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2009 No. 052186

IN HER MAJESTY'S COURT OF APPEAL IN NORTHERN IRELAND

ON APPEAL FROM
THE HIGH COURT OF JUSTICE IN NORTHERN IRELAND
QUEEN'S BENCH DIVISION (COMMERCIAL)

B A KITCHEN COMPONENTS LIMITED

Plaintiff/Respondent

and

JOWAT (UK) LIMITED

Defendant/Appellant

Before: TREACY LJ & STEPHENS LJ

TREACY LJ (Delivering the Judgment of the Court)

Introduction

[1] This is an appeal from the decision of Weatherup LJ, acting as a first instance judge, in the above matter. The dispute is limited to the issue of liability between the parties. For ease of reference and to maintain consistency with the first instance judgment, the appellant is referred to as the "defendant" and the respondent as the "plaintiff" in the ensuing judgment of this court.

[2] The Learned Trial Judge (LTJ) summarised the material facts succinctly and we gratefully adopt his summary below:

"[1] The plaintiff is a manufacturer of kitchen cupboard doors based at Derryloran Industrial Estate, Cookstown, County Tyrone. The defendant is

a supplier of adhesives based in Staffordshire, England. Mr Shaw QC and Mr J Dunlop appeared for the plaintiff and Mr Orr QC and Ms Curran for the defendant.

[2] The plaintiff claims against the defendant for damages for breach of contract, negligence, breach of statutory duty, misrepresentation and negligent misstatement in relation to the supply of adhesives to the plaintiff for use in the manufacture of the kitchen doors.

[3] The plaintiff's product is an MDF vinyl wrap kitchen door. The components are a medium density fibre board substrate (MDF), a vinyl foil (PVC) and the adhesive. The adhesive is applied to the MDF surface by automated spraying and allowed to dry. The PVC foil, which is ready primed on one surface, is preheated and vacuum formed on the MDF.

The Plaintiff's Evidence as to the Background to the Dispute

[4] The plaintiff's business was operated by Brian and Kieran McCracken from 1997. Kieran McCracken gave evidence for the plaintiff as follows. In 2003 the plaintiff installed automated production lines which included robotic spraying equipment to apply the adhesive and presses to apply the PVC to the MDF. A two part adhesive was used, namely an adhesive with a separate curing or hardening agent. The two part adhesive was not supplied by the defendant.

[5] The plaintiff's new equipment included two Cefla spraybotic machines. Operatives from Cefla attended the plaintiff's premises to train the plaintiff's operatives. Each spray machine was fitted with three Krautzberger automatic glue guns. Operatives from Krautzberger attended the plaintiff's premises to train the plaintiff's operatives. Burkle presses applied the PVC to the MDF.

[6] In March 2003, after the installation of the plaintiff's new production lines, representatives of the defendant approached the plaintiff with a proposal to supply to the plaintiff the defendant's

one part glue known as Jowat 150.50. The defendant's representative in the UK was Simon Preston and the representative in Northern Ireland was Philip Bingham.

[7] Mr Preston and Mr Bingham visited the plaintiff's premises and viewed the new automated production lines, the robotic spraying equipment, the components used by the plaintiff and the manufacturing process. In April 2003 trials were conducted at the plaintiff's premises with Jowat 150.50 one part glue. The defendant's dispersion manual dated February 2000 stated the application amount of adhesive to be approximately 40-60g per square metre (wet) (depending on the surface).

[8] In May 2003 the plaintiff stopped using two part glue and commenced using Jowat 150.50 one part glue. Initially the application amount of adhesive was set by the plaintiff at 50g.

[9] In June 2005 the plaintiff became aware of other manufacturers who had used Jowat 150.50 one part glue having experienced delamination of the vinyl from the substrate. As a result the plaintiff increased the application amount of adhesive from 50g to 60g.

[10] From October 2005 the plaintiff began to receive a significant number of complaints that the PVC was detaching from the MDF in finished kitchen doors which had been produced using the Jowat 150.50 one part glue. The plaintiff increased the application amount of adhesive to 70g in December 2005.

[11] Meetings occurred between the plaintiff's representatives and the defendant's representatives. Tests were carried out. The cause of the problem of delamination was not resolved. By a report from the defendant in April 2007 the cause of the delamination was stated to be first of all the application of insufficient adhesive. Additional causes were stated to be factory conditions such as thermal stress or moisture. Further it was stated that another factor could be the substrates or their chemical components.

[12] The plaintiff stopped using Jowat 150.50 one part glue in May 2007.

The Pleaded Case

[13] The plaintiff's amended particulars of claim pleaded that the defendant, with knowledge of the plaintiff's manufacturing process, supplied an adhesive that was unsuitable and not fit for purpose and further was unsuitable and unfit for use with MDF or with the MDF used by the plaintiff or with MDF containing paraffin based hydrophobing elements.

[14] By its defence the defendant pleaded that the adhesive was suitable for use and fit for purpose if applied correctly and in sufficient quantities and that any delamination was a result of the plaintiff's failure to manufacture the doors properly or make proper use of the adhesive and in particular to apply sufficient adhesive.

The Manufacturing Process

[15] The manufacturing process involved the MDF doors being routed to produce the shape and design on the door. The routed door was cleaned and moved into an airtight chamber where the automated glue spraying occurred. The sprayed door then moved to the drying oven. The dried door then moved to the press where the PVC was applied in a closed temperature controlled area.

[16] Adrian Morrison was a Spraybotic Operative at the plaintiff's premises who oversaw the application of the adhesive by the robots. The spraying machine was pre-set to apply the required quantity of adhesive. The doors were laid flat and the adhesive spray guns make repeated passes up and down the doors. Mr Morrison checked the application of the adhesive by visual inspection, by a weight test applied twice daily and by a peel test on five or six doors daily. Stephen Richmond was a Supervisor of fourteen employees working on the production lines at the plaintiff's premises. He confirmed the testing procedures and that delamination did not amount to

a problem before or after the use of Jowat 150.50 one part glue.”

The Expert Evidence

[3] In relation to the parties' expert evidence, the plaintiff engaged Dr Comyn, a polymer chemist specializing in adhesives, to act on its behalf. He initially received 1 specimen failed door from the plaintiff and his report dated 25 April 2012 gives a detailed account of how he investigated the causes of delamination in this door. He noted that delamination had happened in various parts of the failed door and that it was possible that the failure had happened:

- “(i) between the foil and the adhesive;
- (ii) between the MDF and the adhesive;
- (iii) within the adhesive” (para 3.4)

[4] His investigation included sending a sample from the door to CERAM research, an agency which examined samples using 'scanning electron microscopy' (SEM). On the basis of the report received from CERAM Dr Cormyn identified what he considered to be:

“a layer of copolymer which has migrated from the adhesive” (paragraph 3.6)

[5] He then requested five further defective doors for examination. He noted that the common features of all six doors included the following facts:

“Surfaces from the delaminated areas were smooth to touch and contained no wood particles;
Bonded areas required a force to separate them and the surfaces were rough and contained wood particles” (paragraph 4.6).

[6] He recounts his visit to the BA Components factory and describes in detail the manufacturing process, the equipment, the manufacturing protocols and the quality assurance methods used there. He concludes:

“This all indicates that the BA factory is strictly managed, carefully controlled and state of the art. In my opinion it is an ideal environment in which to make these cupboard doors.” (paragraph 7.13)

[7] He describes the formulation of the adhesive in paragraph 8. His information is taken from the defendant data sheet. It sets out the contents of the adhesive in % by weight. The final 7.1% of the contents are described generically as:

“Additives. (stabilizer, de-foamer, thickener, wetting agent, UV indicator).”

[8] Paragraph 8.5 discusses 'stability of the cured adhesive'. It notes:

“It is a rule of polymer chemistry that polymers do not mix” and that the “consequence is that polymers which have been forcibly mixed by stirring will then attempt to separate ...” “Molecules of ... copolymer will thus attempt to depart from the adhesive, and the only place it can go is the interface with the PVC ...”

[9] He concludes:

“In short, the Jowat adhesive has an Achilles heel and it is the copolymer.”

[10] His report also deals with some other proposed causes for delamination including the 'Diffusion of Wax' theory. This proposes that wax from the MDF diffuses into the adhesive changing its mechanical properties and that this process is the cause of the delamination.

[11] Dr Comyn rejects the idea that the action of diffused wax upon the adhesive is the principal cause of the delamination but agrees that this may play some part in the process:

“I accept that alkanes (paraffins) from MDF diffuse into the adhesives. They may alter its mechanical properties somewhat and weaken the bond; I do not accept that they are the basic cause of delamination.”

So the plaintiff's expert accepts that the leeching of wax into the MDF affects the performance of the adhesive but he considers that it is not the “principal cause” of delamination.

[12] Eight further reports were commissioned from Dr Comyn, taking this case from 25 April 2012 when the first report was provided through to 12 January 2014 when his final report became available. Throughout this time Dr Comyn holds fast to his view that the principal cause of delamination in these doors was the “Achilles heel” of the copolymer within the adhesive.

[13] In 2011 the defendant instructed Dr Chatfield to prepare a report on its behalf. He received eight failed doors from the plaintiff with accompanying paperwork indicating that their dates of manufacture ranged from March 2004 - January 2007 (paragraph 4.5). He examined two of these doors in detail and his

findings are set out in paragraph 4.6 of his report dated 30 April 2012. The main findings include the following:

“The adhesive had failed cohesively- (i.e. within itself), leaving adhesive on both the MDF substrate and the PVC foils which had been bonded to it using the adhesive;

The MDF contained a paraffin hydrocarbon wax ingredient;

The exposed surface of the adhesive that remained on the PVC foil after delamination had occurred showed traces of the wax constituent of the MDF.”

[14] Dr Chatfield comments:

“Waxes are well-known for their adhesion-reducing qualities ...”

He concludes that:

“These indications indicate that the wax-like ... components within the MDF have migrated to the failure interface. Because of their mobile character they may soften the adhesive, causing it to lose strength and fail at its weakest region, which for the 2 doors examined was within the adhesive itself.”

[15] In relation to Dr Comyn's view that copolymers were the main cause of the failure of the adhesive bonds Dr Chatfield says the following:

“SA copolymer would be expected to be found at the failure interface because it forms part of the adhesive itself. Its presence, and that of chemical entities other than waxes (which are known to cause adhesion failures) does not mean that any of these entities have a role in the adhesion failure, either individually or collectively ...

Insofar as any role of SA copolymer in the delamination is concerned it should be borne in mind that SA copolymer dispersions have found widespread and successful use for many years in coating and adhesive formulations ...” (paragraph 4.8)

[16] Dr Chatfield also notes at paragraph 4.3 that:

“There are many aspects of B A Kitchen's manufacturing process that could contribute to a subsequent adhesion failure, including:

- Insufficient adhesive thickness;
- Failure to apply a smooth, even adhesive film ...;
- Type of pvc foil, its thickness and quality of priming;
- Failure to reach the desired activation temperature of the adhesive;
- Failure to maintain this temperature for long enough;
- Extended waiting times before lamination;
- Failure to apply sufficient pressure to the laminate;
- Opening the laminating press above 40°C ...”

[17] This initial report was followed by five further reports stretching over a time span from April 2012 until 10 June 2014. Throughout this time Dr Chatfield maintained his view that the principal cause of failure of the doors was the weakening effect of wax diffusing from the MDF on the adhesive bond, and he considered that the use of insufficient quantities of adhesive by the plaintiff may also have contributed to the problem.

[18] In view of the divergence of views between the parties' experts it was agreed that a further expert would be appointed to assist the court. This expert, whose appointment was finally agreed by both parties, was Dr Dahm. It was his role to review all the materials presented to him in relation to the cause(s) of the failure of the doors, to evaluate the conclusions of the other two experts in light of this review and to produce his own report for the guidance of the court.

[19] Dr Dahm produced his report on 27 March 2014. He was of the view that:

“neither of the experts have paid sufficient attention to identifying the locus of failure and to the interaction of the adhesive with the MDF surfaces ...”
(p 1371)

[20] He spent considerable time explaining why the theories of each of the experts failed to provide a compelling explanation of all the evidence which he had reviewed before finally presenting his own proposed explanation. He expresses the basic problem as follows:

“It is often ... difficult to achieve a satisfactory bond between dissimilar materials. The adhesive ... here ... is water based and is recommended to bond two materials with greatly differing chemical and physical properties. On the one hand there is PVC a water insoluble synthetic polymer with a smooth chemically inert surface and MDF a material the

main constituent of which is.... cellulosic fibres derived from ... mainly soft wood ... The fibres are mixed with a small amount of an adhesive, a small amount of paraffin wax and compressed to make a relatively weak ... sheet material." (1385)

[21] He notes that to make a satisfactory bond the adhesive used to join the two materials must be capable of bonding strongly with the material on each of the two sides of the bond. The MDF presents special challenges here because it:

"consists of a mat of fibres weakly bonded to each other by the resin used in its manufacture. It is obvious that it is not sufficient for the adhesive to form a strong bond to the fibres on the surface. Under stress the fibres will simply be teased out of the surface and the bond will fail leaving a tuft of fibres on the failure surface. This teasing out process ... will be influenced by absorbed water or wax which can act as lubricants for the fibres ... Any adhesive on top of the contact layer ie the thickness of the film will have little effect on the bond strength." (1386)

[22] Dr Dahm formed the view that:

"failure takes place at the MDF surface. The adhesive is not able to penetrate sufficiently far into the ... MDF surface to form ... a sufficiently robust layer of fibre reinforced resin composite to withstand the delamination forces ... (1389)

Gradually over time water and wax will find their way back into the interface [*between the adhesive and the MDF*] and by lubricating the fibres will cause these to be teased out of the surface with consequent failure of the laminate."(1389)

[23] His conclusion that the MDF interface was the locus of failure is supported by evidence in the materials he was asked to review. In particular he states:

"The appearance of MDF fibres on the PVC foils of both delaminated doors aged for one or two years and those subjected to accelerated ageing provides strong evidence for failure at the MDF surface." (1388)

The Judge's Decision

[24] The LTJ heard large volumes of evidence from all parties to this case, including all the expert witnesses, intermittently over a period of years. In due course he issued his conclusion which is reproduced in full below.

"Conclusion

[53] The Court must be satisfied that the plaintiff has discharged the burden of establishing that the defendant was in breach of a duty to the plaintiff and that the breach of duty caused the damage to the plaintiff, that is that the delamination of the plaintiff's doors resulted from the use of the adhesive supplied by the defendant. The standard of proof imposed on the plaintiff is the balance of probabilities. Definitive testing with the MDF and the PVC and the adhesive as used in the manufacturing process between May 2003 and May 2007 has not been possible. Records of the quality control of the production process are not available. The Court must proceed on the evidence available.

[54] On the basis of the available evidence the Court is satisfied on the balance of probabilities that Dr Dahm's hypothesis contains the explanation for the problem. The probable cause of delamination of the kitchen doors was that over time water and wax migrated to the MDF interface and lubricated the fibres and caused them to be teased out of the surface with resulting failure of the laminate. I am satisfied that the defendant failed to appreciate the significance of the wax content of the MDF and its overall effect on the adhesive.

[55] The defendant relied on the worldwide use of this adhesive without evidence of any fundamental weakness. The plaintiff relied on delamination problems encountered with the defendant's adhesive and not only in Malta and France. No doubt some of the other instances of delamination have been occasioned by inadequate production methods. However each instance would have to be examined to determine the particular problem. The plaintiff was said to have encountered delamination problems with other adhesives. However the evidence

establishes that the rate of delamination with the defendant's adhesive at 6% was inordinate and unacceptable. Further the defendant relied on the 94% of doors successfully laminated as pointing away from the adhesive being the cause of delamination. The mechanism of delamination described by Dr Dahm relies on the unsuitability of the adhesive with high wax content. A variable will be the wax content.

[56] The defendant's representatives approached the plaintiff to promote their one part glue as suitable for use by the plaintiff. It was represented that it was suitable for use in their existing process, subject to compliance with the defendant's specifications. The process involved the plaintiff's machinery, including the spraying equipment, newly installed, of which the defendant was complimentary. The process also involved the use of MDF and PVC, which the defendant represented could be adequately bonded with the defendant's one part glue. The defendant's specifications included the grammage, temperature and pressure to be applied during the process. I am satisfied that the defendant did not take any or adequate account of the presence of wax in the MDF. The plaintiff and the defendant undertook trials of the adhesive on the plaintiff's MDF and PVC before it was accepted by the plaintiff. No issue was raised about the use of MDF or the particular MDF used by the plaintiff. Variation of grammage or temperature or pressure was not stated by the defendant to be necessary because of the use of the MDF. No adjustment of the process was stated by the defendant to be necessary if Jowat 150.50 were to be accepted by the plaintiff in place of the two part glue then in use.

[57] It was an implied term of the contract between the plaintiff and the defendant that the adhesive supplied by the defendant would be suitable for use by the plaintiff with the MDF and PVC used by the plaintiff and with the equipment installed by the plaintiff, subject to the defendant's specifications. The defendant was in breach of contract in failing to have any or adequate regard to the effect of the presence of wax in the MDF. The failure to take

account of the presence of wax in the MDF was the cause of the delamination of the doors. The defendant's breach was the cause of the damage to the plaintiff.

[58] I find for the plaintiff on liability."

The Present Appeal

[25] The defendant's Notice of Appeal may be summarised into two main points. These are:

1. That the court did not have evidence to draw the conclusions which formed the ratio of the LTJ's decision on liability; and/or
2. That the court fell into an error of law by failing to properly explain the issues which were critical to the LTJ's decision in a way which allows the reader to understand why he reached the decision which he did.

The Law

[26] The legal principles relied upon by the defendant are summarised by Halsbury's Laws of England [2013 edition, volume 88A (4) at 283] and, insofar as relevant, are set out below.

"The common law has long recognised that courts should give adequate reasons for their decisions ... in order that a party can adequately exercise any appeal rights, so that justice is not only done but is seen to be done and as a bulwark against arbitrariness."

[27] The application of these principles was explained as follows by Lord Phillips in the case of English v Emery Reimbold & Strick Ltd and other appeals [2002] EWCA Civ 605 paragraph 19:

"It follows that if the appellate process is to work satisfactorily, the judgment must enable the appellate court to understand why the judge reached his decision It is possible to provide a template for this process. It need not involve a lengthy judgment. It does require the Judge to identify and record those matters which were critical to his decision."

Discussion

[28] This appeal is based on grounds of appeal which have been summarised above. The task of this court of appeal is described as follows by the defendant at paragraph 15 of its skeleton argument:

- “(a) The Court must review the Judgement in the context of the material evidence and the submissions at trial.
- (b) The Court must assess whether it is apparent why the LTJ reached the conclusions which he did.
- (c) If the Court concludes the reasons given by the LTJ for his decision are apparent, then it must still be satisfied that those reasons are a valid basis for the Judgement.”

[29] The skeleton also correctly notes that the only issue under consideration was liability. This issue was to be decided in the context of the case pleaded by the plaintiff which the defendant acknowledges is correctly summarised at paragraph 13 of the judgment. Paragraph 13 reads:

“The plaintiff's amended particulars of claim pleaded that the defendant, with knowledge of the plaintiff's manufacturing process, supplied an adhesive that was not fit for purpose and further was unsuitable and unfit for use with MDF, or with the MDF used by the plaintiff or with MDF containing paraffin based hydrophobing elements”.

[30] According to the defendant therefore, the function of this court is to review the judgment “in the context of the material evidence and the submissions at trial”. The materiality of the evidence is to be assessed by reference to the identified issues in the case, as they have been pleaded by the parties. These issues, the defendant agrees, have been correctly identified by the LTJ and they are as summarised in paragraph 13 quoted above.

[31] We begin this review by identifying the ratio of the judgment in question. The first part of the ratio is set out in paragraph 54 of the judgment. It is introduced with the following explanatory preamble:

“[54] On the basis of the available evidence the Court is satisfied on the balance of probabilities that Dr Dahm's hypothesis contains the explanation for the problem. The probable cause of delamination of the kitchen doors was that over time water and wax migrated to the MDF interface and lubricated the

fibres and caused them to be teased out of the surface with resulting failure of the laminate.”

[32] Here the LTJ expresses himself satisfied, on the basis of the available evidence that Dr Dahm's hypothesis contains the most likely explanation of how the delamination came about. Having selected this as the most persuasive of the three proposed mechanisms through which delamination of the doors was 'achieved', the judge then expresses himself as follows in relation to the first material question in the case:

"I am satisfied that the Defendant failed to appreciate the significance of the wax content of the MDF and its overall effect on the adhesive."

[33] The relevant 'failure' which the judge attributes to the defendant is a 'failure to appreciate the significance of the wax content'. This is the operational part of this section of the ratio. This is the element about which the judge expresses himself to be satisfied by the available evidence.

[34] The defendant objects that this is not a sufficient explanation for it to understand the judge's reasoning. It complains that he gave "undue weight" to the hypothesis of Dr Dahm "which was not supported by testing or any independent verification". It complains that the LTJ erred by failing to make or record any finding of fact as to the likely wax content within the MDF.

[35] All these objections stem from the misconception that the LTJ had to decide which expert hypothesis was "the best one" and then set out his reasons for that finding.

[36] In our view any question along the lines "which expert got it right and why?" is an unprofitable question and irrelevant to the real exercise in hand. It is unprofitable because it is incapable of a definitive answer since at least two factors in the equation were not available to any of the experts at the time of their investigations. These factors were the make-up of the 7.1% of the adhesive which was undisclosed by the defendant on the basis of its commercial sensitivity and the make-up of the primer on the interior face of the PVC foils, which was also undisclosed. Given the absence of these two pieces of information questions such as "what was the mechanism of delamination?" or "what expert's hypothesis is correct?" are not capable of a scientifically justifiable answer. Indeed a definitive measurement of the "level of correctness" in any of the experts' hypotheses is also impossible. As the LTJ correctly states in paragraph 53 of his judgment "Definitive testing with the MDF and the PVC and the adhesive as used in the manufacturing process between May 2003 and May 2007 has not been possible. ... The court must proceed on the evidence available".

[37] The underlying issue between the two parties, and the first question the court needs to answer in order to determine liability, is "who is at fault for the delamination of the doors?" What the judge decided was that the core fault, the error

which could potentially ground liability in the case, was the defendant's "failure to appreciate the significance of the wax content". The "event" or action most likely to have caused the problem that has arisen between the parties in this case has been found to be that this defendant failed to understand that the fact that MDF has a wax content is a significant fact because the presence of wax impacted the effectiveness of its product.

[38] This court understands this finding perfectly well. Much of the expert evidence in the case focussed on the mechanism of failure and the question "how did the adhesive come to fail?" Each expert produced a different theory in relation to this "how" question, but underlying the differences there was a measure of consensus between them all on the fact that the presence of wax from the MDF was important. This is because, as all the experts accepted, wax has well known adhesive-weakening properties and its presence will have an impact on the overall effectiveness of an adhesive. The question of "how" this impact happens is not legally relevant to the outcome of the case. All that matters for the purpose of the proceedings is the fact that the defendant failed to appreciate that the wax content was significant *at all*. The LTJ, correctly on the basis of all the evidence, has concluded that the breach of duty in the case is the defendant's "failure to appreciate the significance of the wax content". On all the evidence that we have reviewed it would have been surprising had the LJT reached any other conclusion.

[39] The next legally relevant question that the LTJ had to address was whether or not:

"the breach of duty caused the damage to the plaintiff, that is that the delamination of the plaintiff's doors resulted from the use of the adhesive supplied by the defendant". (paragraph 53 of judgment)

[40] The LJT approached the issue in two steps. First, he considered whether the level of delamination that occurred amounted to "damage". In paragraph 50 of his judgment he states:

"Failure of the doors was at a rate of 6%. It was the plaintiff's evidence this failure rate corresponded with the use of the defendant's adhesive between May 2003 and May 2007. This evidence is accepted".

[41] Having established that there was a high failure rate which was temporally associated with use of the defendant's product he returns to the question of damage in paragraph 55 of the judgment where he states:

"the evidence establishes that the rate of delamination with the defendant's adhesive at 6% was inordinate and unacceptable".

This makes it clear that the LTJ was satisfied on the evidence received that, a failure rate of 6% constitutes 'damage' for the purposes of this case.

[42] Finally, the LTJ had to consider if it was the defendant's adhesive, and not some other factor, that had caused this damage. It had been suggested in the course of the case that the real cause of the failures might have been some defect in the manufacturing processes used by the plaintiff, or some problem with another component used in the manufacture of the doors. On this point the LTJ states at para 56 of the judgment:

“[56] The defendant’s representatives approached the plaintiff to promote their one part glue as suitable for use by the plaintiff. It was represented that it was suitable for use in their existing process, subject to compliance with the defendant’s specifications. The process involved the plaintiff’s machinery, including the spraying equipment, newly installed, of which the defendant was complimentary. The process also involved the use of MDF and PVC, which the defendant represented could be adequately bonded with the defendant’s one part glue. The defendant’s specifications included the grammage, temperature and pressure to be applied during the process. I am satisfied that the defendant did not take any or adequate account of the presence of wax in the MDF. The plaintiff and the defendant undertook trials of the adhesive on the plaintiff’s MDF and PVC before it was accepted by the plaintiff. No issue was raised about the use of MDF or the particular MDF used by the plaintiff. Variation of grammage or temperature or pressure was not stated by the defendant to be necessary because of the use of the MDF. No adjustment of the process was stated by the defendant to be necessary if Jowat 150.50 were to be accepted by the plaintiff in place of the two part glue then in use.

[57] It was an implied term of the contract between the plaintiff and the defendant that the adhesive supplied by the defendant would be suitable for use by the plaintiff with the MDF and PVC used by the plaintiff and with the equipment installed by the plaintiff, subject to the defendant’s specifications. The defendant was in breach of the contract in failing to have any or adequate regard to

the effect of the presence of wax in the MDF. The failure to take account of the presence of wax in the MDF was the cause of the delamination of the doors. The defendant's breach was the cause of the damage to the plaintiff".

[43] From our review of this case we are entirely satisfied that the LTJ addressed all the legally relevant issues arising in this case and that he answered the right questions with reference to all the evidence that was presented to him. We are satisfied that it was entirely open to him to evaluate the evidence in the way that he did. We find his explanation of his decisions and the reasons for them entirely clear and cogent. His judgment benefits from a total absence of prolixity and displays an impressive clarity which is difficult to achieve in cases involving such large amounts of expert evidence.

Conclusion

[44] On foot of our review of the present case we consider that the defendant's appeal is misconceived because it misunderstands the ratio of the case.

[45] We are satisfied that the LTJ's decision is safe and appropriate and we dismiss the defendant's appeal.