IN THE SUPERIOR COURT OF THE STATE OF DELAWARE

IN AND FOR NEW CASTLE COUNTY

FREUDENBERG SPUNWEB COMPANY,	)	
Plaintiff,	)	C.A. No. 04C-03-073-FSS
v.	)	SUMMARY PROCEEDING per Civ. Rule 124, *et seq*.
FIBERVISIONS L.P.,	)	
Defendant.	)	NON-ARBITRATION CASE

Submitted: November 2, 2005
Decided: February 27, 2006
Released On: March 27, 2006

COURT'S FINDINGS OF FACT AND CONCLUSIONS OF LAW

This is a contract dispute between big corporations. Defendant's factories turn raw plastic into staple fibers for bulk processors, such as Plaintiff, worldwide. Plaintiff's factories, here and abroad, turn plastic staple fibers into roll goods for bulk sale to other manufacturers. In turn, Plaintiff's customers use plaintiff's output to produce consumer products.

Plaintiff, Freudenberg, claims that Defendant, FiberVisions, breached their supply contract when FiberVisions routinely supplied defective polypropylene staple fiber, which clogged Freudenberg's machinery. Even worse, FiberVisions did

not use its know-how to improve its fiber and make it easier for Freudenberg to process FiberVisions's fiber. Therefore, according to Freudenberg, its production suffered, costing it millions in lost profits and waste.

FiberVisions counters that, apart from start-up problems and situations for which it already settled with Freudenberg, its fiber met their contract's specifications. There was no breach. According to FiberVisions, this litigation merely reflects Freudenberg's disappointment with its investment in a state-of-the art factory, and Freudenberg's resulting attempt to spread its costs among those associated with the project, including its customers, its equipment suppliers, and its raw material supplier – FiberVisions.

I.

Freudenberg filed this case as a Summary Proceeding[1] in March 2004. The parties agreed informally to litigate at a more leisurely pace than the rules governing summary proceedings contemplate. They also took considerable discovery. The court held a bench trial beginning in July 2005. The trial was continued after five days and it ended on the sixth day, September 27, 2005. After that, the parties submitted briefs and Proposed Findings of Fact and Conclusions of

[1] Superior Court Civil Rules, Part XV, Rules 123-132.

Law.[2] In hindsight, this proceeding was hardly "summary," but it was relatively streamlined.

This decision is based largely on the parties' proposals. The court has selected the proposed findings and conclusions reflecting what the evidence proved and the applicable law. Where necessary, the court has added to the proposals.

II. FACTS

A. Background – The Customer's Supply Contract with Freudenberg:

1. In the late 1990's, Freudenberg's customer needed a top sheet, material supplier for its diaper and hygiene products. The customer wanted high-quality, standard rolls of top sheet for manufacturing disposable diaper liners and other personal, consumer products. (JX3.)[3]

2. The customer offered Freudenberg a supply contract for a top sheet hygiene product made from a polypropylene staple fiber. As contemplated by the supply contract, Freudenberg was obligated to invest in a "newly developed high

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[2] Superior Court Civil Rule 130.

[3] The court adopts the exhibit designations used for the exhibits introduced at trial. For example JX1 is Joint Exhibit 1, PX1015 is Plaintiff's Exhibit 1015, and DX 2002 is Defendant's Exhibit 2002. Citations to trial testimony include the witness's last name, and the date and page number of the testimony. For example, the citation, "Casey, 7/20, 53" refers to testimony given by William Casey on July 20, 2005, appearing on page 53 of the trial transcript.

speed carded line at its Durham, NC plant for the manufacture of the specific nonwovens requested by [the primary customer]." The customer's contract was based on the parties' view of the "future market needs and expected new product generations…." (JX 3 at 1; Casey, 7/20, vol. I 71-72).

3. Freudenberg and the customer expected Freudenberg's high speed line to become the dominant supplier of polypropylene staple fiber, top sheet products in the United States and to produce enough nonwoven material to supply other customers. (JX3 at 1; Casey, 7/20, vol. I 57-59, 63.)

4. In 1999, Freudenberg and the customer signed an agreement for Freudenberg to supply the customer with a specified, large quantity of carded thermobonded nonwoven material made from polypropylene staple fiber. (JX3.)

5. Freudenberg kept the right to sell to others, as long as it otherwise met the customer's needs. (JX3 at 2; Casey, 7/20, vol. I 57-58, 63.)

6. The contract authorized the customer to qualify the fiber Freudenberg intended to use, and required Freudenberg to seek the customer's permission before changing the process or the fiber. Freudenberg was not free to change suppliers, or the location of the manufacture of the fiber, or the basic fiber specifications, without the customer's approval. (JX 3 § 17).

7. Freudenberg spent $12.7 million building a state-of-the-art, high speed, carding line in Durham, North Carolina to produce top sheet material, 18 grams per square meter, at a rate of 400 meters per minute, a rate much higher than ordinary, but not unique. (JX3 1-2; Casey, 7/20, vol. I 57-63; Jaekel, 9/27, 7-9.)

8. In December 2000, Freudenberg began selling nonwoven material to the customer. Between 2001 and 2003, the customer purchased the material specified in the Supply Agreement. (Casey, 7/20, vol. II 58; Casey, 7/21, 10; *see also* JX2 at 2, JX1 at 11.)

9. In 2003, however, the customer exercised its right to terminate the Supply Agreement early, to buy less expensive top sheet material made differently. All agree that neither FiberVisions nor Freudenberg caused the customer to go elsewhere. (Casey, 7/20, vol. II 8-13.) It is further agreed that Freudenberg never shipped defective goods to the customer. Moreover, the customer's concern for its hygiene products' quality-control was unrelenting. This dispute has nothing to do with consumers.

10. By ending the Supply Agreement early, for its own reasons and through no fault of FiberVisions and Freudenberg, the customer became contractually liable to Freudenberg for a sum of money, based on the material it failed to take from Freudenberg. (JX3 1-2; DX 2060; Casey, 7/20, vol. I 55; Casey, 7/20, vol. II 11-13.)

11. The money the customer paid was intended under the agreement to help Freudenberg recover its multi-million dollar capital investment in the Durham factory. (Latham, 7/22, 37-38; JX3 at 1; Casey, 7/20, vol. I 58.)

B. The Core Document – Freudenberg's Supply Agreement with FiberVisions:

12. Freudenberg sought out FiberVisions to supply the fiber Freudenberg needed to meet the customer's requirements. FiberVisions was not party to Freudenberg's contract with the customer. (7/20/05 TT, Vol. II, p. 65 (Casey)). Nor was FiberVisions aware of that contract's terms, or Freudenberg's arrangement with the customer. FiberVisions did not know Freudenberg's internal projections as to yield and efficiencies necessary for Freudenberg to generate the profit it hoped for from the deal with the customer. (7/21/05 TT, Vol. II, p. 77 (Robinson)).

13. On March 15, 2000, Freudenberg and FiberVisions signed a Supply Agreement on Polypropylene Polymer-Fibers (PP-Fibers), committing FiberVisions to provide Freudenberg with staple fiber for top sheet material. (JX1 at 1-2.) The March 2000 Supply Agreement is this case's core document.

14. The Supply Agreement initially bound Freudenberg to purchase 80% of its fiber from FiberVisions, but later was amended to increase that requirement to 90%. (JX2.)

15. In any event, Freudenberg had no alternative because no other domestic staple fiber manufacturer could produce fiber in the quantity Freudenberg needed, with a low enough shipping cost. (Casey, 7/20, vol. I 89-91.)

16. Freudenberg could not purchase fiber manufactured at FiberVisions's plant in Varde, Denmark, because the shipping was too expensive and Varde lacked production capacity; it had already committed its entire output to other customers. (Casey, 7/20, vol. II 13-14; Robinson, 7/21, vol. II 72-73.)

17. In the Supply Agreement's introductory "Whereas" clauses, the parties acknowledged that Freudenberg intended to run a super high speed carding line to produce a product for hygiene use. (JX1 at 1, 7.)

18. In the introduction, FiberVisions also assured Freudenberg that it had the technical knowledge and experience necessary to develop fiber for a super high speed line:

> FiberVisions . . . has both the necessary capacities to satisfy Freudenberg's currently anticipated demand and the technical knowledge and experience to develop from already existing Products products designed to meet the requirements of super high production speeds.

(JX1 at 1.)

19. The parties later acknowledged in the contract that they would meet their contractual obligations to improve the fiber if they made reasonable efforts to

produce the best result, using state-of-the-art technology and their knowledge and experience:

> It is the parties mutual understanding that they meet their respective obligations with regard to the improvement of the Products under this agreement if they make commercially reasonable efforts to achieve the best possible result making use of the know-how forming part of the state of science and technology as well as of their own knowledge and experience.

(JX1 at 10.)

20. FiberVisions also agreed, ambiguously, that it would "constantly" try to improve its fiber to meet a maximum production speed by Freudenberg on a specific date, or dates:

> FiberVisions shall use its best endeavours to constantly improve the Products such that they can be processed on the Production Line at the maximum speed of 400 meters/min. as of the date(s) indicated . . . .

(JX1 at 7.)

21. These provisions obliged FiberVisions to use or to adopt reasonably available technology and raw materials to produce a fiber for high speed and super high speed production. (JX1 at 10.) The contract, however, did not call for material from Varde, nor for "Varde-style" fiber. Nor did it require FiberVisions to develop new processing methods at FiberVisions's expense.

22. FiberVisions's production plant in Varde used different processes, different machinery, and different raw materials to manufacture the staple fiber it sold in Europe. (Given, 7/18, vol. I 105-07; PX1023, PX1024, PX1045, PX1046.)

23. FiberVisions did not use the technology from its Varde division for manufacturing Varde-style fiber in its Covington, Georgia, plant. Nor did it supply Freudenberg with Varde-style fiber. (Casey, 7/20, vol. II 13-14, 19-21; PX1096 at 6-12; Pederson, 7/22, 58-62, 76-78.)

24. While the Supply Agreement did not specify the product that FiberVisions was required to supply, the only FiberVisions products specifically referred to in the Supply Agreement were T-196® and T-190® fiber. They are named in connection with pricing. (JX1 at 4.)

25. The Supply Agreement specifically stated: "Initially, the [fiber]. . . shall be manufactured at the Covington, Georgia plant of Fiber Visions. . . ." The agreement allowed that later, FiberVisions could provide fiber made in its Athens, Georgia plant. (JX1 at 2.) Again, the Supply Agreement does not price, nor even mention, Varde fiber, nor any other fiber besides T-196® and T-190®.

26. **Warranties:** Section 4.1.1 of the FiberVisions Supply Agreement states:

> FiberVisions warrants that the Products sold to Freudenberg under this Agreement [1] fully conform to the Specifications, [2] are free from defects in material and workmanship and [3] are manufactured and sold in compliance with applicable laws and regulations. (Products which do not conform therewith are hereinafter referred to as "Defective Products"). [The "Specifications" are generally defined in Paragraphs 1.2 and Article 5.]

27. Section 4.1.3 of the Supply Agreement states:

> If Products fail to meet the Specifications, Freudenberg shall notify FiberVisions of such failure within ten (10) Working Days of delivery, such notice describing the nonconformity in detail.

28. Section 4.1.4 of the Supply Agreement states:

> In the event Freudenberg notifies FiberVisions in writing in accordance with Section 4.[1.]3 above that Defective Products have been delivered . . . the following provisions apply:
>
> > 4.1.4.1 Freudenberg may. . .reject and return to FiberVisions at FiberVisions[’s] expense and risk all Defective Products and request that FiberVisions deliver the respective quantity of Products conforming to the Specifications immediately.

29. Section 4.1.4.2 of the Supply Agreement gives Freudenberg the right to buy fiber elsewhere if FiberVisions failed to replace defective fiber after receiving a Complaint under Sections 4.1.4 and 4.1.4.1.

30. Sections 4.2 and 4.3 are irrelevant to this litigation. Thus, the pertinent warranty clause is 4.1.1, set out in the preceding paragraph and referred to in the Supply Agreement's Section 4.4, below.

31. Section 4.4 of the Supply Agreement states:

> The warranties set forth in Sections 4.1.1 through 4.3 above are the sole and exclusive warranties given by FiberVisions with respect to the Products sold to Freudenberg under this Agreement and are given expressly in lieu of any other warranties, express or implied, including, without limitation, any implied warranty of merchantability or fitness for a particular purpose. (JX1§4.4)

32. The Supply Agreement with FiberVisions defined the "Start-Up Date" for the Freudenberg line as "the first date of production of nonwoven products for commercial sale." (JX1 at 11).

33. The parties later agreed that the "Start-Up Date" was December 1, 2000. (JX2.)

34. From the beginning through 2003, FiberVisions supplied Freudenberg with T-196® polypropylene staple fiber. (Casey, 7/20, vol. II 11.) The FiberVisions Supply Agreement's end seems associated with the customer's termination of its agreement with Freudenberg.

35. During the Supply Agreement's run, FiberVisions never contended through its employees, who often saw Freudenberg's employees and equipment at

work, that Freudenberg's employees or equipment were deficient. (Pederson, 7/21, vol. II 113-14.) Conversely, FiberVisions never agreed, directly or indirectly, that they were not. FiberVisions's current view of Freudenberg's employees includes information developed through discovery in this proceeding.

36. By the same token, Freudenberg's contention to the contrary notwithstanding, FiberVisions never agreed, directly or indirectly, that Freudenberg's equipment was suitable to meet Freudenberg's expectations, beyond what was called for in their contract. Obviously, FiberVisions's present position on Freudenberg's equipment also reflects its expert's opinions.

C. FiberVisions's Polypropylene Staple Fiber:

37. Between March and December 2000, Freudenberg and FiberVisions worked together, including joint efforts in Freudenberg's Durham plant, to qualify a fiber and a finished nonwoven material, with the customer and Freudenberg finally selecting FiberVisions's T-196® fiber. (Casey, 7/20, vol. II 58-60.)

38. The customer qualified the T-196® fiber produced by FiberVisions at its Covington, Georgia facility for use by Freudenberg to manufacture top sheet. (JX 3 § 17).

39. The T-196® polypropylene staple fiber at issue was manufactured in Covington.

40. In order to manufacture the T-196® fiber, FiberVisions ran polypropylene polymer flakes through an extruder, reducing them to a molten state. (Pederson, 7/21, vol. II 106.)

41. The molten polypropylene then passed through a spinnerette, which formed individual polypropylene filaments. As the long, hot filaments left the spinneret, FiberVisions applied a chemical finish, and collected the filaments in containers. (Pederson 7/21, vol. II 106, 114-115.)

42. The fiber containers went to a draw line where FiberVisions stretched the filaments, crimped them, and applied a second chemical finish. The filaments were then cut and baled. (Pederson 7/21, vol. II 106.)

D. Freudenberg's Production Process:

43. FiberVisions shipped the T-196® fiber in bales to Freudenberg by truck. When they arrived in Durham, Freudenberg unloaded them into its receiving area. (Given, 7/18 vol. I 26-29.)

44. The fiber bales arrived wrapped in plastic secured by plastic bale straps. In the receiving area Freudenberg visually inspected the fiber bales, scanned information from the bales' labels into its computer for tracking purposes, began unwrapping the bales, and moved them to the walking floor. (Given, 7/18 vol. I 26-29.)

45. Once Freudenberg loaded thirty bales onto the walking floor (ten rows of three bales each), the blendomat moved back and forth across the tops of the thirty fiber bales. It removed a four to six millimeter layer of fiber on each pass, then transported the fiber on an air column through a series of pipes. (Given, 7/18, vol. I 30-36.)

46. Along the way, the fiber passed through a cyclone separator to remove particularly heavy particles, several magnet traps to remove any metal that had entered the system, and a mixmaster to mix the fibers in order to produce a homogeneous blend from the thirty bales. (Given, 7/18, vol. I 37-39.)

47. From the mixmaster, air transported the fiber to an opener having a feed roll and a high speed spiked roll, which pulled apart and separated, or "opened," the fiber. (Given, 7/18, vol. I 39-41.) The openers' configuration is important. FiberVisions's expert testified that the configuration was wrong for opening polypropylene staple fiber at high speed.

48. After the fiber left the first opener, air blew it into the second opener, which, like the first opener, performed the same function, opening the fiber. (Given, 7/18, vol. I 41-42.)

49. After the second opener, the fiber entered the master chute or scanfeed, which spread the fiber into a sheet that could enter the card evenly. (Given, 7/18, vol. I 42-45.)

50. The openers were primarily responsible for opening the fiber; but the blendomat, the mixmaster, and the scanfeed also performed opening. (Given, 7/18, vol. I 40-42.)

51. The card had a series of rollers with wires that combed the fiber. The card continued to open the fiber and began to orient the fibers in the proper direction to form a web. When the fibers left the card, they lay in two sheets. (Given, 7/18, vol. I 46-51.)

52. The two sheets passed through the calendar, which bonded them by heat and pressure to form a single, thin sheet of thermobonded, nonwoven, top sheet material. (Given, 7/18, vol. I 51-52.) The top sheet material was cut and formed into large rolls, sized to meet the customer's specifications.

53. Because Freudenberg's line, at times, could not open the fiber supplied by FiberVision, fiber built-up and fouled Freudenberg's card machine, requiring Freudenberg to stop production for cleaning. (Given, 7/19, vol. I 100-03.) This situation's cause, frequency and duration are difficult to know because, under the best circumstances, card machines are periodically cleaned. Also, there are

different reasons for fiber build-up. Moreover, Freudenberg lost, discarded, or destroyed some of its production records, which could have shed light on this issue.

54. The question of whether Freudenberg's carding problems were caused by FiberVisions's fiber is the threshold factual dispute. FiberVisions contends that with a few specific exceptions, for which it settled, Freudenberg's production problems were caused by Freudenberg's inadequate, inexperienced, poorly trained staff and Freudenberg's inappropriate equipment.

55. **Freudenberg's Production Staff:** Despite the fact that its Durham line was state-of-the-art and Freudenberg expected high yields, Freudenberg's staff was, admittedly, inexperienced. (7/18/05 TT, Vol. II, pp.42-43 (Given)).

56. At start-up, the plant had no process engineer. When one signed on, in September 2002, he came without experience in carding polypropylene, which is relatively difficult to open. The process engineer was trained by an equipment supplier, but not using polypropylene. (7/18/05 TT, Vol. I, pp.17-19 (Given); 7/18/05 TT, Vol. II, pp.71-72 (Given); 7/19/05 TT, Vol. I, p.119 (Given)).

57. The plant's manager, who did not testify, also had no experience with polypropylene, nor with high speed production. Freudenberg's General Manager, who took responsibility for the Durham plant in April 2001, had experience

with polypropylene, but in the distant past and running at low speed. (7/18/05 TT, Vol. II, p.72 (Given); 7/20/05 TT, Vol. II, pp. 38-40. (Casey)).

58. The inexperience of the Durham plant's staff was not customary for the industry. (7/21/05 TT, Vol. I, p. 110 (Nolan)). The staff's inexperience with polypropylene is potentially important because, as all agree, polypropylene, with its low melting point, is difficult to open.

59. **Freudenberg's Known Equipment Problems:** Freudenberg experienced equipment problems from the start. Freudenberg's General Manager for the Hygiene Division, William Casey, testified that when he arrived in Durham in April 2001, equipment problems took precedence. (7/20/05 TT, Vol. I, pp. 52-53, 75 (Casey)).

60. During the contract's term Freudenberg asserted claims against four different equipment manufacturers. Significantly, Freudenberg settled with the card's manufacturer, for a sum of money on a claim that the card was improperly manufactured, preventing Freudenberg from running its line at anticipated speeds. The card manufacturer had to work with Freudenberg to redesign the card. (*Id.* at. 82-83 (Casey); 7/20/05 TT, Vol. II, pp. 42-44, 74-77 (Casey); *see* DX 2062).

61. Freudenberg also asserted a claim against Trützschler concerning the chute that feeds the openers, ultimately settling with it for $450,000. (7/20/05 TT, Vol. I, pp. 81-82 (Casey)).

62. Additionally, Freudenberg had problems with the slitter and the robot. Those problems, however, were resolved without large damage payments. (*Id.* at 83 (Casey)).

63. Finally, Freudenberg experienced problems with the camera system installed to monitor the web quality coming off the card. Freudenberg purchased the camera system after the line had been running for several months, when the subject arose during discussions with the customer and "after research we found some of our more hygiene-related customers apparently had some of this equipment." (7/20/05 TT, Vol. II, pp. 46-49, 53). In a November 2001 internal e-mail Casey wrote: "Competition has on-line visual detection system whereas [Freudenberg] does not." (DX 2053 at 4116). The camera equipment supplier was forced to work with Freudenberg to redesign the system for Freudenberg.

64. In 2003, the final year for the Supply Agreement, Freudenberg finally resolved the equipment problems of which it was aware. (7/20/05 TT, Vol. I, p. 89 (Casey)). Before that Freudenberg admittedly had "a lot of downtime" because of equipment problems. (7/20/05 TT, Vol. II, p. 45 (Casey)).

65. After settling with the equipment manufacturers, in part because it could not run the line at the desired speeds, Freudenberg "no longer pursued the higher speed and the equipment was satisfactory at the speed that we were running." (7/20/05 TT, Vol I, p. 89 (Casey)).

66. During the time at issue, the Durham line averaged 270 meters per minute. While that was below Freudenberg's expectations, 400 meters per minute, it was above the 200 meters per minute typically achieved by American producers at the time, and even higher than the 250 meters per minute typically achieved then in Europe. (*Id.* at 74 (Casey)).

67. **Freudenberg's Other Equipment Problems:** Not only did Freudenberg have known equipment problems for which it made claims, its production suffered due to other equipment problems. FiberVisions's expert, Benjamin Nolan, testified credibly that Freudenberg's opening equipment was not appropriate for its intended job. (7/21/05 TT, Vol. I, p. 98 (Nolan)).

68. Nolan never saw the Durham line in operation. He relied on documents presented to him by FiberVisions's counsel. And in some ways, he was not "strong" on fiber manufacture. Nevertheless, Nolan has over 20 years experience carding polypropylene fiber for top sheet applications. (*Id.* at 68 (Nolan)). His testimony about opening polypropylene fiber at high speed, a major issue in this

litigation, was persuasive. The court finds his opinions well-informed, consistent, reasonable and believable.

69. As Nolan explained, polypropylene fiber must be opened gently because of its low melting point. Freudenberg's openers, however, did rapid opening. As Nolan further explained, the fine openers on the Freudenberg line were better suited to open polyester fiber with its much higher melt point, or low volumes of polypropylene fiber. (*Id.* at 98-108 (Nolan)). Again, it is recognized in the industry that polypropylene fiber is more difficult to open than polyester. (DX 2143-44; PX 1068).

70. As Nolan testified, the Trützschler equipment in Durham was insufficient to open the contemplated volumes of polypropylene fiber. Because polypropylene fiber is more difficult naturally, requiring different opening than polyester, that does not mean the T-196® fiber was defective or substandard.

71. Nolan testified that Freudenberg should have installed three or four multi-stage openers to open the fiber more gently and thoroughly. (7/21/05 TT, Vol. I, pp. 104-105 (Nolan)).

72. In 2000, "all of the openers [Nolan] dealt with T-196 running the hygiene polypropylene material has been with multi-openers." (*Id.* at 139-140 (Nolan)). The same manufacturer that provided the fine openers for the Durham line,

Trützschler, manufactures multi-stage openers. Trützschler's literature seemingly suggests using multi-stage openers with polypropylene fiber. (*Id.* at 104-105 (Nolan); DX 2143-44).

73. As Nolan explained, using several multi-stage openers would not slow down the overall line speed. (7/21/05 TT, Vol. II, pp. 45-46 (Nolan)). On the contrary, for the throughput Freudenberg desired (1700 kg of fiber per hour if the line was running at 400 meters per minute), the fine openers on the Durham line were inadequate because each fine opener in the series could only process 1500 kg per hour. (7/21/05 TT, Vol. I, p. 107 (Nolan)).

E. Fiber Problems – Generally:

74. Before and almost immediately after the FiberVisions Supply Agreement's Start-Up Date, Freudenberg had problems with the FiberVisions's fiber. (Casey, 7/20, vol. I 75-76 and vol. II 102-03; Jaekel, 9/27, 13-15; *see also, e.g.*, PX1098.)

75. Some fiber delivered initially by FiberVisions did not comply with the requirement that the fiber be "free from defects in material and workmanship." (JX1 at 5.) In general, the fiber presented two problems: contamination and fused fiber. (*See, e.g.*, JX11, JX18.)

76. FiberVisions was bound by the Supply Agreement to deliver fiber that standard equipment for a top sheet line could open.

77. The contaminated fiber had foreign substances, for example: grease, pieces of plastic, metal bale straps, insects, wood, and, in one instance, a bolt. (JX18, JX20, JX22, JX24, JX41, JX70, PX1098 at FIB-1956.)

78. Some bales delivered by FiberVisions weighed between 550 and 670 pounds, (*see, e.g.*, JX39, PX1098 at FIB 1965; Given, 7/18, vol. II 16.) a range too great for proper fiber, and bales that were too large, too small, too tightly packed, and with too little bloom. (*See, e.g.*, PX1068.)

79. Also, FiberVisions delivered some fiber without proper paperwork, on the wrong days, and in dirty trucks. (*See, e.g.*, JX21, JX25, PX1098 at FIB 1970.)

80. Beginning in January 2001, and continuing throughout the FiberVisions Supply Agreement's term, Freudenberg notified FiberVisions about fiber problems. (Given, 7/18, vol. I 57-61, Casey 7/20, vol. I 83-87; *see also, e.g.*, PX1098 at FIB 2036, JX70.)

81. Freudenberg submitted complaints to FiberVisions by written "Corrective Action Requests" ("CARs"), by e-mail, by telephone calls, and by joint staff meetings. (Casey 7/20, vol. I 83-84; *see, e.g.*, JX11, JX17-40, PX1034, PX1043, PX1045, PX1097; *see also* Freudenberg Exhibit Addendum at Exhibit A.)

82. Finally, Freudenberg and defendant agreed to meet weekly in person or by telephone to discuss fiber problems, including fused fiber. (Casey, 7/20, vol. II 106-07, PX1052 at 4.)

83. During the three-year Supply Agreement, Freudenberg sent more than fifty CARs to FiberVisions. (JX7, JX17-JX41, JX43-JX65, JX67-68, JX70, PX1012.)

84. FiberVisions recorded more than sixty complaints from Freudenberg. (PX1098, PX1099, PX1100.) In addition, meeting minutes and e-mails record discussions about various complaints. (PX1025, PX1034, PX1043-46, PX1048, PX1052-54, PX1060-67, PX1097, JX11, DX2007, DX2031, DX2032, DX2033.)

85. **Fused Fiber:** For present purposes, Freudenberg's dissatisfaction with FiberVisions's product mostly concerns "fused fiber." The term "fused fibers" has no contractual or standard definition. It generally refers here to a large, polyglot group of defects having meaningless distinctions in appearance but producing the same results on Freudenberg's line. (Given, 7/19, vol. I 101-03; Given, 7/18, vol. I 63-66; Casey, 7/20, vol. I 75-76.)

86. Although Freudenberg usually uses the generally accepted term "fused fiber," it also includes "harsh fiber," "unopened fiber," "fiber build up in the card," "spin fusion," "entangled fiber mass," and "rat-tail fiber to indicate defects in

the fiber received from FiberVisions." (JX17, PX1045, PX1056, PX1063, PX1098 at FIB 1961, PX1099 at FIB 2005, PX1100 at FIB 2000; *see also* Given, 7/18, vol. I 65-66.) Again, none of these terms is defined. Only an expert can tell whether fiber is "fused," "harsh," and so on.

87. Freudenberg considered fiber fused if the fibers were "stuck together," were "hard," or would "not separate." (Given, 7/19, vol. I 101-03, Casey, 7/20, vol. II 116-17.)

88. Several pieces of machinery on FiberVisions's processing lines could generate fused fibers:

(a) If the hot fiber filaments came into contact when discharged by the spinnerets, they could fuse (Pederson 7/21, vol. II 114). FiberVisions referred to the fused fibers generated by the spinnerets as spin fusion (PX1098 at FIB 1961; PX1099 at FIB 2020);
(b) FiberVisions created fused fiber when it stretched the fiber filaments on the draw rolls (JX11); and
(c) FiberVisions created fused fibers when tangled fibers entered the crimper (PX1098 at FIB 2030).

89. To the extent that it saw fused fibers or contamination on the bale's surface, Freudenberg sometimes removed the contaminants or returned the bales. (Given, 7/19, vol. I 110-15; *see also* Given, 7/18, vol. II 5-7.) Sometimes, it used the bales. *(See, e.g.* JX35.)

90. Under its contract with the customer, Freudenberg had to deliver specified quantities of a finished product. (JX3.) Thus, according to Freudenberg, it could not reject every bale that had an apparent problem because to do so would, in effect, close its production line and breach its agreement with the customer. (*See* Casey, 7/20, vol. I 90, vol. II 101.) This contention, however, is unhelpful because Freudenberg concluded without proving, that had Freudenberg rejected more bales, FiberVisions would not have replaced them by promptly shipping more product.

91. More importantly, Freudenberg knowingly ran defective bales when it also knew that doing so would foul its production line and create the very conditions it could not tolerate: waste and downtime. When Freudenberg knowingly ran defective bales (*See e.g.* JX35), it bears the consequences. The waste and downtime Freudenberg generated by knowingly running defective bales is probably not great, but it cannot be determined from the record.

92. The vast majority of any fused fibers were, however, dispersed throughout the fiber bales and, therefore, they were undetectable to Freudenberg until Freudenberg accepted and processed the bales.

93. More than half the CARs and almost half of FiberVisions's complaint reports relate to fused fiber. (*See* Freudenberg Exhibit Addendum at Exhibit A.) The first fused fiber CAR was dated November 30, 2001. (JX17.) The

second fused fiber CAR came five months later, on April 3, 2002. (JX23.) The fused fiber CARs began in earnest on March 27, 2003, almost a year after the second fused fiber CAR, eleven or twelve months after Start-Up, and toward the Supply Agreement's final months. (JX33.) (Again, the Supply Agreement did not end due to anything attributable to FiberVisions.)

94. From Start-Up through March 2003, fused fiber generated three CARs. (JX23, 33, 34.) But then, in April 2003, Freudenberg submitted twelve fused fiber-type CARs. (JX38, 40) (JX 39 refers to uneven bales) 42-44, 46-50.) That precipitated a meeting in Durham on April 24, 2003. After the meeting the frequency of fused fiber CARs subsided, except for a spate in July 2003. At times, FiberVisions admitted responsibility for problems. (*See* Freudenberg Exhibit Addendum at Exhibit A; PX1098, PX1099, PX1100.)

95. For example, in June 2001, Freudenberg complained of a fiber build-up in its card wire. FiberVisions concluded that the sample provided by Freudenberg contained "mostly spin fusion with some melted bale wrap." (PX1098, at FIB-001961.) "Spin fusion" is caused at the spinnerette on the FiberVisions fiber line. (Pederson, 7/22, vol. I 5-6.)

96. At the end of 2001, Freudenberg reported finding a lot of fused fibers in a bale. (PX1098, at FIB-002030.) FiberVisions found that the sample

provided by Freudenberg contained a knot in the fibers that was fused by friction in the crimper, part of FiberVisions's production line, and concluded that "FiberVisions would be at fault of this complaint." (PX1098, at FIB-002030.)

97. Freudenberg complained of hard fiber particles building up in its card rolls in April 2002. FiberVisions stated that "[s]ome of the fusion noted from their card is consistent with spin fusion" (PX1099, at FIB-002020), once again a condition caused on FiberVisions's line. (Pederson, 7/22, vol. I 5-6).

98. James Pepper, a FiberVisions employee and witness, admitted that in 2002 FiberVisions supplied fused fiber to Freudenberg, that it was defective, and that FiberVisions settled with Freudenberg. (Pepper, 7/21/, vol. I 31-34.)

99. In February 2003, Freudenberg complained about "dirty fibers." In fact, according to FiberVisions, the sample from Freudenberg was an entangled fiber mass, or fiber rattail. (PX1100, at FIB-002000.)

100. FiberVisions noted that "several places in [its] process could have been responsible for this fiber mass getting into a bale." (PX1100, at FIB-002000.)

101. In June 2003, Freudenberg complained about unopened fiber bundles and harsh fiber, more examples of fused fiber. (PX1100, at FIB-001949.)

102. FiberVisions noted that the fiber came from a production order produced immediately after a new conveyor had been installed and conceded that "the process conditions used then were not the optimum . . . ." (PX1100, at FIB-001949.)

103. FiberVisions also accepted responsibility for other fiber problems including contamination in fiber bales, insects in fiber bales, fiber bales being too heavy or too compact, and shipping problems. (*See, e.g.*, PX1098 at 1963, 1965, 2036; *see also* Freudenberg Exhibit Addendum at Exhibit A.)

104. FiberVisions neither concluded, nor claimed, nor argued in any of its complaint reports, meetings, or telephone conferences that any problem identified by Freudenberg was caused by Freudenberg, its equipment, its personnel, or its hygiene card line. (PX1098, PX1099, PX1100.) That, however, is not an admission by FiberVisions. Much less is it proof that Freudenberg was not responsible for some of its problems. If, for example, the pins on Freudenberg's openers melted the polypropylene fiber and the card became fouled, FiberVisions cannot be blamed for that.

F. FiberVisions's Defense and Freudenberg's Rebuttal – Battle of Experts:

105. Relying entirely on its production and accounting staff in its case-in-chief, Freudenberg presented no expert testimony. Thus, Freudenberg's claim that FiberVisions's fiber was defective rested on its employees' observations. Those

witnesses had no prior experience with T-196®, nor with any other polypropylene fiber running at high speed. They were well-positioned to testify that Freudenberg had trouble opening T-196® fiber in Durham, and they could describe how the fiber looked to them. Even so, they were neither trained, nor were they otherwise qualified, to assess fiber quality, much less to opine on whether it met industry or contract standards. All they could say, which they did, was that they received some contaminated bales, they had trouble opening T-196® in Durham, and they did not meet their production projections.

106. Freudenberg attempted to bolster its employees' observations through its in-house testing. Primarily, Freudenberg compared T-196®'s performance on its line against samples obtained from Varde. Twice, Freudenberg tested Varde and Covington fibers on its Durham line: first, when the line qualified for "Start-Up," and second, when it performed an experiment using both European (Varde) fiber and Covington fiber. (Jaekel, 9/27, 10-12; Given, 7/18, vol. I 100-105.) FiberVisions manufactured both fibers, but by different processes and using different raw material (flake and pellet). (Given, 7/18, vol. I 105-07; PX1023, PX1024, PX1045, PX1046.)

107. The second Varde fiber trial, upon which Freudenberg relies, was a test run of no more than 30 bales on November 21, 2002, in response to a request from the customer to test different fibers for use in a new diaper. (7/19/05 TT, Vol.

I, pp. 126-128 (Given); 7/22/05 TT, Vol. I, pp. 10-14 (Pederson)). Given's recollection was unclear. The manager of Fibervision's Process Technology Group, Pederson, testified that he was there and that the test ran over two days with 4 variants, each running about 5 hours. (7/22/05 TT, Vol. I, pp. 11-14 (Pederson)).

108. The variants that were run included: Varde High Strength, Varde High Comfort, Covington T-196®, and a modified variant of Covington T-196®. The Varde High Strength test (only 5 hours to begin with) had to be broken up and the settings adjusted on Freudenberg's equipment because of a problem with the web's bonding. (7/22/05 TT, Vol. I, p. 13-15 (Pederson)).

109. The Varde High Strength also failed a "run-off" test for diaper leakage mandated by the customer. Freudenberg experienced problems running the Varde High Comfort, which is the fiber more comparable to Covington T-196®. The normal Covington T-196® ran well, but the modified T-196® did not, and that test run was stopped early. Pederson did not see any significant fused fibers or card build-up during the trial run with any of the fibers. (7/22/05 TT, Vol. I, pp. 14-16, 21, 24 (Pederson)).

110. Furthermore, although Casey, who was not present for the trial run, testified that the Varde fiber ran at speeds of 320 meters per minute, Pederson

witnessed no such thing. (*Id.* at 26-27 (Pederson)). Nor did anyone from Freudenberg ever tell him that happened.

111. Considering the marked increase it would have represented over Freudenberg's typical running speed of 275m/m, Pederson would have expected to have been told if increased speeds had been reached, even if only briefly. Even if it happened as Casey claimed, not much fiber could have been involved, as there was very little, if any, left from the earlier test run. So, it would have been a short run and there is no evidence as to the quality of the web produced. (*Id.* at 26-27 (Pederson)).

112. Based on its in-house testing, of its own design, Freudenberg concluded that Varde fiber was better-suited for its equipment in Durham. From that, in part, Freudenberg's employees further concluded that the T-196® fiber supplied by FiberVisions's Covington plant was defective, or that FiberVisions breached the Supply Agreement by not shipping Varde-style fiber to Durham.

113. FiberVisions knew about these tests and Freudenberg's conclusions. FiberVisions concluded that "[t]he major differences between the Varde fiber and the Covington fiber are probably due to the method of finish application, tow formation from the can, and the resulting crimp characteristics." (PX1023.) These differences, finish application, tow formation, and crimping, took place on FiberVisions's manufacturing line, not the Freudenberg line.

114. The in-house test is not impressive. The court is not assured that the test protocols were scientific, the tests were run reliably, the results were dependable, nor that Freudenberg's interpretation of the results is correct.

115. Most importantly, the test runs did not reveal a defect in the T-196® fiber. At best, they suggest that Varde fiber might have run better than T-196® in Durham, but even that is questionable, and, in any event, it does not establish any breach by FiberVisions.

116. **Nolan's Expert Opinions:** As presented above, according to Nolan, FiberVisions's expert, the fused fibers on Freudenberg's card were created by Freudenberg's equipment, specifically the two openers manufactured by Trützschler. Nolan testified that Freudenberg could have opened and processed the fiber it received from FiberVisions (Covington) if Freudenberg had the proper equipment and properly trained personnel. (Nolan, 7/21, vol. I 94, 98-102.)

117. **Jaekel's Rebuttal:** After hearing Nolan's expert opinions about the Durham line and FiberVisions's fiber, the court recessed the trial and, over FiberVisions's objection, later allowed Freudenberg to call a rebuttal expert, Detlef Jaekel.

118. Jaekel is the head of North American Customer Service for American Truetzschler, the company that supplied Freudenberg's blend-o-mat, fine openers, and scanfeed. (Jaekel, 9/27, 5, 57-58.)

119. According to Jaekel, neither the pins nor the roll speed caused fused fiber. (Jaekel, 9/27, 44-47.) To the contrary, the sharp points were necessary to allow the fiber to transfer easily within the openers and also allowed the openers to operate at lower revolutions per minute. (Jaekel, 9/27, 44-45.)

120. Moreover, the openers had safeguards to prevent fused fibers and other problems that might arise if fiber became lodged in the opener. (Jaekel, 9/27, 47.)

121. Truetzschler's employees, including Jaekel personally, trained Freudenberg's employees to operate the equipment on the Freudenberg top sheet line. (Jaekel, 9/27, 55-56.)

122. Jaekel observed Freudenberg's personnel operating the top sheet line and determined that they were competent. (Jaekel, 9/27, 55-56.)

123. According to Jaekel, Nolan's idea that Freudenberg should have installed three or four multi-roll openers on its top sheet line was wrong because they were more likely to damage the fiber being supplied by FiberVisions and would cost too much to install and operate. (Jaekel, 9/27, 47-51.)

124. Truetzschler has installed identical opening equipment on several high speed top sheet lines in Europe, which processed polypropylene fiber and operated at considerably higher speeds than the Freudenberg line. (Jaekel, 9/27, 7-9).

125. The difference between the European top sheet lines and the Freudenberg top sheet line was the fiber, the European lines using polypropylene fiber manufactured by FiberVisions's Varde plant in Denmark. (Jaekel, 9/27, 7-9.)

126. Jaekel observed top sheet material production from both the polypropylene fiber manufactured in Europe by FiberVisions's plant in Varde, Denmark, and the polypropylene fiber manufactured in FiberVisions's Covington, Georgia plant. (Jaekel, 9/27, 24-26.)

127. According to Jaekel, the Covington polypropylene fiber had a significant amount of large fused fiber bundles like "potato chips," but the Varde fiber did not. (Jaekel, 9/27, 24-26.)

128. Both Nolan and Jaekel are highly qualified, except Jaekel has little experience running polypropylene. Although both could be called partisan, they seemed sincere. Jaekel appeared to believe that Freudenberg had proper equipment and personnel, and that the fiber samples introduced at trial were unsatisfactory. Jaekel's testimony, however, was inconsistent with Freudenberg's production staff's. And, taken as a whole, Nolan was more convincing.

129. Jaekel testified, for example, that the Durham line did not have two identical fine openers as Given explained. Rather, Jaekel stated that the line had one "MSL" and one "FOL," which contain different spiked rolls. (9/27/05 TT, pp. 57-58 (Jaekel)).

130. Given, who was the process engineer at Durham for more than one year, and Freudenberg's "schoolmaster" at trial, referenced a video and diagrams of the Durham line to support testimony about the equipment. Included on the video, as explained by Given, was the opening equipment manufactured by Trützschler. According to the videotape, and confirmed by Given, the opening equipment was two identical FOLs, each having a beater roll containing 7,600 very sharp pins. (7/18/05 TT, Vol. I, pp. 21, 41-43 (Given)).

131. Jaekel also disagreed with Given on the pin count of the fine opening rolls, stating that the MSL had 900 pins and the FOL had 3800 pins. (9/27/05 TT, pp. 58-59 (Jaekel)).

132. Jaekel's trial testimony also contradicts his own deposition, where he testified that the MSL had 830 pins and the FOL had 1800. (Jaekel Dep. at 69).

133. Furthermore, Jaekel did not convincingly explain away his company's promotional literature, which seemingly suggests using multi-stage openers for polypropylene, (9/27/05 TT, p. 80 (Jaekel)), and which seemingly is

inconsistent with some of Jaekel's other opinions. (9/27/05, TT, pp. 85-89 (Jaekel)). According to its literature, Trützschler openers are "available from the single-roll opener for standard polyester fibers through to the four-roll opener for. . . hard-to-open polypropylene." (DX 2144).

134. Trützschler also manufactured the scan feed, or chute, installed on the Durham line, which was the subject of a claim by Freudenberg against Trützschler, resulting in the chute's redesign and a $450,000 payment to Freudenberg. Nevertheless, according to Jaekel, Trützschler's repairs to the chute were necessary due to FiberVisions's fiber. (9/27/05 TT, pp. 121-124 (Jaekel)). If FiberVisions truly had been at fault, Jaekel should have explained why his company took the hit.

135. Jaekel's patently self-serving testimony about the chute is contradicted by Casey and Given. Casey testified that Trützschler's repairs to the chute had nothing to do with fiber quality. Rather, according to Casey, Trützschler "misdrilled the holes" in the chute feed and misplaced the feed roll and nose bar. (*See* 7/20/05 TT, Vol. II, p. 45 (Casey); 7/20/05 TT, Vol. I, pp. 79-81 (Casey)). Given concurred, testifying that Freudenberg's problems with Trützschler were the result of "design issues [Trützschler] had on their side that caused some damage in the equipment." (7/19/05 TT, Vol. I, pp. 107-108 (Given)).

136. As much as fiber quality, Jaekel's, Given's and Nolan's testimony about the Durham line's configuration goes to the heart of Freudenberg's claim. Based on his testimony about the plant's configuration, the way he dismissed his own company's marketing materials, and his readiness to blame FiberVisions for problems that others attributed to his company and for which his company took responsibility, Jaekel's opinions do not rebut Nolan's effectively.

G. Damages:

137. Generally, Freudenberg seeks approximately $5.3 million in damages: approximately $5.2 million for the excessive waste it allegedly produced and less than $200,000 for the excessive production downtime it allegedly incurred due to Fibervision's allegedly defective fiber between 2001 and 2003. (PX1014.)

138. Every carding production line produces waste and must stop for cleaning. Freudenberg seeks to recover from Fibervision only for the waste and downtime allegedly caused by defective fiber, i.e., the excessive waste and the excessive downtime. (PX1014.)

139. In both cases, Freudenberg calculated its damages based on a card line speed of 275 meters per minute. (Kish, 7/19, vol. II 63-64; PX1015, PX1016, PX1017.)

140. Freudenberg does not seek damages because its hygiene card line failed to operate at 300 meters per minute or faster. (Casey, 7/21, vol. I 3.)

141. In the Supply Agreement, Fibervision agreed to "indemnify and hold Freudenberg harmless from and against any and all costs, [and] damages caused by the breach of any warranties set forth in Sections 4.1.1 through 4.3, and/or resulting from any other material breach of this Agreement by Fibervision . . . ." (JX1 at 7.)

142. Freudenberg, therefore, seeks its costs (both material costs - the cost of the bad fiber - and variable costs) and its lost profits for both types of damages, excessive waste and excessive downtime. (PX1014.)

143. Freudenberg's itemized damages are:

Downtime (resulting from excessive cleaning)

Material Cost	$	29,206
Variable Cost	$	38,453
Lost Profit	$	101,875
Sub-Total	$	169,533 [sic]

Waste (resulting from excessive defective fiber)

Material Cost	$	3,296,729
Variable Cost	$	896,855
Lost profit	$	1,737,769
Sub-Total	$	5,931,353

Total Damages

Excessive Downtime	$	169,533
Excessive waste	$	5,931,353
Credit from Waste Sales	($	815,394)
Total	$	5,285,492.

(PX1014.)

144. Candice Kish, the Controller of Freudenberg's Hygiene Division, explained the calculation and the sources shown in the Summary of Claims she prepared (attached as Exhibit B to Freudenberg's Exhibit Addendum). (PX1014.)

145. The Summary of Claims, admitted over FiberVisions's objection, itemizes (on a quarterly basis), among other things, the dollar amount Freudenberg seeks for costs and lost profits for both excessive waste and excessive downtime. (PX1014.)

146. Kish also explained her detailed Cost Summary for each year in which Freudenberg claims damages (attached as Exhibit C to Freudenberg's Exhibit Addendum). (Kish, 7/19, vol. II 56-81, PX1015, PX1016, PX1017.)

147. The Cost Summaries state the way Freudenberg calculated the amounts in its Summary of Claims (costs and lost profits). (PX1015, PX1016, PX1017.)

148. For example, the Cost Summaries include, in square meters, the amount of material allegedly not produced because of excessive downtime, and the material representing excessive waste. (PX1015, PX1016, PX1017.)

149. This material represents alleged lost sales, production Freudenberg would have sold if it had been commercial quality material. (Kish, 7/20, vol. I 29.)

150. The Cost Summaries also show the contribution rates used by Freudenberg, which, when multiplied by the amount of material allegedly not produced in downtime and the alleged excessive waste produced, allegedly resulted in lost profits. (PX1015, PX1016, PX1017.)

151. **Excess Waste:** Based on its experience and trade usage, Freudenberg expected 95% of its production to be commercial grade and expected no more than 5% of the material it produced to be waste grade. (Casey, 7/20, vol. II 24-31.)

152. On the basis of its two carding lines, which produced four to five percent total waste and off-quality material, FiberVisions agrees that the waste on a top sheet polypropylene line would equal 5% of production. (Robinson, 7/21, vol. II 80-81).

153. Freudenberg seeks to recover only for the off-quality material or waste it produced above the waste it expected, 5%, because that material allegedly

would have been sold as commercial grade product. (Kish, 7/20, vol. I 29; PX1015, PX1016, PX1017.)

154. **Excess Downtime:** Freudenberg operated its carding line twenty-four hours a day, seven days a week, except for normal downtime.

155. A carding line may cease operating for many reasons, including the need to clean the card. Freudenberg seeks to recover damages from FiberVisions only for the downtime Freudenberg deems excessive, that it attributes to cleaning the card, and for which it blames FiberVisions. (PX 1014, PX1015, PX1016, PX1017.)

156. Based on its experience with numerous carding lines over many years, and according to industry standards, Freudenberg expected to shut down the line no more than one hour per twenty-four to clean the card. Any time beyond the one hour would have been excessive. (Casey, 7/20, vol. II 25.)

157. **FiberVisions's Damages Expert:** In answer to Freudenberg's Controller and its other witnesses on damages, FiberVisions produced an economist from the University of Delaware, William R. Latham, Ph.D. In Dr. Latham's opinion, there are flaws in both Freudenberg's methodology and calculations. For example, as to methodology, Dr. Latham questioned amounts claimed for depreciation, interest, and other costs. More importantly, Dr. Latham opined that Freudenberg miscalculated and overstated its alleged waste. Similarly, Freudenberg overstated its

expected contribution, or profit margin. Also, Freudenberg did not properly account for the amounts recovered from its equipment's manufacturers and the customer. Thus, Dr. Latham concluded, and the court agrees, that Freudenberg's damages claim is unreliable.

PART III

LEGAL ISSUES

158. **Freudenberg's Claims:** Freudenberg asserts claims for breach of contract and breach of warranty. According to the terms of Freudenberg's and FiberVisions's Supply Agreement's, Delaware law governs.

159. **A. Breach of Contract**: To succeed on its breach of contract claim under Delaware law, Freudenberg must prove: (1) a contractual obligation; (2) a breach of that obligation by FiberVisions; and (3) resulting damage to Freudenberg. *H-M Wexford LLC v. Encorp, Inc.*, 832 A.2d 129, 140 (Del. Ch. 2003).

160. **B**. **Breach of Warranty:** To succeed on its breach of express warranty claim, Freudenberg must prove: (1) a warranty existed; (2) breach of the warranty; and (3) resulting damages. An express warranty is created by: (1) an affirmation of fact or promise made by the seller (2) to the buyer (3) which relates to the goods and (4) becomes part of the basis of the bargain. 6 *Del.C. §* 2-313(1).

161. **Freudenberg's Damages:** Before and during trial, the parties raised several issues relating to Freudenberg's proof of damages. For completeness sake, these issues are addressed here. Actually, Freudenberg failed to establish any breach for which damages were not paid by FiberVisions.

162. **Usage of Trade:** Freudenberg sues to recover two elements of damages, both of which rest on "usage of trade" factors.

163. The Delaware Uniform Commercial Code codifies the common law doctrine of "custom and usage in the trade" as follows:

> A "usage of trade" is any practice or method of dealing having such regularity of observance in a place, vocation, or trade as to justify an expectation that it will be observed with respect to the transaction in question. The existence and scope of such a usage must be proved as facts.
>
> * * *
>
> Evidence of a relevant usage of trade offered by one party is not admissible unless the party has given the other party notice that the court finds sufficient to prevent unfair surprise to the other party.
>
> 6 *Del. C.* U.C.C. § 1-303(c) & (d).

164. To be a "usage of trade" the practice must be regularly followed in the trade, but it need not be universal throughout the trade. *Steuart Petroleum Co. v. Salomon, Inc.*, 1989 WL 100517, at *6 (Del. Super.) (construing N.Y. U.C.C. law).

Nor must both parties be consciously aware of the usage. *Id* at *6; *Aceros Prefabricados, S.A. v. TradeArbed, Inc.*, 282 F.3d 92, 102 (2d Cir. 2002) (construing N.Y. U.C.C. law). Usage of trade is relevant when interpreting terms in the agreement between the parties, including damages. *Aceros*, 282 F.3d at 102. Of course, where a contract's terms are clear, they require no interpretation.

165. Freudenberg's card line operated twenty-four hours a day, seven days a week. According to its view of industry standards, i.e., usage of trade, Freudenberg expected to halt the line up to one hour per twenty-four for cleaning the card, and expected 95% of its production to be commercial grade material.

166. The court admitted Freudenberg's evidence concerning waste and down-time because it was based on regular practices allegedly observed by Freudenberg in its trade.

167. The five percent waste figure is not only supported by Freudenberg's experience, it was the same in FiberVisions's experience. (Robinson, 7/21, vol. II 80-81.)

168. According to Freudenberg, the two elements of damages and the applicable "usage of trade" factor for each are as follows:

(a) as a result of excess down-time, Freudenberg's card line lost sales revenue and incurred costs (Freudenberg proved the ordinary, expected down-time to be somewhat more than one hour in every

twenty-four hours (Casey, 7/20, vol. II 25, 29-31) for a card line as "usage of trade"; this part of Freudenberg's claim amounts to less than two hundred thousand dollars); and

(b) as a result of excess waste in the production from the line, Freudenberg lost sales revenue and incurred costs (Freudenberg proved the expected production of commercial grade material for a card line, 95% (Casey, 7/20, vol. II 24-31), as "usage of trade") (the claim equals more than five million dollars).

169. **Downtime**: Downtime, which is when Freudenberg's top sheet line did not operate, is an issue in this case.

170. Downtime, however, comprises only $169,000 of Freudenberg's $5.2 million claim for damages (the balance of the claim, the vast majority, is for waste).

171. **Lost Log Books:** As part of its standard operating procedure, Freudenberg maintained the following duplicate records of the operation and servicing of its production line:

(1) computerized records noting, among other things, down-time (Freudenberg used these records to calculate its damages); and

(2) handwritten logbooks containing the same information (Freudenberg did not use these records to calculate damages but it did use them to make a few minor adjustments to the computer based numbers).

172. The computerized records were business records kept in the ordinary course of business, they were produced during discovery, they were introduced at trial, and they are as reliable as the logbook records.

173. Freudenberg stored the logbooks at its production facility. After it terminated the production line, before filing suit and before counsel's involvement, the logbooks could not be found in their usual place.

174. When determining whether to impose sanctions for the unavailability of evidence, the Court should consider three factors: (1) the degree of fault and personal responsibility of the party who destroyed the evidence; (2) the degree of prejudice suffered by the other party; and (3) the availability of lesser sanctions that would avoid any unfairness to the innocent party while, at the same time, serving as a sufficient penalty to deter the conduct. *Positran Mfg., Inc. v. Diebold, Inc.,* 2003 WL 21104954, at *2 (D. Del.); *In re Wechsler*, 121 F. Supp. 2d 404, 415 (D. Del. 2000); *Brandt v. Rokeby Realty Co.*, 2004 WL 2050519 at *11-12 (Del. Super.).

175. When determining the fault and responsibility for unavailability of evidence, the court considers whether that party intended to impair the ability of the other side to litigate the case. *Positran*, 2003 WL 211 04954, at *2; *Wechsler*, 121 F.Supp. 2d at 415; *Brandt*, 2004 WL 2050519 at *11.

176. Because no one knows when, how, by whom and why the logbooks were destroyed or lost, the court cannot say whether they were lost or destroyed. Freudenberg's argument that the logbooks' disappearance had to have been harmless because it happened before Freudenberg hired counsel is unpersuasive. By the time the records went missing, Freudenberg had made claims against others, and its staff apparently was beginning to assemble this case.

177. The evidence suggests that FiberVisions's ability to challenge Freudenberg's damages was impaired by the logbooks' unexplained disappearance. But the harm caused by that pales beside the substantive shortcomings in Freudenberg's claims.

178. **FiberVisions's Technical Defenses**: As affirmative defenses, FiberVisions argues that: (1) Freudenberg failed to give timely notice that the fiber was defective and therefore, pursuant to the Delaware Uniform Commercial Code and the Supply Agreement, Freudenberg waived its right to claim breach of contract or warranty; and (2) Freudenberg accepted the fiber and, therefore, Freudenberg may not now reject the goods.

179. Freudenberg regularly notified FiberVisions that the fiber contained defects in material and workmanship, i.e., fused and/or contaminated fibers. Fused and contaminated fibers, however, amount to only a tiny percentage of

Freudenberg's alleged damages. Furthermore, when Freudenberg properly notified Fiber Visions about a fiber problem, the problem was addressed. To the extent that is not so, the remaining damages are nominal. As presented, Freudenberg's main claim concerns huge amounts of waste.

180. Notice need not include all objections, claim damages, or the threats of litigation. *Southern Illinois Stone Co. v. Universal Eng'g Corp.,* 592 F.2d 446, 451 (8th Cir. 1979); *Atwood v. Southeast Bedding Co.,* 485 S.E.2d 217 (Ga. Ct. App. 1997).

181. A series of complaints communicated at unspecified times can constitute reasonable notice under § 2-607(3)(a) of the Uniform Commercial Code. *Lewis v. Mobil Oil Corp.*, 438 F.2d 500 (8th Cir. 1971) (timely notice: a few days after using oil from a supplier, notice to supplier's dealer that he was not sure if proper oil was being supplied and various communications after that about problems); *City Welding & Mfg. Co. v. Gidley-Eschenheimer Corp.*, 451 N.E.2d 734 (Mass. App. Ct. 1983) (notice was timely where buyer and its customers made series of complaints about truck bodies to seller and seller met with buyer's attorneys and some of buyer's customers to discuss the defects); *Atwood,* 485 S.E.2d at 220-21 (finding notice sufficient where plaintiff retailer complained "over and over" and "on a regular basis" to manufacturer about quality of merchandise, and specified ten instances in which

he had complained to manufacturer's personnel that goods were defective); *Delano Growers' Co-op. Winery v. Supreme Wine Co., Inc.*, 393 Mass. 666, 473 N.E.2d 1066 (Mass. 1985) (retailer made numerous and repeated telephone calls to complain that retailer's customers had returned all of seller's wine).

182. As presented, Freudenberg complained to FiberVisions repeatedly about the quality of the fibers through formal written Corrective Action Requests, e-mails, telephone conversations, and meetings. (Casey 7/20, vol. I 83-84; *see also, e.g.*, JX11, JX17-40, PX1034, PX1043, PX1045, PX1097.)

183. The above notwithstanding, Freudenberg's complaints, the "CARs," related to problems with a few dozen specifically identified bales. Freudenberg is emphatic that its claim for millions in damages does not concern those specific bales. Freudenberg's claim concerns nominal defective fiber, a little downtime and a huge amount of alleged waste.

IV.

Conclusions

At first, the court assumed that the case primarily concerned Freudenberg's claim that FiberVisions routinely supplied defective fiber. Freudenberg, however, concedes that defective fiber forms only a small percentage of its total claim. That relatively small claim is not established by the record.

Freudenberg established several isolated instances where FiberVisions supplied fiber that was defective in one of several ways, e.g., contaminated bales. When Freudenberg filed a CAR, the parties generally worked through their differences and moved forward.

The court does not accept the argument that because the T-196® fiber sometimes did not look right to Freudenberg's staff, and Freudenberg could not process it to meet its staff's projections, the fiber was therefore defective. As presented above, the court suspects that at least some of the fused fiber complaints were caused by Freudenberg's own openers. At this point, the court considers any outstanding claims based on defective fiber as nominal and not established.

The serious dispute here concerns Freudenberg's inability to produce top sheet material meeting its projected yields. That inability, however, was not caused by defective fiber. It was caused, according to Freudenberg, by FiberVisions's refusal to provide better fiber, fiber more suited to Freudenberg's line, fiber that Freudenberg's personnel and equipment could process more efficiently. The huge majority of Freudenberg's claim concerns alleged waste and lost profits due to waste.

Freudenberg's damage calculations are sketchy and overstated as a matter of fact. In any event, Freudenberg's bigger and fundamental problem concerns the way it misreads the Supply Agreement. Freudenberg clearly waived any warranty

from FiberVisions that its fiber would be fit for the use to which Freudenberg intended to put the fiber. This is so despite the fact that FiberVisions acknowledged Freudenberg's production expectations.

The only relevant warranty FiberVisions gave was that the fiber it delivered would meet the Supply Agreement's specifications and be free from defects in material or workmanship. Once the parties agreed, which they did, that the specified fiber was FiberVisions's T-196®, the only warranty Freudenberg had was that FiberVisions would deliver good T-196®. If Freudenberg wanted a warranty that the fiber would run on Freudenberg's equipment at its intended speed, Freudenberg should not have waived any expressed or implied warranty that the fiber was fit for its intended use.

By the same token, FiberVisions did not promise to supply fiber to meet Freudenberg's anticipated production speeds. Under the contract, as the parties originally saw it, FiberVisions promised to provide specified fiber, in specified amounts, for a specified price. Further, if FiberVisions improved the specified fiber, on its own or with Freudenberg's help, then Freudenberg was entitled to receive the improved fiber. Otherwise, FiberVisions did not agree to supply a non-specified fiber, or to improve the specified fiber, at Freudenberg's insistence and at the original price.

Once the contract went into effect in December 2000, if Freudenberg decided it needed improved T-196®, or a different fiber altogether, the parties were only required to consult in good faith about any proposed change. FiberVisions's assurances and vague promises to improve its product, or to use state-of-the-art science and know-how and the like, on which Freudenberg now relies, did not give Freudenberg unilateral authority to insist on FiberVisions supplying different fiber from the T-196® fiber they originally agreed on, especially not at the same price. Nor was FiberVisions required to upgrade or improve its product, at its expense, on Freudenberg's demand.

Perhaps Freudenberg's production would have been more efficient and its output greater had FiberVisions supplied it with Varde-style fiber. As discussed, however, FiberVisions never promised Varde-style fiber, and Freudenberg never agreed to pay for anything but T-196®. Moreover, the extent, if any, that different or improved fiber, Varde-style or otherwise, would have generated more production and more profit for Freudenberg is speculative. Freudenberg's testing does not establish that Varde-style fiber, whatever that means, probably would have reduced Freudenberg's waste in any amount, much less in the amounts suggested.

The court suspects that with a more experienced, better trained, larger production team using more expensive equipment (multi-stage openers), the Durham

plant would have wasted less fiber and produced more rolls of top sheet material from the fiber supplied by FiberVisions. The court cannot guess whether, or by how much, Freudenberg's production would have improved with different fiber. The record is even sketchier when it comes to determining to what extent Freudenberg's lost profit is truly attributable to unrealized production.

Were the court to reach the amount of damages question, which it does not, FiberVisions's expert significantly undermines Freudenberg's homegrown analysis at every level. The court is not even satisfied that Freudenberg's math is right. In other words, if the court determined that Freudenberg is entitled to damages, they were not proved in a particular amount, to a reasonable probability.

In closing, there is little doubt that Freudenberg's staff is truly convinced that their state-of-the-art factory should have produced top sheet material in the amounts they expected, and they were disappointed and frustrated when the Durham plant's actual production fell short. There also is little doubt that as they worked, especially when they were cleaning the line's card, they became certain their problems were caused by FiberVisions's fiber. The court doubts that anything it says could change their minds.

Nonetheless, the fiber Freudenberg agreed to take from FiberVisions was basic. The Durham plant, in contrast, was cutting-edge and the staple fiber it was

processing was a recognized challenge. As a matter of probabilities, Freudenberg's disappointment was more likely caused by overly ambitious projections confounded by equipment problems exceeding its limited staff's control, and less likely because it received substandard fiber. Beyond that, FiberVisions did not promise to supply standard fiber at first, then better and better fiber until Freudenberg could process it to meet its projections. What it all boils down to is that Freudenberg received what FiberVisions promised to supply. FiberVisions is not liable for Freudenberg's alleged waste, nor for any breach of contract.

V.

For the foregoing reasons, ***JUDGEMENT IS ENTERED*** for FiberVisions L.P. and against Freudenberg Spunweb Company.

IT IS SO ORDERED.

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Judge

oc: Prothonotary (Civil Division)