

UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

CIVIL ACTION NO. 12-10853-RGS

FEDERAL INSURANCE COMPANY, as
subrogee of HERITAGE ON THE GARDEN
CONDO TRUST

and

GREAT NORTHERN INSURANCE
COMPANY, as subrogee of MCKINSEY &
COMPANY

v.

PENTAIR RESIDENTIAL FILTRATION,
LLC, d/ b/ a AMERICAN PLUMBER LLC.

MEMORANDUM AND ORDER ON
DEFENDANT'S MOTION FOR SUMMARY JUDGMENT
AND TO STRIKE EXPERT TESTIMONY

November 21, 2013

STEARNS, D.J.

In this products liability action, plaintiffs Federal Insurance Company (FIC) and Great Northern Insurance Company (GNIC), seek to hold a Pentair water filtration system responsible for extensive flood damage to the Heritage On The Garden Condominium (Heritage On The Garden). Heritage On The Garden Condo Trust (Heritage) is FIC's insured. GNIC is the insurer for Heritage On the Garden tenant McKinsey & Company.

Pentair Residential Filtration, LLC (Pentair) is the successor to the corporation that designed and manufactured the accused water filtration system.

Plaintiffs' theory of liability is that the system's filter cap was negligently designed by Pentair's predecessor and sold into the stream of commerce in breach of the implied warranty of merchantability. Pentair now moves for summary judgment, seeking to strike the testimony of plaintiffs' expert, Dr. Thomas W. Eager. Pentair does not challenge Dr. Eager's professional credentials,¹ but contends that he has been unable to disprove tampering with the original filter cap design. Pentair also argues that Dr. Eager has failed to identify a feasible alternative design, a necessary element of a design defect claim. The motion will be denied.

BACKGROUND

The following facts are taken for the most part from Pentair's Statement of Undisputed Facts (SOF).

The American Plumber brand water filter was installed sometime in early 2002 at Heritage on the Garden on Boylston Street in Boston. The

¹ Dr. Eager earned a Bachelor's degree from Massachusetts Institute of Technology (MIT) in the field of Metallurgy, along with a doctorate in Sciences. As a professor at MIT for more than thirty years, and former chair of its Department of Material Sciences and Engineering, Dr. Eager's focus is on the manufacture of materials, including plastics.

water filter system consists of a filter cap, a filter cartridge, and a sump canister. When installed, the filter cartridge is seated in the sump canister on a small cylindrical base. The sump canister is then screwed into the cap. Drinking water is funneled into the cap from the building's plumbing and circulates through the cleansing cartridge while making its way back through the cap.

American Plumber water filters were sold to distributors and plumbers, but not directly to retail consumers. The suspect filter system was manufactured in July of 2001. There is no record of who purchased the system, nor is there any evidence to suggest that Pentair or its predecessor played a role in its installation. There are also no maintenance records for the system from the date of its installation to the rupture of the filter cap in August of 2010.

Pentair contends that, as installed, the water filter was altered from the original design (which depended on a rubber gasket to create a water tight seal between the filter canister and the cap) by the insertion of a stand pipe.² The water filter system was packaged with a plastic "sump wrench"

² Pentair contends that "on the bottom of the cap (the side of the cap that faces the inside of the sump canister), someone glued a plastic tube (the stand pipe) around the opening through which water flowed out from the water filter and back into the cap." Def.'s Statement of Facts (SOF) ¶ 12, citing Sternke Dep. at 21-22; Eagar Dep. at 41, 46; Menna Dep. at 34-35. There is no evidence that Pentair modified the filter cap to

to be used to loosen the sump canister from the sump when replacing the filter. Thomas Clark, a Pentair engineer since 2000, and its current “certification manager,” testified that the cap was designed to be tightened by hand, and not with the sump wrench.

On August 21, 2010, the filter cap ruptured and split in half. The rupture caused water to flood Heritage On The Garden, resulting in a damages claim (which plaintiffs paid) in excess of \$1.3 million. In April of 2011, Dr. Eagar was engaged by plaintiffs to examine the cap and other components of the water filter system. More specifically, Dr. Eagar was asked to “reach a preliminary opinion on what caused the top of [the] water filter to split.” Eagar Dep. at 14. Dr. Eagar was provided with the water filter, the filter cartridge, two gaskets, a metal O-ring, a metal wrench, a plastic wrench, and a filter cap.

Dr. Eagar and an MIT colleague, Dr. Harold Larson, examined the fracture in the cap under a stereomicroscope. Dr. Eagar reached a “preliminary opinion” that the location of the fracture “was the highest stress location” and that “the fracture surface indicated that there was a pre-existing crack at the time of the final separation that covered

include the stand pipe. However, Dr. Eagar is of the belief that the stand pipe was part of the original system as manufactured.

approximately half of the original cross-section.” *Id.* at 24-25. Dr. Eagar also concluded “preliminarily” that the crack “grew by fatigue or corrosion fatigue over time until the remaining cross-section was too small to support the stress.” *Id.* Dr. Eagar located the rupture in the area of the filter cap whether the canister screws into the cap. Further examination revealed abrasions and cracks on opposite sides of the stand pipe along its vertical axis and at the bottom of the filter cartridge.

After learning of Clark’s opinion that the original design had been altered by the insertion of the stand pipe, Dr. Eagar performed additional tests on the remnants of the filtration system and reviewed the deposition testimony of several Pentair employees. While unable to definitively establish the provenance of the stand pipe, Dr. Eagar believes that it was manufactured and installed as part of the original system. His specific findings are as follows.

The tube was glued into the molded cap and was a near perfect fit in both diameter and blue color. The cap also had molded into the top “MADE IN THE USA.”

During Discovery the depositions of defendant’s representatives were taken and both Mr. Sternke and Mr. Clarke admitted that the cap was an American Filter product, yet they still maintain that the matching tube, both in color and in dimension, is not part of their

product. They even suggest that the placement of this tube is what caused the failure of the cap. I disagree. Without the tube there would be no radial alignment of the filter cartridge within the housing which could cause the water to bypass the cartridge.

Furthermore, I have measured the assembly with a filter cartridge and the tube and find no basis to suggest that the tube adds any stress to the portion of the cap which failed. The stress at the location which failed is the highest stress location when the unit is pressurized [Clarke Dep. at 24.] There is a rubber gasket outside the tube that transmits the stress of tightening the sump portion of the housing with the filter cartridge to the cap. The tube that is allegedly a “modification” creates no stress on the cap failure location and does not participate in the closure force of the sump screwed into the cap. I find that the addition of the tube, even if it were a modification (which I doubt based on the reasons noted above), did not contribute in any way to this failure. I find no evidence that the cap was counterfeit or was modified in any substantial manner that contributed to this failure.

Gericke Aff. at Ex. A (Eagar Report).

Dr. Eagar explained that in his opinion, the cap failed because of a design defect, specifically that the inside corner radius where the crack originated was “only 7% of the wall thickness whereas, in good engineering design an inside radius on plastic components should be 25% to 75% of the wall thickness. . . . Thus, there is no need to hypothesize that this filter was over-pressurized. Based upon the final crack size, it failed under normal service conditions.” Eagar Aff. ¶ 4. He concluded that the cap was not a counterfeit and that the

tube played no part in causing the rupture.³

DISCUSSION

Summary judgment is appropriate when “the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law.” Fed. R. Civ. P. 56(a). For a dispute to be “genuine,” the “evidence relevant to the issue, viewed in the light most flattering to the party opposing the motion, must be sufficiently open-ended to permit a rational factfinder to resolve the issue in favor of either side.” *Nat’l Amusements, Inc. v. Town of Dedham*, 43 F.3d 731, 735 (1st Cir. 1995) (citation omitted). “Trialworthiness requires not only a ‘genuine’ issue but also an issue that involves a ‘material’ fact.” *Id.* A material fact is one which has the “potential to affect the outcome of the suit under applicable law.” *Nereida-Gonzalez v. Tirado-Delgado*, 990 F.2d 701, 703 (1st Cir. 1993). “[W]hen the facts support plausible but conflicting inferences on a pivotal issue in the case, the judge may not choose between those inferences at the summary judgment stage.” *Coyne v. Taber Partners I*, 53 F.3d 454, 460 (1st Cir. 1995).

Pentair’s first assay on summary judgment is the contention that Dr. Eagar’s testimony “do[es] not withstand scrutiny under the principles

³ Dr. Todd J. Menna, Pentair’s expert, is of the opinion that the water filter failed as a result of the post-manufacture installation of the stand pipe by an unknown third party.

articulated by the Supreme Court in *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579 (1993).” Def. Mem. at 2. Pentair asserts that in dismissing the stand pipe as a causative factor, Dr. Eagar “conducted no tests or measurements of any kind, and he simply ignored cracks in the ‘stand pipe’ and the filter cartridge, which he concedes demonstrate that a vertical force along the center axis of the cap and the filter cartridge was present.”⁴ Def. Mem. at 2. Pentair argues further that Dr. Eagar’s opinions as to what caused the filter cap to rupture are based on “speculative assumptions.” *Id.* at 2-3.

In *Daubert*, the Supreme Court imposed a duty on federal trial judges to play the role of “gatekeeper,” insuring that the fact-finding process does not become distorted by “expertise that is *fausse* and science that is junky.” *Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 159 (1999) (Scalia, J., *concurring*); *see also Wilson v. City of Chicago*, 6 F.3d 1233, 1238 (7th Cir. 1993). Two gateposts frame the exercise of a judge’s

⁴ Dr. Eagar claims that “without the tube there would be no radial alignment of the filter cartridge within the housing which could cause the water to bypass the cartridge.” Eagar Report at 2. Further, Dr. Eagar “measured the assembly with a filter cartridge and the tube and found no basis to suggest that the tube adds any stress to the portion of the cap which failed.” *Id.* In his opinion, a fatigue crack developed at a weak point in the filter cap (“[T]he inside corner radius where the crack originated was much too small for good general engineering design in plastic materials”) and grew steadily over time, extending to half of the thickness of the cap just before it fractured. He concluded that the “weak point” of the cap was unable to sustain the stress exerted on it by water pressure and torque (the force from tightening the cap).

discretion to admit or exclude expert testimony. First, the witness must be shown to be sufficiently qualified by “knowledge, skill, experience, training, or education.” Fed. R. Evid. 702. Second, the Federal Rules of Evidence require that the judge “ensure that any and all scientific testimony or evidence admitted is not only relevant, but [also] reliable” (and helpful to the finder of fact). *Daubert*, 509 U.S. at 589. “[T]he trial judge must determine at the outset, pursuant to Rule 104(a), whether the expert is proposing to testify to (1) scientific knowledge that (2) will assist the trier of fact to understand or determine a fact in issue. This entails a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue.” *Id.* at 592-593.

In pressing its *Daubert* challenge, Pentair objects to Dr. Eagar’s rejection of the insertion of a foreign stand pipe as the precipitating cause of the rupture in favor of his theory that a defect in the design of the cap allowed a stress fracture to develop causing the cap to fail under pressure. Pentair specifically criticizes Dr. Eagar’s “assumptions” that the water pressure in the system typically measured at 100 psi⁵ and that the stress

⁵ Dr. Eagar concedes that he cannot definitively say what the water pressure level actually was anywhere in the building at the precise point in time when the filter cap failed – that “[e]very time someone turns on a faucet there is a significant change in water pressure.” SOF ¶ 41. Dr. Eagar based his 100 psi assumption on a photograph of

fracture had been aggravated when an unknown person used the plastic wrench to tighten the cap to the canister.⁶

Pentair argues that Eagar's opinion, at best, is that "it was possible for the filter cap to develop a fatigue crack [because] of water pressure and torque; therefore, it must have." Def. Mem. at 16. Pentair argues that, as a matter of law, a plaintiff's expert in a product liability case is required to opine that a defect was *the cause* of the injury at issue, while Dr. Eagar's testimony merely theorizes that the alleged design defect *could have* caused the cap to fail. In advancing this argument, Pentair relies on a misreading of *Enrich v. Windmere Corp*, 416 Mass. 83, 87-89 (1993). In *Enrich*, the plaintiff brought a products liability action for property damage sustained as the result of a fire alleged to have been caused by an electric fan. The trial judge directed a verdict at the close of the evidence, ruling that "[t]he cause of the fire was not susceptible of determination by the jury's 'general

the water pressure gauge taken shortly after the failure occurred, as well as on the fact that most faucets and valves are designed to operate at less than 100 psi. Dr. Eagar testified that he adjusted the 100 psi figure to account for the fact that the failure occurred on an upper floor of the condominium building. Eagar Dep. at 146.

⁶ Dr. Eagar assumed that the plastic wrench was used because it was supplied with the original kit. Pentair's expert Dr. Menna conversely assumed that whoever installed the water filter system would have tightened it by hand based on the instructions that came with the replacement filter cartridge. However, there is no evidence that the instruction leaflet was provided with the original filter kit.

knowledge of practical affairs.” *Id.* at 89.⁷ As the Court in *Enrich* observed, “there was no evidence that some defect in the fan caused the fire or that, if such a defect existed, it was present at the time the fan was sold. The presence of such a defect cannot be inferred *in the absence of expert testimony.*” *Id.* at 87 (emphasis added). Neither *Enrich* nor *Daubert* requires that an expert rule out every conceivable alternative explanation of an event as a predicate for the admissibility of his or her testimony.

Daubert does not require that a party who proffers expert testimony carry the burden of proving to the judge that the expert’s assessment of the situation is correct. . . . In short, *Daubert* neither requires nor empowers trial courts to determine which of several competing theories has the best provenance. It demands only that the proponent of the evidence show that the expert’s conclusion has been arrived at in a scientifically sound and methodologically reliable fashion.

Ruiz-Troche v. Pepsi Cola of Puerto Rico Bottling Co., 161 F.3d 77, 85 (1st Cir. 1998) (citations omitted). In pressing their counter-argument, plaintiffs appropriately cite *Santos v. Sunrise Med., Inc.*, 351 F.3d 587, 590 (1st Cir. 2003) (expert’s failure to determine the amount of force necessary to tip a hydraulic lift did not render his testimony too speculative), and *Simmons v. Monarch Mach. Tool Co., Inc.*, 413 Mass. 205, 212 (1992) (fact

⁷ The *Enrich* plaintiff was proceeding without expert testimony, relying unpropitiously on the doctrine of *res ipsa loquitur*.

that expert failed to measure the actual forces necessary to cause a tap to eject did not render his testimony unacceptably speculative).

Outside of the *Daubert* context, Pentair argues that summary judgment is appropriate because of Dr. Eagar’s alleged failure to offer evidence of a feasible alternative (and safer) design. *See Evans v. Lorillard Tobacco Co.*, 465 Mass. 411, 428 (2013), quoting Restatement (Third) of Torts: Products Liability § 2 comment f, at 24 (1998) (“To establish a prima facie case of [product] defect, the plaintiff must prove the availability of a technologically feasible and practical alternative design that would have reduced or prevented the plaintiff’s harm.”). While correctly citing the law, Pentair’s argument fails to sufficiently credit Dr. Eagar’s opinion that “in good engineering design . . . an inside radius on plastic components should be 25% to 75% of the wall thickness.”⁸ He iterated this opinion in his deposition and in an affidavit submitted with plaintiffs’ opposition to the summary judgment motion.⁹ In sum, there is sufficient evidence of a

⁸ In his report, Dr. Eagar stated that his opinion with respect to the desired wall thickness was based in part on a widely accepted engineering treatise, the *Engineering Materials Handbook*, and its chapter entitled “Design Approach for Engineering Plastics.”

⁹ To repeat, Dr. Eagar opined that the cap failed because it was only 7% of the wall thickness instead of the desired 25% to 75% and that “[a] larger inside corner radius would prevent a crack from forming in that area of the type that occurred in this case.” Eagar Aff. ¶ 6.

feasible alternative design offered by plaintiffs to warrant submission of the issue to a jury.

ORDER

For the foregoing reasons, the motion to strike Dr. Eagar's testimony on *Daubert* grounds is DENIED. The motion for summary judgment is DENIED.

SO ORDERED.

/s/ Richard G. Stearns

UNITED STATES DISTRICT JUDGE