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Case No: HC07C02572

IN THE HIGH COURT OF JUSTICE
CHANCERY DIVISION
PATENTS COURT

Royal Courts of Justice
Strand, London, WC2A 2LL

Date: 07/10/2008

Before :

THE HON MR JUSTICE FLOYD

- -

Between :

W L GORE & ASSOCIATES GMBH	**Claimant**
- and -	
GEOX SPA	**Defendant**

- -
- -

James Mellor QC and Andrew Lykiardopoulos (instructed by **Taylor Wessing LLP**) for the **Claimant**
Richard Meade QC and Tom Moody-Stuart (instructed by **Herbert Smith LLP**) for the **Defendant**

Hearing dates: 1-5 September 2008

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Judgment

Mr Justice Floyd :

1. In this action, the Claimant W L Gore & Associates GmbH (whom I shall call "Gore") seeks a declaration of non-infringement of four patents in the name of the Defendant Geox SpA (whom I shall call "Geox"). Gore also seeks revocation of all four patents. The patents all relate to shoes with a waterproof and breathable sole, and methods for making them.

2. Gore makes waterproof and breathable fabric, not shoes. It proposes to license shoe manufacturers to use Gore fabric to make shoes. The action has been brought to trial as a matter of some urgency in the light of Gore's proposed licensing activities, and was heard in a limited trial slot in September. At an earlier hearing, and in view of the fact that Geox had acknowledged non-infringement in respect of two of the patents in suit, I ordered that the issues of validity of those two patents should come on at a later hearing.

3. That left two patents: EP (UK) 0 858 270 ("270") and EP (UK) 1 185 183 ("183"). Gore has described two products (and corresponding processes) in an Amended and Consolidated Product and Process Description. The two products are distinguished by differences in their manufacture. The first is a cemented construction and the second is an injected construction. Geox has acknowledged that the cemented product does not infringe 183, and the injected product does not infringe 270. Thus the issues for me now are (a) validity of 270, (b) validity of 183, (c) infringement of 270 by cemented and (d) infringement of 183 by injected.

The witnesses

4. Gore called three witnesses: two expert witnesses and one witness as to fact.

5. Gore's expert on shoe design was Mrs Rosemary Wright. Mrs Wright has worked in the footwear industry for over 45 years in various capacities. She is now a consultant in footwear design. I found her to be a highly knowledgeable, very frank and down-to earth witness. Her experience did, however, include a role as a trouble-shooter. I gained the impression that she was accustomed to solving problems which those from the footwear industry who consulted her had not been able to solve. To that extent she may have represented a level of skill and inventiveness somewhat beyond that of the person ordinarily skilled in the art. I have taken that fact into account when assessing her otherwise very helpful evidence.

6. Gore's expert on adhesives and adhesive application was Dr Roland Heider, who is a consultant in that field, including those used in the shoe industry. In the course of his cross-examination he was obliged to retreat from some of the more extreme statements in his witness statement. This has led me to treat his evidence with a little caution.

7. Gore's fact witness was Mr Thomas Hübner. He is the Global Business Leader for Footwear at Gore, and had been with Gore for 27 years. He initiated the incorporation of GORE-TEX materials into footwear linings. He gave evidence about the history of GORE-TEX membranes for footwear and

clothing. Whilst highly knowledgable about Gore's business and technology, I did not find his explanations of some of the statements in Gore's technical manuals entirely convincing.

8. Geox also called two experts (and relied on the witness statement of a third minor witness as to fact by way of a Civil Evidence Act Notice).

9. Geox's expert on footwear design was Ms Mary Simons. Upon leaving school in 1962 Ms Simons joined the British Boot and Shoe & Allied Trades Research Association ("SATRA"). SATRA is a footwear research and technology centre which conducts research and offers testing facilities for members. Ms Simons worked there in the Production Services Department until 1976, as a researcher on productivity and methods in the shoe industry. In 1976 she joined the Fashion Technology Department working on technical developments in shoes, and in 1987 the Management Services Department working on efficiency and quality control.

10. Gore pointed to the fact that Ms Simons' experience had not placed her as close to the designer pattern cutter as Mrs Wright's. That is correct, but she has nevertheless spent her career steeped in shoe technology and in close contact with shoe factories to which she was a frequent visitor. I did not think she lacked any relevant knowledge or expertise.

11. Gore's more significant criticism of Ms Simons was that she seemed to take a very literal approach to the teaching of the prior documents. When asked whether the skilled team would or could make a modification or development from the prior art she seemed concerned that to do so might take one outside the "licence" under a prior patent. Such caution has, of course, nothing to do with whether the modification or development is technically obvious. I have taken this caution of Ms Simons into account when assessing her evidence. However, I have not thought it right, on that ground, to discount her evidence in cases where she gave good technical reasons for being uncertain about particular steps, for example because she would be unsure as to the technical consequences of doing so.

12. Geox's adhesives expert was Mr Hacker. Although he had no formal qualifications, he had very long practical experience in supplying adhesives to the footwear industry. I found his evidence helpful, although, for reasons which will emerge later in this judgment, he was having to tackle the issues under discussion from a somewhat theoretical standpoint.

The skilled addressee

13. The patents are addressed to a person or team with a practical interest in the functional aspects of shoe design. Such a person is likely to be a designer pattern cutter in the shoe business. He or she will combine knowledge of the design of shoes with the practical considerations surrounding their manufacture.

14. Geox submitted, based on the evidence of its expert Ms Simons, that the patents would principally interest those working in the "everyday" shoe sector, rather than the sports or specialist shoe sectors.

15. Whilst it may be right that the patent would interest some areas of the footwear industry more than others, I do not think that it would be right to read the patent only through the eyes of someone in the everyday shoe sector.

Common general knowledge

16. The common general knowledge which it is necessary to have in mind for the purposes of interpreting the patent and the prior art and considering the attacks based on lack of inventive step is that knowledge which is generally known and regarded as a good basis for further action by the bulk of those engaged in the art: *General Tire v Firestone* [1972] RPC 457. The knowledge in question must be publicly available knowledge, not, for example, confidential material available only under licence. Moreover, knowledge does not become common or general, if it is known only to particular classes of skilled person: see per Jacob J in *Union Carbide v BP* [1998] RPC 1 at 16. Further, information which is new and/or unsupported by practical trials or other evidence of its reliability may, even if widely circulated, not measure up to the standard required for common general knowledge. The Court of Appeal in *General Tire* was not, on that occasion, prepared to go as far as to say that the information must necessarily be such as to be accepted "without question", but it must nevertheless be information that the skilled person would accept to the extent that he or she would rely on it for further work.

Types of shoe construction

17. Two methods of shoe construction are of particular importance for this case: cement-lasted construction and Ströbel-stitched construction

Cement-lasted construction

18. In cement-lasted construction, the upper of the shoe is stretched over the last (the wooden or plastic form used for forming the shoe). The stretched upper is cemented to the insole with adhesive cement in an overlapping margin called the lasting margin.

19. The lasting margin causes an unevenness around the edges of the sole which can be eliminated with a filler layer of cork, felt or similar material.

Ströbel-stitched construction

20. In this construction the upper is stitched to the insole before lasting, making a bag into which the last is forced. Shoes made in this way are less rigid.

21. In both types of construction the sole can be applied as a prefabricated unit using adhesive in a pressing operation on the last. Alternatively the sole can be attached by a direct moulding process in which the sole material is injected

onto the lasted upper in a mould ("direct injection"). Once solidified, the mould is removed leaving the sole in place.

Use of GORE-TEX material in uppers by 1995

22. GORE-TEX is a proprietary material made by Gore and widely used before the priority date as a material in clothing. The material has the property of being able to transmit water vapour, but not liquid water. So if you seal a sheet of GORE-TEX over a steaming cup of coffee, you will see the steam coming through the material. This is referred to as "breathability". Despite the breathability, you will be able to turn the cup upside down without losing any coffee. So the material is breathable yet waterproof. This property is exploited in clothing and footwear as it allows water vapour in the form of perspiration to escape from the garment or shoe, without compromising its waterproof qualitues. This property of GORE-TEX was well known and widely advertised by them, for example at trade fairs.

23. The material is made and sold in a variety of different plies laminated together, and sometimes rather confusingly referred to together as a "membrane". I will endeavour to refer to these multi-ply materials as laminates. The layer which gives the material its special properties, is made of expanded PTFE (ePTFE). I will refer to this as "bare membrane". Bare membrane is very thin and fragile. Hence one purpose of supplying it as a laminate is to ensure handlability.

24. So far as the shoe industry is concerned, Gore would not supply bare membrane. Bare membrane would always be covered at least with a thin layer of mesh to support it and ensure handlability. In other cases it would be supplied as a three or four layer laminate. The additional layers would be textile materials. A common arrangement was a three-layer laminate consisting of the layer of mesh, the layer of ePTFE and a layer of nonwoven textile material such as Cambrelle.

25. The evidence establishes quite widespread use of GORE-TEX materials in the uppers of shoes by 1995. Gore, however, took a very close interest in the uses to which its materials were put. It operated a licensing program designed to keep the use of its materials to the top end of the market. Licensees would be provided with confidential manuals, giving details of techniques for working with GORE-TEX materials. Not everyone could become a Gore licensee.

26. By 1995 GORE-TEX was by no means the only waterproof yet breathable material on the market. Gore had some 38 competitors in the supply of these materials. But I received little or no evidence about the way in which these competitor companies operated.

27. All this indicates that I should exercise a degree of caution when coming to conclusions as to the extent of the common general knowledge as to the techniques of utilising GORE-TEX and similar materials in shoes in 1995. The skilled addressee would obviously be able to learn a certain amount by inspection of shoes on the market. But more detailed methods might not be

apparent from inspection, and be available only to a limited class and therefore not, on that ground, part of the common general knowledge.

Use of waterproof and breathable soles by 1995

28. By the priority date of 270, Geox had introduced its shoes with a waterproof and breathable sole. This result had been achieved by perforating the sole to allow the escape of water vapour. The holes were, of course, a striking departure in conventional shoe making for the obvious reason that they would allow water to get into the interior of the shoe. Geox was able to make these holes because they had incorporated a waterproof yet breathable membrane in the shoe to prevent water getting in, but still allow water vapour to escape.

29. By 1995, Geox had commenced sales on a substantial scale and secured licensing deals with a number of companies worldwide. Its shoes had been featured in a number of issues of Fotoshoe, an important industry publication. The introduction of the shoes was a talking point in the industry. The articles and advertisements which were published in Fotoshoe would have made the skilled team aware of the fact that (a) the sole of the shoe has holes in it and (b) a waterproof but breathable membrane was somehow incorporated into the shoe.

30. Gore did not adduce any evidence of how much of the detail of such a shoe could be determined by inspection. Indeed I was not shown any examples of prior art Geox shoes.

270

31. 270 has a priority date of 1995. It relates to a vapour-permeable shoe. It explains (at [0002] to [0003]), that the correct exchange of heat and water vapour

> "must not compromise in any way the tightness of the shoe with respect to external moisture"

32. The specification points out at [0004], as part of its section on the background art, that available shoes in 1995 currently entrusted heat and water vapour exchange to the upper or via the sole. So far as the upper is concerned it is acknowledged at [0005] and [0006] that uppers with vapour permeable linings (including linings which were both waterproof and vapour-permeable) were commercially available. It acknowledges at [0007] that the required characteristics for the sole can be provided by the use of vapour permeable and waterproof material optionally associated with protective layers and fillers.

33. [0010] to [0014] set out various aims and objects of the invention. These include allowing water vapour to escape through both the upper and the sole; a lack of restriction on styling and achieving a shoe which can be made with conventional technologies. Geox lays particular stress on this last advantage.

34. The first described shoe has the following arrangement of elements which can be seen from figures 1 and 2 of the Patent depicted below.

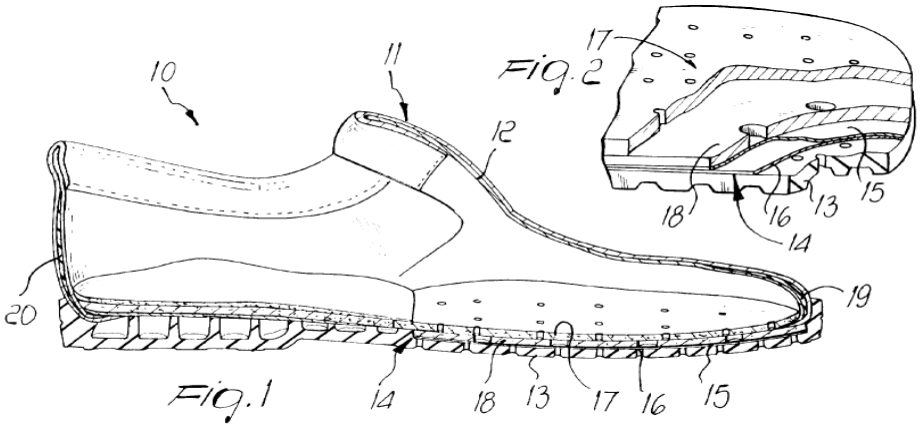


Fig. 2

Fig. 1

35. The shoe, as described in this embodiment, has:

a) **an upper** (marked 11). This is vapour permeable, and made from a material such as leather: [0018];

b) **a lining (**marked 12). This is made of vapour permeable or perforated material (such as "Cambrelle") and is associated to the upper by means of spot gluing: [0018] to [0019];

c) **an insole** (marked 17). This is vapour permeable, e.g. leather or a perforated material: [0021];

d) **a filler layer** (marked 18). This is vapour permeable material which may be perforated injected thermoplastic [0021], or, in another embodiment, felt [0056];

e) **a tread (or sole)** (marked 13). This is made of perforated elastomeric material [0020].

36. Between the filler layer and the tread in this embodiment, 270 teaches that a "**mid-sole**" is inserted. This comprises at least one membrane made of waterproof, vapour-permeable material associated with a **protective layer**: [0020]. The membrane is marked 15 and the protective layer is marked 16. The protective layer is beneath the membrane.

37. The specification teaches the use of the commercially available GORE-TEX material for use as the membrane: [0020]. The protective layer is made of a hydrolysis-resistant, water-repellent, vapour-permeable or perforated material such as a non-woven material or KEVLAR. The function of this protective layer is to protect the membrane against external impacts or against foreign objects that may penetrate through the perforations in the sole: see [0020].

38. The upper and insole are connected together by applying a layer of glue around a perimetric band. The patent explains that by restricting the glue to the perimeter, the transpiration over much of the sole area is unaffected: [0024] to [0025].

39. The membrane and the protective layer are attached to one another by spot gluing: [0027]

40. The protective layer and the tread are associated with each other

> "by spot gluing or by gluing along a perimetric band, so as to ensure vapour-permeability of the sole as a whole". [0030]

41. At [0031] the specification teaches that the coupling of the membrane to the filler layer and the tread :

> "must be provided so as to ensure a seal against external water along its entire perimeter, and this can occur by perimetric gluing….. of compatible material that allows perfect adhesion of the membrane to the tread directly or by means of the protective layer."

42. The second described embodiment (shown in figure 3) also includes a membrane and lower protective layer as shown by numerals 105 and 106 in Figure 3: [0036]. However in this embodiment there is also a membrane (109) under the upper which is sealed to a further membrane (111) below the insole (see [0038]-[0039]). This is shown marked 109 on figure 3. :

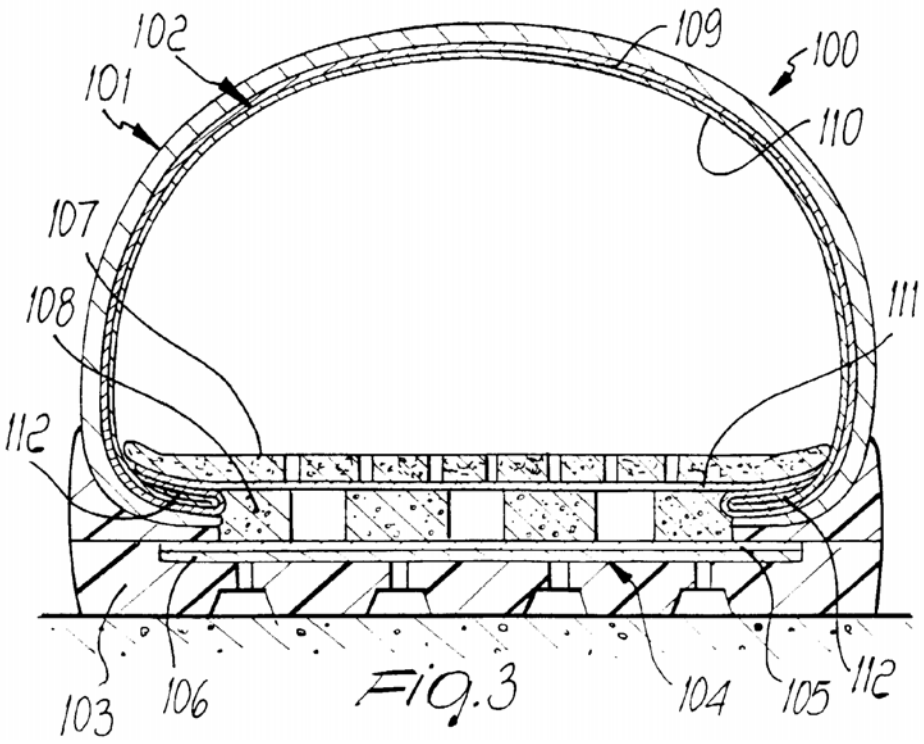


Fig.3

43. Thus, in Figure 3, the entire foot is enclosed in membrane material in addition to the membrane in the mid-sole.

44. The Patent discloses 8 further embodiments. The 4th and 5th embodiments require the protective layer to be thinner (see Figure 7) or not present in the perimetric region (see [0065] and [0073]). This teaching forms the basis for claim 13. The other embodiments provide alternative ways of sealing the lower part of the upper, the tread and the membrane.

45. Claim 1 is to a shoe with the following features (the Roman numerals and letters are added by me – the identifying numerals in the claim omitted):

i) a vapour permeable upper that is associated with a vapour permeable or perforated lining.

ii) a tread made of perforated elastomer;

iii) a mid-sole comprising:

a) at least one membrane made of waterproof vapour permeable material

b) that is connected with a lower protective layer directed towards said tread and made of hydrolysis resistant, water repellent, vapour-permeable or perforated material in the form of, for example non-woven fabric or needle-loomed felt or KEVLAR,

c) said lower protective layer being arranged below said membrane between said membrane and said perforated elastomer tread and directly above said perforated elastomer tread in correspondence with the perforations of said perforated elastomer tread for protecting said membrane against external impacts or foreign object penetration;

iv) a vapour-permeable or perforated insole;

v) a vapour-permeable or perforated filler layer arranged between said insole and said membrane;

vi) the lower part of said upper, said tread, said mid-sole with said membrane being perimetrically sealed in the coupling regions such that non-vapour permeable regions are arranged so as to be substantially limited to the perimetric regions of the sole and vapour-permeable regions are arranged substantially inside the perimetric coupling regions.

46. Claim 13 is also alleged to be infringed and said to be independently valid. It claims a vapour permeable shoe with the features of claim 1, additionally characterised in that:

> "…said lower protective layer is thinner or not present in the perimetric coupling regions where the said tread and said membrane are sealed."

270 - Construction

47. Although there was a dispute as to the proper construction of a number of phrases in claim 1, there was no dispute as to the proper approach to construction, which is now well settled. The task for the court is to determine what the person skilled in the art would have understood the patentee to have been using the language of the claim to mean: see *Kirin Amgen v TKT* [2005] RPC 9 [30]-[35]. In that case the list of principles to be found in the judgment of Jacob LJ in *Technip France SA's Patent* [2004] RPC 46 was approved subject to minor modifications. Pumfrey J (as he was then) in *Halliburton v Smith* [2006] RPC 2; [2005] EWHC 1623 at [69] to [69] listed those modified principles. I apply those principles here.

"mid-sole"

48. The term "mid-sole" has been used in the art to refer to the top part of the sole, for example a lightweight material which does not wear as well as the material used in the tread. The use in the trade is however not consistent, as the witnesses recognised. For that reason, I believe the skilled person would take the meaning of "mid-sole" in 270 primarily from the context in the patent. In 270 the term "mid-sole" is plainly being used in a special sense to include the membrane and the protective layer, so the relevance of other usage where equivalent layers are not present is limited.

49. Gore submitted that the term would be understood to mean a unitary assembly positioned *in the sole* above the tread.

50. Geox submitted that the term is apt to cover any additional layers between the insole and the tread.

51. The difficulty I felt with Gore's submission is that it depends in part on taking a limited view of what is in the sole and what is not. On one view, the sole of the shoe is everything below the sole of the wearer's foot. On Gore's approach, above some level in the shoe, layers cease to be part of the sole and become part of the upper. So the insole, for example, is not part of the sole, despite the presence of the word sole in its name.

52. I believe the skilled person would see in the claimed shoe construction a series of layers which necessarily pass all the way under the wearer's foot, as illustrated most clearly in Figure 2. These are, in vertically ascending order, a tread, a protective layer and membrane (these two together forming a mid-sole), a filler layer and an insole. Provided the protective layer and membrane come in this position in the stack, I see no reason not to call them a mid-sole, coming as they do between the insole and the tread.

53. I think Gore's construction is arrived at only by having too much of an eye on the alleged infringement, where the membrane comes higher up in the

construction, above the lasting margin of the upper. But I cannot see any reason why the skilled person would judge whether he had a mid-sole or not (according to the way the term is used in the patent) by reference to its height relative to the lasting margin.

"membrane"

54. At [0020] in the specification it is said that the membrane can be formed from GORE-TEX. As explained above, as used in shoes, GORE-TEX was a laminate of three materials, either supplied as such or supplied as mesh plus ePTFE for the licensee to use with his own textile layer or leather. So Gore contends that the reader would understand that the membrane of the claim could not be just the bare ePTFE membrane itself: it is a laminate of the bare membrane and the supporting layers. Ultimately what Gore wishes to submit is that the **filler** layer is a further requirement, in addition to the layers of the membrane laminate, a requirement that cannot be satisfied by any of the layers supplied with GORE-TEX.

55. Geox submits that there is no difficulty with the construction of the term membrane. Its purpose is to be waterproof and vapour-permeable. So the claim requirement is satisfied by the presence of a membrane, even the bare membrane, provided it fulfils those functions.

56. In my judgment Geox is right on this issue. The membrane of the claim is not required to be two- or three-layer GORE-TEX. I accept that the use of such materials is encompassed by the claim: but the question of whether any layer which is supplied with the membrane can fulfil any other requirement of the claim is, I believe, an entirely separate one.

"connected with"

57. Claim 1 requires the membrane to be "connected with" the protective layer. Gore submits that this means that the two layers are connected in such a way that they are treated as a unitary element.

58. Geox submits that the term is not so limited. The purpose of the protective layer is to protect the membrane. It can do so whether it is formed from a unitary element or not.

59. I prefer Geox's submission. That submission is consistent with the purpose of the invention and does not import any unnecessary gloss into the claim. The skilled person would understand that the protective layer must be so arranged to protect the membrane: that is the extent of the connection between the two elements of the claim.

"filler layer"

60. The filler layer is required to be between the insole and the membrane. Gore submits that the skilled person would assume from the specification that the filler layer was there to have a supporting or structural function. As such it would be thicker than the membrane it supports. Ultimately Gore's submission

is directed to showing that the filler layer cannot be satisfied by the mesh layer which always accompanies GORE-TEX when supplied for shoes. Gore points to the description of the embodiments of the invention and the figures to argue that what is envisaged is a layer of some substance which fills a cavity other than that merely created by its own presence. Some assistance on what is required could be gained by reference to the known "bottom filler" in a lasted construction: i.e. a filler of sufficient depth to fill the gap created by the lasting margin.

61. Geox submits that there is no basis for limiting the type or thickness of filler layer. It is not fulfilling the same function as a bottom filler in a cement lasted construction, because it is present in the embodiments where there is no gap created by a lasting margin. In any case, bottom fillers could be very thin, less than a millimetre in some cases. Geox also submits that there is no basis for any dimensional limitation.

62. I prefer Geox's construction. Firstly, both sides are agreed that there is a danger in treating the figures as if they were to scale (Figure 12 being a particularly exaggerated representation). Even if they were to scale, one would not import a dimensional or even a relative dimensional term into the claim unless there were some basis in the claim or specification for doing so. Secondly, the specification places very little stress on the filler layer, apart from requiring its presence between the insole and the membrane. So, for example, if one looks at Figure 12 and considers reducing the depth of the filler 718 and the corresponding depth of the tread elements 704, it is impossible to see a point at which the arrangement would cease to have a filler layer, however thin the filler layer became. Thirdly, as Gore's expert Mrs Wright recognised, the Ströbel-stitched constructions in the patent show the filler layer when there is no space for it to fill, and where the filler layer merely supports or positions the membrane (and associated protective layer). So there is no basis for requiring the filler layer to be present for a purpose of filling any particular gap.

"perimetrically sealed"

63. This feature is the one that this case is really all about. The relevant integer of Claim 1 provides;

> "*the lower part of said upper, said tread, said mid-sole with said membrane being perimetrically sealed in the coupling regions such that non-vapour permeable regions are arranged so as to be substantially limited to the perimetric regions of the sole and vapour-permeable regions are arranged substantially inside the perimetric coupling regions*."

64. A number of issues arise here: (a) what does "sealed" require (b) where is the seal required to be (c) what needs to be sealed to what?

65. As to (a), Gore's position is that the seal must be watertight. Geox submits that something less will do. In particular Geox's primary position is that the term "seal" means a sufficient seal in the coupling regions to carry out the purpose

of the invention, to prevent the passage of water from below (the tread side) to above the membrane mid-sole along its perimeter to provide a working vapour permeable and waterproof sole or sole and upper (depending on whether the upper has a waterproof membrane).

66. As to (b), Gore's position is that the seal must be around the perimeter of the sole, whereas Geox submits that it is only required to be around the perimeter of the breathable region.

67. As to (c) Gore submits that all three mentioned components, that is to say the lower part of the upper, the tread and the membrane must be sealed. Although one cannot seal to a water permeable element such as an ordinary leather upper, the patent requires a seal from "nip line to nip line" i.e. from the point where the tread meets the upper on each side of the shoe. Geox submits that, in context, the skilled team would understand the term "perimetrically sealed in the coupling regions" to mean the formation of a seal between those elements of the upper, mid-sole and tread which are waterproof and between which a seal can be formed.

68. I have set out the rival submissions in this broken-down form. But it seems to me that there is a danger in being over-analytical in seeking to understand this aspect of the claim as a whole. There are, in my judgment a number of important facts gleaned from the specification and the common general knowledge which the skilled person would bring to bear in understanding this language.

69. Firstly, the skilled person would know that the invention was concerned with modifying the conventional shoe with an elastomeric tread so as to incorporate a perforated sole and a membrane. He would see the invention as being concerned with achieving that objective without compromising the function of the ordinary elastomeric tread in excluding water: see in particular the specification at [0003]. Equally, he would not see the invention as necessarily providing a shoe which is more waterproof than one in which the sole has not been perforated.

70. Secondly, the skilled person would appreciate that one cannot seal to a water permeable layer such as a leather upper any more than one can seal to a towel or a tissue. So he would read the requirement for the lower part of the upper to be sealed perimetrically with that fact in mind.

71. Thirdly, the skilled person would appreciate that there are two aspects of the function of the ordinary elastomeric tread which were important to be preserved in the invention. The first is the obvious one: no path for water should exist from the ground through the holes and into the interior of the shoe. A second purpose would, on the evidence, also be familiar to him, that is to say the function of an elastomeric sole to prevent water from soaking into the material of the upper: a familiar experience to anyone who wears leather soles. The "wicking" of water into the uppers in this way causes unsightly tide marks on the upper material, and would be avoided by any shoemaker so far as possible. Thus he would know that in the case of an ordinary shoe, with a tread of un-perforated elastomer, that the tread prevents moisture rising up

through the sole and into the lower part of the upper, and through the insole to the wearer's foot.

72. Thus the skilled person would understand that the purpose of the invention was to allow the incorporation of the perforated elastomer and membrane without compromising this aspect of waterproofness of the shoe, that is to say the ability of moisture to find a path from beneath the shoe into the material of the upper or the interior of the shoe. He would understand the nature of the seal required to correspond with its ability to perform these functions.

73. Finally, the skilled person would appreciate that the patent is very much concerned with the perimetric location of the seal, that is to say outboard of the breathable areas.

74. Accordingly I would hold that the perimetric seal required by the concluding words of the claim is one which goes all the way around the breathable area of the sole whilst leaving the breathable area free and

a) involves the lower part of the upper, the mid-sole incorporating the membrane and the tread, in such a way that it

b) is adequate to prevent moisture coming through the tread, by-passing the membrane and wicking into the upper, and

c) is adequate to prevent moisture by-passing the membrane and migrating towards the interior of the shoe.

183

75. The priority date of 183 is 2000. 183 describes a method of manufacture of a breathable shoe. The aim of the invention is stated to be to provide a method of manufacturing a shoe with a waterproof and breathable sole which is simpler than the ones known in the art: see [0018].

76. The method is said to allow freedom in the design of shoe shape and type, to produce shoes useful for both day-to-day and sports use and to provide a method which is cost competitive ([0019]-[0021]).

77. Claim 1 of 183 is to:

a) "a method for manufacturing a breathable shoe consisting of the steps of forming a membrane-including[1] unitary upper assembly comprising a breathable upper and at least one membrane made of a material which is waterproof and breathable,

b) a first step consisting of directly attaching said breathable upper to said membrane in a downward region, said assembly wrapping around the foot insertion region and further

[1] corrected from "inducing": the parties agree that this is the correction the skilled person would make

comprising a protective element made of a material which is resistant to hydrolysis, water repellent, breathable or perforated, and

c) a second step consisting of mutually attaching said unitary upper assembly to a sole made of perforated elastomer, such mutually attaching occurring by joining through a perimetrical seal said article of manufacture to said sole, said protective element being arranged below said at least one membrane in a region between the upper part of said sole and its internal part which is adjacent to the ground contact surface."

78. In the description the protective layer is described as "associated" with the membrane: see [0040] and [0057]. At [0052] the association is effected with spot gluing to the membrane

183 - Construction

79. The only separate issue of construction which arises on 183 is what is meant by the requirement that there be a "unitary assembly" in the first step. Gore submits that this requires some form of permanent attachment of the protective layer within the unitary assembly: it relies on the reference to spot gluing the layer in the description. Geox submits that the claim would be understood to include any form of attachment, with or without glue, and relies on the references to "association". Geox submits that, in practice, the skilled person would see that any adhesive used to attach the protective layer would not fulfil any function in the finished shoe, or indeed be of use once the assembly was clamped in an injection mould. So it could be omitted.

80. I prefer Gore's construction. Firstly, a unitary assembly is, in my judgment, something more than a mere assembly. In the context it brings to mind an assembly which is held together in some way as a unit in the first step before it is brought into contact with the perforated elastomer sole. Secondly, the fact that, in some methods of forming the finished shoe the adhesive would be unnecessary, does not entitle me to disregard the word "unitary". The skilled person would understand that the cohesive upper assembly was required as part of the first step.

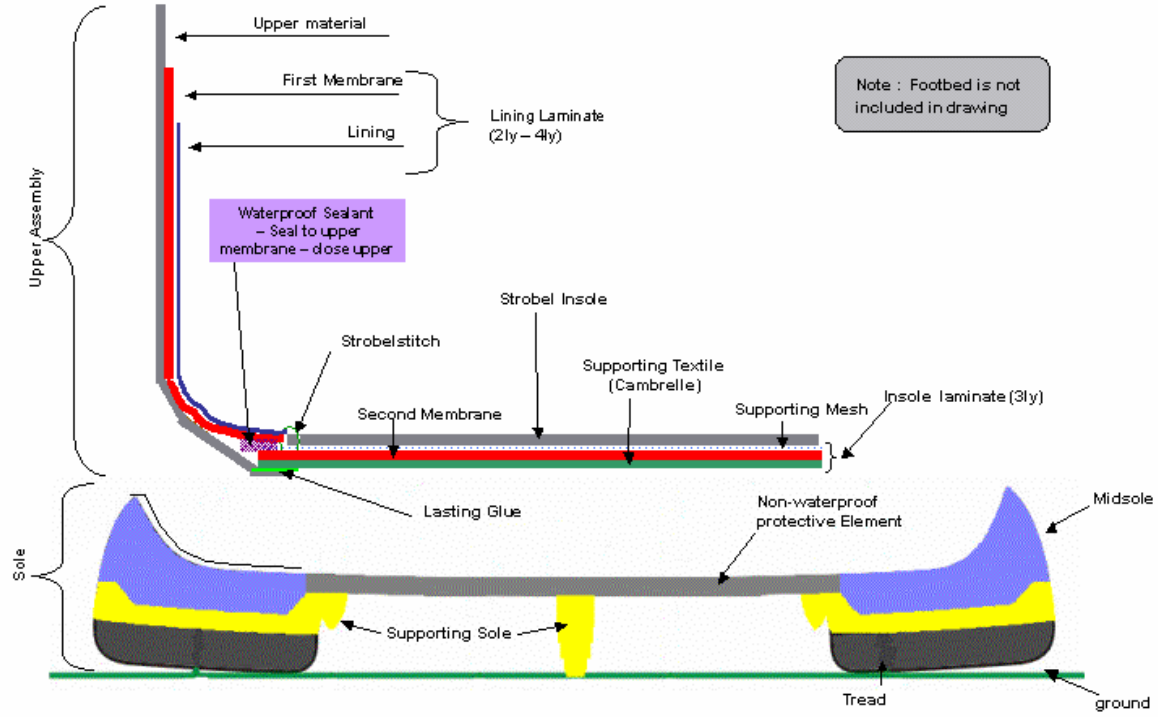
The Product and Process Description: the cemented design

The written description

81. Gore's Product and Process description describes the construction and manufacture of the cemented shoe design as follows:

82. Figure 1 represents the cemented shoe, and is reproduced below:

Figure 1 - Cemented Shoes



83. The upper assembly comprises the following elements:

i) A two- to four-ply lining laminate (see top left in the figure), which comprises (from inside to outside):

a) a vapour-permeable lining layer;

b) optionally a vapour-permeable insulating layer (not shown in Figure 1);

c) a waterproof and vapour-permeable GORE-TEX® membrane;

d) preferably a mesh structure (not shown in Figure 1) that is vapour-permeable and allows penetration of sealing adhesive.

The lining laminate covers the whole of the top and sides of the foot and a small part of the perimetric part of the underside of the foot but does not cover the middle part of the underside of the foot.

ii) A Ströbel insole (middle of the figure) which is made of standard vapour-permeable polyester felt material. The Ströbel insole and lining laminate are stitched to each other in a butt joint by a standard Ströbel stitch or similar stitch.

iii) A 3-ply waterproof and vapour-permeable insole laminate below the Ströbel insole, comprising a GORE-TEX membrane, which is provided with a nylon supporting mesh (having a thickness of less than 0.2mm)

on the top side that allows penetration of sealant to seal the insole laminate to the lining laminate, and a supporting Cambrelle layer on the underside for better handling of the membrane. Cambrelle is vapour-permeable but not waterproof. The insole laminate is attached to the underside of the perimetric part of the lining laminate by a sealant which forms a waterproof seal between the two laminates. This ensures that the second membrane is incorporated into the upper assembly in a waterproof way and that the upper assembly is therefore waterproof all around.

iv) A vapour-permeable upper material (top left of figure), which may be made of leather, polyamide or other material or combinations of these which surrounds and is substantially co-extensive with the lining laminate.

84. The lowermost part of the upper material overlaps the perimetric downward-facing part of the insole laminate, which is then connected to the perimetric upward-facing part (lasting margin) of the overlapping upper material using a lasting glue. Thus, in the perimetric part of the underside of the foot, the insole laminate is "sandwiched" between the upper material and the lining laminate. This completes the upper assembly.

85. The sole comprised in the cemented shoe has the following elements:

i) A layer (identified by the arrow on the right of the figure as a “mid-sole”) made of ethylene-vinyl acetate or polyurethane to effect impact cushioning.

ii) A supporting sole layer made of thermoplastic polyurethane. This layer is injected onto (and is thus attached to) a hydrolysis-resistant, water repellent (but not waterproof) protective element made of vapour-permeable polyester felt.

iii) A tread made of rubber, polyurethane or thermoplastic polyurethane or other commonly known materials or combinations of these materials.

86. The three layers are glued together. Other than the protective element, each of these layers has large openings through it, such that the middle part of the sole (where not covered by the supporting layer) is covered only by the protective element and is substantially vapour-permeable. This part of the sole is not waterproof, so that water from the outside can reach the downward-facing side of the upper assembly through the openings.

87. The sole is then cemented to the upper such that connections are made (1) predominantly between a part of the lasting margin of the upper and the mid-sole, (2) between the insole laminate and the mid-sole where the tread and the mid-sole above it completely cross from one side of the sole to the other and (3) between the lasting margin and the supporting sole and the protective element where the waist of the shoe has no mid-sole.

88. The cement used to bond the sole to the upper assembly is an adhesive with a molecular weight above 100,000.

89. The description of the cemented shoe continues with the following paragraph:

> "The connections between the sole and upper assembly firmly attach the upper assembly to the sole but do not form a perimetrical waterproof seal in the completed shoe. For the avoidance of doubt, a perimetrical seal (i.e. a watertight connection) is not formed between the insole laminate and the sole. Such a perimetrical seal is not required as the upper assembly is already sealed in a waterproof way."

90. This is a troublesome paragraph from a number of points of view. It encapsulates one of Gore's non-infringement arguments: it says that there is no seal between the insole laminate and the sole because there does not have to be one. Of course it all depends on what is meant by "seal". The paragraph is typical of what a product description in a declaratory action should not do. The purpose of a declaration of non-infringement is to clear away disputes about infringement of a patent on the basis of a clear description of the product. Statements in argumentative or conclusory terms based on one side's disputed interpretation of a term used in the claims simply cannot achieve this object. What is needed is a precise technical description of what **is** present, so that the court can firstly interpret the disputed terms, and then decide whether the relevant feature is present.

91. In *Comsafe Engineering v Emtunga (UK) Limited* [1999] RPC 154 Pumfrey J (as he was then) interpreted "full particulars of the product or process alleged to infringe" in the context of the disclosure-avoidance provision in the former Order 104 rule 11 as

> "particulars sufficient to enable all issues of infringement to be resolved. The description must be complete in all relevant areas. A description of the product either in general terms or including tendentious assertions is not acceptable."

I have no doubt that exactly the same applies to the term "full particulars in writing of the act in question" in Section 71 of the Patents Act 1977, the section which provides the basis for a statutory declaration of non-infringement.

92. Mr James Mellor QC, who appeared for Gore with Mr Andrew Lykiardopoulos, accepted that the conclusory paragraph did not prevent Geox from arguing that products within the product description included products which **did** have a seal on the proper construction of that term. The trial proceeded on the basis that the proper construction of the term "seal" and the existence or otherwise of a seal in products which could fall within the Product Description were both fully in issue. In those circumstances it seems to me that I must treat the conclusory paragraph as an argumentative statement as opposed to a conclusion of technical fact.

The Samples

93. Gore has supplied a number of samples of products made in accordance with the Product and Process Description. These are intended to be illustrative of such products. But there is a danger in such illustrative materials which must be kept in mind. The court is being asked to declare that everything falling within the description is not an infringement of the patent. One must be astute to this point, otherwise the declaration will function as a licence to do things which are or may be an infringement. In view of their status as purely illustrative, it not enough to look at a sample shoe, and conclude that it does not have a feature of the claim: the feature must be absent because the description necessarily requires it to be so.

Infringement of 270 by the cemented design

94. Gore takes a number of non-infringement points, as follows.

No mid-sole comprising a membrane connected with a protective layer

95. Firstly, Gore says that the cemented shoe does not have a mid-sole comprising at least one membrane made of waterproof vapour-permeable material that is connected with a lower protective layer. There were originally two parts to the argument. Firstly, Gore said that the GORE-TEX laminate in the cemented shoe is not in the part of the shoe which can be described as the mid-sole. Secondly, Gore argued that the GORE-TEX laminate is not "connected with" the lower protective layer. This second argument fell away during the trial. I have, in any case, rejected the construction which would have been necessary for it to succeed. Gore now accepts that in the finished shoe the membrane is adhered to the protective layer.

96. So far as the first argument is concerned, I have concluded that the term mid-sole is apt to cover any additional layers between the insole and the tread. Gore's membrane and protective layer meet that description. I therefore reject this non-infringement argument.

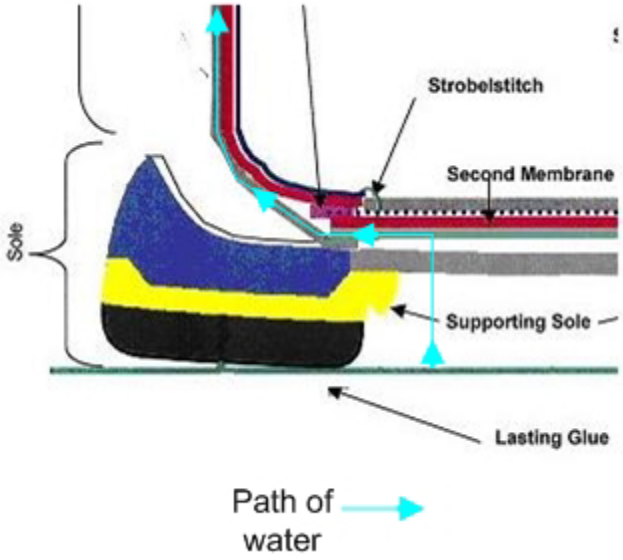
No vapour permeable or perforated filler layer

97. Gore says that there is no filler layer. Geox says that the mesh which forms part of the GORE-TEX three ply laminate is a filler layer.

98. On the construction which I have adopted for the term filler layer, this requirement is fulfilled. The mesh layer is both vapour permeable and perforated and comes in the correct position in the stack. It has a supporting and protecting function for the membrane, as well as a spacing one within the structure.

Absence of a perimetric seal

99. In the absence of a sufficient seal in the cemented shoes, water would be able to wick in through the protective layer either directly into the upper, or into the upper via the Cambrelle, as shown in the diagram below:



100. Gore says that this does not matter. The wearer's foot is kept dry by the first and second membrane which are sealed together with waterproof sealant: any water passing through the described channel and wicking into the upper will still be kept out of the interior of the shoe.

101. It seems to me that the critical question for infringement is whether the tread, the membrane and the lower part of the upper are perimetrically sealed outside the breathable area so that water is prevented from entering through the holes and wicking into the lower part of the upper. If so, then the object of the seal, that of allowing the incorporation of perforations and a membrane without compromising the watertightness of the shoe to water entering through the tread is achieved.

102. I should deal first of all with an argument about motive. Geox argued that avoiding wicking of water into the upper would be something every shoemaker would wish to do. Gore's licensees would be no exception. So they would use every effort when applying adhesive to make a good seal through the textile material to the membrane. On the other hand, Gore argued that wicking was not a problem for its licensees, as Gore would not approve any upper material to be used by its licensees which would wick to any significant extent within a given time frame.

103. I think both sides of this "motive" argument are irrelevant in law. The question is not what Gore's licensees will or will not do: but whether acts which fall within the process description infringe the patent. In those circumstances the question is whether, acting within the terms of the process description an adequate seal *can* be made.

104. Gore's witnesses on this issue were Mrs Wright and Dr Heider. Mrs Wright gave evidence in writing that she did not think that wicking would occur. If that was correct, and given the construction of the shoe where the upper is in contact with the Cambrelle textile material, it would seem that there must be an adequate seal to prevent it. She was asked about this evidence in cross examination:

Q. Well, you said in your report that you didn't think that water could access the upper in this way. We read that as your giving evidence that there was something there to stop water accessing the upper.

A. No, there is nothing there to stop it accessing it, apart from the glue.

Q. Well, why do you say that you don't think that water could access the upper in this way?

A. I don't think it is going to access the upper in any great amount. I know it will access it a bit.

Q. Am I understanding you correctly to have said in your previous answer that the cement that you use to glue the sole to the upper will hinder wicking? I think that is what you were saying, wasn't it?

A. Yes.

Q. And you were talking about glue that has to permeate the lasting margin, were you not?

A. Yes.

105. Mrs Wright was there recognising the ability of the glue to prevent wicking into the upper. Dr Heider's evidence in his report was that it was not possible to seal or even bond through the Cambrelle layer. He said that he did not:

> " *know of any adhesive used in the shoe industry that can penetrate through the Cambrelle supporting textile to form an adequate bond between the mid-sole/supporting sole and the insole membrane, let alone form a seal between those materials*."

106. That evidence of Dr Heider was significantly qualified in cross examination. Firstly he accepted that it was entirely possible to make a good **bond**. His point became one about the difficulty of making a **seal**. Whilst this is an important distinction for present purposes, the concession was a significant retreat on the way he had put it in his report. Secondly, Dr Heider was clearly giving his evidence on the basis of the grade and thickness of Cambrelle material in the samples. He did not know and had not therefore considered thinner Cambrelle layers, or other grades of Cambrelle which could fall within the process description where the penetration of glue could be both greater and more complete. Thirdly, Dr Heider accepted that numerous factors will affect whether a seal is formed in particular circumstances. These include the viscosity of the glue, whether a primer is used and the number of coats of adhesive.

107. Geox also relied on the fact that Gore's 1995 technical manual for licensees contained details of how to effect a waterproof seal through an intermediate permeable layer. Mr Hübner explained this as follows:

Therefore at that time we thought and we experienced to a certain degree that if the upper textile is thin enough that there is a chance, and we made a project to find out how thin it has to be, to make it waterproof. Over time we learned that this is not good enough. Again, 95. Whereas today, today nobody is using this any more. As we experienced, it is not serious enough for mass production. But at that time again we tried to find a way, the way to use adhesives, the way to use thinner textiles on the outer side, deliver the best result in times in the state of the art at that time, but it was not good enough for us, as we had a clear idea what we wanted to deliver to the end user. We stopped it then.

Q. So is it your evidence that a waterproof connection can be made by penetration of adhesive through a textile fabric, but not consistently enough for mass production?

A. Not consistently enough for mass production -- not good enough for mass production and not for a trustful product.

108. I have to say that I did not find this *ex post facto* explanation of Gore's technical instructions to its licensees to be very convincing. The technical manual does not give the impression that the technique is unsuitable or untrustworthy – quite the opposite. But even taking this evidence at face value it shows that the problem with sealing through a textile layer was one of consistency rather than physical impossibility. Dr Heider had not been shown Gore's technical manual when he gave his evidence that it was impossible to form a seal through Cambrelle.

109. Mr Hacker was Geox's witness on this point. His evidence was that it was possible to form a seal through a layer of Cambrelle with the right combination of materials and conditions. He explained that a first layer might leave voids, due to the solvent migrating away from the polymer through the textile. But to the extent these allowed water to pass, the voids could be filled by a second layer, at least to the extent necessary to form an adequate seal.

110. Overall I was left with the impression that whilst it might require careful choice of materials and conditions, it would not be impractical to form an adequate seal to close off the wicking path in addition to the path directly into the interior of the shoe. This could be done without departing in any way from the process description.

111. It is significant that this "no seal" point was clearly intended to be the major thrust of Gore's non-infringement case. Yet the Product Description omits all the technical detail which would enable a determination of how far and how effectively the adhesive will penetrate in the relevant regions. Thus the grade of Cambrelle is not specified, and there are no details as to the gluing process, the viscosity of the glue, whether a primer is used, temperature, pressure and so on. The late amendment to add the molecular weight of the adhesive was a recognition, albeit an inadequate one, of the need for further technical detail. Had the Product Description been more forthcoming in this respect Geox's task of showing that sealing was possible might have been made harder: one

cannot tell. But, as it stands, I believe it encompasses the use of materials and conditions which would form an adequate seal, as I have interpreted that term.

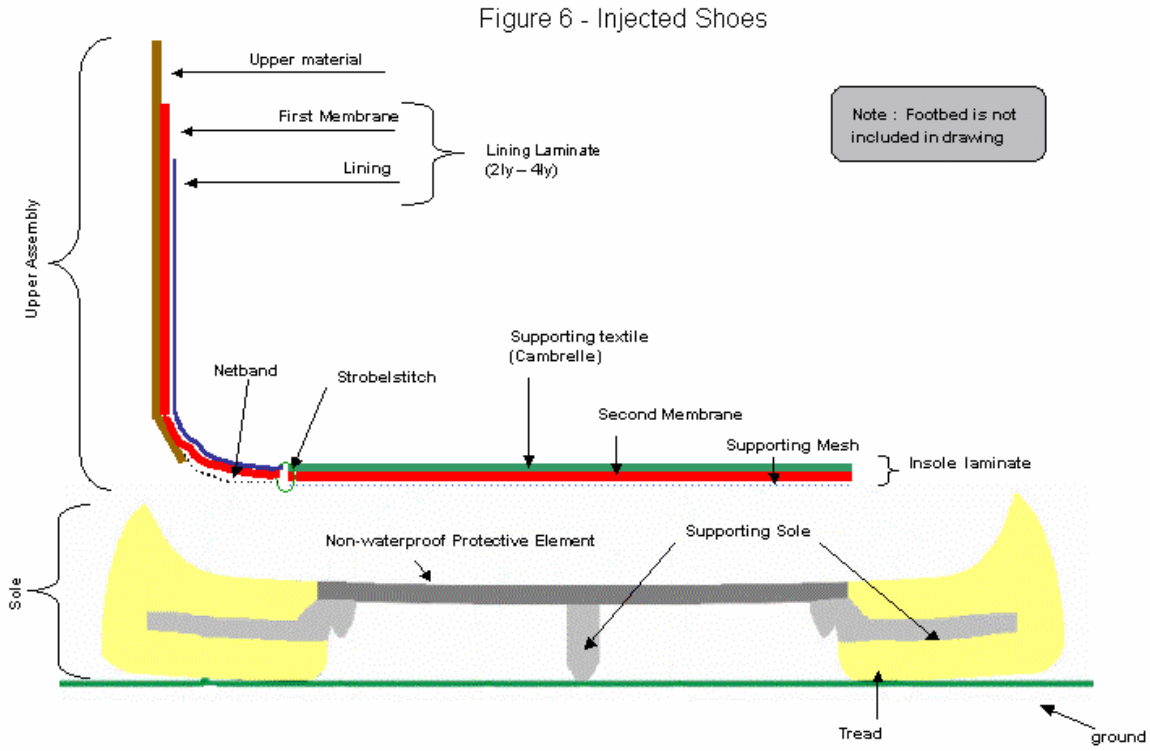
112. It follows that, if the patent is valid, I should not grant the declaration sought on the grounds of non-infringement.

The Product and Process Description: the injected design

The written description

113. Figure 6 of the Product and Process Description represents the injected design, and is reproduced below.

Figure 6 - Injected Shoes



114. The upper assembly of the injected shoe has the same components arranged in the same way as the cemented shoe save that there is no Ströbel felt insole. Instead, the insole laminate forms the base of the upper. The lowermost part of the upper material is shorter than in the cemented shoe and instead a net band is included to allow penetration of the mid-sole material during injection. This seals the stitching between the lining laminate and the insole laminate.

115. **The sole** again has the same three elements as before (a mid-sole to effect impact cushioning, a supporting sole and protective layer of felt and a tread). The tread may be formed in one piece with the mid-sole.

116. The method of construction of the shoe is as follows:

i) The protective felt element and supporting sole are formed by injection moulding. The supporting sole has large openings along the centre which are covered by the protective element. The supporting

sole/protective element mould is then itself placed in an injection mould.

ii) The upper assembly (formed separately) is then placed on a last and brought into contact with the supporting sole/protective element mould. The upper assembly and sole mould are not attached either by spot gluing or otherwise but are merely held together ready for injection moulding of the other elements.

iii) The material forming the mid-sole and tread is then injected into the mould onto the perimetric part of the upper and in all regions where there are no openings in the supporting sole as well as underneath the supporting layer to form the tread. This attaches the two parts of the shoe together and seals the stitching between the membranes in the upper assembly.

Infringement -183

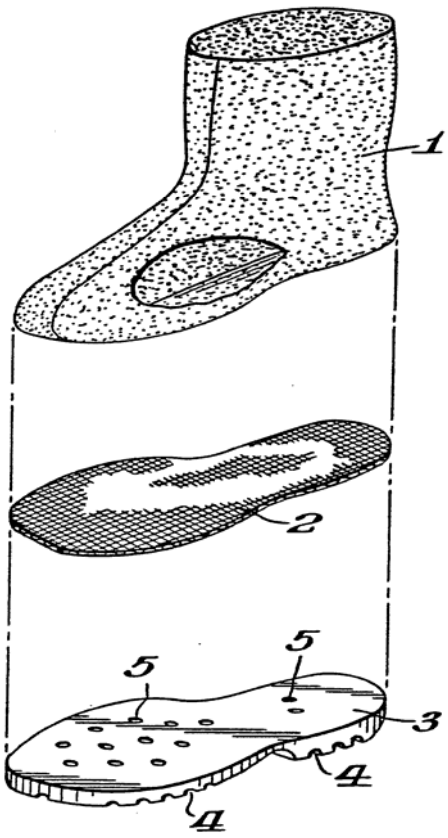
No unitary assembly

117. On the view which I have taken on the single issue of construction, there is no unitary assembly (including protective element) as required by the claim. Holding the upper assembly and the protective element together in the mould in the course of the attachment of the tread does not make them into a unitary assembly for the purposes of this claim. It follows that there is no infringement of claim 1 by the Gore process for making the injected shoe.

The prior art

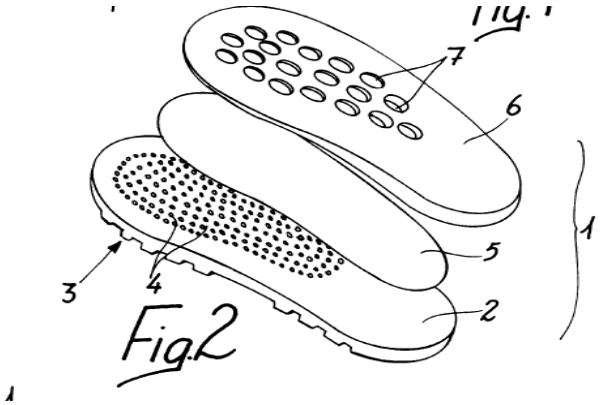
Kozaki

118. Kozaki, which is a European Patent Application published in 1988, describes a vapour-permeable waterproof shoe. Its disclosure can be easily understood by reference to the only figure which shows an upper 1 made from a water-vapour-permeable, waterproof fabric, a sole 3 having openings 5, and a mesh or other porous layer 2 of protective material positioned between the upper and the sole. The upper, the mesh and the sole are bonded together at least in the edge area around the mesh.



Polegato

119. Polegato is a Geox patent dating from 1989 relating to the basic idea of having a sole structure which is both vapour-permeable but waterproof. It has a three part sole structure which is shown in Figure 2, reproduced below:



120. The lower tread, 2, comprises so-called micro-pores, that is to say small holes which pass all the way through the lower tread. The membrane, which may be

GORE-TEX is identified as 5. The third layer is identified merely as the upper part, 6, which has much larger through holes traversing its thickness.

121. The structure is sealed around the edge with adhesive or may be made as a unitary structure by injection moulding. No adhesive or other material must affect the regions provided with the micro-pores and the regions occupied by the membrane: column 2 lines 37-41.

Regal

122. Both sides agree that the process of making a shoe described in Regal is as explained by Mrs Simons in Appendix D to her report. I attach those diagrams as an Appendix to this judgment.

123. Regal is concerned with problems which arise when making a waterproof yet permeable-soled shoe, when making the mid-sole from heavy vulcanised or injected material. Regal solves this problem by the use of a weight saving flange-shaped hollow which is filled with lightweight inner material made from sponge or cork. The flange-shaped hollow is narrow at the top (for increased bonding) and wide at the bottom (for weight saving). As Ms Simons' diagrams show (see the Appendix), there are two moulding stages: one to create the hollow for the inner material and a second to create the outsole or tread.

Validity – obviousness of 270

124. The approach in law to the issue of obviousness is not controversial. It is summarised in the judgment of Jacob LJ in *Pozzoli v BDMO SA*, [2007] EWCA Civ 588; [2007] FSR 37 at [23].

> "In the result I would restate the *Windsurfing* questions thus:
>
> (1) (a) Identify the notional "person skilled in the art"
>
> (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?"

125. In *H. Lundbeck A/S v Generics (UK) Limited* [2008] EWCA Civ 311; [2008] RPC 19 at [24] Lord Hoffmann (sitting as a member of the Court of Appeal)

approved without qualification a statement of principle by Kitchin J in that case which reads as follows:

> "The question of obviousness must be considered on the facts of each case. The court must consider the weight to be attached to any particular factor in the light of all the relevant circumstances. These may include such matters as the motive to find a solution to the problem the patent addresses, the number and extent of the possible avenues of research, the effort involved in pursuing them and the expectation of success."

126. I have identified the skilled person and summarised the common general knowledge above.

127. Gore submitted that the nub of the alleged invention is the provision of a vapour-permeable shoe with a vapour permeable upper and vapour permeable and waterproof sole in a particular arrangement of known materials. The particular arrangement must include (a) a vapour-permeable upper; (b) a perforated elastomeric tread (c) a "mid-sole" comprising an ePTFE membrane connected with a lower protective layer (d) a vapour-permeable insole and (e) a vapour-permeable filler layer, where the upper, tread and membrane are then perimetrically sealed to provide a fully waterproof yet breathable sole.

128. Gore's characterisation omits the fact that the filler layer is between the insole and the membrane. So the "stack" must have in vertically ascending order the tread, the protective layer, the membrane, the filler and the insole.

Obviousness of 270 over Kozaki

129. As compared with Kozaki, at least one difference with the inventive concept of claim 1 of 270 is that it requires a membrane and protective layer separated by a filler from the insole. In Kozaki the membrane is within the insole, so it is impossible to have a filler layer between the membrane and the insole as required by the claim. Another way of putting the point is to say that there is no mid-sole in Kozaki as required by the claim.

130. Secondly, Kozaki does not teach to seal the components, only to bond them. The seal is achieved within the upper bootee.

131. In her written evidence Mrs Wright explained how she would go about implementing Kozaki. Her approach was to take a GORE-TEX bootee, made by creating a Ströbel insole stitched to the upper part. She would attach this bootee to a pre-formed perforated sole with a protective element in between.

132. The principal problem with the attack based on Mrs Wright's proposed construction is that it does not land within the claim: it simply does not create the claimed construction. The membrane on this approach is the insole. Mr Mellor attempted to bridge this gap by suggesting that to add another insole was not inventive, but I was wholly unconvinced by this argument.

133. Mr Richard Meade QC, who appeared for Geox with Mr Thomas Moody-Stuart, relied on his cross-examination of Mrs Wright, which exposed that, in her proposed construction, the seal required to make the bootee waterproof would require a special additional element known as a netband (in fact used by Gore in the proposed injected design), something which neither Kozaki nor the prior common general knowledge would have supplied. Mrs Wright suggested that the skilled team would arrive at this solution by consulting Gore: but it was never established that Gore (or indeed anyone else) would have provided this solution at all in 1995, or if they had, made it available to anyone other than a licensee. It was not shown to be common general knowledge in 1995.

134. An alternative method of forming a seal to the upper of which the skilled person would be aware would be by direct injection of the sole onto the upper. There is no suggestion of doing this in Kozaki. But I think the skilled team would have reservations about achieving Kozaki's objective by the use of a directly injected sole, when it is clearly the bootee which is intended to keep the wearer's foot dry. If the team were unable to see a way to achieve the result by Kozaki's means, I doubt that they would persist with this document very far.

135. Perhaps recognising that Mrs Wright's approach had not landed within the claim, Mr Mellor put to Ms Simons in cross examination a "double-lasted" version of Kozaki. Double lasting was a known technique for building in an additional element (for example a toecap in a boot) when required. I did not understand Mrs Simons to accept that this double-lasted Kozaki would have been an obvious thing for the skilled team to embark on.

136. In the end, despite the careful and persistent cross-examination of Ms Simons, I was not persuaded that Kozaki would have led the skilled team without invention to any construction falling with the claims of 270.

137. I should say something about an attempted infringement/obviousness squeeze which Gore advanced. Mr Mellor put to Mrs Simons that if, as she believed, Kozaki represented "a fundamentally different construction" from the claim of 270 because it had the membrane in the bootee, then so also was the cemented construction. Mrs Simons would not agree. I think Mrs Simons is right. In the cemented construction the membrane is not part of the insole, it is an additional layer. That is quite different from Kozaki. To put it another way, the cemented construction has the mid-sole of the claim; Kozaki does not.

138. I conclude that claim 1 is not invalid for obviousness over Kozaki.

Obviousness of 270 over Polegato

139. Geox relies on a number of differences between the disclosure of Polegato and the inventive concept of 270, but it is sufficient to consider the protective layer. There is no protective layer in the Polegato construction. In this respect it is further away from the inventive concept of 270 than Kozaki.

140. Would it be obvious to the reader of Polegato to include a protective layer? Gore submits that it would. Mrs Wright's evidence in chief was that such a layer would be necessary to protect the membrane from objects passing through the *micropores*. Mrs Simons' evidence was that the purpose of using micropores in Polegato was itself, in part, to prevent objects entering the sole, and that this was the protection which Polegato proposed for the membrane. Her cross-examination went in part like this:

> *Q. Obviously there is no dispute, Mrs. Simons, that these holes are described as micro-pores, but there is no limit placed on the size of those holes, is there?*
>
> *A. There is no dimension given.*
>
> *Q. So it is for the skilled team implementing this to consider for themselves what size holes to use.*
>
> *A. As long as they meet the definition of micro.*
>
> *Q. Well, if they think they want a particularly breathable sole, that would be an incentive for them to make the holes slightly bigger, would it not?*
>
> *A. I think they would be hesitant about doing that. I think they are more likely to increase the number of them by the design.*
>
> *Q. Of course, as you increase the number of the holes, the material between each hole becomes less and the strength of the material between each hole reduces.*
>
> *A. Yes. Designing sole units is quite a difficult job.*
>
> *Q. What I suggest to you, Mrs. Simons, is that faced with this delicate layer, 5, that requires protection from objects coming through the sole, you don't need an inventive mind to put a barrier, a protective layer underneath the membrane. That is what I am suggesting to you.*
>
> *A. Well, I don't agree, because I think that the person reading this believes that the sole will protect the membrane adequately by virtue of the fact that the holes are still extremely small.*
>
> *Q. Right, but if you have got a delicate layer, holes and the risk of something coming through the sole, that will destroy the function of that layer. The natural thing and the practical thing to do is to include a protective layer, is it not?*
>
> *A. I think we may be saying that with hindsight. I think at the time that this was launched, it was such a new idea that that sort of line of reasoning may have never occurred to anyone.*

141. The cross examination did not end there. It was explained to Ms Simons that the skilled team were not to be taken as limited to exactly what was shown in the patent: her reaction was that, given that this was new technology the

skilled team would be very wary about departing from the use of micropores. Furthermore she did not see any reason why the skilled team would want to move away from micropores, which she regarded as "uncharted territory" where the team would have no idea about whether it would work without making a lot of samples and trials. Only when she was asked to assume that the skilled team had decided to use larger holes did she accept that something would have to change to protect the membrane.

142. I believe that Ms Simons' approach represents that of the skilled team approaching the matter without the benefit of hindsight. Polegato represents a different approach to the same problem: it does not suggest a protective layer. Gore has not established that it would be obvious to incorporate a protective layer into Polegato. I conclude that the step from Polegato to claim 1 of 270 is not obvious.

Obviousness of 270 over common general knowledge alone

143. Mr Mellor did not seriously press this attack. If he fails, as he does, on Kozaki and Polegato, he cannot sensibly succeed on common general knowledge alone. The only conceivable starting point would have been Geox's own shoes: but no detailed description or examples of these were before me.

Validity – obviousness of 183

144. The common general knowledge for 183 is as I have summarised it above. It includes the concept of direct injection of a tread around an upper.

145. The inventive concept of 183 lies in the two step approach of the claim, namely (a) forming the unitary upper assembly from a breathable upper, a membrane and a protective layer and (b) attaching the unitary upper to a perforated elastomer sole through a perimetric seal. The result must be that the protective layer ends up below the upper part of the sole.

Obviousness of 183 over Kozaki

146. Kozaki does not give anything but the barest hint as to the method to be used to construct the described shoe. I have already indicated that I do not think that the skilled team would get very far with Kozaki.

147. Geox says that there is therefore no teaching in Kozaki of a unitary upper assembly or the two-stage approach of 183. In particular there is nothing to suggest the two stage approach forming a perimetric seal. There is also no specific teaching of placing the protective element within the sole, as required by claim 1 of 183, but I place no particular weight on that.

148. Mrs Wright's evidence was that the skilled person would implement Kozaki using the steps identified in 183. Mrs Simons accepted that there were in practice only two general ways in which the protective element could be incorporated into Kozaki: spot glue it to the bottom of the insole, or put it into an injection mould and inject material around it so as to seal it in.

149. Injection moulding methods (such as direct injection or pre-forming a sole with the protective layer built in and then attaching that to the upper) would not lead to a unitary upper assembly of the type claimed. Furthermore, a pre-formed sole would be bonded but not sealed to the upper.

150. The alternative approach is spot gluing of the protective layer to the upper, followed by bonding the sole to the upper. This would have the unitary assembly, and the two steps of the claim, but would also lead to the sole being bonded but not necessarily sealed to the upper assembly.

151. The critical question, as it seems to me, is whether the skilled team would effect the perimetric seal, as opposed to merely bonding as taught by Kozaki. If the skilled team had succeeded in making a watertight bootee there would be no incentive to take this step. On the other hand if they had failed (as I believe they would) I consider they are far more likely to abandon Kozaki altogether. Either way they would not make the unitary assembly called for by the claim.

152. Claim 1 of 183 is not obvious in the light of Kozaki.

Obviousness of 183 over Regal

153. As explained in Ms Simons' drawings in the Appendix, the method taught in Regal does not involve the formation of a unitary upper assembly involving the protective layer.

154. Regal does not expressly teach the notion of a protective layer: but, one of the materials suggested for the inner material is cork, which would function to some extent to protect the membrane.

155. Gore's obviousness argument is based on the suggestion that it would be obvious to attempt the Regal process with a single moulding step. This would involve attaching the flanged inner material to the membrane and injecting the entire sole around the assembly so created.

156. Geox advanced two principal reasons why the skilled team would not take this approach.

157. Firstly, it involved throwing away the weight-saving advantage of the invention. Now all the sole would have to be made of the same material: any weight-saving of the heavy mid-sole would be thrown away. Mrs Wright accepted that this was so and provided no reason why anyone would wish to depart from it.

158. Secondly, the one-step moulding process would not work with sponge. There would be problems with penetration of the inner material, and its stability within the mould. Whilst the problems would not arise with cork, the fact that materials such as sponge are mentioned without distinguishing from cork shows that Regal was not contemplating or suggesting a one-step process alternative.

159. I do not believe it would be obvious to modify Regal in the way Gore suggests. It follows that 183 is not obvious in the light of Regal.

Insufficiency

160. In view of the decision of the Court of Appeal in *Generics v Lundbeck* where an appeal is pending to the House of Lords, Gore sought to reserve an argument on insufficiency, which it accepts is not available to it in the light of that decision.

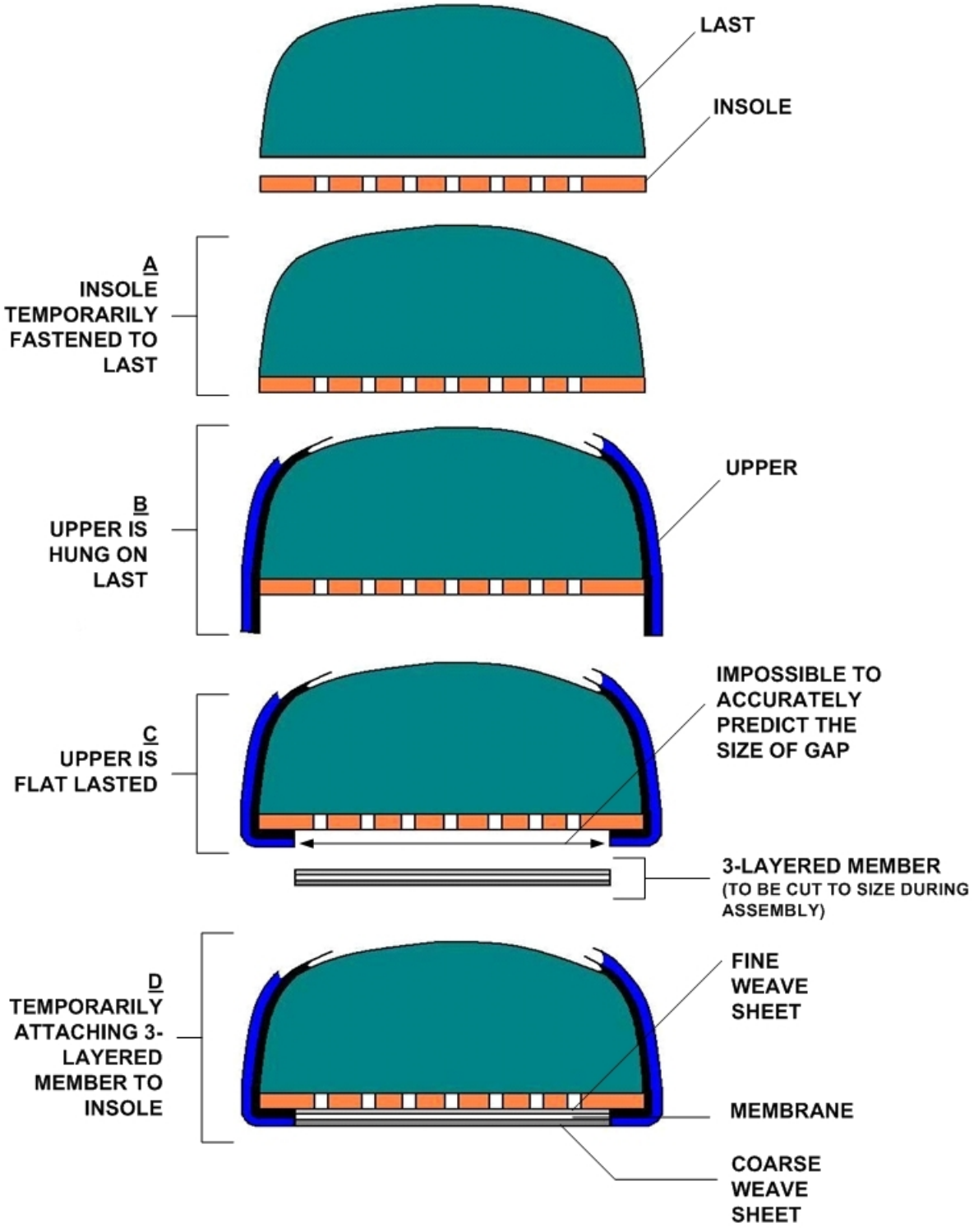
Overall Result

161. 270 is valid and Gore has not established non-infringement by everything within the Product and Process Description relating to the cemented design. I therefore refuse the declaration for the cemented shoe.

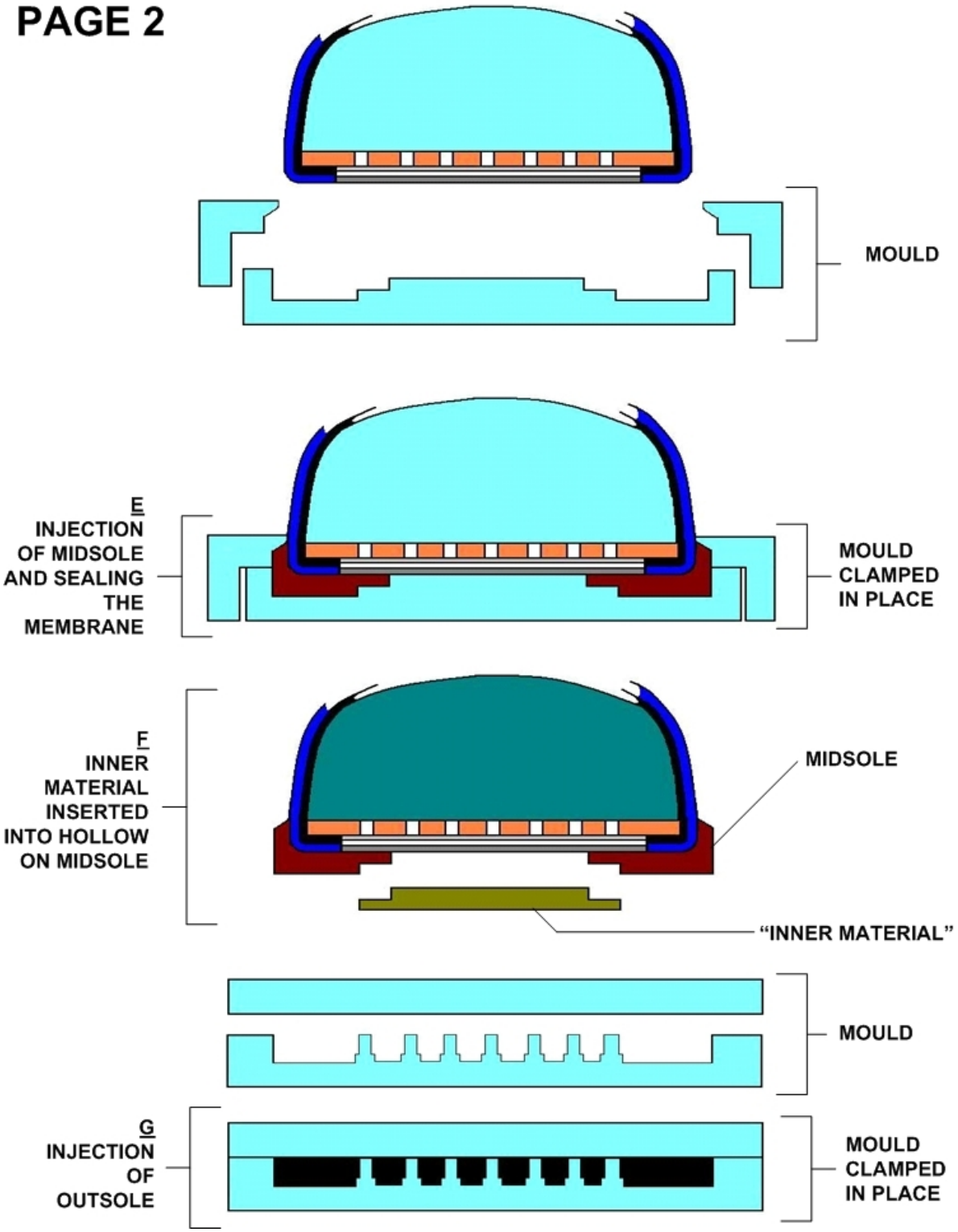
162. 183 is valid and not infringed by the method of making the injected design described in the Product and Process Description. Gore is entitled to a declaration, limited to this design of shoe.

APPENDIX - DIAGRAM SHOWING CONSTRUCTION OF REGAL

REGAL
PAGE 1



REGAL
PAGE 2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PAGE 3