

6 Section 3 sets out how the presence of an inventive step is determined:

An invention shall be taken to involve an inventive step if it is not obvious to a person skilled in the art, having regard to any matter which forms part of the state of the art by virtue only of section 2(2) above (and disregarding section 2(3) above).

7 The attorney made some submissions in respect of the way in which I should approach these provisions, which I consider as a part of my analysis below.

The invention

8 The invention lies in the field of scrapping goods and products which have come to the end of their useful life. It concerns a process which takes the product in question, breaks it up into pieces, separates out certain pieces or material for re-use, and then makes a new composite material out of the remaining matter.

9 The latest set of claims, which was filed on 9 June 2010, comprises 1 main independent claim, as follows:

A process for scrapping vehicles or white goods formed from two or more types of material comprising passing the vehicles or white goods in an assembled condition through a shredding machine which shreds, chops or fragments the products which are being scrapped into pieces, removing and recovering for re-use part of the pieces and mixing or coating the remaining pieces with an encapsulating material having adhesive properties to form a re-useable composite material wherein no pieces of the vehicles or white goods being scrapped remain to be disposed of by other means such as incineration or in land-fill sites.

10 There are then 8 dependent claims and an omnibus claim in the usual format.

Arguments and analysis

Introduction

11 The examiner maintains that the claims define an invention which is lacking in inventive step. His position is set out in detail in his examination report of 18 June 2010, and is summarised in his pre-hearing report of 17 September 2010.

12 The applicant maintains that the invention as now claimed is novel and inventive. Arguments made by the attorney are contained in responses to the various examination reports, and further points were made at the hearing and in a follow-up letter from the attorney dated 27 September 2010.

13 What I must do is determine whether the present set of claims define an invention which is inventive in light of the documents at issue.

Inventive step methodology

14 It is agreed that the approach I should adopt is to work through the well-established steps set out by the Court of Appeal in *Windsurfing*¹ and restated by that Court in *Pozzoli*². These are:

¹ *Windsurfing International Inc. v Tabur Marine (Great Britain) Ltd* [1985] RPC 59

² *Pozzoli SpA v BDMO SA* [2007] EWCA Civ 588, [2007] FSR 37

(1)(a) Identify the notional “person skilled in the art”

(1)(b) Identify the relevant common general knowledge of that person

(2) Identify the inventive concept of the claim in question or if that cannot readily be done, construe it

(3) Identify what, if any, differences exist between the matter cited as forming part of the “state of the art” and the inventive concept of the claim or the claim as construed

(4) Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to the person skilled in the art or do they require any degree of invention?

- 15 Regarding step 1(a), the examiner says that the person skilled in the art is a team of individuals involved in the recycling and disposal of waste mechanical equipment, such as vehicles and white goods. I agree with this assessment.
- 16 At the hearing, the attorney also agreed that essentially this was right, but he went on to say that it should be borne in mind that the team of people who were involved in the process of the present invention had all been surprised at the re-useable composite material that resulted from the process. He was also concerned that the examiner was saying that, because in this case a consortium of people were involved (namely, a recycling company, a construction company, a motor manufacturer, and a company producing the encapsulating material), it meant that the inventive step hurdle was higher because they were being deemed to be “more aware of prior art”.
- 17 It is worth being clear that the skilled person is hypothetical and non-inventive, and so is not to be equated with the actual inventor or team of inventors in the particular case in question. As *Windsurfing / Pozzoli* makes clear, the question of whether the invention is obvious is answered by looking at whether the invention would have been obvious to the hypothetical and non-inventive skilled person, and not by asking whether it was obvious (or indeed surprising) to the actual skilled people involved in the process.
- 18 The examiner’s view is that, under step 1(b), the common general knowledge of the skilled person or team extends to “an awareness of equipment used to crush, shred or otherwise break down waste into smaller pieces, methods of separating waste formed from different materials, methods of recycling processed waste, and potential uses of the resulting products”³. The attorney agrees, and so do I.
- 19 Turning to step 2, the examiner identifies the inventive concept of claim 1 as “a process for scrapping vehicles or white goods formed from two or more materials by shredding the vehicles or white goods in an assembled condition, recovering some of the resulting pieces for re-use, and adding an encapsulating agent to the remaining pieces to form a re-usable composite, whereby no pieces of the vehicles or white goods remain”⁴.
- 20 At the hearing, the attorney agreed with this assessment but placed particular

³ Examination report of 18 June 2010, paragraph 13

⁴ *Ibid.* paragraph 16

emphasis on the fact that the product to be scrapped entered the process in a wholly assembled condition, that no unused pieces remained at the end of the process, and that the composite produced was wholly re-useable. I agree that these are features of the claimed invention and that they are properly brought out in the inventive concept identified above.

- 21 With regard to steps 3 and 4, the relevant prior art for the purposes of this decision comprises a French, a European and a Japanese patent application. I shall consider each of them in turn.

FR 2 734 740 A (Sotecfond)

- 22 The FR document concerns a procedure for using crushed non-recyclable waste in a product. The waste is obtained by using a known process of crushing an entire vehicle (including the bodywork, rolling gear, seats, interior trim and windows). Certain recyclable materials, notably metals, are extracted and the crushed material is then sorted by size, with larger pieces being crushed again. The resulting waste product, comprising glass, foam, leather and other material, is mixed with a binder to form the “core” of a moulded product, which is then surrounded by a waterproof skin or coating to form a block. Suggested uses for this block include sound-proofing or thermal insulation.
- 23 The examiner’s contention is that there is no indication that any material remains unprocessed, other than that which is recovered before the addition of the binder. The attorney argued at the hearing that the document is silent on this point, and so it does not disclose the feature of the present invention that all of the material which remains after removal of certain recyclables is used. Furthermore, he pointed to page 4 lines 7-14 and to the machine translation of that paragraph provided by the examiner, which appears to discuss landfill. He argued that, if landfill was necessary after the described process, then clearly not all the waste material was being used in the new product, since some remained for disposal.
- 24 I have looked closely at this passage in the FR document, and what is being described is one possible use of the product which is formed using the waste material. It explains that – if the core material is encased with the right coating – the product can then be used to fill, for example, a site such as a quarry without risking pollution of the ground water.
- 25 Also, looking at the disclosure more generally I think it is clear that, after crushing of the vehicle, certain recyclable material is removed and the remainder of the waste is then sorted, crushed again, and used to form the core of the product. In other words, once the recyclable material has been removed, there is no disclosure or suggestion of a step which involves further selection from the remaining waste material. Thus, in my view, the FR document clearly envisages that the whole of the remaining waste from the crushed vehicle (once recyclable material has been removed) is used in the core of the product.
- 26 The attorney also argued that the present invention provides that the whole vehicle can be shredded in a fully-assembled form, whereas the FR document says that the “whole vehicle” is crushed, but does not say that the whole vehicle is subjected to the process fully-assembled. I agree that the FR document does

not explicitly refer to whether the vehicle is supplied to the crusher in fully-assembled form.

- 27 The FR document therefore discloses a process in which a whole vehicle is crushed, certain recyclable material is removed, and the remaining waste material is mixed with a binder and then used to form a new product which is re-useable in a number of ways.
- 28 It follows that the only difference between the disclosure of the FR document and the present invention is that the latter shreds a vehicle in a fully-assembled form, whereas the FR document discloses crushing a vehicle and is silent on whether it is in a fully-assembled form. The question to be asked is whether this difference bestows an inventive step on the present invention as claimed.
- 29 First, I cannot see how it can be regarded as inventive to take the disclosure of the FR document and apply it to a fully-assembled car. In my view, even if the FR document does not quite say so in terms, it points the skilled person strongly towards this idea, talking as it does about the known technique of a whole vehicle being crushed, with the entire body being introduced into the crusher via a hopper (page 1 lines 10-13). It would be well-known to the skilled person that crushers are capable of crushing fully-assembled cars and so I cannot see how there would be any degree of invention in applying the teaching of the FR document to such a vehicle. Neither does it seem to me that the skilled person would regard the FR document as explicitly teaching him to disassemble the vehicle in some way before feeding the entire contents into the crusher.
- 30 Turning to the point about the difference between crushing and shredding a vehicle, the attorney made a further submission in a letter of 27 September 2010 – namely that crushing exerts a compressive force which will form a compressed block of material, whereas shredding produces small pieces. Whilst I agree with that distinction, it seems to me that the FR document is disclosing a process of producing small pieces of waste from a scrapped vehicle which are suitable for forming the basis of the core of the new product. Having regard to the skilled person and my conclusion that he would be well aware of the alternative existing machines for scrapping a vehicle and breaking it down into pieces, I cannot see how it would be inventive to choose to break the vehicle down by using shredding rather than the crushing process of the FR document. I therefore find it an obvious alternative to use a shredder instead of a crusher to break a vehicle down into pieces, which can then be sorted for recycling or further processing.
- 31 It follows that claim 1 is obvious in light of the disclosure of the FR document and the common general knowledge.
- 32 Turning to the dependant claims, claim 2 refers to the encapsulating material being an adhesive foam which is mixed with the remaining waste pieces. The FR document talks about the binder being one of a number of well-known resins or adhesives, which is mixed with the vehicle waste. In my view it would not be inventive to use a resin or adhesive foam rather than any other appropriate adhesive type, when following this teaching. Furthermore, the skilled man would know that adhesive or resin of the types in the FR document would need to cure or set. This renders claims 2 and 5 obvious.

- 33 Claim 3 refers to the addition of a strengthening material with the encapsulating material. At page 3 lines 9-13, the FR document discloses use of plural binders selected from a list of materials, and that list includes both adhesives and strengthening material (e.g. cement). This renders claim 3 obvious.
- 34 The FR document talks about moulding the waste material once it has been combined with the binder, and it is clear that the resulting product may be a block. This renders claims 6 and 7 obvious.

EP 1 078 724 A (Toyoda)

- 35 The EP document concerns a method of manufacturing sound-proof products, in which a thermoplastic fibrous binder is mixed with chip-like solid matter and moulded under pressure and heat. The solid matter used is non-metallic shredded material composed of waste from a vehicle. As paragraph [0019] explains, this matter can be obtained by removing glass, metal, wire and other material “from shredder residue composed of wastes of vehicles”. It is not said explicitly whether or not the material removed before formation of the sound-proof product is intended for recycling or re-use.
- 36 The attorney made the point that the material being removed from the shredder residue in the EP document is, in some ways, different from the material that is removed from the vehicle waste in the present invention – with the effect that the composite material of the present invention is different in composition from that of the EP document. While that may be the case, I can see nothing in the claims under consideration which distinguishes on this point; for example, claim 1 refers simply to “removing and recovering for re-use part of the pieces”.
- 37 Furthermore, the attorney argued that the EP document is, like the FR document, silent on whether any unused material remains at the end of the process (other than the material recovered before addition of the binder). Therefore, he contended, it does not disclose the feature of the present invention that all of the material which remains after removal of certain recyclable materials is used.
- 38 However, it seems clear to me that, having obtained the “shredder residue from wastes of vehicles”, the disclosure of the EP document is of removing metal, glass, wire and other materials, and then encapsulating what remains. There is no disclosure or suggestion of a step which involves further selection from the remaining waste material. Thus I think it is clear that, after the described process, nothing remains from the vehicle waste other than the extracted metal, glass, etc and the composite sound-proof material. However, what is not disclosed is whether or not the “shredder residue composed of wastes of vehicles” is derived from shredding an entire vehicle or not.
- 39 It follows that, in my view, the EP document discloses a process for using material from scrapped vehicles in the form of shredded waste, in which some material is recovered from the shredded vehicle waste, and the remaining material is mixed with a binder to form a wholly re-usable composite material, namely, used as a sound-proofing material.
- 40 Thus the difference between the disclosure of the EP document and the present

invention is that the EP document is silent as to how the “shredder residue composed of wastes from vehicles” is generated and as to whether the initially recovered metal, glass, etc is re-used. The question, then, is whether it would be obvious for the skilled person to take the disclosure of the EP document, obtain the necessary “shredder residue from wastes of vehicles” by shredding a whole, assembled vehicle, and re-use or recycle the recovered metal, glass, etc.

- 41 Having considered the point carefully, I am satisfied that it would. Given the skilled person’s common general knowledge in the area of crushing, shredding or otherwise breaking down vehicles and other waste, and the fact that it is known that it is possible to crush or otherwise break down entire, assembled vehicles, I am not persuaded that he would be exercising any degree of invention if he were to obtain the shredded vehicle waste of the EP document by shredding an entire assembled vehicle. Furthermore, I am in no doubt that the skilled person would know that the materials extracted prior to the addition of the binder are standard recyclable materials which can be re-used accordingly.
- 42 It follows that claim 1 is obvious in light of the disclosure of the EP document and the common general knowledge.
- 43 Paragraph [0023] of the EP document discloses use of more than one binder material, including both a resin and another material of a fibrous nature which must, in my view, strengthen the mixture. This renders claim 3 obvious.
- 44 Furthermore, as well as disclosure of mixing the binder with the waste material, there is disclosure of dispensing the binder via a hopper onto the waste material; see e.g. figure 2 and paragraph [0037]. I am not persuaded that choosing to dispense the binder of the EP document (with its fibrous and other component(s)) with a spray instead of a hopper has any degree of inventiveness. This renders claim 4 obvious. Furthermore, the skilled man would know that thermoplastic resin as disclosed would need to cure or set – thus rendering claim 5 obvious.
- 45 The EP document discloses moulding the waste material once it has been combined with the binder, in one embodiment into a flat shape – see paragraph [0049]. This renders claims 6 and 7 obvious.
- 46 Finally, claim 9 refers to passing composite material at the end of its useful life back through the claimed shredding and forming process, thus re-using it in its entirety to form a new composite material. Paragraphs [0021], [0061-0063] and [0091-0094] of the EP document discuss re-use of the formed composite material and in particular the way in which such material can be re-shredded to form the “suitable chip-like solid matter” for the sound-proof material. Given that the EP document teaches the skilled person that the composite material formed by the process can be broken down and reused in the process, I do not see that it is inventive to reprocess the composite material of the present invention at the end of its useful life in the same way. Thus claim 9 is obvious.

JP 8-112584 A (Toyota)

- 47 According to the abstracts and Japanese Patent Office machine translation, the JP document relates to the production of a granular composite material which is

formed from waste material obtained from shredded cars combined with a binder in the form of a fibrous thermoplastic resin. Metals and the wire harness are removed before the waste (comprising plastic, rubber, urethane, textiles and other matter) is subjected to the process by which the composite material is formed. It can be moulded into any shape, and can be used as sound-proofing. It is not said explicitly whether the metals and wire removed before formation of the sound-proof product are intended for recycling or re-use.

- 48 As with the other two documents, the examiner contends that there is no indication that any material remains unprocessed, other than that which is recovered before the addition of the binder. The attorney's position is once again that the document is silent on this point and so does not disclose the feature of the present invention that all of the material which remains after removal of certain recyclable materials is used.
- 49 In my view the JP document discloses removal of metals and wire from the shredder waste, and then the use of the remaining material in one or more composites. I can see no disclosure or suggestion that further material is removed before forming the granular structure which is used with a binder to form the composite. Furthermore, my reading of paragraphs 2 and 3 is that the idea of the invention is to use the material which remains after removal of the metal so that it does not have to be disposed of in landfill or by incineration. In my view it is clear that, if the process is followed as disclosed, there is no material left over from the obtained shredded material from cars, other than the metals and wire recovered prior to addition of the binder.
- 50 The attorney also made the point at the hearing that the present invention is concerned with using "discrete material" to form the composite, whereas the translated JP document talks about "shredder dust". While it is true that the translation uses that term, it is also clear that this "dust" actually comprises particles of up to 20mm in size. In this respect, I can see no distinction between this "dust" and the shredded "small pieces" of the present invention. However, I agree with the attorney that it is not disclosed whether the "shredder dust" is derived from shredding an entire, assembled vehicle or not.
- 51 It follows that the JP document discloses a process for using shredded material from scrapped vehicles, in which some material is recovered from the shredded vehicle waste, and the remaining material is mixed with a binder to form a wholly re-usable composite material, namely, a material used as sound insulation.
- 52 The difference between the disclosure of the JP document and the present invention is that the former does not disclose how the shredder waste is generated, nor whether the recovered metals and wire are re-used. The question is whether it would be obvious for the skilled person to take the disclosure of the JP document, obtain the necessary shredder waste by shredding a whole, assembled vehicle, and re-use or recycle the recovered metals and wire.
- 53 On all fours with my reasoning in respect of the EP document, I am satisfied that it would. Given the skilled person's common general knowledge in the area of crushing, shredding or otherwise breaking down vehicles and other waste, and the fact that it is known to crush or otherwise break down entire, assembled

vehicles, I am not persuaded that he would be exercising any degree of invention if he were to choose to obtain the shredded vehicle waste of the JP document by shredding an entire assembled vehicle. Furthermore, I am in no doubt that the skilled person would know that the metals and wire extracted prior to the addition of the binder are standard recyclable materials which can be re-used accordingly.

- 54 It follows that, in my view, claim 1 is obvious in light of the disclosure of the JP document and the common general knowledge.
- 55 Turning to the dependant claims, the JP document refers to the binder optionally being urethane adhesive and to the fact that it may be a thermoplastic or thermosetting resin which is allowed to solidify – see for example paragraph [0009]. This renders claims 2 and 5 obvious, as it would not be inventive to choose a resin or adhesive foam, rather than any other appropriate adhesive type, when following this teaching.
- 56 Paragraph [0009] discusses combining natural fibres with the resin, and in my view these would have the effect of strengthening the composite material. This renders claim 3 obvious. Given that the document discloses moulding of the composite material into, for example, a “block body” and other shapes, claims 6 and 7 are obvious.

Conclusion

- 57 I conclude that the invention as defined in claims 1-7 and 9 is lacking in an inventive step.
- 58 Not all of the claims have been found to lack inventive step in light of the documents discussed, so I am remitting the application to the examiner.
- 59 The compliance date is currently 25 October 2010, which falls within the appeal period for this decision. Section 20(2) therefore applies. If my decision is appealed, the compliance date is extended until such date as the court may determine. If my decision is not appealed, the compliance date is extended until the end of the appeal period set out below, namely **19 November 2010**.

Appeal

- 60 Under the Practice Direction to Part 52 of the Civil Procedure Rules, any appeal must be lodged within 28 days.

Dr J E PORTER

Deputy Director acting for the Comptroller