honda Motor Co., 529 U.S. 861 (2000) (discussing FMVSS 208's preemption effect on state standards for the purpose of "avoid[ing] the conflict, uncertainty, cost, and occasional risk to safety that too many different safety-standard cooks" might otherwise create").

[161] Estate of Hicks v. Dana Cos., LLC, 984 A.2d 943, 964 (Pa. Super. Ct. 2009).

[162] Sullivan v. Werner Co., 253 A.3d 730, 746-48 (Pa. Super. Ct. 2021); Webb v. Volvo Cars of N. Am., LLC, 148 A.3d 473, 480-83 (Pa. Super. Ct. 2016).

[163] Church Ins. Co. v. Trippe Mfg. Co., 2005 WL 2649332, at *2 (S.D.N.Y. 2005).

expectation reasoning.[164] Other jurisdictions take an explicitly "middle-ground" approach: for example, *Covell* held that evidence of compliance with a CPSC regulation setting "minimum performance criteria" for bicycle helmets was admissible under the Federal Rules of Evidence, and *Kim* held (under California strict products liability) that evidence of industry custom can be admissible for a limited purpose—namely, to inform feasibility/cost of an alternative design—while not serving as a "no-negligence" shield.[165]

Warning cases show similar dynamics. Standards can become a benchmark for warning adequacy even when they are voluntary. In *Anderson v. Hedstrom*, competing ANSI and ASTM approaches to warning design created a triable dispute about whether the defendant's warning design was adequate (and whether the defendant's asserted "industry standard" was in fact the best benchmark).[166] *Kreuzmann* likewise treated a voluntary ASTM warning standard as admissible and relevant to warning adequacy, enough to help create a genuine issue of material fact.[167] *Beadling* offers a similar warning-focused illustration: experts' reliance on ANSI standards for warning placement/visibility, together with record support that the relevant industry used ANSI to set warning practices, was treated as relevant to the warnings dispute.[168]

A central typological question, then, is not simply "is this a products case?" but "what defect theory is doing the work (manufacturing, design, warning), and what conception of strict liability the court is working with?"[169]

---

[164] Gillespie v. Edmier, 2019 IL App (1st) 172549, ¶ 43.

[165] Covell v. Bell Sports, Inc., 651 F.3d 357, 365-66 (3d Cir. 2011); Kim v. Toyota Motor Corp., 6 Cal. 5th 21, 25-27 (Cal. 2018).

[166] Anderson v. Hedstrom Corp., 76 F. Supp. 2d 422, 450-52 (S.D.N.Y. 1999).

[167] Kreuzmann v. Seda France, 2012 WL 1211356, at *12-13 (S.D. Ohio 2012).

[168] Beadling v. William Bowman Assocs., 355 N.J. Super. 70, 87-88 (N.J. Super. Ct. App. Div. 2002).

[169] *See, e.g.,* Estate of Hicks v. Dana Cos., LLC, 984 A.2d 943, 963-77 (Pa. Super. Ct. 2009) (applying an exclusionary conception of strict liability that bars standards evidence); Church Ins. Co. v. Trippe Mfg. Co., 2005 WL 2649332, at *1-2 (distinguishing manufacturing from design defects as requiring different evidentiary frameworks); Gillespie v. Edmier, 2019 IL App (1st) 172549, ¶¶ 33-44 (applying consumer-expectation conception of strict liability to admit standards in design-defect analysis); *Anderson*, 76 F. Supp. 2d at 450-52 (treating warning defect claims as presenting distinct evidentiary questions from design defects); *Kreuzmann*, 2012 WL 1211356, at *12-13 (same).

### *B. A Functional Typology: What is the Standard Being Offered to Prove?*

A second organizing axis is the function standards are asked to serve. Courts' reactions often turn less on "standards" in the abstract than on what the proponent is trying to do with them.

#### 1. Duty and Duty-Adjacency: Standards as Rules Versus Standards as Context

When parties present standards as duty-defining, courts tend to be cautious unless the standard is legally incorporated. Again, *Saunders* is a useful reference point: private standards and internal standards were treated as relevant evidence of negligence, while a permit condition (a legally operative instrument) supported a negligence-*per-se* style analysis.[170] The typological question here is: is the proponent trying to use the standard as "the law," or as a factual signal about reasonable care? A related "duty-adjacent" use arises when plaintiffs argue that a firm voluntarily undertook to follow (or to enforce) a set of standards or policies; *Syngenta* illustrates both the appeal and limits of that move, rejecting a duty theory based on an alleged voluntary undertaking to comply with an industry policy in a case seeking purely economic loss.[171]

#### 2. Breach or Defect: Standards as Benchmarks for Reasonableness or Safety

The most common use in the sample is standards as benchmarks for breach (negligence) or defect (products). Many decisions frame compliance/noncompliance as probative, but not conclusive. *Bhoodai* is explicit on this point: ISO standards were treated as trustworthy and relevant for jurors assessing due care and design defect, but the jury would not be instructed that violation is a per se breach; the standards were "one of the factors" in the overall inquiry.[172] *Ratcliffe* likewise treated industry-standard compliance evidence as relevant and probative, rejecting efforts to exclude it categorically (framing the issue largely through Rules 401 and 403 rather than a hard doctrinal bar).[173]

Several additional products cases make the same "relevant but not dispositive" point in slightly different statutory/structural terms: *Jablonski* treated compliance with governmental regulations and industry standards as evidence a jury may consider, while emphasizing that such compliance does not preclude liability; and *Kagan* similarly treated compliance evidence as relevant but not liability-eliminating, citing the federal "savings clause" principle that compliance with

[170] Saunders v. Consumers Energy Co., 615 F. Supp. 3d 707, 721-22, 735-36 (W.D. Mich. 2022).

[171] *In re* Syngenta AG MIR 162 Corn Litig., 249 F. Supp. 3d 1224, 1244-48 (D. Kan. 2017).

[172] Bhoodai v. Employers Assurance Co., 2022 WL 4591239, at *8-10 (M.D. Ga. 2022).

[173] Ratcliffe v. BRP U.S., Inc., No. 1:20-cv-00234-JAW, 2024 WL 4728893, at *5-7 (D. Me. Nov. 8, 2024).

motor vehicle safety standards does not exempt a person from common-law liability.[174]

3. Feasibility and Alternative Design: Standards as Evidence that "It Could Have Been Done"

Standards sometimes appear not to show what the defendant *should* have done, but what could have been done. This is the core move in *Sappington*: the court permitted reliance on a later ANSI standard not as retrospective "state of the art" proof, but to support the feasibility of an alternative design and to show that stability requirements reflected in later standards supported the plaintiff's proposed design.[175] A related variant appears where experts describe using "equivalent" standards when no on-point standard exists, with the dispute treated as going to weight rather than admissibility.[176]

*Cacevic* illustrates how feasibility fights can become "standards fights" in machinery cases: the court described a prima facie design-defect showing as including that a feasible and available safety device existed, and it noted record allegations of ANSI-standard violations alongside those feasibility arguments.[177]

The functional question this raises—highly salient for emerging technologies—is whether courts will treat AI frameworks not primarily as duty rules, but as evidence of feasible safety practices (e.g., red-teaming, monitoring, risk management systems) in contexts where directly on-point standards are sparse.

4. Knowledge, Notice, and "What Was Known When": Standards as Windows into the Past

Sometimes standards are used to argue about knowledge: what the industry knew, or what the defendant should have known, at a particular time. Courts in the sample show sensitivity to the inferential leap from "published later" to "known earlier." *Fillingane* is an explicit warning: a 1975 IEEE standard could not, by itself, prove what was widely known in 1974; publication does not necessarily establish earlier industry-wide understanding, even with close proximity in time.[178] *Saunders* shows the same concern from the opposite direction: experts analyzed later editions of the NESC, and the court noted the odd absence of evidence about contemporaneous compliance at the time of installation.[179] Relatedly, *Crawford* shows that "standards-adjacent" materials—like OSHA investigation reports about

[174] Jablonski v. Ford Motor Co., 2011 IL 110096, ¶¶ 103-04, 955 N.E.2d 1138 (Ill. 2011); Kagan v. Harley-Davidson, Inc., No. 07-0694, 2008 WL 3874824, at *8-9 (E.D. Pa. Aug. 20, 2008) (citing 49 U.S.C. § 30103(e)).

[175] Sappington v. Skyjack, Inc., 512 F.3d 440, 445-47 (8th Cir. 2008).

[176] Jaycox v. Terex Corp., No. 4:19-cv-02650-SRC, 2021 WL 2438875, at *6-8 (E.D. Mo. June 15, 2021).

[177] Cacevic v. Simplimatic Eng'g Co., 248 Mich. App. 670, 679-81, 645 N.W.2d 287 (2001).

[178] Fillingane v. Siemens Energy & Automation, Inc., 809 So. 2d 737, 742 (Miss. 2002).

[179] Saunders v. Consumers Energy Co., 615 F. Supp. 3d 707, 723-24 (W.D. Mich. 2022).

prior incidents—can be treated as relevant to notice/foreseeability and reasonable-care disputes even when the defendant argues they are merely regulatory materials.[180] Additionally, *Elledge* shows that standards are admissible as evidence for establishing the level of standard care even if the District has not formally promulgated the standards.[181]

The functional question here is whether a standard is offered as historical evidence (what was known and expected then) or as prospective evidence (what is known today). Courts appear more comfortable with the latter than with using later standards to construct earlier knowledge without additional foundation.[182]

#### 5. Causation and Comparative Fault: Standards as User-Facing Norms (and the Risk of Confusion)

Standards sometimes enter through causation and comparative fault, especially when defendants argue that user conduct caused the accident. The sample suggests that courts are attentive to whether standards are being used to mislead juries into treating voluntary user-oriented standards as binding law. *Whyte* excluded a defendant's attempt to use an ASME hammer standard to argue unforeseeable misuse because it would have misled jurors into thinking the user was governed by that standard.[183] *Brown v. Crown Equipment* similarly treated an OSHA training regulation as poorly suited for proving operator negligence where the regulation applied to employers rather than employees; the fit between the standard and the actor mattered to admissibility and relevance.[184]

#### 6. Deception, Misrepresentation, and Warranty: Standards as Representational Anchors

A distinct function appears where defendants represent compliance in marketing or documentation, and plaintiffs use standards to argue deception or warranty breach. *Herrera* permitted opinions that the defendant promoted compliance with ASTM standards without testing for compliance, treating the question as relevant to negligence and warranty theories (and leaving disputes for weight at summary judgment).[185] That is a different use of standards than "breach;"

---

[180] Crawford v. ITW Food Equip. Grp., LLC, 977 F.3d 1331, 1347-48 (11th Cir. 2020).

[181] Elledge v. Richland/Lexington Sch. Dist. Five, 341 S.C. 473, 477, 534 S.E.2d 289, 290 (Ct. App. 2000).

[182] *See Fillingane*, 809 So. 2d at 742 (holding that publication of an earlier standard did not establish industry-wide knowledge of the relevant information prior to that date); *Sappington*, 512 F.3d at 445-47 (permitting reliance on a post-manufacture ANSI standard to show feasibility of an alternative design, not to establish what was known at the time of manufacture).

[183] Whyte v. Stanley Works, 180 Ohio App. 3d 844 (Ohio Ct. App. 2003).

[184] Brown v. Crown Equip. Corp., 445 F. Supp. 2d 59, 69-70 (D. Me. 2006).

[185] Herrera v. Sherrill, Inc., No. TDC-16-1763, 2023 WL 2245250, at *22 (D. Md. Feb 27, 2023).

the standard becomes a reference point for the truthfulness of representations and the reasonableness of relying on them.

#### 7. Damages: Standards as Context for Punitive Damages and Regulatory Penalties

Finally, standards can appear at the remedial stage. *Cooley* treated OSHA penalties and "what OSHA might do" as too speculative to be meaningful comparators in evaluating punitive damages excessiveness, suggesting that standards may have only limited traction when the question is not safety but punishment and due process.[186] Courts have also treated compliance with standards as evidence for negating conscious disregard and thus generally reject awarding punitive damages when defendants comply with standards.[187]

### *C. Source and Rigor: Pedigree as an Implicit Relevance and Weight Variable*

Courts in the sample also appear to treat "standards" differently depending on their pedigree—though again, the point is best framed as a recurring question rather than a conclusion: *what kind of standard is this, and why should it be trusted?*

#### 1. Regulatory and Legally Adopted Standards

Standards that are mandatory or embedded in legal frameworks can have effects that look qualitatively different from voluntary consensus standards. In some jurisdictions, compliance can trigger statutory presumptions. *Mutual Insurance* applied a Michigan statute creating a rebuttable presumption of no liability where the product complied with standards relevant to the injury and promulgated by a responsible federal agency; OSHA's adoption of UL standards mattered to the presumption's application.[188] *Toyota v. Reavis* similarly dealt with a statutory presumption based on FMVSS compliance, but allowed rebuttal through evidence that at least one applicable standard was inadequate to protect the public.[189]

Other statutes go further than rebuttable presumptions: *Taylor* describes Michigan's conclusive-presumption provision for FDA-approved drugs, under which (absent specified exceptions) the manufacturer is "not liable" and is "presumed to have acted with due care," effectively turning regulatory compliance

---

[186] Cooley v. Lincoln Elec. Co., 776 F. Supp. 2d 511, 526-27 (N.D. Ohio 2011).

[187] *See* Hernandez v. Crown Equipment Corp., 92 F. Supp. 3d 1325, 1356-57 (M.D. Ga. 2015) (granting summary judgment on punitive damages where forklift complied with ANSI and OSHA standards); Drabik v. Stanley-Bostitch, Inc., 997 F.2d 496, 510 (8th Cir. 1993) (identifying compliance with industry standards as a factor weighing against submission of punitive damages); Lopez v. Three Rivers Elec. Co-op., Inc., 26 S.W.3d 151, 160-61 (Mo. 2000) (rejecting punitive damages instruction where the defendant had obtained legal advice that no statute required markings and the evidence of an industry standard was insufficiently clear and specific).

[188] Mutual Ins. Co. of Am. v. Royal Appliance Mfg. Co., 112 F. App'x 386, 391-92 (6th Cir. 2004).

[189] Toyota Motor Sales, U.S.A., Inc. v. Reavis, 627 S.W.3d 713, 724-26 (Tex. 2021).

into a powerful merits-stage shield rather than mere evidence.[190] And, as noted above, federal standards can sometimes operate through preemption rather than through evidentiary presumptions—foreclosing state tort claims that would impose a conflicting safety requirement.[191]

Rather than saying "regulatory standards matter more," the typological point is that legal embedding changes the procedural stakes: standards become part of burden allocation and jury instruction, not merely background evidence.[192]

#### 2. Consensus Standards from Standards-Setting Organizations

Several cases emphasize the process behind consensus standards. *Bhoodai* highlighted ISO's development process and treated that process as supporting the standards' trustworthiness and relevance to due care and defectiveness determinations.[193] *Milanowicz* treated ANSI/UL/ASME/ASTM standards (and failure to engage with them) as part of the reliability inquiry for experts, implicitly crediting standards as systematic design parameters even when not legally binding.[194] And *Ratcliffe* framed private consensus standards (ROHVA/ANSI) as relevant under First Circuit precedent, notwithstanding their non-governmental origin.[195] But pedigree disputes can also cut the other way: *Fayerweather* described ANSI standards as intended for "voluntary use" and emphasized record concerns about whether the committee reflected a broad cross-section (including evidence about committee membership), supporting the broader point that "consensus" and "industry standard" can be contested characterizations.[196]

#### 3. Internal Standards and Company Policies

Internal standards can be probative but also raise different concerns. *Saunders* treated internal standards as relevant but not decisive in the negligence analysis.[197] *Rupolo* suggests another role: internal references to OSHA/ANSI within a company's own documents can support an inference that the company itself treated those standards as relevant reference points, even if formal applicability is disputed.[198] *Syngenta* highlights a related internal-policy dynamic when parties argue that an internal adoption of an industry policy amounts to a voluntary undertaking—again illustrating that the "policy/standard" can function either as (i)

---

[190] Taylor v. SmithKline Beecham Corp., 468 Mich. 1, 658 N.W.2d 127, 134-37 (2003).
[191] Geier v. Am. Honda Motor Co., 529 U.S. 861, 867 (2000).
[192] *Mutual Ins.*, 112 F. App'x at 392; *Toyota*, 627 S.W.3d at 727-28.
[193] Bhoodai v. Employers Assurance Co., 2022 WL 4591239, at *16 (M.D. Ga. 2022).
[194] Milanowicz v. Raymond Corp., 148 F. Supp. 2d 525, 533 (D.N.J. 2001).
[195] Ratcliffe v. BRP U.S., Inc., 2024 WL 4728893 (D. Me. 2024).
[196] Fayerweather v. Menard, Inc., 659 N.W.2d 506, 510 (Wis. Ct. App. 2003).
[197] Saunders v. Consumers Energy Co., 615 F. Supp. 3d 707, 727 (W.D. Mich. 2022).
[198] Rupolo v. Oshkosh Truck Corp., 2013 WL 5520756 (E.D.N.Y. 2013).

evidence of reasonable care or (ii) the alleged source of an assumed duty, depending on the theory advanced.[199]

#### 4. Custom and Practice

Custom appears in the background of several cases, often as something courts do not want to treat as dispositive. *Walter Family Grain Growers* underscores that compliance with custom or minimal regulatory requirements does not necessarily establish reasonable care.[200] *Tosseth* suggests that plaintiffs may contest the adequacy of "industry standards" as being too lax—an explicitly *Hooper*-like move (standards exist, but they may be normatively insufficient).[201]

### D. *Applicability: To Whom Does the Standard Speak?*

A recurring gatekeeping issue is applicability—not only to the product, but to the actor.

#### 1. Employer-Oriented Standards in Manufacturer Cases (OSHA as the Classic Flashpoint)

Multiple cases revolve around whether OSHA is relevant in product cases against manufacturers. *Noskowiak* treated OSHA reliance as irrelevant and misleading because OSHA applies to employers, not manufacturers.[202] *Almonte* similarly rejected OSHA-based methodology as unreliable absent evidence that OSHA reflected the industry standard for manufacturers at the relevant time, while accepting the expert's ASME-based analysis.[203] Yet other cases show more permissive treatment where the OSHA regulation addresses product safety features and is treated as relevant to consumer expectations or due care,[204] and *Young* cautioned against treating OSHA as relieving manufacturers of liability.[205]

The typological question is not "is OSHA admissible?" but "what work is OSHA being asked to do, and is there a foundation for treating it as relevant to this defendant's obligations?"[206]

---

[199] *In re* Syngenta AG MIR 162 Corn Litig., 249 F. Supp. 3d 1224 (D. Kan. 2017).

[200] Walter Family Grain Growers v. Foremost Pump & Well Servs., LLC, 21 Wash. App. 2d 451, 451 (Wash. Ct. App. 2022).

[201] Tosseth v. Remington Arms Co., 483 F. Supp. 3d 659, 675 (D.N.D. 2020).

[202] Noskowiak v. Bobst Sa, No. 04-C-0642, 2005 WL 2146073 (E.D. Wis. 2005).

[203] Almonte v. Averna Vision & Robotics, Inc., 128 F. Supp. 3d 729, 744-45 (W.D.N.Y. 2015).

[204] *See, e.g.*, Wagner v. Clark Equip. Co., 243 Conn. 168, 181 (1997) (holding OSHA compliance evidence admissible in products liability action regarding whether product met consumer safety expectations); Gillespie v. Edmier, 2019 IL App (1st) 172549, ¶ 43 (rejecting manufacturer's argument that OSHA evidence was categorically inapplicable in products liability action).

[205] Young v. Pollock Eng'g Group, Inc., 428 F.3d 786, 791 (8th Circ. 2008).

[206] *Almonte*, 128 F. Supp. 3d 729; *Noskowiak*, 2005 WL 2146073; *Wagner*, 243 Conn. 168; *Young*, 428 F.3d 786.

### 2. User-Oriented Standards and the Risk of Turning Advice into Law

*Whyte* illustrates a related concern: even if a standard says "users should not do X," admitting that standard can mislead juries into thinking users are legally bound by private guidance.[207] That is a distinct applicability problem: not employer-versus-manufacturer but standard-versus-legal obligation.

## *E. Timing: Contemporaneous Versus Post-Event Standards*

The sample suggests that timing questions arise in two main forms.

First, courts are cautious about using later standards to prove earlier knowledge or industry practice. *Fillingane* is explicit: later publication does not necessarily establish earlier dissemination.[208] Second, courts may allow later standards as evidence of feasibility, particularly where the standard supports a proposed alternative design and the proponent is not using the standard as retrospective duty proof.[209] *Norris* adds an additional "timing" wrinkle: the court rejected efforts to treat a decades-old critique (a 1974 CPSC report about an earlier ANSI standard) as having "zero bearing" on the ANSI standard later adopted and applicable to the product at issue—illustrating that timing questions can run in both directions (old critiques may not translate to later versions; later versions may not prove earlier knowledge).[210] It bears emphasis that the inquiry here is not what was (or should have been) known—it is rather what was feasible—at the earlier time.

A practical typological question—especially for AI—is therefore: will courts treat early AI standards as "too new" to evidence customary care at the time of an accident, even while later standards might become useful feasibility evidence as practices stabilize?

## *F. Expertise and Method: Standards as Part of Rule 702 Gatekeeping, Not a Substitute for It*

A notable portion of the sample consists of Daubert/Rule 702 and motion-in-limine disputes, in which standards matter less as substantive rules and more as part of an expert's methodological scaffolding.

Some courts treat standards-based analysis as a familiar and often reliable methodology when the expert explains applicability and ties the standard to case facts.[211] *Affiliated FM* reflects a related methodological debate in fire causation

---

[207] Whyte v. Stanley Works, 180 Ohio App. 3d 844 (Ohio Ct. App. 2003).

[208] Fillingane v. Siemens Energy & Automation, Inc., 809 So.2d 737, 742 (Miss. 2002).

[209] Sappington v. Skyjack, Inc., 512 F.3d 440 (8th Cir. 2008).

[210] Norris v. Excel Indus., Inc., 139 F. Supp. 3d 742, 748-49 (W.D. Va. 2015).

[211] *See, e.g.*, Manzo v. Stanley Black & Decker, Inc., 13-CV-3963, 2024 WL 5319230 (E.D.N.Y. 2024) (admitting an expert's OSHA standards-based design defect opinion as reliable); Follmer v. Pro Sports, Inc., 2023 WL 3964029 (D.S.C. 2023) (admitting an expert's opinion based on physical testing and applied ANSI and ASTM standards as reliable); Bhoodai v. Employers

litigation: NFPA 921 is often treated as a benchmark methodology, but the court recognized that an expert's reliance on something other than NFPA 921 is not per se unreliable.[212] Conversely, *Holmes* illustrates how standards can become a credibility/reliability lever in the other direction: the court noted that ANSI had a test for "foot slip" and criticized the expert for not consulting the ANSI test.[213] And *Norris* shows how Rule 702 disputes can hinge on whether an expert is invoking a real "standard" at all—e.g., the court was "not convinced" that ANSI had adopted the claimed "design safety hierarchy," and treated that kind of mismatch as part of the methodological challenge.[214]

Other cases emphasize the inverse: experts can survive even without invoking standards, and failure to cite standards often goes to weight rather than admissibility.[215] Conversely, courts may exclude expert opinions where the expert gestures at a standard but does not apply it, or where the standard's relevance is not explained.[216]

For an "initial assessment" typology, the point is not that standards-based methodology is always preferred or required, but that standards often become a proxy battleground for reliability: parties argue over whether the expert chose the right benchmark, whether the benchmark applies, and whether the expert's use of it is transparent and non-conclusory.[217]

---

Assurance Co., 2022 WL 4591239 (M.D. Ga. 2022) (admitting an expert's defective design opinions based on machine inspection and applied ISO, OSHA, and ANSI standards as reliable).

[212] Affiliated FM Ins. Co. v. LTK Consulting Servs., Inc., 2014 WL 1494026 (W.D. Wash. 2014).

[213] Holmes v. Wing Enters., Inc., No. 2:08-cv-822, 2009 WL 1809985 (E.D. Va. June 23, 2009).

[214] *Norris*, 139 F. Supp. 3d 742.

[215] *See, e.g.*, Mustafa v. Halkin Tool, Ltd., No. 00-CV-4851 (DGT), 2007 WL 959704, at *8 (E.D.N.Y. 2007) (holding that an expert's failure to cite an ANSI standard in his report did not render his opinions unreliable; Ramos v. Simon-Ro Corp., No. 06-CV-6105 (KMK), 2008 WL 4210487, at *9 (S.D.N.Y. 2008) (finding that plaintiff's expert's failure to reference OSHA, ASME, or ANSI standards in his design defect analysis did not render his opinion unreliable); Anderson v. ABB Installation Prods., Inc., No. 2:18-cv-01836-JHE, 2022 WL 801511, at *7 (N.D. Ala. 2022) (challenges of an expert's unfamiliarity with applicable IEEE, ASTM, and NFPA standards went to the weight and credibility of his opinions rather than their admissibility).

[216] *See, e.g.,* Jackson v. E-Z-GO Div. of Textron, Inc., 326 F. Supp. 3d 375, 421-24 (W.D. Ky. 2018) (excluding warnings testimony where an expert referenced a safety standard but neither applied it nor cited supporting literature in reaching his inadequacy conclusion, rendering the opinion unreliable).

[217] *See, e.g.,* Milanowicz v. Raymond Corp., 148 F. Supp. 2d 525, 533 (D.N.J. 2001) (identifying nine indicia of reliability for nonscientific expert testimony and excluding an expert who listed applicable standards in his report but never engaged with or applied them); Almonte v. Averna Vision & Robotics, Inc., 128 F. Supp. 3d 729, 745 (W.D.N.Y. 2015) (excluding expert reliance on OSHA machine-guarding regulations as unreliable while simultaneously permitting reliance on ASME consensus standards, demonstrating that parties can litigate the choice of benchmark itself, not merely whether the expert applied it correctly); Jaycox v. Terex Corp., 541 F. Supp. 3d 954, 957 (E.D. Mo. 2021) (showing how definitional disputes over the operative standard can become the central locus of the liability determination).

### *G. A Cautious Synthesis: The Categories as a Predictive Checklist for Emerging Tech*

Taken together, the cases support a practical framework that is less a set of conclusions than a checklist of questions that recur when standards become legally salient:

1. Which liability frame is doing the work? Negligence, strict liability, hybrid claims—and within products, design/manufacturing/warnings.[218]
2. What is the standard being offered to prove? Duty, breach/defect, feasibility, notice, causation/comparative fault, misrepresentation/warranty, damages.[219]
3. What is the standard's pedigree? Regulatory/embedded, consensus SSO, internal policy, custom.[220]
4. Does the standard actually apply to this actor and this risk? Employer vs manufacturer; user vs manufacturer; scope disclaimers.[221]
5. Is the timing doing hidden work? Contemporaneous care vs later-adopted standards offered for feasibility.[222]
6. Is the dispute really about expert reliability? Standards as a methodological anchor, not a legal trump.[223]

---

[218] *See, e.g.*, Saunders v. Consumers Energy Co., 615 F. Supp. 3d 702, 721-22, 735-36 (W.D. Mich. 2022) (negligence); Estate of Hicks v. Dana Cos., LLC, 984 A.2d 943, 963-77 (Pa. Super. Ct. 2009) (strict liability); Church Ins. Co. v. Trippe Mfg. Co., No. 04 Civ. 6111(HB), 2005 WL 2649332, at *1-2 (design-defect and warning claims).

[219] *See, e.g.*, *Saunders*, 615 F. Supp. 3d at 721-22 (duty); Sappington v. Skyjack, Inc., 512 F.3d 440, 445-47 (8th Cir. 2008) (duty); Fillingane v. Siemens Energy & Automation, Inc., 809 So.2d 737, 739 (Miss. 2002) (duty); Herrera v. Sherrill, Inc., No. TDC-16-1763, 2023 WL 2245250, at *11-13 (D. Md. 2023) (misrepresentation/warranty); Cooley v. Lincoln Elec. Co., 776 F. Supp. 2d 511, 517 (N.D. Ohio 2011) (damages).

[220] *See, e.g.*, Mutual Ins. Co. of Am. v. Royal Appliance Mfg. Co., 112 F. App'x 386, 391-92 (6th Cir. 2004) (regulatory/embedded); Bhoodai v. Employers Assurance Co., No. 3:19-CV-111 (CAR), 2022 WL 4591239, at *8-10 (M.D. Ga. 2022) (consensus ISO); Rupolo v. Oshkosh Truck Corp., No. 05-CV-2978, 2013 WL 5520756 at *8-11 (E.D.N.Y. 2013) (internal policy); Walter Family Grain Growers v. Foremost Pump & Well Servs., LLC, 21 Wash. App. 2d 451, 461-63 (Wash. Ct. App. 2022) (custom).

[221] *See, e.g.*, *Almonte*, 128 F. Supp. 3d at 742-44 (employer-oriented standard); Noskowiak v. Bobst SA, No. 04-C-0642, 2005 WL 2146073 (E.D. Wis. 2005) (same); Whyte v. Stanley Works, 180 Ohio App. 3d 844 (Ohio Ct. App. 2003) (user-oriented standard); Jaycox v. Terex Corp., No. 4:19-cv-02650-SRC, 2021 WL 2438875, at *2-10 (E.D. Mo. June 15, 2021) (equivalent standards).

[222] *See, e.g.*, *Fillingane*, 809 So.2d at 738-42 (later-adopted standards); *Sappington*, 512 F.3d at 443-54 (same).

[223] *See, e.g.*, Milanowicz v. Raymond Corp., 148 F. Supp. 2d 525, 528-42 (D.N.J. 2001) (expert reliability); Affiliated FM Ins. Co. v. LTK Consulting Servs., Inc., No. C06-1750JLR, 2014 WL 14940263, at *3-9 (W.D. Wash. 2014) (methodological debate); Mustafa v. Halkin Tool, Ltd., No. 00-CV-4851 (DGT), 2007 WL 959704, at *6-20 (E.D.N.Y. 2007) (standards as anchor, not legal trump).

7. Does the standard operate as more than evidence—through statutory safe-harbor presumptions or preemption?[224]

This framework is especially useful for thinking about AI standards because AI currently sits in a fluid, early lifecycle stage: standards are emerging quickly, often without decades of accumulated "collective learning," and adoption is uneven. In that context, standards may initially enter tort cases less as dispositive baselines and more as (i) expert-methodology anchors, (ii) feasibility evidence, and (iii) representations and internal governance artifacts (what the firm said it did, what it documented, and what it chose to rely on).[225] Over time, if AI standards become embedded in contracts, insurance, procurement, and regulation, the litigation function of standards may change—sometimes even taking on rebuttable presumption effects where legislatures choose to provide them.[226] But the present typological lesson is narrower: even in mature domains, courts appear to treat standards as *tools whose role depends on context*, and the most productive way to anticipate AI's path is to track which of the above questions is likely to control in a given case.

On that view, the practical significance of "AI standards" in tort will likely not be determined by abstract debates about whether standards are voluntary or mandatory. It will turn on the more concrete questions courts already ask in other technical domains: Is this the right benchmark for this defendant, at this time, for this risk—and is it being used to show duty, breach, feasibility, or something else?

## V. Standards and AI Liability—and Future Questions

This article has so far treated "standards" as an umbrella category that includes everything from hard law (statutes and regulations) to soft law (consensus standards and professional guidelines) to quasi-standards (internal policies and customary practice). The case survey in Part IV suggests that courts use these heterogeneous standards in heterogeneous ways: for instance, sometimes as evidence of breach;[227] sometimes as evidence of due care;[228] sometimes as a gatekeeping tool for expert reliability;[229] and sometimes, under particular statutory frameworks, as a rebuttable

---

[224] *See, e.g.*, Taylor v. SmithKline Beecham Corp., 658 N.W.2d 127, 129-37 (Mich. 2003) (statutory safe-harbor provision); Geier v. American Honda Motor Co., 529 U.S. 861, 864-86 (2000) (preemption).

[225] Manzo v. Stanley Black & Decker, Inc., 13-CV-3963, 2024 WL 5319230, at *3-20 (E.D.N.Y. 2024) (expert methodology); *Jaycox*, 2021 WL 2438875, at *2-10 (feasibility evidence); Herrera v. Sherrill, Inc., No. TDC-16-1763, 2023 WL 2245250, at *2-15 (D. Md. 2023) (representations).

[226] *See, e.g.,* Mutual Ins. Co. of Am. v. Royal Appliance Mfg. Co., 112 F. App'x 386, 391-92 (6th Cir. 2004) (concerning Michigan's rebuttable presumption of non-liability); Toyota Motor Sales, U.S.A., Inc. v. Reavis, 627 S.W.3d 713, 713-77 (Tex. 2021) (showing how plaintiffs successfully rebutted a statutory presumption of non-liability).

[227] *Supra* Part IV.B (discussing Standards as Benchmarks for Reasonableness or Safety).

[228] *Supra* Part IV.A (discussing Standards as Evidence of Reasonableness).

[229] *Supra* Part IV.F (discussing Standards as Part of Rule 702 Gatekeeping).

presumption or other burden-shifting device.[230] Part IV also underscores a jurisdictional split on whether compliance evidence is even admissible in strict products-liability design-defect cases—some courts treat it as probative context, while others exclude it as an improper "negligence" concept in a strict-liability frame.[231] The aim of this Part is not to forecast a single doctrinal endpoint for "AI standards," but to identify how those patterns are likely to reappear—often in amplified form—in litigation over AI-related harms.

The difficulty is that the present moment is unusual. As discussed in Part II, the contemporary policy debate is "standards-first," with governments and industry pressing for standards as a governance mechanism even while many AI applications remain in an early, rapidly evolving, and contested phase. The EU AI Act's conformity architecture is the most direct example: for certain high-risk and general-purpose AI obligations, conformity with harmonized standards whose references are published in the Official Journal yields a presumption of regulatory conformity (EU AI Act, art. 40).[232] In the United States, the Biden Administration's Executive Order on "Safe, Secure, and Trustworthy" AI (EO 14110) framed standards and testing as core tools of policy; this order was revoked by the Trump Administration in January 2025, with new guidance shifting the emphasis toward removing perceived barriers to AI development.[233] Regardless of one's view of those policy shifts, they matter here because they change what "reasonable" conduct looks like to courts and juries—not by controlling outcomes, but by shaping expectations about what safety work was feasible, known, and normatively demanded at the time of design, deployment, or injury. They also matter because some regulatory standard-setting is structured not as a "minimum floor" but as a deliberate menu of compliant design choices—so that a tort theory demanding a different design can be framed as conflicting with the regulatory objective.[234]

A central lesson of the case survey—and certainly the most surprising—is not that standards will define AI liability but that they will structure how liability questions are presented to courts and juries. Accordingly, the most immediate legal role of AI standards is better thought of as evidentiary rather than substantive.

### *A. What "AI standards" will look like in tort litigation*

A threshold typology question—one that courts will face in an implicitly common-law, case-by-case way—is what kind of "standard" a litigant is actually offering. The AI field is already generating at least four distinct families of standards-like artifacts, and they map differently onto familiar tort functions.

---

[230] *Supra* Part IV.C (discussing Regulatory and Legally Adopted Standards).

[231] *Supra* Part IV.A (discussing, e.g., Sullivan v. Werner Co. and Church Ins. Co. v. Trippe Mfg. Co.).

[232] Council Regulation 2024/1689, of 13 June 2024, art. 40, 2024 O.J. (L1689) 1, 76 (EU).

[233] Exec. Order No. 14,110, 88 Fed. Reg. 75,191 (Nov. 1, 2023); Exec. Order No. 14,148, 90 Fed. Reg. 8,237 (Jan. 28, 2023); Exec. Order No. 14,179, 90 Fed. Reg. 8,741 (Jan. 23, 2023).

[234] Geier v. American Honda Motor Co., 529 U.S. 861, 864-86 (2000).

First, there are process and management-system standards: governance frameworks that specify how an organization should identify risks, test systems, document decisions, monitor incidents, and improve iteratively. The NIST AI Risk Management Framework (AI RMF) is an influential example in the U.S. context, explicitly framed as voluntary guidance rather than law.[235] ISO/IEC 42001—an AI management-system standard—represents a more formalized path: a certifiable management system that looks closer to ISO 27001-style compliance (and therefore closer to the evidentiary posture of a "quality system" than a pure technical safety standard).[236] Two implications from Part IV sharpen the tort-facing significance of these process standards. One is evidentiary: documented internal processes can become the most concrete "standard" a court will see in an early-stage technology dispute (especially where external engineering norms are thin). The other is doctrinal: where plaintiffs try to convert "we follow best practices" into "we assumed a legal duty," courts often analyze the claim through voluntary-undertaking logic, which typically requires a showing of reliance or increased risk—not merely the existence of an aspirational program.[237]

Second, there are technical performance and testing standards: evaluation protocols (for robustness, bias, safety, and security), measurement standards, benchmarks, and "test harnesses." In practice, much of this work lives in quasi-standard forms (model cards, system cards, red-team reports) rather than in mature consensus documents. That matters because courts, in the products context, are often more comfortable treating standards as evidence of "what competent engineers do" when the standard looks like a tested, stable proxy for expertise,[238] and more skeptical when it looks like ad hoc advocacy.[239] Additional cases reinforce that point with "classic" engineering-standard litigation: courts routinely

---

[235] NAT'L INST. OF STANDARDS & TECH.., ARTIFICIAL INTELLIGENCE RISK MANAGEMENT FRAMEWORK (AI RMF 1.0) (2023), https://doi.org/10.6028/NIST.AI.100-1 [https://perma.cc/Q5FJ-NSCT].

[236] INT'L ORG. FOR STANDARDIZATION & INT'L ELECTROTECHNICAL COMM'N, ISO/IEC 42001:2023—INFORMATION TECHNOLOGY—ARTIFICIAL INTELLIGENCE—MANAGEMENT SYSTEM (2023) (establishing requirements for an artificial intelligence management system and providing a certifiable governance framework for organizations developing or deploying AI); *see also* INT'L ORG. FOR STANDARDIZATION & INT'L ELECTROTECHNICAL COMM'N, ISO/IEC 27001:2022—INFORMATION SECURITY, CYBERSECURITY AND PRIVACY PROTECTION—INFORMATION SECURITY MANAGEMENT SYSTEMS—REQUIREMENTS (2022).

[237] *In re* Syngenta AG MIR 162 Corn Litig., 249 F. Supp. 3d 1224, 1224-48 (D. Kan. 2017).

[238] Milanowicz v. Raymond Corp., 148 F. Supp. 2d 525, 528-542 (D.N.J. 2001) (noting that courts look to such standards as indicia of reliability precisely because they reflect "tested, stable" parameters for industrial design); Jackson v. E-Z-GO Div. of Textron, Inc., 326 F. Supp. 3d 375, 375-444 (W.D. Ky. 2018) (illustrating that courts treat consensus documents as proxies for what competent engineers in the field actually do); Manzo v. Stanley Black & Decker, Inc., 13-CV-3963, 2024 WL 5319230, at *3-20 (E.D.N.Y. 2024) (underscoring that the evidentiary weight of a standard turns on whether it functions as a stable, tested measure of professional practice).

[239] Howard v. Omni Hotels Management Corp., 203 Cal. App. 4th 403 (Cal. App. 4 Dist., 2012) (affirming summary judgment where an expert offered only his personal opinion that higher standards were warranted); Noskowiak v. Bobst SA, No. 04-C-0642, 2005 WL 2146073, at *1-11 (E.D. Wis. 2005) (excluding expert testimony where the expert's post-hoc invocation of ANSI standards to validate opinions did not retroactively render those opinions reliable).

treat consensus engineering documents (e.g., SAE/ANSI/UL) as legitimate anchors for expert methodology and defect analysis—while emphasizing that compliance/noncompliance is rarely dispositive.[240]

Third, there are deployment and operational standards: guardrails, monitoring protocols, incident response, user reporting channels, age gating, and "human-in-the-loop" oversight processes. These are especially likely to appear in negligence claims because they resemble operational precautions rather than physical design choices. They also resemble the "internal standards" category that courts treat as relevant but non-dispositive evidence.[241] Other cases underscore that internal policies and "customary practice" can cut both ways: they may support a due-care narrative, but a departure from one's own safety practice can also be used as evidence of negligence when it increases risk.[242]

Fourth, there are labeling and marketing standards: "truth-in-advertising" norms, disclosure obligations, and standardized terminology that constrains what firms may claim about their systems. These often show up indirectly (through consumer protection statutes, warranty theories, or "failure to warn" claims) rather than as a standalone tort standard. In AI, where systems are often marketed with anthropomorphic or autonomy-suggestive framing, marketing standards may function as a surrogate for safety standards—particularly where the alleged harm is mediated through user reliance.[243] Other warning/labeling cases reinforce that "standards" frequently operate here as context for warning adequacy—both through external marks/certifications (e.g., UL) and through the "industry knowledge" baseline that informs what a warning must communicate.[244]

---

[240] Alfred v. Caterpillar, Inc., 262 F.3d 1083, 1083-89 (10th Cir. 2001) (showing SAE standards as admissible basis for expert inference of defect); Linden v. CNH Am., LLC, 673 F.3d 829, 829-41 (8th Cir. 2012) (exemplifying how a SAE standard treated as "safety code"/custom is relevant to negligence instruction); DiCarlo v. Keller Ladders, Inc., 211 F.3d 465, 465-68 (8th Cir. 2000) (showing how ANSI compliance evidence is admissible on design defect).

[241] Saunders v. Consumers Energy Co., 615 F. Supp. 3d 707-41 (W.D. Mich. 2022).

[242] Commonwealth v. Angelo Todesca Corp., 446 Mass. 128, 128-43 (Mass. 2006).

[243] Anderson v. Hedstrom Corp., 76 F. Supp. 2d 422, 422-59 (S.D.N.Y. 1999); Kreuzmann v. Seda France, 2012 WL 1211356, at *1-8 (S.D. Ohio 2012); Follmer v. Pro Sports, Inc., 2023 WL 3964029, at *1-6 (D.S.C. 2023); *see* FED. TRADE COMM'N, *Keep Your AI Claims in Check* (Feb. 2023), https://www.ftc.gov (warning companies against overstating AI capabilities or making misleading claims about autonomy or performance) [https://perma.cc/UTG9-UFAE]; NAT'L INST. OF STANDARDS & TECH., ARTIFICIAL INTELLIGENCE RISK MANAGEMENT FRAMEWORK (AI RMF 1.0) 23-25 (Jan. 2023) (recommending transparency and documentation practices to mitigate risks arising from user misunderstanding of AI system capabilities), https://doi.org/10.6028/NIST.AI.100-1 [https://perma.cc/X46R-B9FZ].

[244] Lightolier, A Div. of Genlyte Thomas Grp., LLC v. Hoon, 387 Md. 539, 539-62 (Md. App. Ct. 2005) (UL marking standards relevant to warning adequacy); Smith v. Louisville Ladder Co., 237 F.3d 515, 515-23 (5th Cir. 2001) (industry knowledge shaping warning adequacy analysis); Rufer v. Abbott Laboratories, 2003 WL 22430193, at *1-15 (Wash. Ct. App. 2003) (industry custom on warnings is evidence but not conclusive).

### *B. Negligence claims: standards as evidence of reasonable precautions, not a substitute for reasonableness*

The negligence setting is where "AI standards" are most likely to appear early, and in the most familiar role: as evidence of what a reasonable actor should have done in the circumstances. That is the straightforward translation of the case survey's baseline: standards are typically relevant, but they do not mechanically define the duty of care.[245] This is also the most direct domain for the *T.J. Hooper* dynamic. Where courts perceive an industry to be "lagging" behind feasible safety measures, voluntary standards can become a floor of expectation rather than a ceiling—particularly for high-risk contexts like driving automation, youth-facing products, or systems used in safety-critical settings.

Two AI-specific features will intensify that classic tension.

One is that many AI harms will be framed as the failure to implement readily available precautions—guardrails, monitoring, escalation pathways, and constraints on foreseeable misuse—rather than as the failure to comply with a single clear engineering specification. This pushes litigation toward operational reasonableness. In that setting, standards are likely to be litigated not only as "did you follow X," but as "did you have a defensible safety process at all." That tracks the way some courts treat management-like standards in other technical domains: experts use standards as a methodology to explain what a competent process would have looked like; defendants respond that the standards are voluntary or inapplicable; and the admissibility fight becomes a Daubert-reliability proxy battle.[246] Other cases also show how parties litigate the "weight versus admissibility" line: courts often let standards-based opinions in when the expert explains fit and application, and exclude them when the expert gestures at standards without doing the work.[247]

The other is that, because AI systems often change post-deployment, "reasonable precautions" will be contested across time. Even if a standard exists today, plaintiffs may attempt to use it to show that an earlier safety measure was feasible, while defendants may argue that such evidence is a hindsight-driven attempt to impose after-the-fact obligations.[248] Courts have long navigated this in product design cases by distinguishing between "state of the art" uses (what was known and expected at the relevant time) and feasibility uses (what could have been

---

[245] *See* Walter Family Grain Growers v. Foremost Pump & Well Servs., LLC, 21 Wash. App. 2d 451, 451-68 (Wash. Ct. App. 2022); *Saunders*, 615 F. Supp. 3d at 707-41.

[246] Affiliated FM Ins. Co. v. LTK Consulting Servs., Inc., No. C06-1750JLR, 2014 WL 14940263, at *3-9 (W.D. Wash. 2014); Manzo v. Stanley Black & Decker, Inc., 13-CV-3963, 2024 WL 5319230, at *3-20 (E.D.N.Y. 2024); Jaycox v. Terex Corp., No. 4:19-cv-02650-SRC, 2021 WL 2438875, at *2-10 (E.D. Mo. June 15, 2021); *Follmer*, 2023 WL 3964029, at *1-6.

[247] Alfred v. Caterpillar, Inc., 262 F.3d 1083, 1083-89 (10th Cir. 2001); Holmes v. Wing Enters., Inc., No. 2:08-cv-822, 2009 WL 1809985, at *1-9 (E.D. Va. June 23, 2009); Allenbrand v. Louisville Ladder Grp., L.L.C., 2007 WL 120805, at *1-4 (D. Kan. Jan. 12, 2007).

[248] Fillingane v. Siemens Energy & Automation, Inc., 809 So. 2d 737, 738-42 (Miss. 2002); Sappington v. Skyjack, Inc., 512 F.3d 440, 440-54 (8th Cir. 2008).

done), and by using evidentiary doctrines (e.g., subsequent remedial measures) to manage unfair prejudice. AI's rapid iteration cycle will make those line-drawing problems routine rather than exceptional. And in some domains, later-adopted standards are treated as feasibility evidence even when they are not treated as definitive "state of the art" at the earlier time—an analytic move likely to recur for AI safety tooling and post-deployment controls.[249]

The negligence-per-se pathway is, doctrinally, the most direct way for "AI standards" to become legally salient, but it may be less common than the policy discourse implies. The EU AI Act, for example, uses harmonized standards to create a presumption of regulatory conformity (art. 40), but that is not itself a tort standard and does not automatically become negligence per se in member-state tort systems; its effect will turn on local doctrines about regulatory compliance evidence, protected classes, and private enforcement. In the U.S., Executive Orders are even further from negligence per se: they often include explicit limitations on creating enforceable private rights and are better understood as agency-direction instruments that may indirectly influence industry practice and the evidentiary record of what was foreseeable. Even where legislatures do provide safe-harbor-like effects, the details matter: some statutes create rebuttable presumptions tied to standards compliance, while others go further and make compliance effectively conclusive in narrow categories.[250]

### *C. Products liability: whether standards speak to "defect" depends on doctrine and framing*

The case survey's most important caution for AI is that products liability is not a single doctrinal bucket. Standards can matter very differently depending on whether the claim is framed as design defect, manufacturing defect, or warning defect; and depending on whether the jurisdiction is closer to strict-liability "product focused" frameworks or risk-utility frameworks that permit reasonableness concepts to re-enter through the back door.[251]

The first AI-specific question is definitional: is the AI system a "product," a "service," or a hybrid? That question is not a mere taxonomy fight. It changes which evidentiary instincts courts bring to bear. Courts are generally more willing to hear about "industry standards" in design-defect litigation when the standard functions

[249] Adams v. Genie Indus., Inc., 929 N.E.2d 380, 380-86 (N.Y. 2010); Wickersham v. Ford Motor Co.,194 F. Supp. 3d 434, 434-52 (D.S.C. 2016).

[250] Fortune v. Techtronic Indus. N. Am., 107 F. Supp. 3d 1199, 1199-204 (D. Utah 2015); Taylor v. SmithKline Beecham Corp., 658 N.W.2d 127, 129-37 (Mich. 2003).

[251] Estate of Hicks v. Church Ins. Co., No. 245643, 2005 WL 2649332, at *5-6 (Mich. Ct. App. Oct. 20, 2005).; Sullivan v. Werner Co., 253 A.3d 730, 750 (Pa. Super. Ct. 2021); Webb v. Volvo Cars of N. Am., LLC, 148 A.3d 473, 477 (Pa. Super. Ct. 2016); Kim v. Toyota Motor Corp., 6 Cal. 5th 21, 34 (Cal. 2018); Covell v. Bell Sports, Inc., 651 F.3d 357, 370 (3d Cir. 2011).

as a proxy for tested engineering practice,[252] and more skeptical when it looks like a way to smuggle negligence reasonableness into strict liability.[253] AI systems that are cloud-hosted, subscription-based, and continuously updated will invite the argument that they are services; plaintiffs will respond that they are consumer products in functional terms. Additional cases also show that "compliance" can matter in multiple, sometimes conflicting, ways in product cases: (i) as relevant but non-dispositive evidence of defect/non-defect, (ii) as a statutory presumption in some jurisdictions, and (iii) in rare settings, as a basis for federal preemption when a federal standard reflects a deliberate design-policy choice.[254]

*Garcia v. Character Technologies*, the prominent Character.AI wrongful death litigation, previews this definitional contest. In May 2025, the district court declined—at least at the motion-to-dismiss stage—to treat the chatbot's output as categorically protected speech and allowed key claims to proceed, making the case a plausible vehicle for "AI-as-product" theories rather than "AI-as-speech" immunization. But the case's subsequent procedural history also illustrates a second AI-specific point: settlements may resolve early, headline-grabbing cases before appellate courts crystallize durable doctrines. Reports in January 2026 describe mediated settlements in *Garcia* and other related suits, with terms undisclosed and subject to court approval. That pattern—early settlement under uncertainty—may slow the production of precedential "standards in AI tort" opinions, even as it accelerates private ordering (companies changing practices to reduce litigation exposure).

The second AI-specific question is whether standards will be invoked as defect evidence (plaintiff's sword) or as non-defect evidence (defendant's shield). The survey suggests both moves are common, but their success depends on whether the plaintiff can offer more than a bare "noncompliance" allegation. When courts give compliance substantial weight, it is often because the plaintiff lacks a concrete alternative or lacks evidence that the product was otherwise unreasonably dangerous.[255] Conversely, when plaintiffs successfully counter "compliance," it is often by attacking the adequacy of the standard itself or by showing that compliance with a minimal standard does not speak to the specific risk that materialized.[256] The new cases reinforce both sides of that dynamic: some courts treat compliance as

---

[252] Ratcliffe v. BRP U.S., Inc., 2024 WL 4728893, at *11 (D. Me. 2024); Bhoodai v. Employers Assurance Co., 2022 WL 4591239, at *8-10 (M.D. Ga. 2022); Toyota Motor Sales, U.S.A., Inc. v. Reavis, 627 S.W.3d 713, 730 (Tex. 2021).

[253] *Estate of Hicks*, 2005 WL 2649332, at *5.

[254] Bic Pen Corp. v. Carter, 171 S.W.3d at 667 (Tex. App. Corpus Christi 2005) (CPSC compliance does not relieve common-law liability); *Fortune*,107 F. Supp. 3d at 1199 (statutory presumption of non-defectiveness tied to standards compliance); Geier v. American Honda Motor Co., 529 U.S. 861, 874 (2000) (conflict preemption where tort claim would frustrate federal standard's objectives).

[255] Porpora v. Louisville Ladder, Inc., No. 05-61008-CIV, 2006 WL 8431483, at *1 (S.D. Fla. June 29, 2006).

[256] *Toyota*, 627 S.W.3d at 730-31; Tosseth v. Remington Arms Co., 483 F. Supp. 3d 659, 676 (D.N.D. 2020).

"some evidence" that can be rebutted by plaintiff proof of defect,[257] while others treat noncompliance (or failure to adopt known private safety guidance) as supporting heightened culpability at the punitive-damages stage.[258]

That dynamic has an obvious AI analogue. If an AI vendor can show (credibly, with documents) that it followed an established risk-management framework—internal or external—defendants will argue that this is at least persuasive evidence of due care (and perhaps a rebuttable presumption, if legislatures create one). If plaintiffs can show that the framework is thin, captured, or mismatched to the risk (e.g., "you had a governance process, but it did not address foreseeable self-harm escalation pathways in a youth-facing companion app"), then "compliance" becomes only one data point in a broader reasonableness inquiry. And, as in the automotive context, defendants may also attempt a "standards-as-expectations" argument—i.e., consumer expectations track prevailing safety regimes and testing practices—while plaintiffs respond that the industry may have "unduly lagged" or that the standard is a floor rather than an endorsement of safety.[259]

### *D. Standards as an evidentiary technology: the fight will often be about experts, not "the standard of care"*

Across the surveyed cases, a repeated pattern is that standards do not merely influence what counts as reasonable conduct; they also influence who gets to testify and what methods of reasoning courts will accept. Courts regularly use standards as part of the Daubert reliability inquiry: Did the expert identify an applicable standard? Did they apply it correctly? Did they explain why it is an appropriate benchmark?[260] But courts also caution that failure to cite a standard is not necessarily disqualifying; it may go to weight rather than admissibility.[261] Other cases provide concrete illustrations of both impulses: standards-based engineering analysis can support admissibility when it is transparently applied,[262] but courts

---

[257] *Bic Pen Corp.*, 171 S.W.3d 657 at 667; Gable v. Vill of Gates Mills, 784 N.E.2d 739 (Ohio Ct. App. 2003).

[258] Groth v. Hyundai Precision & Ind. Co.,149 P.3d 333, 337 (Or. Ct. App. 2006); Creadore v. Shades of Light, No. 01 Civ. 4110, 2003 WL 152003, at *3 (S.D.N.Y. Jan. 21, 2003); Kay v. Sunbeam Prods., Inc., No. 09-4065-CV-C-NKL, 2010 WL 2178506, at *4 (W.D. Mo. May 27, 2010).

[259] *See* Evans v. NACCO Materials Handling Grp., Inc., 810 S.E.2d 462, 471 (Va. 2018); Jablonski v. Ford Motor Co., 2011 IL 110096, ¶¶ 11-19, 955 N.E.2d 1138, 1143-45 (Ill. 2011); Kim v. Toyota Motor Corp., 424 P.2d 290, 302-09 (Cal. 2018).

[260] *See* Jackson v. E-Z-GO Div. of Textron, Inc., 326 F. Supp. 3d 375, 424 (W.D. Ky. 2018); Milanowicz v. Raymond Corp., 148 F. Supp. 2d 525, 536 (D.N.J. 2001); Almonte v. Averna Vision & Robotics, Inc., 128 F. Supp. 3d 729, 752 (W.D.N.Y. 2015); Herrera v. Sherrill, Inc., No. TDC-16-1763, 2023 WL 2245250, at *5 (D. Md. Feb 27, 2023).

[261] *See* Mustafa v. Halkin Tool, Ltd., No. 00-CV-4851 (DGT), 2007 WL 959704, at *8 (E.D.N.Y. Mar. 29, 2007); Ramos v. Simon-Ro Corp., No. 06-CV-6105 (KMK), 2008 WL 4210487 at *12 (S.D.N.Y. Sept. 11, 2008); Anderson v. Hedstrom Corp., 76 F. Supp. 2d 422, 456-57 (S.D.N.Y. 1999).

[262] *See* Alfred v. Caterpillar, Inc., 262 F.3d 1083, 1087 (10th Cir. 2001); G.W.M. v. Flink Co., No. 4:08CV158, 2009 WL 2337117, at *2-3 (E.D. Mo. 2009).

may exclude or discount experts who ignore directly applicable standards or who invoke "standards" without a clear application theory.[263]

AI litigation will likely intensify this evidentiary function for at least three reasons.

First, judges and juries will need translation mechanisms. In many AI cases, the fact-finder cannot directly assess the reasonableness of design choices (model architecture, fine-tuning procedures, guardrail design) without expert mediation. Standards—especially process standards—can function as the scaffolding by which experts explain what "competent development and deployment" looks like. That, in turn, makes standards disputes look less like "what is the standard of care" and more like "is the expert's method anchored to something recognizable."

Second, AI will produce "standards conflicts" of the Almonte type: plaintiffs' experts citing one regime; defendants' experts citing another; and courts deciding whether the dispute is properly left to the fact-finder or whether the plaintiff has failed to show the proffered standard actually reflects relevant industry practice for the defendant's role (developer versus deployer; employer versus manufacturer analogies). AI supply chains—model provider, application developer, deploying enterprise, platform host—make role-based applicability disputes more likely, not less. Other products and warning cases also suggest a specific AI analogue: "role mismatch" fights will increasingly ask whether a standard is addressed to the developer/model provider, the deployer/operator, or the downstream user—and courts will often treat that fit question as central to relevance and prejudice.[264]

Third, AI will generate "equivalency" arguments. *Jaycox* illustrates how courts sometimes tolerate experts using "equivalent standards" where no on-point standard exists, treating the objection as a weight issue rather than an admissibility issue when the expert explains the reasoning. AI's novelty means that on-point standards will often be absent, leaving litigants to fight about whether general cybersecurity standards, software safety standards, or AI governance frameworks are "close enough" to the disputed system.

### *E. Two early illustrations: Character.AI and Tesla FSD*

The Character.AI litigation is an especially vivid example of how standards talk may enter negligence and product-defect framing even before formal "AI safety standards" have matured. In *Garcia*, the plaintiff's allegations focused on an AI companion relationship with a minor, foreseeability of harm, and failures to implement protective design choices; the court's refusal to dismiss on sweeping First Amendment grounds signaled that courts may treat these harms as susceptible to ordinary product- and negligence-style analysis, at least at early stages. From a

[263] *See* Holmes v. Wing Enters., Inc., No. 2:08-cv-822, 2009 WL 1809985, at *8 (E.D. Va. June 23, 2009); Allenbrand v. Louisville Ladder Grp., L.L.C., 2007 WL 120805, at *3 (D. Kan. Jan. 12, 2007); Clarke v. LR Sys., 219 F. Supp. 2d 323, 329 (E.D.N.Y. 2002).

[264] *See* Covell v. Bell Sports, Inc., 651 F.3d 357, 360-62 (3d Cir. 2011); Rufer v. Abbott Laboratories, No. 48909-7-1, 2003 WL 22430193, at *5-6 (Wash. Ct. App. Oct. 27, 2003).

standards perspective, the case raises a set of questions that recur across the survey but feel sharper in AI: What standards apply to products whose "hazard" is psychological or relational rather than mechanical? What counts as adequate warning where the product's value proposition is engagement and emotional bonding? When a platform adopts guardrails after a lawsuit, will those changes be treated as evidence of feasibility, subsequent remedial measures, or both? And, perhaps most importantly, what does "industry practice" even mean when the industry is young and the practice may be set by a small number of firms? Other warning and consumer-expectations cases suggest courts may operationalize these questions through familiar proxies—warning adequacy benchmarks, "industry knowledge" baselines, and standards as evidence of what risks were foreseeable.[265]

Tesla's "Full Self-Driving" litigation highlights a different pathway: standards as a vocabulary for consumer expectations and as a tool for evaluating contested marketing. In *In re Tesla Advanced Driver Assistance Systems Litigation*, the court's class certification order reflects, among other things, disputes about whether Tesla's representations implied capabilities consistent with higher automation levels and whether Tesla sought regulatory permissions associated with SAE Level 3 functionality in California. That is not, strictly speaking, a traditional "industry safety standard" case; it is a misrepresentation-and-reliance case. But it demonstrates how standards can become legally salient even when the nominal cause of action is not "negligence" or "design defect:" standards provide the semantic boundary conditions for what claims like "full self-driving" communicate, what a reasonable consumer may infer, and what evidence counts as "common proof" for classwide reliance and injury. Other cases emphasize that even when standards are not treated as dispositive of defect, they can still structure the "meaning" of safety-relevant representations—especially where standardized terminology and certifications act as shorthand for safety attributes.[266]

The deeper point is that, in AI-enabled products, marketing and safety will often converge. A system that is marketed as more autonomous than it is will tend to generate foreseeable misuse, which can feed back into negligence (foreseeability, inadequate warnings) and product liability (defective instructions or warnings). This is a modern echo of the survey's repeated theme that standards can be used both as sword and shield: plaintiffs invoke standards to show what defendants should have disclosed or designed against; defendants invoke standards to show that their representations and designs fit prevailing benchmarks. Geier adds a further wrinkle for autonomy-related marketing: where a regulator intentionally calibrates an evolving technology by permitting multiple design paths, "standards compliance" may be argued not merely as evidentiary reasonableness but as a federal objective that tort claims should not undermine.[267]

---

[265] *See* Lightolier, A Div. of Genlyte Thomas Group., LLC v. Hoon, 876 A.2d 100, 109-15 (Md. App. Ct. 2005); *Smith*, 237 F.3d at 517-22; Evans v. NACCO Materials Handling Grp., Inc., 810 S.E.2d 462-63 (Va. 2018).

[266] *See Covell*, 651 F.3d at 357; *Lightolier*, 876 A.2d at 103.

[267] Geier v. American Honda Motor Co., 529 U.S. 861, 872-73 (2000).

Across these contexts, the recurring judicial concern is not whether standards are "correct," but whether their presentation risks substituting technical authority for legal judgment. Courts repeatedly manage standards through evidentiary doctrines—Daubert, relevance, Rule 403 balancing, and jury instructions—precisely to prevent standards from hardening into de facto law. For emerging AI systems, this evidentiary management function is likely to dominate early litigation, long before courts are willing to treat any standard as defining legal duty.

### *F. Open questions for "standards in AI torts"*

Because the empirical base is still developing, the most responsible move is to identify questions that will likely structure doctrine rather than to predict doctrine itself. Several stand out.

1. Will AI standards function as floors, ceilings, or neither? The T.J. Hooper lesson, as reflected across negligence contexts, is that custom is not dispositive. But in fast-moving AI contexts, courts may be tempted to treat widely recognized frameworks (NIST AI RMF; ISO management-system certifications) as "good enough" proxies for reasonableness—especially where juries would otherwise face an unbounded inquiry. Whether courts resist that temptation and, under what fact patterns, will shape AI incentives. The cases supply two cautionary bookends: courts sometimes treat compliance as meaningful but non-dispositive evidence,[268] yet in narrow categories legislatures may make compliance functionally conclusive.[269]
2. How will courts treat the pedigree of AI standards? Article 40 of the EU AI Act formalizes a presumption of regulatory conformity for certain harmonized standards. If similar presumptions or safe-harbor statutes arise domestically (as in some product-liability reforms), AI standards could become quasi-dispositive in some jurisdictions. If they do not, pedigree may matter mainly to evidentiary weight: government-linked standards may carry more persuasive force with juries than purely private ones[270] but will still not necessarily control outcomes. Additional product cases highlight both "soft" and "hard" versions of pedigree effects: compliance evidence may be admitted as probative context.[271]
3. How will standards allocate responsibility across the AI supply chain? Many standards are written with an implicit actor in mind—developer,

[268] Jablonski v. Ford Motor Co., 2011 IL 110096, ¶ 22, 955 N.E.2d 1138, 1145 (Ill. 2011); *Evans*, 295 Va. at 238-43.

[269] Taylor v. SmithKline Beecham Corp., 658 N.W.2d 127, 129-30.

[270] Wagner v. Clark Equip. Co., 243 Conn. 168, 179-82 (1997); Mutual Ins. Co. of Am. v. Royal Appliance Mfg. Co., 112 F. App'x 386, 386-92 (6th Cir. 2004).

[271] Covell v. Bell Sports, Inc., 651 F.3d 357 (3d Cir. 2011), may trigger rebuttable presumptions, *See* Fortune v. Techtronic Indus. N. Am., 107 F. Supp. 3d 1199 (D. Utah 2015), or may be excluded entirely in strict-liability frames in some jurisdictions *See* Sullivan v. Werner Co., 253 A.3d 730 (Pa. Super. Ct. 2021); Webb v. Volvo Cars of North America, LLC, 148 A.3d 473 (Pa. Super. Ct. 2016).

deployer, integrator, operator. Tort suits will often name all of them. One recurring move in the product-liability cases is to argue that standards place responsibility on the employer/user rather than the manufacturer[272] or that the standard does not apply to the defendant's role.[273] AI's multi-actor structure suggests that "who the standard binds" will be an early, recurring, and outcome-significant question. Voluntary-undertaking disputes may amplify this: firms may adopt internal "deployment standards" that sound duty-like, but courts may require reliance or increased risk before treating such commitments as actionable duties to third parties.[274]

4. What is the legally relevant time slice for a "standard" in continuously updated systems? Traditional product cases often focus on the time of manufacture or sale, with limited attention to post-sale updates except under particular doctrines. AI systems blur those boundaries. Plaintiffs will argue that model updates and safety patches show feasibility; defendants will argue that later changes should not redefine earlier duties or that admitting them would punish remediation. This is the AI version of the timing disputes seen in *Fillingane* and *Sappington*.

5. How will courts operationalize "compliance" for process standards? A standard like ISO/IEC 42001 is not a single measurable safety property; it is a management system. In litigation, compliance will be contested through documentation, audit trails, and expert interpretation. This will raise discovery burdens and spoliation pressures, and it may make standards litigation look like corporate-governance litigation—less about the system's outputs in one interaction, more about whether the organization had a defensible safety program. Other expert-gatekeeping cases suggest that the fight will often be framed as methodology: did the expert meaningfully connect the standard (process or technical) to the system's design/deployment facts, or merely invoke "standards" as rhetoric.[275]

6. Will AI ever generate a malpractice-like deference regime? The survey does not show a strong analogue to medical-malpractice deference in the standards cases: courts generally treat standards as evidence and often insist on an independent reasonableness inquiry, rather than deferring wholesale to the profession. AI complicates this further because "AI engineers" are not a licensed, self-regulating profession in the way physicians are. That institutional absence may make courts less willing to treat "what AI companies do" as presumptively reasonable, and more willing to apply the

---

[272] Young v. Pollock Eng'g Group, Inc., 428 F.3d 786, 792.

[273] Noskowiak v. Bobst Sa, No. 04-C-0642, 2005 WL 2146073, at *4-7 (E.D. Wis. Sept. 2, 2005); Brown v. Crown Equip. Corp., 445 F. Supp. 2d 59, 69-70 (D. Me. 2006); Almonte v. Averna Vision & Robotics, Inc., 128 F. Supp. 3d 729, 743-47 (W.D.N.Y. 2015).

[274] *In re* Syngenta AG MIR 162 Corn Litig., 249 F. Supp. 3d 1224, 1229-33 (D. Kan. 2017).

[275] Alfred v. Caterpillar, Inc., 262 F.3d 1083, 1089 (10th Cir. 2001); Holmes v. Wing Enters., Inc., No. 2:08-cv-822, 2009 WL 1809985, at *8 (E.D. Va. June 23, 2009); Allenbrand v. Louisville Ladder Grp., L.L.C., 2007 WL 120805, at *3 (D. Kan. Jan. 12, 2007).

*T.J. Hooper* intuition that a young industry may lag behind feasible precautions. At the same time, *Geier*-like preemption disputes suggest a separate route to deference-like effects: in some heavily regulated domains, courts may treat regulator-mediated standardization choices as limiting the space for tort to impose "better" designs.[276]

7. These questions are not merely academic. They describe where legal incentives will land: whether standards will primarily create safe harbors, primarily create liabilities, or primarily structure evidence without controlling outcomes. The early signals—from *Garcia's* willingness to entertain product- and negligence-style claims against an AI companion provider to Tesla's litigation highlighting how autonomy vocabularies shape reasonable consumer expectations—suggest that standards will matter, but often indirectly: as anchors for experts, as boundary conditions for foreseeability, and as tools for sorting what "reasonable safety work" even means in a rapidly evolving domain. Additional cases sharpen that "indirect" prediction: standards often do their most consequential work through admissibility (what the jury is allowed to hear), burden shifting (presumptions), and framing (whether a standards-based story is treated as "product defect" proof or "conduct reasonableness" proof) rather than by operating as a simple liability on/off switch.[277]

## VI. CONCLUSION

This Article has argued that standards matter in technology tort litigation—but not in the way much of the current AI governance discourse assumes. The dominant policy conversation treats standards as *ex ante* regulatory instruments: tools for compliance, coordination, and political reassurance. The case law surveyed here suggests a different, more modest, and ultimately more consequential role. In tort litigation, standards rarely operate as dispositive rules of decision. Instead, they fill an evidentiary and institutional role—helping courts and juries reason about reasonableness, feasibility, knowledge, and defect in technical domains where generalist adjudication would otherwise be strained.

Across negligence and products-liability contexts, courts consistently resist treating standards as automatic shields or swords. Compliance is almost never conclusive; noncompliance is rarely sufficient by itself. What matters instead is how a standard is used: what it is offered to prove, whether it plausibly applies to the defendant and the risk at issue, whether it reflects contemporaneous knowledge or only later consensus, and whether it is presented through a reliable expert methodology. These questions recur across doctrinal settings and technologies, from railroads and automobiles to medical devices and digital systems. They recur not because courts lack a theory of standards but because tort law is structurally

---

[276] Geier v. American Honda Motor Co., 529 U.S. 861, 872 (2000).

[277] Sullivan v. Werner Co., 253 A.3d 730, 754-55; Covell v. Bell Sports, Inc., 651 F.3d 357, 374-78 (3d Cir. 2011); Fortune v. Techtronic Indus. N. Am., 107 F. Supp. 3d 1199, 1200-03 (D. Utah 2015).

committed to contextual, fact-intensive evaluation rather than categorical rule-following.

That pattern has particular implications for artificial intelligence. AI standards are emerging unusually early in the technological lifecycle, often before stable engineering practices or accumulated accident experience exist. As a result, courts are unlikely—at least in the near term—to treat AI standards as duty-defining baselines or safe harbors. Instead, they are more likely to encounter them first as evidentiary tools: anchors for expert testimony, benchmarks for feasibility arguments, and reference points for evaluating warnings, representations, and internal governance practices. In other words, AI standards will likely enter tort law through the law of evidence before they meaningfully reshape the law of duty.

This evidentiary framing helps explain both the promise and the limits of standards as a liability-management strategy. Standards can structure explanation, discipline expert disagreement, and reduce uncertainty about what precautions were available or foreseeable. But they cannot do the normative work that tort law reserves to courts and juries. A standard may clarify what engineers commonly do; it cannot, by itself, answer whether doing only that much was reasonable under the circumstances. Nor can early, anticipatory standards easily substitute for the cumulative learning that historically gives industry custom its persuasive force.

The broader lesson is therefore one of institutional fit. Tort law does not ask whether a defendant complied with "the" standard; it asks whether the defendant acted reasonably in light of the risks, knowledge, and alternatives available at the time. Standards matter to that inquiry—but only as part of a larger evidentiary ecosystem. For AI, as for prior technological revolutions, the legal significance of standards will be earned gradually, through use in litigation, expert practice, insurance, and professional judgment. The question is not whether AI standards will matter in tort law. They will. The question is how—and the answer, at least for now, lies less in governance and more in evidence.