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APPROVAL OF THE APPELLATE DIVISION

SUPERIOR COURT OF NEW JERSEY
APPELLATE DIVISION
DOCKET NO. A-1413-10T4

ERIC LEONARD and ELISE LEONARD,
VINCENT LOMBARDO and LORI LOMBARDO,
and JOSEPH A. ACREE, JR.,

Plaintiffs-Appellants,

v.

CONSARC CORPORATION,

Defendant-Respondent.

Argued November 16, 2011 - Decided July 25, 2012

Before Judges Lihotz, Waugh, and St. John.

On appeal from Superior Court of New Jersey, Law Division, Morris County, Docket No. L-1223-06.

Saul J. Steinberg argued the cause for appellants (Zucker Steinberg Sonstein & Wixted, PA, attorneys; Mr. Steinberg, on the briefs).

Robert P. Avolio argued the cause for respondent (Avolio & Hanlon, P.C., attorneys; Mr. Avolio and Catherine B. Rinaldi, on the brief).

PER CURIAM

Plaintiffs Eric Leonard and Vincent Lombardo, as well as their spouses suing per quod, and plaintiff Joseph A. Acree, Jr., appeal from the Law Division's October 4, 2010 order

dismissing their products liability suit against defendant Consarc Corporation (Consarc) at the close of the presentation of their evidence to the jury. We affirm.

I.

We discern the following facts and procedural history from the record on appeal.

In 2005, Leonard, Lombardo, and Acree were employed by Howmet Dover Alloy (Howmet), which uses a vacuum induction melting furnace (VIM) to manufacture super alloys for aerospace uses. In the late 1980s, Howmet contracted with Consarc to retrofit and upgrade a VIM located at its Dover facility. As part of that project, Consarc manufactured a new vacuum chamber and dome (collectively C Furnace), an industrial crucible to fit inside the vacuum chamber, and controls for the C Furnace. Consarc had no further involvement with Howmet's equipment after the initial installation of the new C Furnace and related equipment.

On July 25, 2005, while Howmet employees were melting super alloys in the VIM's interior crucible, it tipped and spilled molten super alloy onto the floor of the C Furnace. As a result, the exterior walls of the C Furnace glowed red, causing such extreme conditions of heat that fires broke out in adjacent areas. The Rockaway Fire Department was called and extinguished

the fires after all of Howmet's employees were safely evacuated from the facility.

Approximately two hours after the incident, eleven Howmet employees, including Leonard, Lombardo, and Acree, met to devise a plan to remediate the problem created by the spill. Plaintiffs, together with some of the others, returned to the location of the C Furnace to evaluate the damage.

Once inside the building, some of the employees went up to the catwalk surrounding the edge of the dome and looked into the chamber, using sight ports covered by removable glass. They were unable to see into the chamber, however, because it was filled with smoke.

The other employees went onto the dome so that they could look into the pipe through which ingredients are added or samples withdrawn. The pipe incorporates a ball-type valve, known as the "overmelt ball valve" (overmelt valve). When the overmelt valve is open, there is a view down into the crucible through a passage between the furnace chamber and the outside. As was the case with the sight ports, smoke in the chamber prevented a clear view into the chamber. Nevertheless, they could see a general reddish glow in the chamber, which they concluded might come from the red-hot interior of the crucible or molten metal on the chamber floor. Because they believed

that the argon had already extinguished all fire in the chamber, they did not think there was any further hazard of fire or explosion.

In an effort to get a better view of the condition of the crucible and chamber, the workers removed the glass from the sight ports, opened the overmelt valve, and turned on the vacuum pumps to extract the smoke. The pumps expelled the smoke and argon gas. As the argon gas was removed, it was replaced by air drawn in through the sight ports, the overmelt valve, and, possibly, a hole in the chamber resulting from the original fire.

The workers were aware that, in the past, small leaks of hydraulic oil from fittings had led to fires when air was admitted to the chamber following completion of a batch. Those fires, however, were always small, harmless, and easily extinguished with portable fire extinguishers. At the time of the accident, however, they were not aware that a substantial quantity of unburned oil and resulting vapor remained in the C Furnace. They were also unaware that there was either molten metal remaining in the furnace chamber or that the crucible walls were still hot enough to ignite the oil vapor.

When enough air had entered the chamber, the air-oil mixture ignited and caused an explosion. The explosion lifted

the dome, allowing flames and extremely hot gases to rush out. Plaintiffs, who were standing on the catwalk adjacent to the edge of the dome, were severely burned.

Plaintiffs filed complaints against Consarc. The complaints were eventually consolidated. Plaintiffs retained Frederick Blum, who has a Bachelor of Science degree in mechanical engineering, as an expert in the analysis of "industrial accidents, mechanical malfunctions, fires and explosions." Blum issued a report in November 2008, which concluded that (1) the hydraulic hose used to deliver hydraulic fluid required to tilt the crucible containing the molten metal alloys was touching or extremely close to the interior floor of the chamber at the time of the accident, which constituted a defect in the design of the C Furnace because the hose could not withstand coming into contact with molten alloy; and (2) the dome of the chamber was defectively designed because it should have been protected by exterior shields to repel any hazardous gases emerging from inside the C Furnace that could harm Howmet employees working near it.

Prior to trial, Consarc filed a motion in limine to preclude Blum from testifying, arguing that he was not qualified and that his opinion was essentially a net opinion. The trial started while the motion was still pending. When Blum was

called to testify, the trial judge excused the jury and held a Rule 104 hearing to determine whether he was qualified to testify as an expert witness.

The trial judge concluded that Blum was qualified as an expert under Rule 702, and denied Consarc's motion. He held that, while Blum "does not have specific experience in the field of vacuum induction furnaces, [or] melting furnaces, [he] certainly has overall experience in the analysis of industrial accidents, mechanical malfunctions, fires and explosions." In support of his decision, the trial judge observed that Blum's testimony revealed "that it is reasonably foreseeable that due to human error or in the process of operating the furnace, hot molten metal could clearly come in contact with the hoses[,] . . . which is not based upon a net [opinion] or a surmise." The judge observed that his role was not "to determine the weight of [Blum's] testimony[, which] is quintessentially for the jury to determine."

With regard to the protective shields around the edge of the furnace dome, the judge held that Blum's testimony was "admissible, albeit subject to cross-examination, as the prior testimony regarding hoses will also be subject to cross-examination." The judge noted that "[t]he big point that the defendant makes is that there are no other systems in the world

which have such protective devices. But that does not drive the court's decision here."

After the conclusion of Blum's testimony, plaintiffs rested. Consarc moved for an involuntary dismissal pursuant to Rule 4:37-2(b).[1] Although the judge did not agree with all of Consarc's arguments in support of an involuntary dismissal, he granted the motion to dismiss on the following grounds: (1) Blum gave a net opinion as to the inadequacy of any existing hose and the proposed relocation of the connections for the interior hydraulic hose; (2) Blum gave a net opinion as to the feasibility of placing protective shields around the dome of the C Furnace; and (3) Howmet's conduct after the explosion served as an intervening and superseding cause that precluded Consarc's

[1] Rule 4:37-2(b) states:

> After having completed the presentation of the evidence on all matters other than the matter of damages (if that is an issue), the plaintiff shall so announce to the court, and thereupon the defendant, without waiving the right to offer evidence in the event the motion is not granted, may move for a dismissal of the action or of any claim on the ground that upon the facts and upon the law the plaintiff has shown no right to relief. Whether the action is tried with or without a jury, such motion shall be denied if the evidence, together with the legitimate inferences therefrom, could sustain a judgment in plaintiff's favor.

liability for Leonard's and Lombardo's injuries. This appeal followed.

II.

On appeal, plaintiffs argue that the trial judge erred by (1) granting defendant's motion for involuntary dismissal because the evidence when viewed in favor of plaintiffs along with reasonable inferences drawn therefrom established the prima facie elements of a design defect; and (2) making findings of fact even though plaintiffs produced sufficient evidence to raise material disputes of fact suitable for submission to the jury.

A.

Before turning to the merits of the appeal, we outline some of the legal principles that govern our review of the trial judge's decision, as well as the legal principles that govern the issues raised on appeal.

Motions for involuntary dismissal in accordance with Rule 4:37-2(b), as well as motions for judgment occurring at the close of evidence or after the verdict, are all governed by the same evidential standard:

> "[I]f, accepting as true all the evidence which supports the position of the party defending against the motion and according him the benefit of all inferences which can reasonably and legitimately be deduced

> therefrom, reasonable minds could differ, the motion must be denied. . . ."
>
> [Verdicchio v. Ricca, 179 N.J. 1, 30 (2004) (alterations in original) (quoting Estate of Roach v. TRW, Inc., 164 N.J. 598, 612 (2000)).]

We review the trial judge's decision de novo, applying the same standard as that used by the trial judge. Chance v. McCann, 405 N.J. Super. 547, 563 (App. Div. 2009).

Plaintiffs contend that there were two design defects in the C Furnace manufactured by Consarc. A design defect is defined by the Products Liability Act, N.J.S.A. 2A:58C-1 to -11, as something that renders a product not "reasonably fit, suitable, or safe for its intended purpose." N.J.S.A. 2A:58C-2. A design defect is further defined as a danger inherent in a product that has been manufactured as intended when that danger, as a public policy matter, is greater than can be justified by the product's utility. See Jurado v. W. Gear Works, 131 N.J. 375, 385 (1993); Johansen v. Makita U.S.A., Inc., 128 N.J. 86, 95 (1992); Suter v. San Angelo Foundry & Mach. Co., 81 N.J. 150, 172-73 (1979). When a product is manufactured as intended but the design renders the product unsafe, the first element of a design defect case exists. See Suter, supra, 81 N.J. at 170-71, 174-76. In addition, the defect must have "existed when the product left the hands of the manufacturer," and "the defect

must have caused [an] injury to a reasonably foreseeable user." Jurado, supra, 131 N.J. at 385.

Analysis of the danger posed by the product first examines either (1) the reasonable expectations of the consumer or, as in this case, (2) a list of factors that balances the risk posed by the product against its utility within the marketplace, the ultimate question being whether, under all the circumstances, the manufacturer was reasonable in marketing the product as designed. See Suter, supra, 81 N.J. at 171-72; Johansen, supra, 128 N.J. at 95. These "risk/utility" factors are: the usefulness and desirability of the product; the likelihood that it could cause injury (and the seriousness of the injury); the availability of a safer substitute product or design; the manufacturer's ability to eliminate the danger without impairing the usefulness of the product or making it too expensive; the user's ability to avoid the danger by the exercise of care; the user's likely awareness of the danger; and the feasibility, on the part of the manufacturer, of spreading the loss through the price of the product or by carrying liability insurance. Suter, supra, 81 N.J. at 171-72.

If the plaintiff contends that an alternative design would have rendered the product safe, the plaintiff must also "prove that a practical and feasible alternative design existed that

would have reduced or prevented [the] harm." Lewis v. Am. Cyanamid Co., 155 N.J. 544, 560 (1998). See also Dewey v. R.J. Reynolds Tobacco Co., 121 N.J. 69, 74 (1990). A claim that there could have been an alternative design requires support by expert opinion that the proposed alternative design was available at the time of manufacture and that it was practical, feasible and safer. Diluzio-Gulino v. Daimler Chrysler Corp., 385 N.J. Super. 434, 438-39 (App. Div. 2006).

"Expert testimony in conclusionary terms is insufficient to meet that burden." Id. at 438 (citing Smith v. Keller Ladder Co., 275 N.J. Super. 280, 285-86 (App. Div. 1994)). N.J.R.E. 703 requires that an expert's opinion be based upon "facts or data . . . perceived by or made known to the expert at or before the hearing." "The net opinion rule is a prohibition against speculative testimony." Grzanka v. Pfeifer, 301 N.J. Super. 563, 580 (App. Div. 1997) (citing Vuocolo v. Diamond Shamrock Chems. Co., 240 N.J. Super. 289, 300 (App. Div.), certif. denied, 122 N.J. 333 (1990)), certif. denied, 154 N.J. 607 (1998). "Under this doctrine, expert testimony is excluded if it is based merely on unfounded speculation and unquantified possibilities." Vuocolo, supra, 240 N.J. Super. at 300.

N.J.R.E. 703 requires an expert "to give the why and wherefore" of his or her opinion rather than a mere conclusion.

Jimenez v. GNOC, Corp., 286 N.J. Super. 533, 540 (App. Div.), certif. denied, 145 N.J. 374 (1996). Therefore, experts "must be able to identify the factual bases for their conclusions, explain their methodology, and demonstrate that both the factual bases and the methodology are scientifically reliable." Landrigan v. Celotex Corp., 127 N.J. 404, 417 (1992). An expert's conclusion is inadmissible as a net opinion when it is a "bare conclusion[], unsupported by factual evidence." Buckelew v. Grossbard, 87 N.J. 512, 524 (1981). See also State v. Townsend, 186 N.J. 473, 494 (2006) ("Simply put, the net opinion rule 'requires an expert to give the why and wherefore of his or her opinion, rather than a mere conclusion.'" (quoting Rosenberg v. Tavorath, 352 N.J. Super. 385, 401 (App. Div. 2002))); Johnson v. Salem Corp., 97 N.J. 78, 91 (1984) ("The weight to which an expert opinion is entitled can rise no higher than the facts and reasoning upon which that opinion is predicated." (citations and internal quotation marks omitted)).

B.

With that background, we turn to the specific issues raised on appeal, beginning with the question of the alleged defect concerning the hose.

The focus of plaintiffs' case with respect to the hose was Blum's assertion that, because no hose could withstand exposure

to molten metal likely to spill out of the crucible during the manufacturing process, the hose connections should have been placed higher and the hose recommended by Consarc should have been shorter, so that it could not touch or get close to the floor of the chamber where spillage would accumulate. The judge concluded that Blum offered a net opinion because he had not tested the hose involved in the incident for defects in manufacture or installation and had not actually surveyed the available hoses to support his assertion that there was no hose available that would not have been subject to failure. The judge also found that Blum did not have sufficient expertise or a sufficient factual basis to opine that there were no defects in the hose or its installation by Howmet that could have caused the accident.

Blum further testified that the connection points for the hose on the chamber and crucible were too low, which caused the hose to sag during operation to the point of touching or almost touching the chamber floor. He opined that the connection points should have been higher so that the hose would not have come into contact with any spillage and would not have failed. However, Blum failed to support his assertion with any specifics concerning such an alternative design. The judge concluded that

Blum's testimony was deficient because he failed to provide such specifics, resulting in a net opinion.

In H.T. Rose Enterprises v. Henny Penny Corp., 317 N.J. Super. 477, 495 (App. Div. 1999), a case in which Blum was also the expert witness, we observed:

> There may well be a technologically feasible and practical alternative design . . . . But the point is, Blum's almost off-handed assertion that that is what the [product] should have had does not provide any basis for a finder of fact to conclude that such a design was reasonably feasible [at the time of manufacture].

The same situation exists in this case. Blum did not have the expertise or the factual basis for opining that there was a feasible alternate design for the hose connection points. As a consequence, his opinion amounted to nothing more than a net opinion.

The same problems apply to Blum's opinion with respect to the dome. He testified that there should have been shields around the top of the dome to prevent discharged material from injuring anyone standing nearby. He also asserted that it would have been very simple to do so. However, he was not aware of any such design in actual use and he provided no details to demonstrate that his proposed design was actually feasible. As the judge noted, Blum had no expertise in the field of vacuum induction furnaces.

We conclude that the judge correctly determined that Blum gave net opinions as to both issues. His qualifications were, at best, minimal with respect to the type of sophisticated machinery involved in this case. More importantly, he offered no specifics with respect to the details and feasibility of the alternative designs upon which he relied. For that reason, plaintiffs failed to meet their burden to prove that alternate designs were available, feasible, and practical at the time of manufacture. Lewis, supra, 155 N.J. at 560; Diluzio-Gulino, supra, 385 N.J. Super. at 438-39.[2]

Affirmed.

[2] Because we conclude that plaintiffs failed to prove a prima facie case with respect to the two alleged design defects, we need not reach the issue of whether the trial judge erred in concluding that, in any event, Howmet's decision to inspect the furnace before it had totally cooled down was an intervening and superseding cause of the accident sufficient to relieve Consarc of any liability.