

**REPORTABLE**

**IN THE KWAZULU-NATAL HIGH COURT, PIETERMARITZBURG**

**REPUBLIC OF SOUTH AFRICA**

Case No. 6670/03

In the matter between

**RUBEN ANTHONY FRY**

Plaintiff

and

**HULETTS ALUMINIUM (PTY) LIMITED**

Defendant

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**J U D G M E N T**

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Delivered:  
25 September 2009

**INTRODUCTION**

- [1] In this matter plaintiff instituted an action against the defendant for damages suffered as a result of an explosion and subsequent fire at the defendant's premises. The court is required to determine the issues relating to whether the defendant's actions were negligent and as well as the factual cause of the explosion.

**BACKGROUND FACTS**

- [2] At the time of the incident, plaintiff was employed as a qualified welder for an engineering firm known as Rallin Engineering. On the morning of the 13<sup>th</sup> February 2002, the plaintiff along with four other co-workers ('the team') attended the premises of the defendant for the purposes of

inserting a valve between two pipelines, as was required by the defendant.

[3] Defendant engages in the process of rolling aluminium at its rolling mill, and the two pipelines in question contained Shell Sol D100 oil that was used in the rolling process. The team had brought with it cutting and welding equipment which was brand new. Upon arrival, they were issued with a Hazard Clearance Certificate, as is required by the General Safety Regulations<sup>1</sup> of the Occupational Health and Safety Act<sup>2</sup>, by an employee of the defendant, Mr Van Der Mescht. Van der Mescht also examined their equipment and was satisfied therewith.

[4] The team then proceeded to the basement of the rolling mill S6, in which the pipes were situated. According to the plaintiff, the area was then hosed down in order to flush oil from the floor gratings, and wet cardboard was placed over the panels. A hole was then cut into each of the pipes, with the equipment that the team had brought with it. After these holes had been cut, it was discovered that the valve that was to be fitted either needed to be assembled, or was in fact the wrong one. The team then proceeded up to the ground floor in order to assemble the valve.

[5] Some five hours later, the team, along with Van Der Mescht, returned to the basement in order to proceed with the fitting of the valve.

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<sup>1</sup> GN R1031 in GG 10252 of 30 May 1986

<sup>2</sup> Act 85 of 1993

However, it was then discovered that oil had been dripping from one of the pipes. Nevertheless, a member of the team, Mr Houston, climbed up onto the other pipe in order to fit the valve. Around the same time, Van Der Mescht returned to the ground floor to determine on the computer system whether the valve in the leaking pipe was in fact closed.

- [6] Mr Houston, upon discovering the hole in the other pipe wasn't suitable, decided to enlarge it. However, as he struck his flint to light his torch, an explosion occurred. As a result of the explosion and ensuing fire, Mr Houston was killed and plaintiff suffered burns as well as dislocated shoulder

## **STATUTORY DUTY AND THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS**

- [7] In seeking to hold the defendant liable, the plaintiff argued that the Regulations place on the defendant a statutory duty towards him and such duty has been breached. The requirements to be proved in regard to such a duty have been set out by Professor McKerron in *The Law of Delict*<sup>3</sup> and accepted as such in *Da Silva & Another v Coutinho*<sup>4</sup> and *Lascon Properties (Pty) Ltd v Wadeville Investments CO (Pty) Ltd and Another*<sup>5</sup>.

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<sup>3</sup> McKerron *The Law of Delict* 7ed 276-281

<sup>4</sup> 1971 (3) SA 123 (A)

<sup>5</sup> 1997(4) SA 578 (W)

[8] These requirements include that the plaintiff must prove that he or she is a person to whom the benefit of the duty was imposed.<sup>6</sup> In *Du Pisanie v Rent-A-Sign and Another* the extent of such duty in terms of the Regulations was considered and found to only impose the duty on an 'employer' for the benefit of employees. The court said that the wording of the regulations did not suggest that an independent contractor or his workmen would fall into the category of persons covered by the duty.<sup>7</sup> Consequently, plaintiff, as an employee of an independent contractor, would not be a beneficiary of any duty arising from the regulations.

## NEGLIGENCE

[9] The test for negligence was laid out in *Kruger v Coetzee*<sup>8</sup> as follows:

- (a) whether a reasonable person in the position of the defendant –
  - (i) would foresee the reasonable possibility of his conduct injuring another in his person or property and causing him patrimonial loss; and
  - (ii) would take reasonable steps to guard against such occurrence; and
- (b) whether the defendant fail to take such steps.

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<sup>6</sup> *Da Sliva*; Mckerron

<sup>7</sup> Para 15

<sup>8</sup> *Kruger v Coetzee* 1966 (2) SA 428 (A)

[10] Plaintiff essentially argues that the defendant was negligent in that it failed to take reasonable steps to avoid the harm to plaintiff in two ways:

- 1) by not identifying the basement at the mill as a 'confined space' in terms of the regulations; and
- 2) by issuing a hot hazard certificate to the team when it was not safe to do so.

### **Confined Space**

[11] In terms of Item 5 of the Regulations, certain steps are required to be undertaken before work can be undertaken in a confined space, which includes the testing of the air in the area. The Regulations define a confined space as:

'an enclosed, restricted, or limited space in which because of its construction, location or contents, or any work activity carried on therein, a hazardous substance may accumulate or an oxygen-deficient atmosphere may occur, and includes any chambers, tunnel, pipe, pit, sewer, container, valve, pump, sump, or similar construction, equipment, machinery or object in which dangerous liquid or dangerous concentration of gas, vapour, dust or fumes may be present.'

[12] The regulations require the air in such space to be tested<sup>9</sup>, and if that is not possible, the space is to be purged, ventilated, and isolated from all openings by the shutting of valves that are to be locked and fastened

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<sup>9</sup> Regulation 5(4)

with chains and padlocks. The regulations then go on to require that breathing apparatus be used if these steps cannot be taken. Furthermore, these requirements may also apply to an area bordering or alongside any confined space, and that all persons have to vacate the space once the work is completed.

- [13] It is difficult to imagine how these requirements could be applied in the case of the defendant's basement. Although the photographs handed in as Exhibit D depict an area that is restricted and narrow where the work was being undertaken, the basement itself runs almost the entire length of the mill, has several access points, has a ceiling that partly consists of grates which are open to floor above and indeed constitute the floor of the ground level. For the defendant to take all these steps required of it in terms of the regulations if the basement were a 'confined space', would be an impractical expectation and as such, it is doubtful whether the legislature would have intended a basement such as the defendant's to be so defined.

### **Issuing of the Hazard Clearance Certificate**

- [14] Regulation 5(4) requires that where welding work is to be done in respect of any tube, tank, drum, vessel or similar object that is completely closed and that contains a substance that may explode or ignite, an authorised person has to certify that such danger has been removed before the work can be undertaken.

[15] The Hazard Clearance Certificate was issued to the team upon their arrival at the mill. It stated, *inter alia*, that valves and pipeline leading to the area had been closed and locked out, that the pipes had been drained and that the oil had been washed away. However, this had obviously not been properly done as on the evidence of both the plaintiff and Van Der Mescht, the area required to be hosed down and indeed was done so both before the work began in the morning, and around midday by Mr Van Der Mescht himself. Also the presence of the dripping oil when the team returned to the basement indicates that either the pipes had not been sufficiently drained, or the valves had not been suitably closed. In either case, what was stated to have been done had in fact not been done, and the certificate had therefore been issued incorrectly.

## **CAUSATION**

[16] The second issue before court is the cause of the fire. In this respect, the parties each led their own expert witness to support their differing versions.

[17] Plaintiff alleges that the explosion was caused by the ignition of oil vapours that had leaked out of the pipe into the basement. In support of this plaintiff lead the expert evidence of Mr Carr.

- [18] Carr is a natural scientist with a specialisation in chemistry. He has substantial and extensive history and experience with the workings of rolling mill such as the defendant's. He testified that Shell Sol D100 contained numerous materials, some of which have lower flashpoints than others. When exposed to continuous heat and pressure, the Shell Sol D100 oil degrades, losing the material with the lower flashpoint first. Small vapours then form at the rolling mill, which travel down into the pan beneath the mill and into a dirty oil tank. When this tank is then drained, a small but sufficient amount of vapour is left behind, which could then roll down the pipe once the holes were drilled.
- [19] Although these vapours are heavier than air, he said that the matter was more complex than to just say that because of this the vapour would accumulate on the floor. However, he did not explain how or why. In any event, he noted that Mr Houston had been burnt more around his legs than his head which would be consistent with the vapour coming out of the pipe on which Mr Houston was sitting, and then descending. Furthermore, the fire had been contained to the basement. He pointed out that the data sheet on Shell Sol D100 issued by the Shell Corporation warns against welding any container containing such oil, which must be drained thoroughly.
- [20] However, Mr Carr conceded that he has not had knowledge of the conditions of the workings of this particular mill since the mid-1980s. He did not calculate what percentage of the oil would have the lower



flashpoint, but estimated it to be around one to two percent. He also testified that given the size of the pipe, it was less likely that this would be sufficient area for gas vapours to collect, but that the Shell Corporation nevertheless warns against it.

[21] Defendant argued that the explosion was more likely caused by the ignition of the acetylene in the pipes of the cutting and welding equipment used by the team. To support this, it led the evidence of Dr. Froneman.

[22] Froneman testified that he has investigated approximately 2000 fires, and that around 20 per cent of these involved accelerants. He conducted tests of samples of the oil taken from the mill, and determined that the flashpoint of the oil was 105 degrees Celsius , which was consistent with both the Shell data sheet and other tests conducted by the GCMS. He then added that it is only at this temperature that the oil vapours become dangerous.

[23] He further testified that where the plant was operating at 30 degrees Celsius, the oil was not going to produce any volatile compounds. He confirmed the oil vapours would be heavier than air, and therefore descend, unlike acetylene which is lighter than air. Furthermore, given the design of the pipes in the mill, in order for the vapour to reach the point on the pipes where the holes were made, the vapour would have to ascend up the pipe to the holes.

[24] He added that as soon as acetylene turns into a vapour, it expands 22 000 times. It burns immediately, and it is easy for acetylene to form a cloud. Furthermore, the description of the plaintiff of a sudden rolling ball of flame is more consistent with acetylene burning. He also testified that according to his calculation, if the pan were coated with a maximum amount of oil after draining, this would only produce 400ml of oil vapour.

[25] However, Froneman's experience is not as extensive as Professor Carr's, and has largely been laboratory based. Furthermore, he is not familiar with the workings of a roll mill, and this was the first time that he had investigated a fire at such a mill. He first attended the mill several weeks after the fire, and based his tests on ambient temperatures, which Carr said that the mill was not operating on at the time, which in turn was based on the statement of the plaintiff that the oil was 'lukewarm' when it was dripping from the pipe. He relied on the defendant for much of his information, without checking this. Finally, the evidence was that for acetylene gas cloud to have formed, the gas would have had to be leaking for some time.

[26] On this evidence, it would seem that the two versions postulated by the parties are of equal probability. Although, the plaintiff has established how the oil vapours would have formed, it does not explain how they overcame the physical necessity of having to travel up the pipe in order

to reach the holes, contrary to its nature. Furthermore, the evidence is that the explosion occurred at the ceiling, but did not travel back along the pipes as would be expected if the oil vapour was the cause of the explosion.

[27] However, the defendant's version, does not explain how a sufficient amount of acetylene would have accumulated in the basement prior to the explosions. It also does not explain why there were no problems when the team cut the pipes earlier in the day, or why the acetylene gas, which has a particularly noticeable smell, was not noticed by any persons if it had indeed been leaking.

[28] Where the two versions before court are of equal probability and a court is unable to determine which version is the most probable, and there are no independent facts on which to rely or persuade to accept one over the other, the court must decide in the favour of the defendant.<sup>10</sup> Plaintiff therefore, has been unable to establish on a balance of probabilities that the fire was caused by the ignition of the oil vapours.

[29] In the circumstances the action is dismissed with costs.

TSHABALALA JP \_\_\_\_\_

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<sup>10</sup> See *Tshikomba v Mutual & Federal Insurance Cp Ltd* 1995 (2) SA 124 (T) at 129D; *H Mohammed & Associates v Buyeye* 2005 (3) SA 122 (C) at 129B

Dates of Hearing:	4 <sup>th</sup> & 5 <sup>th</sup> May 2005 29 <sup>th</sup> August 2005 8 <sup>th</sup> May 2007 27 <sup>th</sup> 28 <sup>th</sup> & 29 <sup>th</sup> August 2007 7 <sup>th</sup> September 2009
Date of Judgment:	25 September 2009
Counsel for Plaintiff:	Mr. F.M. Moola, SC with him Ms J.M.Singh
Instructed by:	Volsum, Chetty & Lax
Counsel for Defendant	Mr. A.J. Troskie, SC
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