

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF PENNSYLVANIA

CASHMAN EQUIPMENT CORP.	:	CIVIL ACTION
	:	
Plaintiff	:	
	:	
v.	:	NO. 06-3259
	:	
UNITED STATES FIRE	:	
INSURANCE COMPANY	:	
	:	
Defendant	:	

FINDINGS OF FACT AND CONCLUSIONS OF LAW

DAVID R. STRAWBRIDGE
UNITED STATES MAGISTRATE JUDGE

September 17, 2008

INTRODUCTION

Plaintiff Cashman Equipment Corporation (“CEC”), commenced this action against U.S. Fire Insurance Company (“U.S. Fire”) and HBC Barge, LLC (“HBC”) on July 25, 2006 for claims arising out of an alleged failure on the part of HBC to properly perform under a vessel construction contract (the “Contract”) it had with HBC for the construction of four barges. U.S. Fire is named in their capacity as the issuer of a performance bond (the “Bond”) binding itself to CEC for the performance of the Contract. On November 7, 2007, the parties voluntarily consented to jurisdiction by a United States Magistrate Judge, pursuant to 28 U.S.C. § 636(c) and Fed. R. Civ. P. 73, and the matter was referred to this Court. (Doc. 57).

Prior to that referral, the district court judge to whom this matter was assigned, the Honorable Michael M. Baylson, resolved by memorandum and order cross-motions for summary judgment. By his order dated October 26, 2007, Judge Baylson granted judgment to CEC on its liquidated damage claim for \$100,000 and also ordered the payment of prejudgment interest up to the date of

that order in the amount of \$47,733.17. (Doc. 55 at 9-12). Judge Baylson further determined that the CEC claims against HBC could not go forward in light of the bankruptcy status of HBC and that the resolution of the non-liquidated damages claim against HBC would be determined by trial. (Doc. 55 at 8-9). Trial was held before this Court sitting without a jury between April 29 and May 5, 2008. Upon completion of the transcript of the trial proceedings, closing arguments were heard on July 22, 2008.

For the reasons set out below we conclude that there were material defects in the application of certain protective coatings at the time of the construction of the barges and that plaintiff has proven the breach. We also conclude that the defenses asserted through HBC or by U.S. Fire directly are unavailing.

Proceeding to damages, we conclude that CEC has suffered harm and we are guided by the Restatement (Second) of Contracts § 348(2) (“Restatement § 348(2)”) in determining how to measure that harm. CEC relies upon the estimated cost to cure the defect (or the repair cost), asserting that the loss of value of the barges caused by the breach cannot otherwise be proven “with sufficient certainty.” *See* Restatement § 348(2).

We also conclude that U.S. Fire has proven that responsibility for some of the damage to the barges derives from acts or omissions of CEC and/or its lessees. The extent of that harm, however, is minimal and, given the fact that CEC may recover only against U.S. Fire a sum not to exceed the available face amount of the Bond (\$1,028,604.00), which is well below the cost of repair, this contribution does not impact the outcome of this case.

U.S. Fire has challenged CEC’s cost of repair approach to damages and has asserted that this approach is not the proper measure upon which to assess damage where that cost is “clearly

disproportionate” to the probable reduction in value to CEC caused by the defect. CEC accepts that consideration of any clear disproportionality must be undertaken but asserts that the burden falls upon the defendant to prove this disproportionality. U.S. Fire, to the contrary, asserts that the burden falls upon CEC. Each side, as we discuss within, presents authority from the Pennsylvania Superior Court, which they argue supports their particular position.

We read the Pennsylvania cases somewhat differently, however, and believe that a proper reliance upon Restatement § 348(2) sets up a shifting burden analysis where a plaintiff, once it has demonstrated the loss of value cannot be proven with “sufficient certainty,” would be obligated to offer “some evidence” that the cost of repair was “clearly disproportionate” to a “diminution in value” to it, to shift the burden to the defendant. We do not, however, have to predict how the Pennsylvania Supreme Court might resolve this issue in that we conclude that CEC has met its initial “some evidence” burden to our satisfaction and has therefore shifted the burden to U.S. Fire. We also conclude that U.S. Fire, whether it has the primary burden as suggested by CEC or whether it has had the burden shifted to it, has failed to meet that burden. We, therefore, conclude that CEC will be entitled to the entry of a judgment in its favor in the amount of \$1,028,604.00, which is the available face amount of the Bond, along with prejudgment interest.

I. Findings of Fact¹

A. Parties

1. CEC, at all times material to this case, was and is a corporation duly organized,

¹ Throughout this document we make reference to the exhibits provided by the parties and to our own findings of fact and conclusions of law. For ease of reference, we refer to CEC’s exhibits as “Ex. P-”, to U.S. Fire’s exhibits as “Ex. D-”, and to exhibits submitted jointly as “Ex. J-”. We refer to our findings of fact as “FF” and to our conclusions of law as “CL”.

incorporated and existing under the laws of Massachusetts with a principal place of business at 161 Granite Avenue, Boston, MA 02210. (Doc 1 at ¶ 3).

2. U.S. Fire, at all times material to this case, was and is a corporation duly organized, incorporated and existing under the laws of New York or Delaware, with a principal place of business at 305 Madison Avenue, Morristown, NJ 07960. (Doc 1 at ¶ 4).

3. HBC, at all times material to this case, was a limited liability company duly organized, incorporated and existing under the laws of Pennsylvania, with a principal place of business at 1800 Paul Thomas Boulevard, Brownsville, PA 15417. (Doc 1 at ¶ 5). HBC has since filed for Chapter 7 Bankruptcy in the United States Bankruptcy Court for the Western District of Pennsylvania at docket number 06-22153-BM. (See Doc. 55 at 2).

B. The Vessel Construction Contract

4. On or about August 23, 2002, CEC entered into the Contract with HBC for the construction of four barges, identified as JMC-120, JMC-121, JMC-140 and JMC-141. (Joint Stip. 1; Ex. J-1). The Contract was drafted by Dick Zellen, a senior vice president of CEC. (Joint Stip. 2; N.T. 4/29/08 at 27).

5. CEC purchased the barges in order to charter them out to various lessees as part of its normal business operations. (N.T. 4/29/08 at 137-41). HBC's former president and CEO, Walter Kuhns, testified that he was aware of CEC's business operations prior to the signing of the Contract. (See N.T. 5/1/08 at 111-15).

6. CEC and HBC subsequently agreed that the JMC-140 would be known as the JMC-142 and that the JMC-141 would be known as the JMC-143. (Joint Stip. 3). Throughout the remainder of these findings and conclusions, the barges shall be referred to as JMC-120, JMC-121,

JMC-142 and JMC-143.

7. The total Contract price was \$1,128,604.00. (Joint Stip. 4).

8. Section 1 of the Contract provided that: “*The vessel will be designed and built, but not classed, in accordance with the latest version of the ABS Rules for building and classing steel vessels for service on rivers and intercoastal waterways (inland rules).*” (Ex. J-1 at 1) (italics in original). ABS refers to the American Bureau of Shipping. (See N.T. 4/29/08 at 33).

9. Section 3 of the Contract provided for delivery afloat of all four barges by December 30, 2002, and that they be completed in a workmanlike manner in accordance with the drawings and specifications incorporated into the Contract. (Joint Stip. 5).

10. Section 6 of the Contract required all workmanship and procedures of HBC in the construction of the four barges to conform to good industry practice and be consistent with ABS standards. (Joint Stip. 6).

11. Exhibit “B” to the Contract contained specifications relating to the painting of the barges. (Joint Stip. 7).

C. Interior Paint Coating Specifications

12. The paint coating specifications for the interior of the barges, per Exhibit “B” to the Contract, read as follows:

Barge Interior and Exterior

- a. all steel will be whellabrated (sic) or sand blasted to SP-10 and primed with minimum $\frac{3}{4}$ mil zinc rich primer.
- b. Surface preparation – spot blast welds and damaged primer areas before painting.
- c. Paint entire Interior and Exterior with two coats

of epoxy 12 to 14 mils DFT.²

(Joint Stip. 8; Ex. J-1).

13. Steel corrodes over time and becomes thinner. (N.T. 4/29/08 at 67-69). This process is also known as “wastage.” (N.T. 4/29/08 at 68). Corrosion, or wastage, of steel can accelerate without protection, which can significantly reduce the lifespan of the barge. (N.T. 4/29/08 at 67-69).

14. The interior coatings specified for the barges were sought by CEC for the purpose of protecting against steel wastage and prolonging the barges’ useful lives. (See N.T. 4/29/08 at 57, 69, 145).

15. Plaintiff’s expert, Dr. Gerald Soltz,³ testified that the interior coating specifications, if applied properly, would have added approximately 10-15 years onto the useful service lives of the barges. (See N.T. 4/30/08 (Part I) at 63-64, 72, 109-14). Generally speaking, we find Dr. Soltz’s testimony on this point to be credible and consistent with other evidence.

16. It was HBC’s responsibility to meet these paint coating specifications. (See N.T. 5/1/08 at 123).

17. Pursuant to Section 6 of the Contract, in the event that any defective or faulty workmanship issues arose within twelve months of the date of the barges’ delivery and acceptance by CEC, including issues pertaining to the interior paint coatings, HBC, at its option, would either repair or replace the barge(s) at its expense and without delay, and return the barge(s) to service in

² A “mil” is a unit of measurement equal to one one-thousandth of an inch. The term “DFT” stands for “dry film thickness,” a measure of the depth of a coat of paint after the paint has dried.

³ The Court accepted Plaintiff’s submission of Dr. Soltz as an expert in “the field of corrosion protection of marine structures,” including “coating application.” (N.T. 4/30/08 (Part I) at 3).

the shortest time possible. (Joint Stip. 9).⁴

D. The Performance Bond

18. Section 2 of the Contract called for HBC to provide CEC with a payment and performance bonds for the full amount of the Contract price. (Joint Stip. 10).

19. On or about August 27, 2002, U.S. Fire issued the Bond (No. 6102371799) in the amount of \$1,128,604, with HBC as Principal and U.S. Fire as Surety. (Joint Stip. 11; Ex. J-2).

20. Pursuant to Section 1 of the Bond, U.S. Fire bound itself to CEC as “Owner” for the performance of the Contract. (Joint Stip. 12).

E. Paint Coating Failures and Deterioration

21. Pursuant to the Contract, HBC did construct and paint the four barges. (Joint Stip. 13).

22. HBC did not, however, apply the paint coat system to the internal compartments of the barges in accordance with the Contract specifications. (Joint Stip. 14). Although the Contract called for the interiors of the barges to be thoroughly coated with 12-14 mils DFT on all surfaces, they in fact only received an interior coating which averaged between five and seven mils. (See Exs. J-20, J-39; N.T. 5/5/08 at 19, 23).

23. In addition to the failure to meet that Contract specification, HBC’s overall

⁴ We recognize that U.S. Fire points to the Technical Data Sheet for the NCL paint (the brand of paint used on the barge interiors) which provided a narrow thirty day window within which additional coats of paint could have been inexpensively applied (*see* Ex. D-43) and argues that CEC’s failure to recognize and take this course of action should preclude its recovery. (*See* Doc. 108 at 14). We have no reason to doubt the factual basis of this assertion. However, as between the provisions of the Technical Data Sheet and the provisions of the Contract, we conclude that the provisions of the Contract dictate what CEC’s duties were with respect to proper notification. Those provisions provided CEC with twelve months to notify HBC of any defects. CEC complied with this provision. (*See* FF 116).

workmanship in applying the paint coatings was deficient. The record established that, among other deficiencies, the coatings were generally applied too thin throughout the interiors, and some areas were completely bare of any epoxy.⁵ (*See* Exs. J-29-32; N.T. 5/5/08 at 169).

24. Mr. Kuhns admitted that this poor workmanship was due in part to a failure in HBC's quality control process. (*See* N.T. 5/1/08 at 121-24). According to Mr. Kuhns, at least five HBC representatives responsible for quality control (Joe Verno, Scott Eicher, Floyd Eicher, Fran Ruth, and himself) missed the fact that the barges' interiors failed to receive the specified second coat of epoxy and thus received only half of the DFT specified in the Contract. (*See* N.T. 5/1/08 at 122-23). We find this testimony credible and consistent with other evidence.

25. The general failure in quality control included a failure to have in place a formal quality control program to inspect the coatings. (*See* N.T. 5/1/08 at 121).

26. The general failure in quality control also included a failure to provide the barge painters with the Contract specifications so as to inform them of what the DFT requirements were. (*See* N.T. 4/30/08 (Part III) at 29-30). Joe Verno, one of two paint leaders during construction of the barges, testified that he never saw the Contract specifications to inform him of what the DFT measurements of the interior paint coatings should have been. (*See* N.T. 4/30/08 (Part III) at 29: "I never, ever seen [sic] the specs of it, okay.")⁶ We find this testimony credible and consistent with other evidence.

27. Joe Verno also testified that the painters he supervised had no experience painting

⁵ At various points within the pleadings, filings, exhibits and testimony, the parties and witnesses alternatively and interchangeably refer to "paint," "coatings," and "epoxy." We assume that these terms refer to the same thing.

⁶ Relevant portions of the transcript of Mr. Verno's deposition were read into the record.

in confined spaces like those found in the barge interiors, but rather were hired “off the street.” (N.T. 4/30/08 (Part III) at 13-14). Further, Mr. Verno testified that painting in such confined spaces is very difficult and required the use of special protection equipment, fresh air hoods, and non-explosive lights. (*See* N.T. 4/30/08 (Part III) at 11-12). We find this testimony credible and consistent with other evidence.

28. Dr. Soltz, who inspected all four barges in May and June 2007, noted that there were extensive breakdowns in the coating systems and observed that:

- a. the applications were too thin – on some occasions only 50% of the specified thickness;
- b. there was a failure to complete the application of the epoxy layer in some areas;
- c. there was a failure to consistently apply proper stripe-coating⁷ over many welds and structural edges;
- d. there was a failure to correct faulty applications by sanding in areas where there were coating runs or sags;
- e. there were applications of coating over contaminated surfaces causing extensive breakdown in the coating in the bottom tank areas;

⁷ Stripe coating is the name of a method of using a paint brush to apply paint to edges, crevices and other areas where paint cannot be applied by spraying. (*See* N.T. 5/5/08 at 93; N.T. 4/30/08 (Part III) at 100). The parties dispute whether stripe coating was called for by the Contract.

Although the Contract did not expressly state that HBC was required to “stripe coat” the interior of the barges (*see* Ex. J-1), Dr. Soltz testified that stripe-coating “was inherent” in the Contract because it required HBC “to get the coating on in uniform thickness and [stripe-coating] is the only way you’re going to do it.” (N.T. 4/30/08 (Part III) at 99). Although stripe-coating comes at some expense (*see* N.T. 5/5/08 at 93; N.T. 4/30/08 (Part III) at 100), Dr. Soltz testified that it “is one of the cheapest, easiest methods and it’s one of the places where I would use the poorest labor to do it. I would not use my key painters, I would send the new people in” (*See* N.T. 4/30/08 (Part III) at 100). We find this testimony credible and consistent with other evidence.

- f. there were unworkmanlike applications of coatings in the bottom longitudinal stringer webs causing extensive breakdown of the coatings in that area; and
- g. there were faulty applications of coatings on the backside of the flanges on both the bottom and under deck longitudinal stringers causing breakdown of the coating in that area.

(See Exs. J-29-32). We find this testimony credible and consistent with other evidence. We also accept Dr. Soltz's testimony that these conditions have a significant impact upon the useful life of the barges. (See N.T. 4/29/08 (Part I) at 61, 64, 110-13).

29. Upon receiving notice of the paint coating failures, HBC engaged KTA-Tator, Inc. ("KTA") to inspect the barges and to determine the scope of work required to address the issues with the coating system. (Joint Stip. 23).

30. On August 30, 2005, E. Bud Senkowski of KTA issued a report (Ex. J-20) to Mr. Kuhns detailing his findings from the inspections. (Joint Stip. 24).

31. According to that report, Mr. Senkowski inspected the JMC-120 on May 20, 2005 and found that the existing coating system, while thinner than specified, was providing some protection to the steel from corrosion, with the serious exception of the top of the flanges, where an epoxy topcoat was missing from the zinc primer. He also reported that: "coating defects were found throughout the interior spaces of the vessel"; low coating thickness (average of 6.65 mils) that was approximately 50% of the Contract specifications; and that there existed flange edge rusting, crevice rusting, runs and sags, missing coating, rusting at welds, and tacky coating. (Joint Stip. 25; J-20).

32. According to the same August 30, 2005 report, Jim Saldutti of KTA inspected the JMC-121 on April 28, 2005 and also identified significant coating defects including: low coating thickness (average of 6 to 8 mils) that was only 50% of the Contract specifications; delaminated and

cracked coating; flange edge rusting; crevice rusting; rusting at welds; coating misses and holidays⁸; and workmanship issues. (Joint Stip. 26; J-20).

33. According to the same August 30, 2005 report, Mr. Senkowski inspected the JMC-142 on April 14, 2005 and identified significant coating defects including: low coating thickness (average of 6.29 mils) that was approximately 50% of the Contract specifications; delaminated and cracked coating; flange edge rusting; crevice rusting; uncured epoxy coating; rusting at welds; missing coating; and runs and sags. (Joint Stip. 27; J-20).

34. According to the same August 30, 2005 report, Mr. Senkowski inspected the JMC-143 on August 17, 2005 and found that “[t]he coating system installed throughout the barge compartments was generally in good condition and was adhered to the steel surfaces.” He also noted, however, that the average coating thickness (7.28 mils) was only 55% of the specified total film thickness and he identified isolated coating defects including: blistering; flange edge rusting; crevice rusting; rusting at welds; coating misses and holidays; and runs and sags. (Joint Stip. 28; J-20).

35. Mr. Senkowski testified that, in sum, approximately 58% of the interior coatings were failing to the point where they were no longer protecting the steel surfaces effectively and that those coatings essentially had no more useful life. (*See* N.T. 5/5/08 at 131, 134). We find this evidence credible and consistent with other evidence.

36. Jeffrey York, CEC’s East Coast fleet sales manager, testified that, due to HBC’s failure to apply the interior coatings properly, they were not serving their purpose in protecting and

⁸ A paint “holiday” is an “area where the paint coating is so thin you can see through it. Or there’s no paint coating at all.” (Collyer Dep. at 19).

extending the useful service life of the barges. (*See* N.T. 4/29/08 at 154). Dr. Soltz testified that the useful service lives of the barges have been decreased by at least 10 years due to the improperly applied coatings. (*See* N.T. 4/30/08 (Part I) at 61, 64, 110).

37. We find the testimony of Mr. York and Dr. Soltz generally credible on both points, and we accept that the deficiencies in the coating application have substantially diminished the useful service lives of the barges.

F. Cost of Curing the Defects

38. We now move to our consideration of the evidence concerning the cost of repairs necessary to cure the defects. In order to properly correct the coating system failures and ensure that the interior coating system would comply with the Contract specifications, Dr. Soltz testified and set out in his report that it would be necessary to remove all of the existing epoxy in all of the internal compartments in each of the four barges by completely sandblasting the loose epoxy, to then thoroughly clean the compartments with fresh water, and finally to re-coat them with two full coats of epoxy. (*See* N.T. 4/30/08 (Part I) at 92-93; Dr. Soltz report in Ex. J-33; Exs. J-29-32).

39. Dr. Soltz also testified and set out in his report that it would be necessary to remove the existing epoxy in all of the internal compartments, even where the epoxy was intact and fully adhering to the steel, rather than simply removing the defective epoxy, due to his belief that the extent of paint failure increased the likelihood of latent defects existing within the coating system and, given the expansive extent of the barges' coating system failures, the impracticality of attempting to remove isolated areas of epoxy. (*See* N.T. 4/30/08 (Part I) at 92-94; Dr. Soltz report in Ex. J-33; Exs. J-29-32).

40. On April 22, 2008, Main Industries, Inc. provided an estimated total cost in the

amount of \$2,347,754.00 to perform the paint coating work recommended by Dr. Soltz on all four barges in the Norfolk, Virginia area. (See Ex. J-42). This estimate was lower than the August 1, 2007 estimate from Colonna's Shipyard which provided an estimated total cost in the amount of \$3,943,234.00 to perform the same work. (See Ex. J-44).

41. The Main Industries estimate was broken down as follows:

Barge	Amount
JMC-120	\$562,082
JMC-121	\$562,082
JMC-142	\$611,795
JMC-143	\$ 611,795
TOTAL:	\$2,347,754

(Ex. J-42; N.T. 4/30/08 (Part II) at 84-103).

42. Mr. Senkowski disagrees with Dr. Soltz's conclusion that it would be necessary to remove all epoxy from the barges' entire interior compartments. In Mr. Senkowski's opinion, Dr. Soltz's proposed remediation is excessive and unnecessary in that 42% of the coating system is adequately protecting the steel and does not require any repairs. (N.T. 5/5/08 at 86-88; *see also* Exs. D-45, D-52, D-55, D-64 (photos showing fully intact coatings that do not need to be repaired)). According to Mr. Senkowski, "There's no rational reason to remove a coating system that's protecting the steel." (N.T. 5/5/08 at 89-90).

43. Mr. Senkowski testified that, contrary to Dr. Soltz's assertion, it is in fact feasible to remove only the defective portions while leaving intact the unaffected portions. He testified that certain blasting nozzles and rubber mats could be used to remove affected paint while not disturbing the intact areas, which could be separately protected. (N.T. 5/5/08 at 90-91). We find Mr.

Senkowski's testimony regarding the desirability of stripping only that paint which is deficient while leaving intact that paint which is properly serving its purpose to be generally credible and we accept that some, perhaps significant, savings could be achieved by effectuating a re-application of the coatings upon less than 100% of the interior compartmental space.

44. While Mr. Senkowski provided an outline setting out his specific suggested repairs, he did not prepare formal specifications and he did not provide an estimate as to how much it would cost to perform those specific repair measures, even though KTA is capable of providing such an estimate. (*See* Ex. J-39; N.T. 5/5/08 at 131).

45. Instead, at CEC's request (N.T. 5/5/08 at 98-99), Raymond Challoner of Main Industries provided an estimated cost of implementing the repairs proposed by Mr. Senkowski. Mr. Challoner's estimate for all four barges was \$1,979,992.00. (*See* Ex. P-9a; N.T., 5/5/08 at 119-21).

46. We recognize that certain differences exist between Mr. Challoner's estimate and Mr. Senkowski's precise description of suggested repairs. For example, Mr. Challoner's estimate calls for abrading the interior surface to SP-7, a specification not expressly called for in Mr. Senkowski's recommendations. (*See* Exs. P-10, J-39; N.T. 5/5/08 at 122-25). Further, while Mr. Senkowski recommends only a single coat of epoxy to a thickness of ten to twelve mils, Mr. Challoner's estimate calls for two coats of epoxy of five to six mils each. (*See* Ex. P-10; N.T. 5/5/08 at 126). Mr. Challoner opined that the two layer method provided "a better coating system" (N.T. 5/5/08 at 117) and, importantly, were called for in the Contract specifications (*see* Ex. J-1). Further, Mr. Challoner's estimate included a line item for a coatings inspector while Senkowski's summary did not expressly call for one. (*See* Ex. P-10; N.T. 5/5/08 at 125-26). Additionally, Mr. Challoner's estimate included stripe coating, while stripe coating was not mentioned in Mr. Senkowski's

summary. (*See* Ex. P-10; N.T. 5/5/08 at 126).

47. Additionally, Mr. Challoner's estimate also called for re-abrading the entire interior paint surface, including that paint which was adequately serving its purpose, prior to the application of the epoxy. (*See* Ex. P-10; N.T. 5/5/08 at 124-25). Mr. Senkowski, however, called for a "self-priming high build epoxy." (*See* N.T. 5/5/08 at 90, 124). Mr. Challoner called for a full re-abrasion because the product data sheet for the epoxy originally used "has a recoat window of thirty days" beyond which "the epoxy must be abraded, requiring additional preparation costs." (*See* N.T. 5/5/08 at 123-24).

48. Other than the discrepancies described above, Mr. Challoner's estimate substantially covers the repairs called for by Mr. Senkowski. It is the most accurate, and indeed the only, estimate in the record of the cost associated with implementing the repairs called for by Mr. Senkowski.

49. Any and all of the aforementioned repairs would be significantly more expensive to complete now than if the coatings had been properly applied and were consistent with the Contract specifications at the time of construction. (*See* N.T. 4/30/08 (Part I) at 71-72). Indeed, there was some evidence that the difference in cost would be up to ten times more than if the work had been done properly in the first instance. (*See* N.T. 4/30/08 (Part II) at 46).

50. Mr. Senkowski estimated that it would have cost \$11,021 per barge to add another coat of paint prior to the barges leaving HBC. (*See* N.T. 5/5/08 at 92-93). Mr. Kuhns agreed with that estimate and testified further that putting an extra coat on the barges would have cost four to five percent of the total cost of the Contract. (*See* N.T. 5/1/08 at 142, 151-52). CEC is not responsible for this circumstance.

51. In addition to the cost of repair, CEC would be required to tow all four barges from

their existing locations to Norfolk, Virginia to have the coating work performed. (N.T. 4/29/08 at 156). CEC received estimated towing costs of total amounts ranging from \$168,080.00 to \$172,530.00 each way. (N.T. 4/29/08 at 157-158; *See* Ex. P-6). Those estimates have not been challenged and we accept them.

52. Each of the four barges would be out of service for a period of approximately 40 calendar days while the coating work would be performed. (*See* Ex. J-42). According to Mr. York, CEC charters each of the four barges for a price between \$6,850.00 and \$8,000 per month. (N.T. 4/29/08 at 204; *See* Exs. D-16, D-19, D-32, D-33). This element of damage has not been challenged and, subject only to any saved expenses, we accept it as an appropriate element of damage caused by the defective work.

G. CEC's Potential Contribution to Paint Coating Deterioration

53. We now move to a consideration of CEC's potential contribution to the harm caused. U.S. Fire, through the testimony of Mr. Senkowski, suggests that "[t]he poor performance of the tank coating system has been accelerated substantially due to Cashman's lack of quality control and its failure to keep water, sand, dirt and other harmful substances out of the tanks. The fact that Cashman has permitted those substances to accumulate and to remain within the buoyancy tanks has significantly increased the corrosion and paint film breakdown." (Ex. J-39). Mr. Senkowski conceded, however, that he is unable to quantify the amount of failure or corrosion attributable to the acts or omissions of CEC or their lessees. (N.T. 5/5/08 at 170). We proceed to discuss each potential contributing factor in turn.

1. Usage of Barges in Saltwater

54. Saltwater has a tendency to corrode steel more quickly than fresh water. (*See* N.T.

4/30/08 (Part I) at 108; N.T. 5/5/08 at 83-84). CEC operates its barges almost exclusively in salt water. (See N.T. 4/29/08 at 36, 140).

55. Although CEC may not have expressly informed HBC that it intended to use the barges in saltwater prior to the execution of the Contract (see N.T. 5/1/08 at 67, 187), Mr. Kuhns testified that it was “evident” that the barges would be used in that environment (N.T. 5/1/08 at 109). Scott Eicher, former vice president of operations at HBC (N.T. 5/1/08 at 160), also agreed that the barges “can be in salt water.” (N.T. 5/1/08 at 212-13). Gabe Centofanti, formerly in charge of sales, engineering and plant maintenance at HBC (Centofanti Dep. at 51-52),⁹ agreed that the paint specifications were proper for saltwater use. (See Centofanti Dep. at 70).

56. Mr. Senkowski confirmed that the barge interior coatings were “specified for salt water environments, and [have] apparently worked okay.” (N.T. 5/5/08 at 136). He did not proffer any estimate regarding the extent to which saltwater exposure may have contributed to the deterioration of the interior paint coatings. We give no weight to CEC’s operation of the barges in saltwater as a contributing factor to the damage to the barges.

2. Exposure to Water and Ballasting Within Barge Interiors

57. When water enters and remains in a compartment, condensation forms which creates a “rainforest” effect inside the compartment. (See N.T. 5/1/08 at 196; N.T. 5/5/08 at 45-46; see also Ex. P-3a1-16 (pictures depicting the effect of water in the compartments)). Water is harmful because it gradually migrates into the coating and eventually to the surface of the steel, causing rust. (See N.T. 5/5/08 at 41-42). When coatings are subjected to alternating dry/wet cycles, the coatings loosen

⁹ Deposition testimony of Mr. Centofanti was offered and accepted into evidence on May 1, 2008. (See N.T. 5/1/08 at 17-21).

more quickly than if they remained dry or were constantly immersed. (*See* N.T. 5/5/08 at 45-47).

58. Ballasting is the act of intentionally filling one or more barge compartments with water to lower or to level a barge so that the water inside the barge compartment(s) acts as a counter-balance to a load being applied upon the barge exterior. (*See* N.T. 4/29/08 at 142).

59. The barges built by HBC for CEC were not designed to be ballasted. (*See* N.T. 5/1/08 at 69-70, 177; Centofanti Dep. at 69). Both Mr. Kuhns and Jamie Cashman, President of CEC, agree that CEC and HBC never discussed whether CEC intended that the barges be ballasted. (Cashman Dep. at 26; N.T. 5/1/08 at 71).¹⁰

60. The barges would have been designed differently if CEC intended for them to be ballasted. Specifically, “they would have had a location and a method to pump the water out. You would want to have vents on the tanks. And [HBC] would have to have done a calculation so that the compartments could withstand the internal pressures of the water.” (Centofanti Dep. at 71-72). Further, HBC would have used “specific coatings designed for ballast tanks.” (Centofanti Dep. at 73). HBC would also have installed wear plates at the bottom of the manholes so that when the barges were ballasted, the water rushing into the tanks would hit the wear plates and not destroy the coatings. (*See* N.T. 5/1/08 at 70, 179). Finally, the bulkheads would have been solid welded rather than stitch welded. (*See* N.T. 5/1/08 at 70, 178-79).

61. Mr. Cashman admitted that CEC’s lessees have ballasted the barges: “We don’t like the customers to ballast the barges, but they all do, you know. . . . Just a normal practice in the industry. People ballast the barges down. We don’t encourage it but they always do.” (N.T. 5/2/08

¹⁰ Deposition testimony of Mr. Cashman was offered and accepted into evidence on May 2, 2008. (*See* N.T. 5/2/08 at 3-8).

at 5). We accept Mr. Cashman's concession that generally speaking, ballasting occurs.

62. CEC charter agreements provide that all compartments must be cleaned and dried and free from any traces of water at the end of the charter. (*See* D-19; N.T. 4/29/08 at 98-99). Despite this provision, CEC does not require its lessees to remove water from the tanks when the water level is the same at the end of the charter as it was when the charter began. (N.T. 4/29/08 at 193-94).

63. Mr. York conceded that CEC sometimes failed to take appropriate steps to remove several inches of water found in various compartments of certain barges. (*See* N.T. 4/29/08 at 189, 193-94; *see also* D-15; N.T. 4/29/08 at 180-81 and D-18; N.T. 4/29/08 at 181-82).

64. Dr. Soltz testified that CEC was making "a reasonable effort to keep water out of the tanks but they're not succeeding and that's one of the problems." (N.T. 4/30/08 (Part I) at 86). He explained, however: "Could [CEC] do more [to keep water out of the compartments]? I think you could say yes." (N.T. 4/30/08 (Part I) at 86). Dr. Soltz agreed, for instance, that although the compartments of the barges do not contain pumps to expel water, CEC could pump the water out if an extension cord were run to the barge. (N.T. 4/30/08 (Part I) at 85). In his opinion, however, this pumping would not be a "practical marine operation." (N.T. 4/30/08 (Part I) at 85).

65. Ballasting, however, is not the only means by which water enters the barge compartments. Importantly, Mr. York and Mr. Senkowski testified that even if the barges are not ballasted, they would still accumulate atmospheric moisture. (*See* N.T. 4/29/08 at 143-144; N.T. 5/5/08 at 143-45). It is not practical to suggest the barge compartments can be kept completely dry – some amount of standing water inevitably accumulates. (*See* N.T. 4/29/08 at 143-144). We found Mr. York's testimony to be credible on this point.

66. Ambient condensation or moisture occurs within a barge compartment in the normal

course of barge operations. Every time a barge hatch is opened, moisture and condensation enter the compartment and remain trapped inside when the hatches are closed. (*See* N.T. 5/5/08 at 143-45).

This creates the rainforest effect described above. (*See* N.T. 5/5/08 at 143-45).

67. When Mr. Senkowski first inspected the barges in 2005, there was no ballast in any of the compartments. (N.T. 5/5/08 at 143-44). There was only ambient condensation. (N.T. 5/5/08 at 144-145).

68. Without any evidence of ballasting, and with only ambient condensation present, Mr. Senkowski still found extensive coating defects in all four barges. (*See* Ex. J-20; N.T. 5/5/08 at 144-145).

69. Mr. Senkowski did not discover standing water in the barge compartments until his inspections in 2007. (N.T. 5/5/08 at 36-37; J-39).

70. Dr. Soltz agreed that application of water within the compartments would cause a coating to “develop a problem quicker” (N.T. 4/30/08 (Part I) at 83). In his opinion, however, the entry of water or other contaminants into the tanks should not have made a difference if the coatings had been applied properly at the time of construction. (N.T. 4/30/08 (Part I) at 34, 83).

71. According to Mr. Senkowski, approximately 27% of the total damage to the coatings in the four barges was attributable to standing water in the bottom of the compartments. (*See* N.T. 5/5/08 at 174).

72. Mr. Senkowski did not distinguish, however, between water in the compartments which resulted from intentional ballasting, which CEC could be deemed responsible for, and water which resulted from ambient condensation associated with normal operations. Likewise, his opinion was based upon what he saw with the inadequate coatings, not with coatings applied as per the

specifications. Accordingly, we are unable to determine the extent to which CEC may be deemed to have contributed to the deterioration of the interior coatings through ballasting of the compartments.

73. We conclude that while there may have been some contribution from CEC, we do not consider it to be a significant factor in contributing to the harm suffered.

3. Exposure to Sand

74. Sand also holds moisture and can work to corrode steel. (*See Centofanti Dep. at 151*). Dr. Soltz agreed that when sand gets wet and sits on top of a coating, it may hasten the breakdown of a coating which has been poorly applied. (*See N.T. 4/30/08 (Part I) at 108*).

75. Mr. York admitted that HBC made no effort to remove sand and gravel from the JMC-143. (*N.T. 4/29/08 at 198*). Even though the JMC-143 had been offcharter for several months at the time of trial, sand and gravel remained in it. (*See N.T. 4/29/08 at 198; Ex. D-51*).

76. There is no evidence in the record, however, that sand had existed within any of the compartments of the other three barges at any time prior to trial. (*See J-39 (only discussing presence of sand in the JMC-143)*).

77. Mr. Senkowski did not proffer any opinion regarding the extent to which sand may have contributed to the deterioration of the interior coatings. We consider from the limited evidence of sand in any of the barges that it played no meaningful role in contributing to the harm suffered.

4. Reverse Impact Damage

78. Both Dr. Soltz and Mr. Senkowski agree that impact damage to a barge's exterior will affect a barge's useful life. (*See N.T. 4/30/08 (Part I) at 87; N.T. 5/5/08 at 85*).

79. Impact to the barge exterior causes the coating on the reverse side to delaminate.

(N.T. 5/5/08 at 56). Then, as water works its way into the unrepaired damaged area, the coating delaminates further. (N.T. 5/5/08 at 56). Even where coatings have been applied precisely to Contract specification, reverse impact damage will affect the coating. (N.T. 5/5/08 at 56).

80. According to Mr. York, CEC's lessee of the JMC-121 created extensive impact damage to the interior of that barge. (*See* Exs. D-22, D-23; N.T. 4/29/08 at 182-184). Several photos of this damage were introduced into evidence. (*See* Exs. D-58, D-59, D-68, D-71, P-3c16, P-3c25). In areas where this damage occurred, the coating has delaminated. (*See* Exs. D-22, D-23, D-58, D-59, D-68, D-71, P-3c16, P-3c25; N.T. 4/29/08 at 182-184). CEC has not repaired any of this impact damage. (N.T. 4/29/08 at 188). Mr. York believes that the impact damage to the JMC-121 will adversely affect the useful life of the barge. (N.T. 4/29/08 at 208).

81. We accept that HBC will not be responsible for coating failures resulting from reverse impact damage. (*See* N.T. 4/30/08 (Part I) at 51).

82. We also accept the testimony of Mr. Senkowski who estimated that approximately 10% of the coating failure in the JMC-121 was due to reverse impact damage, but that only approximately 3% of the total overall deterioration of the interior coatings on the four barges is due to this cause. (N.T. 5/5/08 at 173).

5. Weld Burns Caused by Welding to Barge Exterior

83. When construction machines or materials are welded to the deck of a barge, a "weld burn" is created on the opposite side. (*See* N.T. 5/5/08 at 30). Coatings that have been subjected to weld burns can no longer effectively protect the steel. (*See* N.T. 5/5/08 at 52). Several photos of weld burns within barge compartments were presented at trial. (*See* Exs. D-49 (showing six different weld burns inside one compartment of the JMC-143); D-57 (showing two weld burns inside one

compartment of the JMC-120)).

84. CEC generally does not charge its customers to repair any weld burns to the interior of an HBC barge. (*See* N.T. 4/29/08 at 160-62). CEC has not repaired the weld burns on the inland barges at issue. (N.T. 4/29/08 at 199).

85. We accept that HBC will not be responsible for coating failures resulting from weld burns. (*See* N.T. 4/30/08 (Part I) at 51).

86. We also accept the testimony of Mr. Senkowski, however, who estimated that weld burns made up a mere 1% of the total overall coating failures on the four barges. (N.T. 5/5/08 at 135).

6. General Maintenance of Paint Coatings

87. According to Mr. Senkowski, a coating should be periodically maintained. (N.T. 5/5/08 at 94). Mr. Senkowski testified, “When coating system life is given – it’s predicated upon doing periodic maintenance on the coating.” (N.T. 5/5/08 at 94.) He added, “There’s also the requirement that when a coating system is applied on any structure, you have to periodically do maintenance to realize that fifteen years. You can’t just put the coating on and walk away from it for fifteen years.” (N.T. 5/5/08 at 139).

88. Mr. Senkowski saw no indication that the interior coatings in any of the barges had been maintained. (N.T. 5/5/08 at 94). Mr. York admitted that none of the money that CEC has recovered from its customers due to damage beyond normal wear and tear has been used to maintain or to repair the interior coating of any of the HBC barges. (N.T. 4/29/08 at 170).

89. Dr. Soltz agreed that how well a barge is maintained in general will possibly affect its useful life. (N.T. 4/30/08 (Part I) at 88). He testified, however, that maintenance of interior

coating systems in particular was “very rarely done” and was generally “ineffective.” (N.T. 4/30/08 (Part I) at 64-65). He further testified that, given the pervasive extent of the deterioration of the interior coatings on the four barges, there was no effective or practical manner by which to maintain those interior coatings. (N.T. 4/30/08 (Part I) at 64-65).

90. Mr. Senkowski did not proffer an estimate regarding the extent to which any general failure by CEC could be deemed to have contributed to the deterioration of the interior coatings. We accept that this is a factor within CEC’s control, but also accept that the extent of the poor workmanship of the coating application would have made effective maintenance difficult.

H. Valuation of the Barges

91. As we discuss within, the parties disagree about how to approach the damage aspect of this case. They accept that the cost of repair is generally a proper approach and they also accept that it may not be appropriate where that cost is “clearly disproportionate” to the probable “diminution in value” of the barges. *See* Restatement § 348(2). In that we must consider diminution of value such as to assess the extent of any disproportionality, we now turn to the question of valuation. Evidence of market value of the barges was offered based upon “Condition and Valuation Surveys” (“C&V”) and “Security Schedules.” In consideration of this evidence we make several findings.

92. Michael Collyer, an independent and experienced marine surveyor, was retained by CEC to undertake a valuation of the four barges upon the completion of construction but prior to launching. These valuations are set out in C&V’s submitted on July 7, 2003, August 20, 2003 and February 10, 2004. They reflect an amount totaling \$1,650,000 broken down as follows:

Exhibit	Barge	Date of Survey	Amount
J-8	JMC-120	8/20/03	\$375,000
J-10	JMC-121	2/10/04	\$375,000
J-6	JMC-142	7/7/03	\$450,000
J-4	JMC-143	7/7/03	\$ 450,000
TOTAL:			\$1,650,000

(Exs. J-4, J-6, J-8, J-10).

93. CEC relied upon and utilized these C&V's to assist it in setting charter prices, securing adequate insurance and supporting its financing. (*See* N.T. 4/29/08 at 74-77). At the time of these evaluations, there was no evidence of any deterioration of the coating system. (*See* N.T. 4/29/08 at 73-74, 150-51).

94. The record contains evidence which reflects that further appraisal surveys were undertaken, also by Michael Collyer, in March 2006 (*see* Exs. D-25-27) and at various other times.¹¹ The March 2006 appraisals, which pertain to the JMC-120, JMC-142 and JMC-143, reflect increases in value of \$25,000 for each of these three barges. No change in value is reflected with respect to the JMC-121.

95. We have some reservations about the weight which we should give to Mr. Collyer's appraisals. As discussed above, the August 20, 2005 KTA report (Ex. J-20), which predates the 2006 Collyer appraisals, contains many negative comments about the condition and deterioration of the barges' interior coatings. Mr. Collyer, however, appears to have overlooked these conditions reported

¹¹ We recognize that certain of these reports are signed by Dana Collyer, also of Marine Safety Consultants, Inc. We find no need to distinguish between the two during the course of this discussion and, for ease of reference, refer solely to Michael Collyer, rather than Dana, as the author of the reports.

by Mr. Senkowski. Further, even where he does take note of certain problems with the interior coatings, his observations are coupled with other inherently inconsistent statements which in our view undermine the credibility of his valuation conclusions.

96. With respect to the JMC-120, Mr. Collyer makes no comment regarding the interior paint coatings in his March 15, 2006 report. (Ex. D-25). The same report reflects a \$25,000 increase in value from the initial 2003 C&V. (*Compare* Ex. J-8 *with* Ex. D-25).

97. With respect to the JMC-121, despite issuing reports in July 2004 and December 2005 (*see* Exs. D-15, D-22), Mr. Collyer makes no reference to any interior paint deterioration until his January 11, 2006 “Off-Hire Survey” (Ex. D-23) where, for the first time, he notes three separate areas where there was evidence of paint deterioration. In bay #5 of port tank #1, he reported that “paint coatings in this tank are starting to peel and chip. They are flaking in areas 6"x6"." (Ex. D-23). In bay #5 of port tank #2 he reported that “paint coatings are peeling in sheets off of the deck,” and the same conditions existed in bay #5 of port tank #3, where “total paint coatings are down to about 40%.” (Ex. D-23). Mr. Collyer’s “On-Hire Survey” of June 26, 2006 for the same barge (Ex. D-29) continued along this line. There Mr. Collyer reported that “coatings are failing throughout” in center tanks #1, #2 and #3 in the starboard forward rake tank, in starboard tanks #1, #2 and #3 and in the aft cofferdam. Mr. Collyer’s August 11, 2006 “On-Hire Survey” with respect to the same barge (Ex. D-31) reflected comparable findings. Despite these apparently negative findings, the valuations provided in the June 2006 report reflected no change in value from the \$375,000 valuation appearing in the initial February 10, 2004 C&V. (*Compare* Ex. J-10 *with* Ex. D-29).

98. With respect to the JMC-142, Mr. Collyer did note as early as September 2004 that the barge contained paint coatings which were alternatively “popped,” “disturbed,” or “peeled,” and

even noted that one area contained “major paint failures.” (Ex. D-18). That report, however, in several places also reflected either “good coatings” or “100% coatings,” but also reflected a \$10,000 decrease from the \$450,000 valuation appearing in the initial July 7, 2003 C&V. (*Compare* Ex. J-6 with Ex. D-18). Despite noting the same observations with respect to the interior coatings as those made in September 2004, Mr. Collyer’s March 15, 2006 report for the JMC-142, under the section “Internal Conditions Found,” concluded that, “Paint coatings are considered very good.” (Ex. D-26). That report also reflected an “Orderly Liquidation Value” of \$475,000.00, a \$25,000 increase in value over his September 2004 valuation. (*Compare* Ex. D-18 with Ex. D-26). The September 27, 2006 “On Hire Condition and Valuation Survey” for the JMC-142 made virtually the same observations as the previous two reports, yet also reflected a fair market value of \$440,000, some \$35,000 less than what was reported in the March 15, 2006 report as to the same vessel. (*Compare* D-26 with D-34). The same \$440,000 value was provided in the September 2004 report. (*Compare* D-18 with D-34). No explanation has been given for these differing valuations.

99. With respect to the JMC-143, Mr. Collyer observed no deficiencies with respect to the interior coatings in his March 17, 2006 appraisal survey report. (Ex. D-27). He, rather simply commented that, “Paint coatings are considered very good” and reflected a \$25,000 increase in the barge’s value to \$475,000.00. (*Compare* J-4 with D-27).

100. These observations, along with references to various “curious statements” and “inaccura[cies]” appearing in Mr. Collyer’s reports, prompted Mr. Senkowski, in his July 2007 report to “question the credibility of Mr. Collyer as a competent coatings inspector.” (J-39 at § II-pg.11, § III-pg.6, § IV-pg.5, § V-pg.6). We agree with Mr. Senkowski and give only minimal weight to Mr. Collyer’s opinions on value.

101. It is evident, and we so find, that Mr. Collyer's C&V's were provided to Raymond Riddle, CEC's chief financial officer, who would regularly submit them as part of a "Security Schedule" to the lenders who were financing the barges. (*See* Riddle Dep. at 27-28; Exs. D-41 and D-48).¹²

102. The CEC Security Schedules submitted on March 31, 2007 and March 28, 2008 both reflected the same valuations:

Barge	Value
JMC-120	\$400,000
JMC-121	\$375,000
JMC-142	\$475,000
JMC-143	\$ 475,000
TOTAL:	\$1,725,000

(*See* Exs. D-41 and D-42). We note that Mr. Riddle did not reflect the reduction in value to JMC-142 which Collyer reported in his September 2006 report. (*See* Ex. D-34).

103. At the time that we were asked to admit the various exhibits which reflected some evidence of the value of the barges from the July 2003 time period until the last CEC Security Schedule dated March 2008, we advised counsel that we would, in this non-jury matter, admit them, but consider them for whatever weight we felt they deserved. In doing so, we consider that the valuation reports are in a format which is commercially expedient, but fall somewhat short of what we would normally expect to properly form the basis of an acceptable opinion on value. While we are told by Mr. Collyer that the valuations are made ". . . in comparison to vessels of like size, age

¹² Deposition testimony of Mr. Riddle was offered and accepted into evidence on May 2, 2008. (*See* N.T. 5/2/08 at 14-19).

and service, and in consideration of the current market”(see Exs. J-4, J-6, J-8, J-10, D-18, D-25-27, D-29, D-31, D-34), the reports provide no detail upon which we could, in fact, assess the validity of the comparisons referred to. Likewise, U.S. Fire’s evidence does not appear to accommodate, hypothetically or otherwise, the evidence raised by CEC concerning the deficiencies in the applications of the coatings and what effect, if any, these deficiencies would have upon the longer term value of the barges.

104. Similarly, we have difficulty with CEC’s income approach evidence on valuation in that it is based upon certain assumptions which appear to us to be somewhat questionable. CEC has asked us to take the approximate \$7,000 of revenue per month generated by each barge, multiply that by 12 months in a year and multiply that by the assumed 10 year reduction in the barges’ useful life as per the testimony of its principal expert, Dr. Soltz. (See Doc. 107 at 6). This would bring us to a number of \$840,000 per barge, or a total estimate of lost revenue for the four barges of \$3,360,000. CEC acknowledges that this submission asks us to make certain questionable assumptions, particularly the assumption that all barges would, in fact, be leased all 12 months for the entire anticipated 10 year period. (See Doc. 107 at 6). CEC has not presented us with sufficient evidence indicating the extent to which the barges had been leased during the period of their operation or any other basis upon which such a projection could be made. Likewise, CEC has not provided us with any evidence of what its costs would be in maintaining this operation over the period of time for which the projected loss occurs. CEC has convinced us, however, that it has suffered a real economic loss associated with this clear breach of contract, and that the evidence of projected revenue streams, despite their inherent limitations, are of such an order as to constitute “some evidence” of loss of

value not clearly disproportionate to the cost of curing the defects.¹³

I. CEC Notification to HBC Regarding Paint Coating Deficiency

105. According to the Technical Data Sheet for the NCL paint (the brand of paint used on the barge interiors), additional coats of paint could be applied within thirty days of the initial coat. (*See Ex. D-43*).

106. Upon Mr. Collyer's initial inspections of the barges in 2003 and 2004, he opined that the barges were "getting one good six mil dry dimension coat." (*See Collyer Dep. at 78*).¹⁴

107. Fewer than thirty days passed between the time that each of the barges was painted and when Mr. Collyer examined the barge. (*See N.T. 5/1/08 at 99, 190*). U.S. Fire argues that if Mr. Collyer, who CEC hired to do the initial inspections, or CEC itself had notified HBC of the thickness deficiency within this 30 day window, then HBC could have mitigated its damage by applying the second coat before the first had thoroughly set. After the barges were painted, they were launched within a week and a half to two and a half weeks. (*See N.T. 5/1/08 at 99, 190*). Had Mr. Collyer recognized that the interior coatings were not thick enough, HBC could have added an additional coat of paint to comply with the Contract specifications. (*See N.T. 5/1/08 at 98-99*). HBC had the capability to provide an additional paint coating even if the barges already were in the water. (*See N.T. 5/1/08 at 139-41*).

108. Mr. Collyer, however, was not made aware of the paint coating specifications provided for in the Contract (*Collyer Dep. at 110*) in that the purpose of his inspections was not to confirm that

¹³ We reach this conclusion mindful of the fact that the point of comparison as to cost of repair in this case is limited by the available face amount of the Bond, or \$1,028,604.

¹⁴ The transcript of Mr. Collyer's deposition was offered and accepted into evidence on May 2, 2008. (*See N.T. 5/2/08 at 8-11*).

the barges met Contract specification, but rather, according to Mr. Zellen, was to “verify progress of construction . . . he’s only there at a very quick snapshot of construction, . . . [h]e, primarily for me in this contract, was to review progress so that I could make payments and so that I could justify payments. And to take a general look at what he saw and report back to me.” (N.T. 4/29/08 at 51-52). The C&V’s which Mr. Collyer created were for insurance, valuation and financing purposes. (*See* Riddle Dep. at 27)

109. The Contract contains no provision obligating CEC to conduct an independent inspection of the barge interiors to insure that the paint coatings complied with the Contract specifications. (*See* J-1). The Contract simply required CEC to notify HBC of defects within one year of delivery. (*See* FF 17; Joint Stip. 9)

110. The provision setting out CEC’s notification requirements is contained in Section 6 of the Contract. (*See* Ex. J-1). Pursuant to this provision, CEC had a twelve month period from the date of delivery within which to notify HBC of any defective or faulty workmanship. (Ex. J-1; N.T. 4/29/08 at 54).

111. As memorialized in the Certificate of Delivery and Acceptance for the JMC-143 (Ex. Ex. J-3), the JMC-143 was delivered to CEC on May 22, 2003, 143 days late. (Joint Stip. 15).

112. As memorialized in the Certificate of Delivery and Acceptance for the JMC-142 (Ex. Ex. J-5), the JMC-142 was delivered to CEC on June 5, 2003, 157 days late. (Joint Stip. 16).

113. As memorialized in the Certificate of Delivery and Acceptance for the JMC-120 (Ex. Ex. J-7), the JMC-120 was delivered on June 25, 2003, 177 days late. (Joint Stip. 17).

114. As memorialized in the Certificate of Delivery and Acceptance for the JMC-121 (Ex. Ex. J-9), the JMC-121 was delivered on February 9, 2004, 406 days late. (Joint Stip. 18).

115. By a letter from Mr. York to Mr. Kuhns dated January 8, 2004 (Ex. J-13), CEC notified HBC that paint was peeling off the internal compartments of JMC-142. (Joint Stip. 19).

116. By a letter from Mr. Zellen to Mr. Kuhns dated April 15, 2004 (Ex. J-15), CEC notified HBC of paint issues in all four barges. (Joint Stip. 20). This notification was communicated to HBC less than a year after the delivery of any and all of the four barges, as was required by Section 6 of the Contract.

J. CEC Notification to U.S. Fire

117. By a letter from Mr. Zellen to U.S. Fire dated January 13, 2005 (Ex. J-16), CEC notified U.S. Fire of coating issues with the barges. (Joint Stip. 21).

118. By the same January 13, 2005 letter, CEC notified U.S. Fire that it was considering declaring a contractor default, and requested a conference with HBC to be held within fifteen days. (Joint Stip. 22).

119. As set out in a March 7, 2005 letter from Mr. Kuhns to Mr. Zellen (Ex. J-19), HBC thereafter engaged KTA to inspect the barges and to determine the scope of work required to address the issues with the coating system. (Joint Stip. 23). This led to the previously discussed inspections and report issued by Mr. Senkowski.

120. On November 18, 2005, CEC issued a notice of default pursuant to Section 3.2 of the Bond. (Joint Stip. 29; Ex. J-21).

121. On January 27, 2006, CEC issued a notice pursuant to Section 5 of the Bond, advising U.S. Fire and HBC they had not proceeded in accordance with their obligations outlined in Section 4 of the Bond, and that they would be in default if they did not do so within fifteen days. (Joint Stip. 30).

122. That fifteen day period was extended by agreements until July 19, 2006. (Joint Stip. 31). The fifteen day period lapsed at that time.

123. CEC has paid the entire Contract amount owed, minus liquidated damages in the amount of \$58,050.00. (Joint Stip. 32).

II. Conclusions of Law

A. Jurisdiction, Venue and Choice of Law

1. This Court has subject matter jurisdiction pursuant to 28 U.S.C. § 1332, as there is diversity between the parties and the amount in controversy exceeds \$75,000 exclusive of interest and costs.

2. Venue is proper pursuant to 28 U.S.C. § 1391(a) and (c).

3. In accordance with Judge Baylson's Memorandum Opinion, "with respect to the claim under the Contract, this Court will apply Massachusetts law," but "Pennsylvania law applies to the remaining claims." (Doc. 55).

4. Applying Judge Baylson's ruling, the parties have understandably briefed the issues by applying Pennsylvania law to Plaintiff's claims under the Bond against U.S. Fire. We follow their lead and do the same.

5. In further accordance with Judge Baylson's Memorandum Opinion of October 26, 2007, "Plaintiff can only proceed for damages against U.S. Fire." (Doc. 55).

B. HBC Breached the Contract

6. The thickness of the interior coatings of all four barges was only about 50% of the coating thickness specified in Exhibit "B" of the Contract. (*See* FF 22-23, 28, 31-34).

7. By failing to comply with the interior paint coating specifications set out in the

Contract, HBC breached the Contract.

8. The runs and sags, paint misses, and the overall coating thickness, which was below the specified DFT, demonstrate to our satisfaction that both the HBC workmanship and paint inspection effort were deficient, that the HBC quality control was deficient and that, with respect to the coatings, HBC failed to deliver the quality of vessel which was contracted for. (*See* FF 22-28, 31-35). Thus, subject only to the consideration of defenses asserted by U.S. Fire discussed within, we conclude that HBC breached the Contract.

C. U.S. Fire's Obligations Under the Bond

9. U.S. Fire has not, at the time of trial, asserted any defenses under the Bond itself. Rather, it has denied liability based upon its assertion that CEC has waived any right it may have had to challenge the deficiencies in performance and, alternatively, that if HBC is found to have breached the Contract, CEC has failed to prove that it suffered compensable damage.

10. Pursuant to Paragraph 5 of the Bond, CEC is entitled to enforce any remedy available to CEC against U.S. Fire. Likewise, U.S. Fire is entitled to offer any defense or mitigating evidence that would be available to HBC. *See, e.g., General Equip. Mfrs. v. Westfield Ins. Co.*, 635 A.2d 173, 180 (Pa. Super. Ct. 1993) (“A surety may usually assert any defense of which his principal could take advantage.”).

11. Where the breach is proven, U.S. Fire is liable for any liquidated and non-liquidated damages caused to CEC by HBC's breach.

12. Pennsylvania caselaw provides that a surety “assumes no liability or obligation beyond those set forth in the suretyship agreement; likewise, a bond obligation does not extend beyond the express obligation set out in the agreement.” *General State Auth. v. Sutter Corp.*, 403 A.2d 1022,

1026 (Pa. Commw. Ct. 1979); *see also Stone v. Pittsburgh, B. & E.R. Co.* 56 Pa. Super. 615, 619 (1913).

13. Pursuant to the terms of the Bond, U.S. Fire's principal liability is thus limited to the face amount of the Bond, \$1,128,604.00.

D. CEC's Damages

14. By Judge Baylson's October 26, 2007 Order and Memorandum, HBC, and in turn U.S. Fire, owe CEC liquidated damages in the amount of \$100,000.00. (*See* Doc. 55). The face amount of the Bond is thus diminished by these liquidated damages in the amount of \$100,000.00.

15. U.S. Fire's principal liability for any non-liquidated damages is accordingly limited to \$1,028,604.00.

16. As an initial matter, "[t]he general rule in this Commonwealth is that the plaintiff bears the burden of proof as to damages." *Penn Electric Supply Co. v. Billows Electric Supply Co.*, 528 A.2d 643, 645 (Pa. Super. Ct. 1987).

17. In a breach of contract case, Pennsylvania law generally entitles an injured party to recover his expectation interest as measured by the loss in the value to him of the other party's performance caused by its failure or deficiency, plus any other loss, including incidental or consequential losses caused by the breach, less any cost or other loss that he has avoided by not having to perform. *See Douglass v. Licciardi Constr. Co.*, 562 A.2d 913, 915 (Pa. Super. Ct. 1989).

18. We are also mindful that "[t]he central principle of the law regarding contractual damages is that the non-breaching party should be placed in the position he or she would have been in absent breach." *Oelschlegel v. Mut. Real Estate Inv. Trust*, 633 A.2d 181, 184 (Pa. Super. Ct. 1993).

19. While it is frequently difficult for an injured party to prove with certainty the loss in value in building contract cases, Pennsylvania courts “have generally allowed damages for incomplete or defective performance of a building contract to be measured by the cost of completing the work or correcting the defects by another contractor.” *Gloviak v. Tucci Constr. Co., Inc.*, 608 A.2d 557, 559 (Pa. Super. Ct. 1992) (quoting *Douglass*, 562 A.2d at 915-16).

20. HBC’s breach of the Contract has caused CEC to sustain non-liquidated damages. The interior coatings of the barges were deficient and that circumstance has accelerated the deterioration of the coatings as well as the deterioration of the steel that the coatings were meant to protect. We agree with CEC that the useful life of the barges has been diminished as a result of this deficiency.

21. Repair of the barge interiors is necessary in order that CEC be “placed in the position [it] would have been in absent breach.” *Oelschlegel*, 633 A.2d at 184.

22. While Dr. Soltz and Mr. Senkowski disagree about the extent to which the interior coatings need to be fully abraded and repainted, the only estimated costs of implementing either expert’s recommended remediation upon the record are \$2,347,754.00 and \$3,943,234.00 (Dr. Soltz) and \$1,979,992.00 (Mr. Senkowski). (*See* FF 40, 45). These three estimates are all substantially greater than the remaining \$1,028,604.00 available face amount of the Bond.

23. For reasons explained more fully below, after considering and rejecting the waiver argument raised by U.S. Fire, we conclude that CEC is entitled to a damage award given the harm caused by HBC’s breach. We then consider the question of whether some of this harm is attributed to CEC’s own conduct and whether the extensive cost of repair is the appropriate measure of loss giving consideration to the relationship between the cost to cure the defects and the diminution in value of the barges.

E. U.S. Fire’s Defenses

1. Waiver

24. Under Pennsylvania law, waiver is recognized as a valid defense in a breach of contract dispute. “Waiver is a voluntary and intentional abandonment or relinquishment of a known right. Waiver may be established by a party’s express declaration or by a party’s undisputed acts or language so inconsistent with a purpose to stand on the contract provisions as to leave no opportunity for a reasonable inference to the contrary.” *Samuel S. Marranca Gen. Contracting Co. v. Amerimar Cherry Hill Assocs., L.P.*, 610 A.2d 499, 501 (Pa. Super. Ct. 1992) (citation omitted).

25. Waiver is an affirmative defense under Pennsylvania law. *See* Pa.R.C.P. 1030. As such, the burden of proving waiver falls upon the party asserting it. *See Commonwealth ex rel. Corbett v. Griffin*, 946 A.2d 668, 676-77 (Pa. 2008).

26. U.S. Fire argues that in “failing to maintain the coatings, CEC waived any right to enforce any claim for damages against U.S. Fire in connection with HBC’s application of the coatings.” (Doc. 108 at 21).

27. The record makes clear that, rather than attempting to maintain the deficient coatings on its own, CEC understandably elected instead to stand upon its rights under the Contract by notifying HBC of the coating failures and seeking the remediation of those failures.

28. Even if we determined that CEC could have taken feasible steps toward maintaining the non-conforming interior coatings – a proposition which we are not convinced would be effective given the extent of the deficiencies (*see* N.T. 4/30/08 (Part I) at 64-65) – U.S. Fire has not demonstrated to our satisfaction that the failure to take such steps rises to the level of constituting an act which is “so inconsistent with a purpose to stand on the contract provisions as to leave no

opportunity for a reasonable inference to the contrary.” *Samuel S. Marranca*, 610 A.2d at 501.

29. The record demonstrates that, far from waiving its rights under the Contract, CEC has vigorously pursued them. U.S. Fire has failed to meet its burden of establishing waiver and may not avail itself of this affirmative defense.

2. CEC’s Failure to Mitigate and Contribution to the Damage Caused

30. In Pennsylvania, as a general matter of contract law, a plaintiff has a duty to make a reasonable effort to mitigate damages upon a defendant’s breach of contract. *See Bafile v. Borough of Muncy*, 588 A.2d 462, 464 (Pa. 1991).

31. In that failure to mitigate is an affirmative defense, the burden is on defendant to prove that plaintiff failed to make a reasonable effort to mitigate. *See Koppers Co. v. Aetna Cas. & Sur. Co.*, 98 F.3d 1440, 1448 (3d Cir. 1996).

32. Specifically, a defendant is required to show: (1) what reasonable actions the plaintiff ought to have taken, (2) that those actions would have reduced the damages, and (3) the amount by which the damages would have been reduced. *Id.*

33. U.S. Fire asserts that CEC had not only failed to mitigate but “significantly accelerated the deterioration of the coatings by allowing water, sand, dirt and other harmful substances to enter and to remain in the compartments, failing to repair reverse impact damage and weld burns and permitting its lessees to ballast the barges.” (Doc. 108 at 21).

34. While we accept that U.S. Fire has presented some credible evidence that CEC or its lessees may have been responsible for some portion of the damage, or that CEC could have undertaken its mitigation responsibility more effectively, we are unable to conclude that U.S. Fire has demonstrated these failings would have had a significant impact upon the extent of the cost of repair

or any diminution in value attributed to the defects. U.S. Fire likewise has failed to convince us that any mitigation on CEC's part, short of the reapplication that the experts have discussed, would have been successful in reducing the substantial deterioration of the interior paint coatings. Finally, U.S. Fire has failed to demonstrate with any specificity the amount by which the paint deterioration would have been reduced but for CEC's mitigation deficiencies. U.S. Fire, therefore, has not met its burden in establishing this defense.

35. We note, for example, that while U.S. Fire points to CEC's use of the barges in saltwater as a contributing factor to the coating deterioration, CEC has established that the barges were designed for such use. (*See* FF 55-56). Further, U.S. Fire's own expert, Mr. Senkowski, did not offer any estimate regarding the extent to which saltwater may have been a contributing factor. (*See* FF 56).

36. U.S. Fire also points to CEC's ballasting of the barges as a contributing factor. However, while U.S. Fire has established there was some evidence of ballasting and that the compartments may not have been designed to withstand such ballasting, CEC points out that the barge compartments also gain moisture from atmospheric pressure in the normal course of operation. (*See* FF 65-66). Understandably, U.S. Fire cannot separate out what, if any, deterioration may have come from one cause as opposed to the other. (*See* FF 72). We have concluded, as set out in FF 65-73, that improper ballasting was not a significant factor in contributing to the harm caused by the defects.

37. U.S. Fire also points to CEC's allowance of sand to enter the interior of the barge compartments as a contributing factor to the coating deterioration. U.S. Fire, however, only provided evidence that one of the four barges at issue (the JMC-143) contained sand. (*See* FF 75-76). There is no evidence of sand in any other barge. Likewise, there is no evidence that this kind of condition

would not have been expected in the normal leasing of barges to commercial users. Importantly, U.S. Fire's own expert did not even proffer an estimate regarding the extent to which sand may have been a contributing factor in the deterioration of the interior coatings. (*See* FF 77).

38. Finally, U.S. Fire cites CEC's failure to repair damage to the interior paint coatings caused by weld burns and reverse impact damage as a contributing factor to the coating deterioration. Although U.S. Fire has established that neither it nor HBC are responsible for any coating deficiency caused by these factors, U.S. Fire has offered evidence that only 3% of the total overall coating deficiency was attributable to reverse impact damage and that only 1% was attributable to weld burns. (*See* FF 82, 86).

39. While U.S. Fire asserts that "the cost of remedy would be significantly less than they are [sic] presently" (*see* Doc. 108 at 22), it has not presented us with convincing evidence to show that the cost of the necessary coating remediation would have differed in the absence of any of these potentially contributing factors and whether the cost would have indeed been any lower, let alone lower than the available face amount of the Bond. The defense thus effectively provides U.S. Fire with no relief.

3. Whether Cost of Repair "Clearly Disproportionate" to Loss in Value

40. Recognizing the difficulty which an injured party frequently encounters in proving the loss in value with certainty, Pennsylvania courts generally allow the injured party to calculate damages in accordance with Restatement § 348(2), which allows for the cost of repair as a proper measure of damages for deficient performance of a building contract where that cost is not "clearly disproportionate to the probable loss in value" to the injured party. *Douglass*, 562 A.2d at 915-16.

41. Restatement § 348(2) provides:

If a breach results in defective or unfinished construction and the loss in value to the injured party is not proved with sufficient certainty, he may recover damages based on (a) the diminution in the market price of the property caused by the breach, or (b) the reasonable cost of completing performance or of remedying the defects if that cost is not clearly disproportionate to the probable loss in value to him.

42. Comment c to Restatement § 348(2) explains the competing rationales behind the provision for alternative remedies in a construction contract dispute:

[T]he injured party will usually find it easier to prove what it would cost to have the work completed by another contractor than to prove the difference between the values to him of the finished and the unfinished performance. Since the cost to complete is usually less than the loss in value to him, he is limited by the rule on avoidability to damages based on cost to complete. See § 350(1). . . .

Sometimes, especially if the performance is defective as distinguished from incomplete, it may not be possible to prove the loss in value to the injured party with reasonable certainty. In that case he can usually recover damages based on the cost to remedy the defects. Even if this gives him a recovery somewhat in excess of the loss in value to him, it is better that he receive a small windfall than that he be undercompensated by being limited to the resulting diminution in the market price of his property.

Sometimes, however, such a large part of the cost to remedy the defects consists of the cost to undo what has been improperly done that the cost to remedy the defects will be clearly disproportionate to the probable loss in value to the injured party. Damages based on the cost to remedy the defects would then give the injured party a recovery greatly in excess of the loss in value to him and result in a substantial windfall. Such an award will not be made. It is sometimes said that the award would involve “economic waste,” but this is a misleading expression since an injured party will not, even if awarded an excessive amount of damages, usually pay to have the defects remedied if to do so will cost him more than the resulting increase in value to him. If an award based on the cost to remedy the defects would clearly be excessive and the injured party does not prove the actual loss in value to him, damages will be based instead on the difference between the market price that the property would have had without the defects and the market price of the property with the defects. This diminution in market price is the least possible loss in

value to the injured party, since he could always sell the property on the market even if it had no special value to him.

43. We conclude that Restatement § 348(2) is applicable here in that a breach occurred as a result of defective construction and that the loss in value to CEC is not proved with “sufficient certainty.” At this point, under Restatement § 348(2), CEC, at its option, may recover damages based either upon the diminution in market price or “the reasonable cost of . . . remedying the defects *if that cost is not clearly disproportionate to the probable loss in value to [it].*” *Id.* (emphasis added).

44. Pursuant to the principles contained in Restatement § 348(2) and Comment c, “[i]t is only where the cost of completing performance or of remedying the defects is *clearly disproportionate* to the probable loss in value to the injured party that damages will be measured by the difference between the market price that the property would have had without the defects and the market price of the property with the defects.” *Douglass*, 562 A.2d at 916 (emphasis added); *see also Gadbois v. Leb-Co Builders, Inc.*, 458 A.2d 555 (Pa. Super. Ct. 1983).

45. We are mindful that the loss in value caused by the breach is determined by taking “the difference between the value that the performance would have had if there had been no breach and the value of such performance as was actually rendered.” *Douglass*, 562 A.2d at 916 (citing Comment b to Restatement § 348(2)).

46. We additionally note that a consideration of these differing values “requires a determination of the values of those performances to the injured party himself and not their values to some hypothetical reasonable person or on some market.” *Id.* (emphasis omitted); *see also Berg v. Reaction Motors Div., Thiokol Chem. Corp.*, 37 N.J. 396, 412 (1962) (in case involving damage to the plaintiffs’ homes in which plaintiffs presented evidence of necessary “correction of impaired

foundations, seam openings and cracked floors, walls, ceilings, chimneys and fireplaces,” court observed that “[t]he plaintiffs are concerned with living in rather than selling their homes and, in all fairness, they should have the right to recover the reasonable cost of the necessary repairs without being subjected to the artificial burden of establishing that the diminution in the salable value of their homes was in a corresponding amount.”).

47. Applied here, proof of loss in value would entail a demonstration of the difference between (a) the barges’ present value in their current condition and (b) the barges’ value as it would have been had they been coated in a proper workmanlike fashion and in accordance with the Contract specifications.

48. We recognize that the parties disagree as to which of them possesses the burden of providing evidence regarding diminution in value in order to determine whether the cost of repair is “clearly disproportionate” to any diminution in value.

49. U.S. Fire asserts that CEC bears “the specific burden, under the Restatement, to establish its ‘loss in value’ with ‘sufficient certainty.’” U.S. Fire further asserts that CEC, in failing to produce “evidence at trial as to the current value of the barges both with and without the alleged painting defects,” has failed to meet that burden. (Doc. 109 at 9).

50. CEC, on the other hand, asserts that “the law in Pennsylvania is clear that once the contracting party has presented evidence as to the cost of remedying the defects, the burden is on the [breaching party] to challenge this evidence.” CEC then asserts that U.S. Fire, in failing to present “evidence as to the alleged diminution in market value of the barges,” has failed to meet that burden. (Doc. 107 at 9).

51. U.S. Fire relies upon the Superior Court’s opinion in *Freeman v. Maple Point, Inc.*,

574 A.2d 684 (Pa. Super. Ct. 1990), a case where plaintiff homeowners brought suit against the defendant home-builder due to a surface-water problem which had developed on its property. There, the Superior Court was troubled by the fact that the plaintiffs “presented no evidence whatsoever as to the value of their house as constructed with all of its water problems, and the value it would have had with proper drainage.” *Id.* at 686. The court explained:

Only by establishing probable diminution in value because of the improper grading and driveway construction, would it be possible to determine if the damages awarded in the amount of \$ 45,785 were appropriate.

...

The verdict . . . represented almost 48% of the cost of the house and it is clear in these circumstances that the jury should have had some idea as to the diminution of value in order to avoid a windfall to the appellants. . . . *Therefore, there must be some evidence produced by the plaintiff of the reduction in value, although it need not be shown with exactitude.* There must be a balancing between the probable diminution in value, which is often quite nebulous, and the cost of repairs which may be determined with greater accuracy. However, there must be some *reasonable basis for determining reduction in value*, before a judgment may be made that the cost of repairs is a proper measure of damages, where the required repairs to a new house represent a high percentage of the cost of the house.

Id. at 686-87 (emphasis added). In that the plaintiffs “did not establish what the value of their house would have been had the surface water problem not existed, and its diminished value because of the water problem,” *id.* at 687, the court overturned the jury award. From the perspective of U.S. Fire, this opinion supports its position that the burden to establish reduction in value falls upon CEC.

52. CEC, on the other hand, relies upon the Superior Court’s opinion in *Fetzer v. Vishneski*, 582 A.2d 23 (Pa. Super. Ct. 1990). In *Fetzer*, a case which was decided by a different panel of the Superior Court six months after *Freeman*, the court upheld a jury verdict in favor of plaintiff homeowners against defendant contractor in the amount of \$6,750, an amount which

included \$5,100 as the replacement cost of defective skylights. *Id.* at 25. The court specifically rejected the defendant’s argument that the proper measure of damages should have been the diminution in value rather than the cost of replacement and stated that the mere “fact that the cost of replacement somewhat exceeds the diminution in market value does not bar the homeowner from recovering the cost of replacement.” *Id.* at 26. The court explained, further:

[O]nce the homeowner has presented evidence as to the cost of remedying the defects, *the burden is on the contractor to challenge this evidence.* [The contractor] failed to rebut [the homeowners’] evidence. He introduced no evidence of his own as to the diminution in market value. . . . Since [defendant] failed to rebut [plaintiff’s] evidence as to the cost of replacement, and since the leakage and the need for replacement are supported by competent evidence, the trial court correctly awarded [plaintiffs] the replacement cost of the skylights. . . . Having failed to meet his burden of rebuttal at trial, [the contractor] cannot argue on appeal that he should now be given an opportunity to rebut [the homeowners’] evidence.

Id. at 26-27. CEC argues that this opinion supports its position that the burden to establish diminution in market value falls upon U.S. Fire.

53. CEC also finds support in the Superior Court’s 1992 opinion in *Gloviak*, 608 A.2d 557. There, the court upheld a trial court verdict in favor of plaintiff homeowners against defendant contractors in the amount of \$7,500 due to a “defectively constructed, residential fireplace,” despite the fact that the only evidence in the record as to damages pertained to the cost of repair and that “[n]o party offered evidence of the diminution in value of the home caused by the defective fireplace.” *Id.* at 558-59. Distinguishing the case from *Freeman*, the court noted that “[i]t was because the [Freeman] award was grossly disproportionate *on its face* that the Court required some evidence of the diminution in value of the property,” *id.* at 560 (emphasis added) and found:

The facts in the instant case are different. An award based on repair

costs of \$7,500.00 was not patently disproportionate to the sum of \$84,500.00 paid for the house by the appellee-homeowners. They did not receive a windfall by an award of the cost of repairing the defective fireplace. Therefore, it was not essential that the homeowners, in order to recover the costs of making repairs, prove by separate evidence that the repair costs were not grossly disproportionate to the diminution in value caused by the defective fireplace. *If appellant-contractors deemed the cost of making repairs disproportionate to the diminution in value of the home, the burden was on them to introduce evidence establishing that fact.* This they did not do.

Id. (emphasis added). Therefore, in that the only “measure of damages submitted to the court by both sides was the cost of repairing the defective fireplace,” the court held that cost of repair was the appropriate measure of damages. *Id.* (citing *Fetzer*, 582 A.2d at 27).

54. On their face, *Freeman* and *Fetzer* appear to be in direct opposition to each other, with *Freeman* holding that a plaintiff possesses the burden of offering “some evidence . . . of the reduction in value” so that an analysis of whether the cost of repair is “clearly disproportionate” can be conducted, 574 A.2d at 686-87, and with *Fetzer* holding that once a plaintiff has established the cost of repair, the burden of challenging and rebutting that cost as the proper amount of damages falls upon the defendant, 582 A.2d at 26-27. Accordingly, at the same time that *Freeman* appears to place at least some burden of establishing diminution in value upon CEC, *Fetzer* appears to place that burden upon U.S. Fire.

55. We believe that the opinion in *Gloviak* contains a reasonable synthesis of the two seemingly competing mandates found in *Freeman* and *Fetzer*. In *Gloviak*, the court determined that where the cost of repair does not appear *on its face* to be *grossly disproportionate* to the diminution in value, a plaintiff seeking damages based upon cost of repair is not required to prove by separate evidence that the cost of repair is not clearly disproportionate to diminution in value. 608 A.2d at

559-60. The burden of establishing such disproportion shifts to the defendant and requires it to come forward with its evidence of diminished value.

56. In that we conclude that the loss of value is not proved with sufficient certainty, CEC may proceed, as it has, under subparagraph (b) of Restatement § 348(2) and impose upon itself a burden to produce *some evidence* (albeit not with sufficient certainty) that the cost of repair is not *clearly disproportionate* to the loss in value *to it*. We do not believe, however, that CEC is required to affirmatively offer evidence of a full blown before and after market value analysis. The offering of “some evidence” to show that the repair cost is not “clearly disproportionate to the probable loss in value to him” is enough. Thus, while we agree with U.S. Fire that CEC has some burden, we believe that burden is minimal and we believe that it has been met.¹⁵

¹⁵ We note, additionally, that courts in several other jurisdictions have put the burden of establishing evidence of diminution of market value more squarely upon the defendant as the breaching party. *See, e.g., Panorama Village v. Golden Rule Roof.*, 10 P.3d 417, 422 (Wash. Ct. App. 2000) (holding that “[o]nce the injured party has established the cost to remedy the defects, the contractor bears the burden of challenging this evidence in order to reduce the award, including providing the trial court with evidence to support an alternative award”); *Pennington v. Rhodes*, 929 S.W.2d 169, 175 (Ark. Ct. App. 1996) (holding that “once [plaintiffs] presented sufficient proof to go to the jury on the cost of repairs measure, the burden shifted to [defendant] to produce evidence showing (a) either that repairing the defects was unreasonable . . . or (b) that the repair costs would have been disproportionate to the probable increase in value to [plaintiffs] resulting from proper construction, so that difference in value would have been the proper measure of damages”); *Andrulis v. Levin Constr. Corp.*, 628 A.2d 197, 208 (Md. 1993) (holding that “the burden of proving economic waste is on the party that breached the contract and that invokes the doctrine in an effort to limit expectation interest damages”); *Willie’s Constr. Co. v. Baker*, 596 N.E.2d 958, 962 (Ind. Ct. App. 1992) (holding that “breaching contractor has the burden of proving that curing defects would cause economic waste and any reasonable doubt will be resolved against him”); *General Ins. Co. v. City of Colorado Springs*, 638 P.2d 752, 759 (Colo. 1981) (holding that “[i]f damages are established, then it is a defendant’s burden to produce evidence on which any reduction of damages is to be predicated”); *Stangl v. Todd*, 554 P.2d 1316, 1320 (Utah 1976) (holding that “contract breaker should pay the cost of construction and completion in accordance with his contract, unless he proves, affirmatively and convincingly, such construction and completion would involve an unreasonable economic waste”); *Shell v.*

(continued...)

57. CEC has provided two estimates of the costs of implementing the repairs specified by Dr. Soltz: \$2,660,354.00 (estimate of Main Industries plus towing costs) and \$3,941,234.00 (estimate of Colonna's Shipyard). (See FF 40). U.S. Fire, who is not exposed beyond the available face amount of the Bond, does not challenge those estimates. For the same reason, we see no need to question them as far as they go.

58. U.S. Fire, through the testimony of its expert, Mr. Senkowski, however, disputes the extent to which repair to the barge interior coatings was necessary. Specifically, Mr. Senkowski testified that only 58% of the interior coatings would need to be replaced. U.S. Fire, however, failed to present any evidence of the cost of implementing the repairs specified by Mr. Senkowski. CEC did, however, and through the report and testimony of Mr. Challoner offered evidence that the cost of implementing repairs based upon Mr. Senkowski's 58% figure would be \$1,979,992.00. (See FF 45). That estimate is the only one on the record pertaining to Mr. Senkowski's specifications. We find it to be substantially credible. Although U.S. Fire challenges certain issues related to whether that estimate matches precisely the specifications called for by Mr. Senkowski, it presented no other estimate of those costs. Further, U.S. Fire fails to show the extent to which, if at all, the estimated cost of implementing the repairs specified by Mr. Senkowski would decrease if Mr. Challoner's estimate precisely matched Mr. Senkowski's specifications. Perhaps most importantly, U.S. Fire fails to show that any estimated cost of repair would be less than the available face amount of the Bond.

¹⁵(...continued)

Schmidt, 330 P.2d 817, 827 (Cal. Ct. App. 1958) (holding that "the burden is on the defendant to affirmatively and convincingly prove that economic waste would result from the replacement of the omissions and defects" and noting, as justification, that "it is the defendant who is seeking to prove a situation whereby he will get equitable relief from a rule of law").

59. We need not decide whether Dr. Soltz's specifications and the corresponding estimates are more credible than Mr. Senkowski's. The salient point is that all of these estimates are significantly greater than the \$1,028,604.00 available face amount of the Bond which is the upward limit of U.S. Fire's liability. (See CL 12-15).

60. Relying upon *Freeman's* reversal of an award based upon a cost of repair that amounted to 48% of the contract price, Defendant asserts that the \$2,347,754 cost of repair (as estimated by Main Industries) represents "over 200%" of the purchase price of the barges and is thus on its face "clearly out of all proportion to the probable loss in value." (Doc. 109 at 11).

61. U.S. Fire is correct that the cost of repair is dramatically in excess of the Contract price. We do not believe, however, that this is the proper analysis. The plain language of Restatement § 348(2) and its comment c make it clear that in considering whether the cost of repair is excessive such as to constitute an improper windfall recovery to plaintiff, the comparison must be made with the probable loss in value to CEC, not the contract price.¹⁶

62. U.S. Fire presented evidence regarding the difference in value of the barges by comparing Mr. Collyer's 2003 and 2004 C&V's, which value the four barges at \$1,650,000.00, and the Security Schedules submitted to the lenders by Mr. Riddle, which value the four barges at

¹⁶ Tellingly, some courts which have used cost of repair as a point of comparison have found that cost to be the proper measure of damages even where the repair costs *exceed* the contract price. See *Kansas ex rel. Stovall v. Reliance Ins. Co.*, 107 P.3d 1219, 1229 (Kan. 2005) (holding that district court erred in limiting damages to the contract price, and finding instead that cost of repair in an amount between \$4.5 million and \$6.3 million, which represented between 410% and 574% of original \$1,097,000 contract price, was proper measure of damages); *Lapierre v. Samco Dev. Corp.*, 406 S.E.2d 646, 651 (N.C. Ct. App. 1991) (holding that \$6,741.19 cost of repair, which represented approximately 150% of \$4,500 contract price, was proper measure of damages).

\$1,725,000 in March 2007.¹⁷ U.S. Fire thus asserts that this is the only proper evidence regarding value contained within the record and that it demonstrates that the barges have actually *increased* in value. (Doc. 109 at 10-11).

63. We do not agree with U.S. Fire that this evidence is sufficient to meet its burden of proving that the repair cost is “grossly disproportionate” to the probable reduction in value to CEC. While we note that Mr. Collyer’s estimates are said to be “in comparison to vessels of like size, age and service and in consideration of the current market,” he provides no comparisons for us to consider. (See FF 103). Likewise, he offers no discussion of how or even whether he took into account any decrease in the barges’ useful lives resulting from the coating deteriorations, even where his own reports note this deterioration. He thus fails to consider the value of the barges as they relate to CEC’s ability to generate future revenue and income. (See Exs. D-18, D-25-27, D-29, D-31, D-34). At best, if they are to be accepted at all, these values represent, instead, the value of the barges “to some hypothetical reasonable person or on some market.” *Douglass*, 562 A.2d at 915. This is insufficient.

64. As we have already noted, a consideration of value requires a consideration of the specific value of completed performance *to the injured party in particular*. See *Douglass*, 562 A.2d at 915. The *Douglass* court, for instance, upheld a jury award of \$15,000 despite the fact that the only evidence of record regarding diminution in value demonstrated a decrease of only \$2,500. Although the award represented 600% of the diminution in value sum, the court upheld the award, noting that the appraisal pertaining to diminution in value “failed to consider aspects of the house which had been

¹⁷ The record also contains a Security Schedule for March 2008 showing the same values. (See FF 102).

contracted for but not received by plaintiff-appellees” and which “clearly had value to them.” *Id.* at 916.

65. CEC’s expert, Dr. Soltz, testified that, as a result of the substantial and pervasive deterioration in their interior coatings, the barges have lost at least 10 years of their useful lives. We have found Dr. Soltz’s testimony generally to be credible on this point. CEC has offered some evidence demonstrating that this potentially represents a loss in gross revenue of \$3,360,000. [*See* FF 104). We accept that the diminution in value would certainly run to a figure larger than the available face amount of the Bond. If we assume for example that only 1/2 of the projected revenue figure was earned and that same value was further reduced by 25% on account of expenses, we would end up with a loss of \$1,260,000. This sum would still be in excess of the available face amount of the Bond.

66. Although we concede that this estimate regarding lost future revenue leaves us unable to determine “with exactitude” the actual diminution in value of the barges, we recognize that *Freeman* takes pains to stress that “exactitude” is not required. *See* 574 A.2d at 687. We are satisfied that this estimate represents, at the very least, a “reasonable basis for determining reduction in value.” *Id.*

67. We thus conclude that, to the extent that CEC may be said to bear the minimal burden of establishing that the cost of repair is not, on its face, and in the context of this case, grossly disproportionate to the diminution in value, that burden has been met.

68. With the burden then shifted to U.S. Fire to rebut CEC’s evidence, it has, for the reasons set out above, failed to meet this burden. The cost of repair, as limited by the available face

amount of the Bond, remains the proper measure of damage.¹⁸

F. Prejudgment Interest Owed

69. U.S. Fire does not dispute that under both Pennsylvania and Massachusetts law, it is liable to CEC for prejudgment interest on both liquidated and non-liquidated damages in excess of the available face value of the Bond. *See Pennsylvania Co. for Ins. on Lives, etc. v. Swain*, 42 A. 297 (Pa. 1899); *Pitts v. Tilden*, 2 Mass. 118 (Mass. 1806).

70. Judge Baylson calculated prejudgment interest on CEC's claim for liquidated damages pursuant to the Contract against U.S. Fire at a rate of 12% in accordance with Massachusetts law. (Doc. 55). This sum, as of October 26, 2007, was \$47,733.17.

71. Prejudgment interest on these liquidated damages has been accruing since October 26, 2007 at a rate of \$32.87 per day (Doc. 55) which, as of September 17, 2008, amounts to a total of \$10,781.36.

72. The total prejudgment interest on the liquidated damages claim is \$58,514.53.

73. CEC has proceeded against U.S. Fire with its remaining claims for non-liquidated damages pursuant to the provisions of the Bond. Accordingly, pursuant to Judge Baylson's order, Pennsylvania law applies to the determination of any prejudgment interest owed upon non-liquidated damages. (Doc. 55).

74. Under Pennsylvania law, prejudgment interest on the principal amount of any damages

¹⁸ While recognizing that we rely principally upon the analytical approach of Restatement § 348(2), we do not feel the need to "resolve" the question of the apparent conflict between *Freeman* and *Fetzer*. The broader principles of those cases are dependent, of course, on their facts; the same is true here. We conclude that if CEC has a burden, it is minimal and it has been met. If U.S. Fire has the burden, it has not been met. Thus, we do not mean to write dispositively upon this burden issue.

assessed against U.S. Fire is 6% per annum. *See* 41 Pa.C.S.A. § 202; *Pollice v. National Tax Funding, L.P.*, 225 F.3d 379, 395-96 (3d. Cir. 2000).

75. The parties disagree about the date upon which the calculation of U.S. Fire's liability for prejudgment interest upon non-liquidated damages is to begin. U.S. Fire, citing Pennsylvania caselaw, argues that "interest runs from the date of U.S. Fire's breach, not the date of HBC's breach." (Doc. 108 at 26). CEC, contends that the calculation of interest dates back to February 9, 2004, which is the date of delivery of the last barge and thus the date of HBC's breach. (Doc. 106 at 11). While CEC cites only to Judge Baylson's order in support of this proposition, that order is silent on this issue.

76. There is some older support for U.S. Fire's position. In *Swain*, the Supreme Court of Pennsylvania held that a surety "is responsible for interest, not from the date of defalcation by the principal, but from the time when demand may be and has been made on him." 42 A. at 297.

77. Subsequent caselaw, however, threw the *Swain* rule into doubt. The Supreme Court of Pennsylvania in *Erie Trust Company Bank v. Employers' Liability Assurance Corp.*, 185 A. 224 (Pa. 1936) conducted a review of that caselaw:

In *Pennsylvania Co. v. Swain*, 189 Pa. 626, and in *Folz v. Tradesmen's Trust & Saving Fund Co.*, 201 Pa. 583, it was held that a surety on a bond was responsible for interest only from the time when demand was made upon the surety. In *Herron v. Stevenson*, 259 Pa. 354, interest was allowed from the date of the principal's default, and the *Swain* and *Folz* cases were distinguished as having arisen on official bonds. In *Commonwealth v. Great American Indemnity Co.*, 312 Pa. 183, it was suggested that the same two cases might be distinguished on the ground that in them the claim upon the surety exceeded the penal sum of the bond, and, after a review of the Pennsylvania authorities, the conclusion was reached that, *in the absence of a stipulation in the contract to the contrary*, the surety of a defaulting principal is liable for interest from the time that the principal becomes

liable therefor. In *Punxsutawney Boro. v. Mitchell* (No. 1), 320 Pa. 168, interest was allowed only from the time of the beginning of the suit against the surety, but that was the case of an official bond covering the liability of a borough treasurer. In other jurisdictions the general weight of authority seems to be in favor of holding the surety liable for interest from the time when the defalcation by the principal occurs, if such liability does not cause the claim to exceed the penal sum of the bond.

Id. at 226 (emphasis added). Accordingly, the court held that “the insured should be allowed the same measure of reimbursement from the insurer as it could have obtained in an action against the defaulting principal, and such recovery would certainly include interest from the time of the defalcation.” *Id.* (citation omitted).

78. The general rule that “a surety is liable for interest from the time of the principal’s defalcation” was reaffirmed in *Commonwealth use of Ft. Pitt Bridge Works v. Continental Casualty Co.*, 240 A.2d 493, 494 (Pa. 1968).

79. A surety may, however, limit its liability for prejudgment interest by inserting within the surety agreement specific language requiring notice of a principal’s default. *Id.* at 495. Such a contractual requirement will, in turn, limit the date from which prejudgment interest is calculated to the date upon which the surety receives such notice of the contractor’s breach. *Id.*; see also *Erie Trust*, 185 A. at 226 (prejudgment interest generally calculated from time of principal’s defalcation, “in the absence of a stipulation in the contract to the contrary”).

80. Section 3 of the Bond provides in pertinent part as follows:

3. If there is not Owner Default, the Surety’s obligation under this Bond shall arise after:

3.1 The Owner has notified the Contractor and the Surety . . . that the Owner is considering declaring a Contractor Default . . . ; and

3.2 The Owner has declared a Contractor Default and formally terminated the Contractor's right to complete the contract. Such Contractor Default shall not be declared earlier than twenty days after the Contractor and the Surety have received notice as provided in Subparagraph 3.1; and

3.3 The Owner has agreed to pay the Balance of the Contract Price to the Surety in accordance with the terms of the Construction Contract.

(J-2 at 2).

81. This provision stipulates that U.S. Fire's obligations under the Bond were to arise only after it received notice of HBC's default. In this case, therefore, there was a "stipulation in the contract to the contrary," departing from the general rule that a surety's liability for interest be calculated from the date of the principal's breach. *Erie Trust*, 185 A. at 226.

82. Pursuant to Section 3 of the Bond, calculation of U.S. Fire's liability for interest upon the non-liquidated damages thus begins on the date upon which CEC declared HBC to be in default and agreed to pay the balance of the Contract price.

83. The evidence in the record shows that CEC issued a notice of default to U.S. Fire pursuant to Section 3.2 of the Bond on November 18, 2005. (Joint Stip. 29; Ex. J-21; FF 120). The parties agree that CEC paid the entire Contract amount. (Joint Stip. 32). There is no evidence upon the record which would suggest that CEC's agreement to pay the Contract price came after this date.¹⁹

84. U.S. Fire's liability for prejudgment interest upon the non-liquidated damages is thus calculated at 6% per annum from November 18, 2005. We calculate U.S. Fire's liability as follows:

¹⁹ Although the parties agree that CEC paid the sums owed on the Contract, they do not provide the date upon which payment took place. We assume, absent evidence to the contrary, that this occurred on or before the November 18, 2005 date upon which CEC issued the notice of default. We use that date as the proper date to start running interest.

6% per year X \$1,028,604.00 = \$61,716.24 per year since November 18, 2005	
\$61,716.24 per year / 365 days = \$169.086 per day since November 18, 2005	
November 18, 2005 - November 17, 2007: \$61,716.24 X 2 years =	\$123,432.48
November 18, 2007 - September 17, 2008: \$169.086 X 305 days =	\$51,571.23
TOTAL:	\$175,003.71

85. Combining the prejudgment interest owed upon both liquidated (*see* CL 72) and non-liquidated damages, as of September 17, 2008, U.S. Fire is liable for prejudgment interest in a total amount of \$233,518.24.

III. Conclusion

For the reasons set out in the Court's Findings of Fact and Conclusions of Law:

86. The Court finds in favor of CEC and against U.S. Fire for non-liquidated damages under CEC's cause of action for breach of the Bond in the amount of \$1,028,604.00.

87. The Court further finds that, pursuant to Judge Baylson's previous order, U.S. Fire is liable to CEC for liquidated damages in the amount of \$100,000.00.

88. The Court further finds that U.S. Fire is liable to CEC for prejudgment interest upon both the liquidated and non-liquidated damages in the total amount of \$233,518.24.

An appropriate Order follows.

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF PENNSYLVANIA

CASHMAN EQUIPMENT CORP.	:	CIVIL ACTION
	:	
Plaintiff	:	
	:	
v.	:	NO. 06-3259
	:	
UNITED STATES FIRE	:	
INSURANCE COMPANY	:	
	:	
Defendant	:	

ORDER FOR JUDGMENT

AND NOW, this 17th day of September, 2008, following upon a six day bench trial, consideration of the record of that trial, the parties' Proposed Findings of Fact and Conclusions of Law, the parties' further post-trial submissions and for the reasons set out in the Court's Findings of Fact and Conclusions of Law, **IT IS HEREBY ORDERED:**

That **JUDGMENT** be entered in favor of Plaintiff Cashman Equipment Corporation ("Plaintiff") and against Defendant U.S. Fire in the amount of \$1,028,604.00 on Plaintiffs' breach of

performance bond claim together with prejudgment interest in the total amount as of September 17, 2008 of \$233,518.24.

BY THE COURT:

/s/ David R. Strawbridge

DAVID R. STRAWBRIDGE

UNITED STATES MAGISTRATE JUDGE