**UNITED STATES DISTRICT COURT**
**DISTRICT OF CONNECTICUT**

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| ALEXANDER GRAHAM and JOSE CUEVAS<br><br>Plaintiffs,<br><br>v.<br><br>FIRELINE, INC.,<br><br>Defendant. | Civil No. 3:03CV00990 (AWT) |

**RULING ON MOTION FOR SUMMARY JUDGMENT**

The plaintiffs bring this products liability action, alleging violations of the Connecticut Products Liability Act (the "CPLA"), Conn. Gen. Stat. § 52-572m, et seq.. Specifically, the plaintiffs contend that they suffered injuries as a result of a flash explosion that was directly and proximately caused by a defective pour cup manufactured by the defendant. In support of their claims and pursuant to Fed. R. Civ. P. 26(a)(2), the plaintiffs disclosed Raymond J. Erikson as an expert whose testimony they intend to offer at trial. The defendant has moved (1) to preclude Erikson's proffered expert testimony and (2) for summary judgment. Because the court concludes that the defendant is entitled to summary even if the plaintiffs' proffered expert testimony is admissible, the defendant's motion for summary judgment is being granted, and the motion to preclude Erikson's proffered expert testimony is being denied as moot in a separate order.

## I. Factual Background

The defendant is an Ohio company that manufactures and sells pour cups made of fused silica for use in the metal casting process. At the time of the events that gave rise to the complaint, Ansonia Copper & Brass, Inc. ("AC&B"), a foundry that manufactures wires and rods, used the defendant's pour cups in its manufacturing process. As part of this process at AC&B, metal casters pour molten metal into molds to create metal billets from which wires and rods are ultimately cut; a billet is a long, solid, metal cylinder which, when completed, looks like a small, metal telephone pole. The casting of the metal billets occurs at various casting stations in AC&B's plant.

On June 3, 2000, plaintiff Jose Cuevas ("Cuevas") was employed by AC&B as a metal caster, operating casting Station No. 21. On the same date, plaintiff Alexander Graham ("Graham") was employed by AC&B as a supervisor, and his duties included supervising the casting process at Station No. 21. The plaintiffs contend that at some point during the casting process at Station No. 21, the bottom of the pour cup installed at the south end of the running box failed because it was defective and it broke. They also contend that this failure of the pour cup caused a mal-distribution of the molten metal within the billet mold, such that the molten metal collected at the center of the mold rather than the outer portion as intended. The plaintiffs further contend that the pooling of the molten metal caused the billet to leak, which resulted in molten metal leaving the billet and entering the cooling tank, and that when the leaked molten metal came into contact with the water in the cooling tank a flash explosion occurred. As a result of the flash explosion, the plaintiffs suffered, inter alia, severe burn injuries and permanent scarring.

On June 5, 2000, two days after the incident, AC&B informed the Bridgeport area office of the Occupational Safety Hazard Administration ("OSHA") of the explosion. OSHA visited the AC&B plant to investigate the explosion and to conduct a plain view assessment of any hazards. OSHA prepared a report (the "OSHA Report"), which has been submitted by the plaintiffs. (See Pls.' Mem. in Obj. to Def.'s Mot. for Summ. J. (Doc. No. 27), Ex. B.) The OSHA Report describes the casting process at Station No. 21 as follows:

> The employer manufactured rod and wire of various copper alloys. The employer's casting shop had 1 automated rod casting station and 6 billet casting stations. By either static casting or semicontinuous direct chill casting (DC casting) billets of various copper alloys were made and taken to other departments to be extruded into rod or wire. Copper alloys were said to be cast by direct chill to prevent the alloy from cracking.
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> In direct chill casting molten metal was slowly poured into a water cooled mold that had a mold base which slowly descended into a water filled casting tank as the

metal hardened to obtain the desired length of the casting. In this type of casting the downward movement of the bottom of the mold and the flow of metal into the mold were controlled by the caster to make long billets of various alloys. Standing at the casting tank, the employee manipulated devices (screw-downs) to control the flow of molten metal into the mold. At the control panel of the casting tank, the employee mechanically controlled the downcast speed of the mold base and the tilt of the furnace to a pour position. This process was used to cast billets approximately 11 inches in diameter and approximately 129 inches in length. 2 billets were cast per heat or pour. A billet of alloy 651 weighed around 3000 pounds.

. . . .

At casting station #21, the furnace was tilted by rotating a knob at the control panel . . . to pour molten metal into a running box. The knob did not have to be manually held into position for the furnace to remain tilted for pouring. The pour temperature was 1140 - 1150 deg C (2084 - 2102 deg F). The running box was "T" shaped with 2 orifices on either side. A "screw down" was installed into each orifice of the running box. At the underside of each orifice a cup was installed. Each cup had 4 holes that directed the flow of molten metal to the outer portion of the mold. The cups and the orifices were made of fused silica. The caster manually adjusted each screw down to control the rate of flow of molten metal from the running box into each mold. The manual manipulation of the screw down required the caster to stand directly at the casting tank when molten metal was being poured.

The mold plugs formed the bottom of the billet molds. The billet molds were situated over a water-filled casting tank which provided direct chilling to the newly formed billets. At the start of the pour, the bottom of the molds sat about 8 inches above the water of the casting tank. From the bottom of the mold to the top of the casting tank, the shell of the newly formed portion of the billet was air cooled. The casting tank was about 170 inches deep.

The billet molds sat within the frame of the oscillator above the casting tank. The oscillator rocked back and forth slowly about 1 inch per min to help provide even

> cooling. The billet molds incorporated copper water jackets that provided indirect cooling of the molten metal to form the billet wall. Water feed lines were attached to each side of the mold so each mold had 2 water feed pipes and 2 water discharge pipes. The water from the mold jacket discharged into the casting tank. Water flowed through the jacket of the mold at a rate of about 12-15 gallons per minute.

(Pls.' Mem., Ex. B, at section e.)

The OSHA inspectors also examined equipment that had been removed from Station No. 21, and their findings included the following:

> Running Box (aka T-box) - 1 screw down was still attached at the south orifice (right side) of the box. The other screw down was not present. . . . [T]he south underside (right underside) of the box had a lot of metal around the cup area as compared to the north underside. Only the top portions of the cups were present in the running box. The top portion of the cup in the north underside of the running box matched a bottom cup portion found by the employer on 6/3/00. There were no cracks around the holes of the 1 cup found. The bottom cup portion for the south side of the running box was not found. This was of note since the cups directed the metal towards the mold wall to form the billet wall. If the cup did not direct the metal to the mold wall but rather allowed the metal to collect in the middle, the sump of [the] billet may have been too long.

(Id., at section g.)

The OSHA Report stated that employees were interviewed and no one saw the accident. (See id., at section f.) Cuevas testified at his deposition that he has no knowledge as to whether the pour cup broke before the explosion; he simply guessed that it broke before the explosion. (See Cuevas Dep., at 60-1.) Similarly, Graham has no knowledge as to whether the pour cup broke before the explosion; he simply based his conclusion as to what had happened on what Cuevas told him. (See Graham Dep., at 63.)

The complaint alleges, inter alia, that the defendant manufactured and sold a defective and unreasonably dangerous pour cup in violation of the CPLA, and that the defective cup was the direct and proximate cause of the plaintiffs' injuries. The plaintiffs have disclosed Raymond J. Erikson as an expert witness whose testimony they intend to offer at trial. Erikson is a material systems engineer with a Masters of Science degree in Mechanical Engineering, Materials Specialization from Northwestern University. (See Pls.' Mem. Obj. to Def's. Mot. to Preclude Proffered Expert Test. of Raymond J. Erikson (Doc. No. 26), Ex. C.) Erikson's professional experience includes providing consulting services in system design and analysis; material selection, application and process development; reliability and failure analysis; and stress analysis of flight structures, antennaes, randomes and optical systems. He has published several articles in his field.

Erikson prepared an expert's report containing his analysis of the alleged failure of the pour cup. In the report, he concluded that the pour cup in use at the time of the incident was not made of material suitable to withstand the thermal stress of the casting process at Station No. 21. Erikson based his opinion on information provided to him from several sources[1] and his own analysis of an exemplar pour cup, which he assumed had failed on May 7, 2003 and caused leakage similar to that which occurred during the June 3, 2000 incident. According to Erikson, his analysis, which was conducted in accordance with mathematical principles set forth in a treatise[2] and in consultation with ASTM Standards, revealed that the pour cup was made of a low-density, clay-based refractory ceramic, which can fracture due to thermal stress during the billet casting process at the AC&B plant.

In his report, Erikson identified seven ways in which a direct-chill billet casting operation can go awry:

1. The molten metal in the furnace can be too hot; i.e., too far above the lower freezing point of the alloy. This can allow some of the metal near the sides of the billet to remain liquid after it leaves the bottom of the mold, causing billet leaks.

2. The molten metal in the furnace can be too cool; i.e., too close to the upper freezing point of the

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[1] Erikson reviewed (1) Statement from Jose Cuevas on OSHA Form 181A taken July 31, 2000, (2) Excerpts from OSHA Report for June 3, 2000 incident, (3) Sketches of plant arrangement and furnace setup, and static photos of casting station #21 (not in operation), (4) AC&B's website, (5) the website of Wagstaff, Inc., a maker of casting equipment, (6) Investment Casting Institute online profile for Fireline, Inc., maker of pouring cup, (7) ASTM C401. Standard Classification of Alumina and Alumina-Silicate Castable Refractories. West Conshohocken: American Society for Testing and Materials, (8) ASTM C416. Standard Classification of Silica Refractory Brick. West Conshohocken: American Society for Testing Materials.

[2] R.J. Roark, Formulas for Stress and Strain 585 (5th ed. 1975).

alloy. This can allow some of the metal to solidify before it passes into the mold, blocking the flow through the pouring cup and causing the billet to tear away from the mold for lack of metal.

3. The flow rate through the pouring cups can be too high. The flow rate is normally controlled by the pouring rate from the furnace into the running box, and by control valves directly above the pouring cups. An excessive flow rate would allow molten metal to overflow the mold.

4. The flow rate through the pouring cups can be too low. As with a too-low temperature, this can cause the billet to form incompletely or separate from the mold.

5. The rate at which the bottom block (called the "plug" by Mr. Cuevas) is drawn downward by the hydraulic ram of the casting machine can be too high. This rate needs to match the rate of billet creation exactly. If the bottom block descends too quickly, the billet will be unsupported at the bottom and subjected to large tensile stresses at the top, where it is very weak. This, in turn, would result in separation of the billet from the mold and release of molten metal.

6. The bottom block rate could be too low. If the bottom block does not descend fast enough, the excess metal will overflow the top of the mold.

7. The cooling water could be insufficient in quantity or of the wrong specific composition (i.e., with the wrong types or amounts of additives necessary to control the heat transfer coefficient of the water). Insufficient cooling would allow the billet to remain closer to the freezing/melting point as it leaves the mold, and thus be more susceptible to tearing, with resulting leakage of molten metal from the side of the billet.

(Pls.’ Mem., Ex. F., at 3.) Erikson’s report then continues as follows:

> Separation of the bottom of the pouring cup from its body would not produce a significantly different flow rate, since the holes in the bottom have the same total surface area as the central passage. However, the distribution of molten metal in the mold would change significantly, since four separate streams of metal previously directed to the sides of the mold would become a single large stream directed to the middle of the mold.
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> With less of the molten metal exposed to the cooling sidewalls of the mold, more of the metal in the mold could remain above the freezing point. This could conceivably lead to excessive heat buildup in the billet, and result in the observed billet leakage.

(Id.)

## II. Legal Standard

A motion for summary judgment may not be granted unless the court determines that there is no genuine issue of material fact to be tried and that the facts as to which there is no such issue warrant judgment for the moving party as a matter of law. Fed. R. Civ. P. 56(c). See Celotex Corp. v. Catrett, 477 U.S. 317, 322-23 (1986); Gallo v. Prudential Residential Servs., 22 F.3d 1219, 1223 (2d Cir. 1994). Rule 56(c) "mandates the entry of summary judgment . . . against a party who fails to make a showing sufficient to establish the existence of an element essential to that party's case, and on which that party will bear the burden of proof at trial." See Celotex Corp., 477 U.S. at 322.

When ruling on a motion for summary judgment, the court must respect the province of the jury. The court, therefore, may not try issues of fact. See, e.g., Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 255 (1986); Donahue v. Windsor Locks Board of Fire Comm'rs, 834 F.2d 54, 58 (2d Cir. 1987); Heyman v. Commerce & Indus. Ins. Co., 524 F.2d 1317, 1319-20 (2d Cir. 1975). It is well-established that "[c]redibility determinations, the weighing of the evidence, and the drawing of legitimate inferences from the facts are jury functions, not those of the judge." Anderson, 477 U.S. at 255. Thus, the trial court's task is "carefully limited to discerning whether there are any genuine issues of material fact to be tried, not to deciding them. Its duty, in short, is confined . . . to issue-finding; it does not extend to issue-resolution." Gallo, 22 F.3d at 1224.

Summary judgment is inappropriate only if the issue to be resolved is both genuine and related to a material fact. Therefore, the mere existence of some alleged factual dispute between the parties will not defeat an otherwise properly supported motion for summary judgment. An issue is "genuine . . . if the evidence is such that a reasonable jury could return a verdict for the nonmoving party." Anderson, 477 U.S. at 248 (internal quotation marks omitted). A material fact is one that would "affect the outcome of the suit under the governing law." Anderson, 477 U.S. at 248. As the Court observed in Anderson: "[T]he materiality determination rests on the substantive law, [and] it is the substantive law's identification of which facts are critical and which facts are irrelevant that governs." Id. at 248. Thus, only those facts that must be decided in order to resolve a claim or defense will prevent summary judgment from being granted. When confronted with an asserted factual dispute, the court must examine the elements of the claims and defenses at issue on the motion to determine whether a resolution of that dispute could affect the disposition of any of those claims or defenses. Immaterial or minor facts will not prevent summary judgment. See Howard v. Gleason Corp., 901 F.2d 1154, 1159 (2d Cir. 1990).

When reviewing the evidence on a motion for summary judgment, the court must "assess the record in the light most favorable to the non-movant and . . . draw all reasonable inferences in its favor." Weinstock v. Columbia Univ., 224 F.3d 33, 41 (2d Cir. 2000)(quoting Del. & Hudson Ry. Co. v. Consol. Rail Corp., 902 F.2d 174, 177 (2d Cir. 1990)). Because credibility is not an issue on summary judgment, the nonmovant's evidence must be accepted as true for purposes of the motion. Nonetheless, the inferences drawn in favor of the nonmovant must be supported by the evidence. "[M]ere speculation and conjecture" is insufficient to defeat a motion for summary judgment. Stern v. Trs. of Columbia Univ., 131 F.3d 305, 315 (2d Cir. 1997) (quoting W. World Ins. Co. v. Stack Oil, Inc., 922 F.2d 118, 121 (2d. Cir. 1990)). Moreover, the "mere existence of a scintilla of evidence in support of the [nonmovant's] position" will be insufficient; there must be evidence on which a jury could "reasonably find" for the nonmovant. Anderson, 477 U.S. at 252.

Finally, the nonmoving party cannot simply rest on the allegations in its pleadings since the essence of summary judgment is to go beyond the pleadings to determine if a genuine issue of material fact exists. See Celotex Corp., 477 U.S. at 324. "Although the moving party bears the initial burden of establishing that there are no genuine issues of material fact," Weinstock, 224 F.3d at 41, if the movant demonstrates an absence of such issues, a limited burden of production shifts to the nonmovant, which must "demonstrate more than some metaphysical doubt as to the material facts, . . . [and] must come forward with specific facts showing that there is a genuine issue for trial." Aslanidis v. United States Lines, Inc., 7 F.3d 1067, 1072 (2d Cir. 1993)(quotation marks, citations and emphasis omitted). Furthermore, "unsupported allegations do not create a material issue of fact." Weinstock, 224 F.3d at 41. If the nonmovant fails to meet this burden, summary judgment should be granted. The question then becomes whether there is sufficient evidence to reasonably expect that a jury could return a verdict in favor of the nonmoving party. See Anderson, 477 U.S. at 248, 251.

**III. Discussion**

The defendant has filed a separate motion to preclude Erikson's proffered expert testimony but argues that, even if Erikson's testimony is admissible, the defendant is entitled to summary judgment because the plaintiffs have failed to create a genuine issue of material fact as to the proximate cause of the flash explosion. The court agrees.

Alleging violations of the CPLA, the plaintiffs advance several theories of liability including failure to warn, inadequate warnings, misrepresentation as to the safety of the pour cup, failure to disclose the dangerous propensities of the pour cup, failure to adequately test the product, and breach of implied and express warranties. Because each of these theories requires the plaintiffs to prove causation, the analysis below applies to the plaintiffs' entire cause of action.

Under the CPLA, a plaintiff must plead and prove that the defendant's product was defective and that the defect proximately caused his injuries. See Sharp v. Wyatt, Inc., et al., 31 Conn. App. 824, 833 (Conn. App. 1993). "A requisite element of proximate cause is 'cause in fact'." Gold v. Dalkin Shield Claimants Trust, 1998 WL 351456, at *2 (D. Conn. June 15, 1998) (citing Fitzgerald v. Manning, 679 F.2d 341, 348 (4th Cir. 1982)). "Expert testimony with reference to proximate causation is not always required . . . .," for example, when a jury could find "proximate causation from its consideration of . . . the [product] and the plaintiff's description of how the accident happened." Fane v. Zimmer, Inc., 927 F.2d 124, 131 (2d Cir. 1991). However, an expert opinion as to proximate causation "is required[] when the subject-matter to be inquired about is presumed not to be within common knowledge and experience and when legal inference predominates over statement of fact . . ." Id.

"Questions regarding the existence of a causal link classically are reserved for determination by the trier of fact. Proximate cause 'becomes a question of law only when the mind of a fair and reasonable person could reach only one conclusion . . . .'" Battistoni v. Weatherking Products, Inc., et al., 41 Conn. App. 555, 563 (Conn. App. 1996) (quoting Hall v. Winfrey, 27 Conn. App. 145, 158, cert. denied, 222 Conn. 903 (1992)) (internal citations omitted). Where expert testimony is necessary to establish a causal link and none is proffered, "a reasonable jury [cannot] find that the plaintiff has proved that the defect caused [his] injuries." Gold, 1998 WL 351456, at *3.

To meet their burden of proof as to cause in fact, the plaintiffs must establish a causal link between the defect in the pour cup and their claimed injuries. Specifically, at the summary judgment stage, the plaintiffs have the burden of producing evidence that could establish that it is more probable than not that a defective pour cup failed, causing a mal-distribution of molten metal within the billet mold that, in turn, caused the billet to leak, which resulted in molten metal leaving the billet and entering the cooling tank. Cuevas and Graham testified that they cannot describe how the accident happened based on what they saw, and there is no other witness who can do so. Thus, this is not a case where a jury could find proximate causation from its consideration of the product and a witness' description of how the accident happened.

Moreover, the court concludes that the factual predicate necessary to establish such causation is outside the common knowledge of a layperson and, therefore, must be established by expert testimony. See Zuchowicz v. United States, 140 F.3d 381, 389 (2d Cir. 1998); Fane, 927 F.2d at 131-32 (expert testimony required where there were two possible causes of complex injury); Gold, 1998 WL 351456, at *3 (citing Connecticut v. McClary, 207 Conn. 233 (Conn. 1998). Erikson's highly technical analysis of why the pour cup is capable of failing under the thermal stress of the casting process and the explanations in his report as to how the casting process can go awry demonstrates the need for expert testimony on what went awry in the casting process during the incident in question and caused the flash explosion that resulted in the plaintiffs' injuries.

The plaintiffs have not produced evidence that could establish that the chain of events that they contend happened actually occurred. The plaintiffs could not establish proximate cause based on Erikson’s limited testimony that the pour cup is capable of failing under the thermal stress of the casting process because Erikson can proffer expert testimony only as to certain qualities of the product. Erikson’s proffered testimony could not establish that the pour cup actually failed during the incident in question because of a defect. Such a failure is simply Erikson’s hypothesis. In his report, Erikson lists seven ways the billet casting process can go awry and lead to a flash explosion, including failure of the pour cup, but he did not reach a conclusion as to which of the seven possibilities actually occurred:

> Q: So as you sit here today, you have nothing more than just a hypothesis that a broken cup may have brought about this injury or may have been the proximate cause of the injury?
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> A: Yes, that’s one possibility.
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> Q: And there are several other possibilities?
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> A: There are other possibilities.
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> Q: Did anybody ever ask you to determine which would be the more likely possibility of the other possibilities you’ve come up with?

A: No, I don’t think so.

(Erikson Dep., at 107:7-17.)

Q: My question is very simple. You were never asked to determine whether or not a broken pour cup was a proximate cause of the plaintiffs’ injuries; is that correct?

A. That’s correct.

(Erikson Dep., at 108:4-8.) Thus, even if Erikson’s proffered testimony is sufficient to establish the existence of a defect in the pour cup, it is not sufficient to establish a causal link between that defect and the plaintiffs’ injuries.

Accordingly, the court concludes that the plaintiffs have failed to demonstrate a genuine issue of fact as to cause in fact, and the defendant is entitled to summary judgment.

**III. Conclusion**

For the reasons set forth above, the defendant’s Motion for Summary Judgment (Doc. No. 24) is hereby GRANTED.

The Clerk shall enter judgment in favor of the defendant and close this case.

It is so ordered.

Dated this 14th day of June 2006 at Hartford, Connecticut.

/s/ (AWT)
Alvin W. Thompson
United States District Judge