United States District Court,
D. Delaware.

PIPE LINERS, INC. and Hydro Conduit Corporation,
Plaintiffs.
v.
PIPELINING PRODUCTS, INC,
Defendant.

No. Civ.A. 98-164(SLR)

Aug. 9, 2000.

Richard D. Kirk, of Morris, James, Hitchens & Williams, Wilmington, Delaware, Bradley B. Geist, Louis S. Sorell, David T. Cunningham, Richard L. Blaylock, and Gary Butter, of Baker & Botts, LLP, New York, New York, for Plaintiffs, of counsel.

Douglas E. Whitney, of Morris, Nichols, Arsht & Tunnell, Wilmington, Delaware, Edward V. Filardi, Benjamin S. Lee, and Vincent Filardo, Jr., of White & Case, L.L.P., New York, New York, for Defendant, of counsel.

MEMORANDUM OPINION

ROBINSON**, Chief J.**

I. INTRODUCTION

Currently before the court is plaintiffs Pipe Liners, Inc. and Hydro Conduit Corporation's motion to alter or amend the judgment under Fed.R.Civ.P. 59(e). (D.I.181) Plaintiffs contend that newly discovered evidence requires the court to amend its October 22, 1999 order and deny defendant Pipelining Products, Inc.'s motion for summary judgment of noninfringement under the doctrine of equivalents. Because this newly discovered evidence raises disputed issues of material fact, the court shall amend its prior order and deny defendant's motion for summary judgment of noninfringement under the doctrine of equivalents.

II. BACKGROUND

At issue is whether "new evidence" produced by plaintiffs compels the court to alter its finding that defendant did not infringe claim 12 of U.S. Patent No. 4,985,196 ("the '196 patent") under the doctrine of equivalents. Defendant had moved for summary judgment that it did not infringe claim 12 of the '196 patent either literally or under the doctrine of equivalents. Claim 12 of the '196 patent reads as follows:

a process for installing in situ a thermoplastic liner in a generally horizontally extending, generally cylindrical pipe, comprising the steps of:

(a) providing an elongate hollow liner formed of thermoplastic material having a cross-section altered at a shape memory activation temperature from a generally cylindrical cross-section having an original outer diameter substantially comparable to the inside diameter of the pipe to be lined to a reduced cross-section having reduced cross-sectional dimensions to enable the liner to be pulled into the pipe, said liner in said altered cross-section having a predetermined wall thickness;

(b) inserting said altered liner into said pipe such that end portions of said liner extend beyond opposite ends of said pipe;

(c) partially expanding the liner ends portions which extend beyond the opposite ends of the pipe by mechanical means inserted into said liner end portions such that said expanded liner end portions approximate the original cylindrical shape of said liner;

(d) sealing the expanded liner end portions beyond the opposite ends of said pipes to seal the interior of said liner at its opposite ends;

(e) subsequent to the step of sealing the liner and while maintaining the liner sealed, generally conforming said liner to the interior wall of the pipe while maintaining substantially the original predetermined wall thickness by (1) injecting a heated fluid into and through said sealed liner, (2) pressurizing the interior of said liner to a first predetermined pressure above atmospheric pressure by means of said heated fluid and (3) reheating said liner to a predetermined temperature by heat transfer from said heated fluid to said liner, whereby, the liner returns substantially to its remembered cylindrical cross-section; and

(f) then increasing the pressure in said liner to a second predetermined pressure above said first predetermined pressure to conform the liner substantially precisely to the interior wall surface contours of the pipe; and

(h) while the liner is still hot, introducing a cooling fluid into the liner for flow therethrough to fix the liner in final form in conformance to the interior wall of the pipe. FN1

FN1. There is no element (g) to claim 12.

('196 patent, col. 10, Ins. 60-68, col. 11, Ins. 1-37, col. 12, Ins. 1-2) In its October 22, 1999 opinion, the court construed element (a)'s term "shape memory activation temperature" as the crystallization point of a given thermoplastic, calculated according to the following formula:

$T_c \sim= (T_m + T_g)/2$ where T_c is the crystallization temperature, T_m is the melting temperature and T_g is the glass transition temperature.

(D.I. 174, opinion at 19) This construction necessitated the finding that defendant's Sure-Line(R) process does not literally infringe the '196 patent because there was no dispute that the Sure-Line(R) process alters its thermoplastic pipe liner at temperatures well below the liner's shape memory activation temperature. In their motion to alter or amend the judgment, plaintiffs do not challenge the court's claim construction or its finding that defendant's Sure-Line(R) process does not literally infringe the '196 patent.

As for whether the Sure-Line(R) process infringes the '196 patent under the doctrine of equivalents, the

court concluded in its October 22, 1999 opinion that there was a substantial difference between the way in which the Sure-Line(R) process alters the liner's cross section and the way disclosed in element (a) of claim 12. The court reasoned that the difference between altering the liner at a shape memory activation temperature and altering it at a significantly lower temperature was not insubstantial. Moreover, evidence in the record indicated that altering a thermoplastic liner at a temperature below its shape memory activation temperature produces a substantially different result. Namely, the evidence revealed that liners deformed according to the Sure-Line(R) process tend to reround after deformation unless restrained by tensile tape whereas a liner altered at a shape memory activation temperature has "substantially no tendency to return to its original shape once the deforming stresses are removed." FN2 (D.I. 17 at A356) Because it found that defendant did not infringe element (a) of claim 12 under the doctrine of equivalents, the court did not address plaintiffs' further argument that defendant's pressurization of its liners also infringed element (f) of claim 12.

FN2. The quoted language appears in the prosecution history in a letter to the patent examiner from the inventor's patent counsel explaining the significance of deforming liners at a shape memory activation temperature. The inventor also attempted to include the quoted language in a later deleted claim that specifically recited that "the liner is maintained in its reduced cross-sectional shape with substantially no tendency to return to its cylindrical shape." (D.I. 17 at A342) The court found patent counsel's explanation of the effects of altering a liner at a shape memory activation temperature helpful in determining whether there was a substantial difference between altering a liner at its shape memory activation temperature and altering a liner at a manifestly lower temperature. The court did not, as plaintiffs suggest, import the quoted limitation into element (a) of claim 12. (*See* D.I. 182 at 13 n.9)

Now, plaintiffs have come forth with new evidence that purports to establish that liners deformed according to the Sure-Line(R) process exhibit shape memory activation properties. This new evidence also allegedly indicates that defendant's pressurization process is the substantial equivalent of element (f) of claim 12. This evidence consists of a test conducted by plaintiffs' expert, Stanley Mruk, on a Sure-Line(R) liner. Mruk observed both the deformation and the insertion of the Sure-Line(R) liner into a host pipe. The host pipe had three windows cut into its side to permit observation of the liner during its installation. Mruk noted that, after the removal of the tensile tape from the Sure-Line(R) liner, the liner retained its deformed "U-shape" during the insertion of the liner into the host pipe. Moreover, Mruk commented that the deformed liner did not tend to reround and, indeed, retained its deformed "U-shape" until after the introduction of pressurized steam.FN3 This, he concluded, "confirms the use of memory activation properties in the Sure-Line liner." (D.I. 183 at A008, para. 19)

FN3. Specifically, Mruk observed the following:
After only a minute, just as the thermocouple showed an increase in the outside surface temperature of the liner to approximately 95 (deg.)F and the pressure inside the liner reached approximately 4 psi, the liner quickly rerounded from its U-shape to its original round shape. Thus, in my opinion the Sure-Line liner retained its U-shape until the combination of pressure and heating to temperatures approaching the deforming temperature caused the liner to reround.

(D.I. 183 at A007, para. 16)
Mruk further contends that the test reveals that the Sure-Line(R) liner "rerounded at a gauge pressure of approximately 4 to 5 psi and that after the pressure was further increased to defendant's target pressure in

the 20-25 psi range, the liner subsequently achieved conformance [with the host pipe]." (D.I. 183 at A008, para. 20) Plaintiffs argue that this pressurization procedure is the substantial equivalent of element (f) of the '196 patent because it uses a "second predetermined pressure above [a] first predetermined pressure to conform the liner substantially precisely to the interior wall surface contours of the pipe." ('196 patent, col. 11, lns. 31-35)

III. DISCUSSION

The court first must ascertain whether plaintiffs' motion meets the threshold requirements of Rule 59(e). A motion to alter or amend the judgment pursuant to Fed.R.Civ.P. 59(e) must rely on one of three major grounds: (1) an intervening change in controlling law; (2) the availability of new evidence; or (3) the need to correct clear error of law or prevent manifest injustice. *See* North River Ins. Co. v. CIGNA Reinsurance Co., 52 F.3d 1194, 1218 (3d Cir.1995).

Plaintiffs contend that defendant refused numerous requests to produce a sample of the liner used in the Sure-Line(R) process and that defendant only provided plaintiffs with a sample of the liner on October 12, 1999. Plaintiffs state that, after receiving the sample, Mruk conducted the test on October 15, 1999 and completed his analysis on October 22, 1999. (D.I. 182 at 10) Defendant, on the other hand, counters that plaintiffs were well aware that it purchased its liner from a third party and that plaintiffs could have purchased liners from this third party and conducted their tests before October 1999. (D.I. 186 at 7; D.I. 187 at B002 (May 22, 1998 letter from defendant's counsel to plaintiffs' counsel indicating that defendant uses Plexco thermoplastic pipe in its Sure-Line(R) process)) Defendant, however, resisted plaintiffs' efforts to observe the deformation process and the various parameters of deformation. Indeed, this topic was the subject of no less than three telephone conferences with the court. (*See generally* D.I. 90, D.I. 138, D.I. 151) (telephone conf. trans.) Because of these delays, the results of plaintiffs' test on defendant's process were not available to the court prior to its decision on defendant's motion for summary judgment. Consequently, the court concludes that the evidence presented in support of plaintiffs' Rule 59(e) motion is "new evidence."

Next, the court must consider whether this new evidence warrants altering its prior conclusion that defendant's Sure-Line(R) process does not infringe the '196 patent under the doctrine of equivalents. A finding of equivalents infringement turns on whether "the differences between the claimed invention and the accused device ... are 'insubstantial." ' Texas Instruments Inc. v. Cypress Semiconductor Corp., 90 F.3d 1558, 1563-64 (Fed.Cir.1996). Differences are insubstantial if "the element of the accused device at issue performs substantially the same function, in substantially the same way, to achieve substantially the same result, as the limitation at issue in the claim." Dawn Equip. Co. v. Kentucky Farms Inc., 140 F.3d 1009, 1016 (Fed.Cir.1998).

In its October 22, 1999 opinion, the court concluded that the Sure-Line(R)) process performs the same function as that taught in element (a) of claim 12. It deforms the cross-section of the pipe liner to facilitate insertion of the liner into a host pipe. Nonetheless, the court concluded that the differences between the Sure-Line(R) process and the '196 patent were substantial (1) because Sure-Line(R) liners are deformed in a different way than liners deformed according to the '196 patent and (2) because this difference in deformation produced significantly different results. Specifically, the evidence indicated that the Sure-Line(R) liner is deformed at temperatures significantly below its shape memory activation temperature. The evidence also suggested that this lower deformation temperature caused the Sure-Line(R) liner to reround after deformation unless restrained by tape, whereas liners deformed according to step (a) of claim 12 would

not reround until after the application of steam and pressure.

The new evidence submitted by plaintiffs suggests that, even though the way in which the two processes deform the liner differs, the results produced by each process may be equivalent. Plaintiffs' test reveals that defendant's liner, although not deformed at its shape memory activation temperature, nonetheless retains its deformed "U-shape" after the removal of the tensile tape and only returns to round after pressure and steam are applied during the reformation stage of the Sure-Line(R) process. Because the Sure-Line(R) liner retains its "U-shaped" cross-section after removal of the tape even though it is deformed at relatively low temperatures, the evidence raises the question of whether the lower deformation temperature employed in the Sure-Line(R) process is equivalent to element (a)'s shape memory activation temperature.

Defendant questions the validity of plaintiffs' testing procedures. Its criticism rests on the fact the Sure-Line(R) liner returned to round when the liner surface temperature reached the mid-90 (deg.)F range. Defendant contends that it frequently installs its liners in areas where the ambient temperatures reach 90 (deg.)F. Thus, defendant concludes that plaintiffs' new evidence establishes only that Sure-Line(R) liners have no "U-shape" memory because they return to round at ambient temperatures. Plaintiff's expert notes, however, that the test liner was heated with pressurized steam at approximately 212 (deg.)F and that, while the surface of the liner may have been in the 90 (deg.)F range when it rerounded, the temperature of the liner as a whole was approximately 150 (deg.)F. The dispute between these two experts is fundamentally a factual one and, as such, capable of resolution only by a jury.

The new evidence also raises genuine issues of material fact regarding whether the Sure-Line(R) process infringes element (f) of claim 12 by utilizing two different pressure stages in its reformation process. Because these disputed issues of material fact exist, the court must amend its October 22, 1999 order and deny defendant's motion for summary judgment of noninfringement under the doctrine of equivalents.

IV. CONCLUSION

For the aforementioned reasons, the court shall grant plaintiffs' motion to amend the court's October 22, 1999 order. An appropriate order shall issue.

D.Del.,2000.
Pipe Liners, Inc. v. Pipelining Products, Inc.