

**OPINION UNDER SECTION 74A**

Patent	GB 2519685 B
Proprietor(s)	Strip Tinning Limited
Exclusive Licensee	
Requester	R. A. Labone & Co. Ltd
Observer(s)	Strip Tinning Limited
Date Opinion issued	23 February 2017

**The request**

1. The comptroller has been requested by R. A. Labone & Co. Ltd (“the Requester”) to issue an opinion on the validity of patent GB 2519685 B (“the Patent”) in the name of Strip Tinning Limited (“the proprietor”). In particular, the requester has argued that the claims of the patent are not novel or inventive in light of information (“Annexes 1-7”) they have submitted regarding products and manufacturing processes provided by R. A. Labone & Co. Ltd and Strip Tinning Limited.

**Observations**

2. Observations were received from the proprietor. These observations included comments regarding whether the disclosures of Annexes 1-7 were in the public domain, the allowability of the request, and arguments refuting the lack of novelty and inventive step.

**Observations in reply**

3. Observations in reply were submitted by the requester including a further “Annex 8” which is said to confirm that Annex 3 was in the public domain.

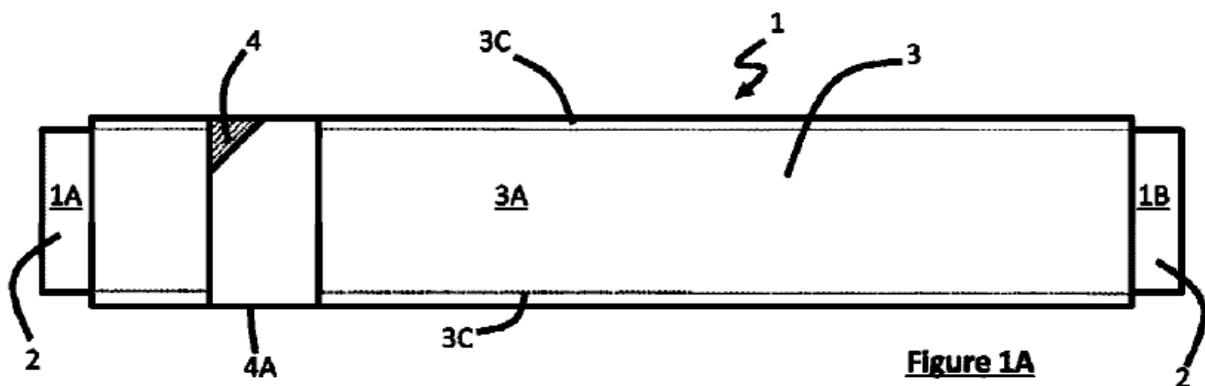
**Allowability of the request**

4. The proprietor has argued that the request is entirely without merit and is frivolous and/or vexatious, particularly as the request is based on documents which they allege do not form part of the state of the art. The proprietor has suggested that an opinion should therefore not be issued based on Section 74(A)(3)(a) and Rule 94(1)(a).
5. However, it is my view that the requester has provided arguments and information such that there is a legitimate basis for requesting an opinion, and I will proceed on

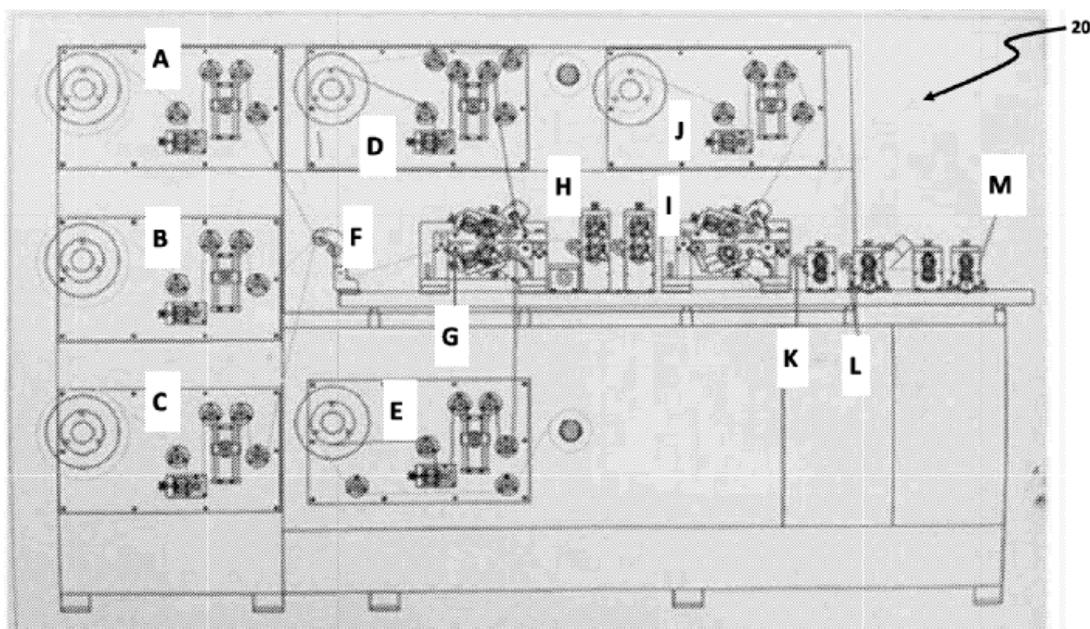
that basis.

## The Patent

6. The patent was filed on 9 January 2015 with a priority date of 10 January 2014. It was granted on 29 September 2015 and is still in force. It relates to a connector for installation in a windscreen, and a method and apparatus for forming connectors. The connector has particular use in supplying resistively heated metal wires found in heated windscreens with electricity, by using the connector to supply electricity to a busbar which, in turn, distributes the electricity to the metal wires. The connector has a length of conductive material 2, partially encased in a non-conductive material 3, to define exposed ends 1A and 1B. An adhesive patch 4 is provided on the non-conductive material. A release liner 4A may also be provided. Figure 1A of the Patent showing such a connector is reproduced below.



7. Apparatus 20 and a method for manufacturing connectors are also provided, which include using a number of stations A-F and modules G-M for continuously forming connectors by encasing electrical conductive strips with non-conductive material, applying adhesive to the non-conductive material and subsequently cutting to form connectors. The apparatus is shown in figure 3 of the Patent.



8. The Patent has 16 claims, including three independent claims – Claims 1,10&11.  
Claim 1 reads as follows:

*An apparatus for continuously forming connectors, the apparatus comprising means to supply an electrically conductive strip, means to encase intermittently the conductive strip in non-conductive material, means to apply intermittently an adhesive material to or along a minor portion of the non-conductive material and across its entire width, means to cut the conductive strip to form connectors and/or means to cut the non-conductive material to form connectors.*

Claim 10 reads as follows:

*A method of continuously forming connectors, the method comprising intermittently encasing electrically conductive strips with non-conductive material and applying intermittently adhesive to the non-conductive material and cutting the conductive material and/or the non-conductive material to form connectors.*

Claim 11 reads as follows:

*A connector for installation in a windscreen, the connector comprising a flat strip of electrically conductive material having a first end and a second end for providing electrical contacts, intermediate the first and second ends the conductive material is encased in a thin non-conductive material, the connector further comprising an adhesive layer which covers the entire width of the connector and is located at or towards one end of the non-conductive material and extending along a minor portion of the non-conductive material.*

9. Also of note is claim 16, which reads:

*A connector formed by the apparatus of any of Claims 1 to 9 or the method of Claim 10.*

## **The Annexes**

10. The requestor has supplied Annex 1-8 in support of their request for an opinion on the validity of the Patent. These are summarised below:

*Annex 1:* a web page printout for the website of R.A.Labone & Co Limited (the requestor), dated using the Wayback Machine at archive.org as 27 July 2012, showing examples of heated screen connectors for sale.

*Annex 2:* A web page printout for the website of Strip Tinning Ltd (the proprietor), dated using the Wayback Machine at archive.org as 7 July 2013, showing and discussing components of connectors for sale.

*Annex 3:* a company presentation of R.A.Labone & Co Limited (the requestor) showing connector product variants and discussion of manufacturing process. There is a revised date of November 2005.

*Annex 4:* a company presentation of Strip Tinning Ltd (the proprietor) which bears a date of March 2007.

*Annex 5:* Six Invoices dated between 30 January 2008 and 29 September 2011 regarding orders made by Strip Tinning Ltd (the proprietor) to R.A.Labone & Co Limited (the requestor). Invoice CD970056218 refers to a product with the code M4720-A.

*Annex 6:* An identification chart for flexible connector codes on sale by R.A.Labone & Co Limited (the requestor), which bears a date of 9 March 2010. Page 15 shows a product with the code M4720-A.

*Annex 7:* A part drawing for product number M4720-A, which bears a date of 15 August 2008.

*Annex 8:* A number of emails sent to prospective customers by R.A.Labone & Co Limited (the requestor) between July 2006 and January 2007, the emails including an attachment corresponding to the presentation of Annex 3.

### **Analysis of the Annexes**

11. In order for matter to form part of the state of the art under Section 2(2) it must have been publically available before the priority date of the Patent.
12. There seems to be no disagreement between the requester and proprietor that Annexes 1&2 were publically available - as they have been catalogued by the WayBack Machine – and it is my opinion that Annexes 1&2 form part of the state of the art.
13. However, the proprietor has argued that the Annexes 3,4,6&7 were not in the public domain before the priority date of the patent, and therefore not relevant for the assessment of validity of the patent. In particular, whilst they have noted that Annexes bear dates before the priority of the Patent, these are not publication dates. They consider that the requester has proffered no evidence that Annexes 3,4,6&7 were in the public domain.
14. In response the requester has provided Annex 8 which is said to show that the presentation of Annex 3 was communicated, before the priority date, to third parties without binding restrictions (i.e. no confidentiality). The requester has also noted that Annexes 4,6&7 are each “not relied on in and of itself, as a public disclosure” – rather they are relied on to show the features of product M4720-A sold in the invoice of Annex 5.
15. On balance, based on the information provided in the request and observations in reply, I am of the opinion that Annex 3 was available to the public at the priority date of the Patent and thus forms part of the state of the art under Section 2(2). In particular, the presentation of Annex 3 is clearly intended for public use with prospective customers, bears dates before the priority of the patent, and the emails appear to demonstrate that Annex 3 was provided to the public before the priority date.

16. Although Annexes 4,6&7 each bear a date before the priority date, it is my opinion that they were not publicly available. In particular, the requester has provided no information that these Annexes were actually made available to the public. Furthermore, each page of Annex 6 bears the text “information only”, and Annex 7 is marked “void if printed” which gives the impression that they are not for public consumption. Therefore, it is my opinion that Annexes 4,6&7 do not form part of the state of the art under Section 2(2).
17. I consider that Annex 5, as an invoice between two parties, was publically available. However, Annex 5 does not contain any technical information – only reference to a part M4720-A (among others). The requester has argued that Annexes 4,6&7 can be used to show the technical features of part M4720-A in Annex 5. Notwithstanding that I do not consider Annexes 4,6&7 to form matter available to the public, I am also of the opinion that it has not been demonstrated that the part M4720-A in Annex 5 is necessarily the same as parts M4720-A in Annexes 4,6&7. Thus, all that is disclosed in Annex 5 is that a part named M4720-A was sold by R.A.Labone & Co Limited (the requester) to Strip Tinning Ltd (the proprietor).
18. Therefore, in summary, it is my opinion that Annexes 1-3&5 were publically available before the priority date of the Patent and form part of the state of the art under Section 2(2). Annexes 4,6&7 were not, in my opinion, publically available and do not form part of the state of the art under Section 2(2) (alone or in combination with any of the other Annexes).

### **Claim Construction**

19. Before considering the Annexes put forward in the request I will need to construe the claims of the Patent following the well known authority on claim construction which is *Kirin-Amgen and others v Hoechst Marion Roussel Limited and others* [2005] RPC 9. This requires that I put a purposive construction on the claims, interpret it in the light of the description and drawings as instructed by Section 125(1) and take account of the Protocol to Article 69 of the EPC. Simply put, I must decide what a person skilled in the art would have understood the patentee to have used the language of the claim to mean.
20. Neither the requester nor the proprietor suggest that there is any particular difficulty in construing the claims. I am of the opinion that the claims 1,10,11&16 can be construed as read save for the following points of note.
21. I consider the person skilled in the art to be a designer or manufacturer of connectors for vehicles.
22. In claim 1 the phrase “cut the conductive strip to form connectors and/or means to cut the non-conductive material to form connectors” would be construed, in light of figures 11&12 and pages 15&16 of the Patent, by the person skilled in the art to mean cutting the exposed parts of the conductive strip transversely to provide plural connectors, *or* cutting the non-conductive material longitudinally at a position between continuous lengths of the conductive material, *or* providing *both* of the aforementioned cuts. The similar phrase in claim 10 should be construed in the same way.

23. Claim 16 appears to define a so called “product by process” claim and, as per *Kirin-Amgen Inc v Hoechst Marion Roussel Ltd [2005] RPC 9*, should be construed as a claim to the product – irrespective of the phrase “formed by”.

## Novelty

24. In order for a claim to lack novelty, a prior art disclosure must clearly and unambiguously disclose all of the features of the claim. I shall assess the novelty of each of the independent claims and claim 16 in light of the Annexes, starting with claims 1&11.

## Claims 1&11

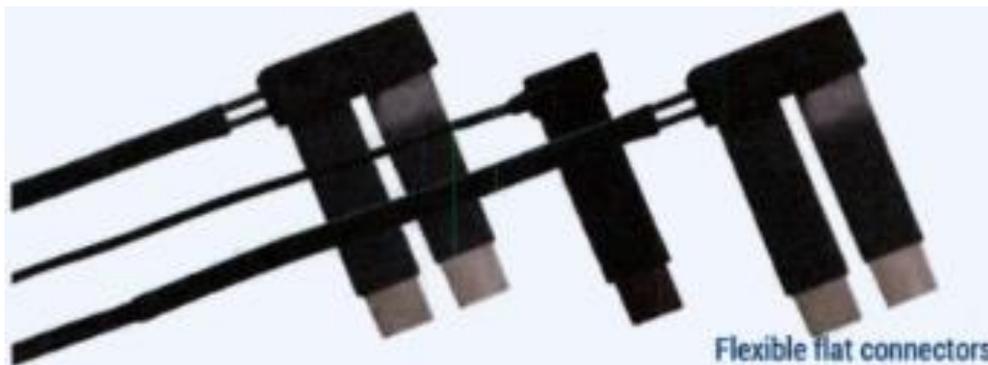
25. The requestor has argued that the connectors shown in Annex 1 disclose all the features of claim 11, at least implicitly, and have referred to Annexes 2&3 to demonstrate the features implicit in Annex 1. However, as noted by the proprietor, in order to demonstrate lack of novelty the anticipatory disclosure must be entirely comprised within a single document. Thus I will consider the disclosure in each of Annexes 1-3 individually.
26. Annex 1 discloses connectors suitable for installation in a windscreen – see image below – with a flat copper foil based strip encased in a thin black material, which I believe would be construed by the person skilled in the art as a non-conductive insulating thin film. An exposed end can be seen in the images and it is considered implicit that the other end is exposed in order to connect to the conductive terminal shown in the images. Annex 1 does not refer to an adhesive patch, however the requestor has argued that at least two of the connectors in the image below have an adhesive layer covering the entire width of the connector



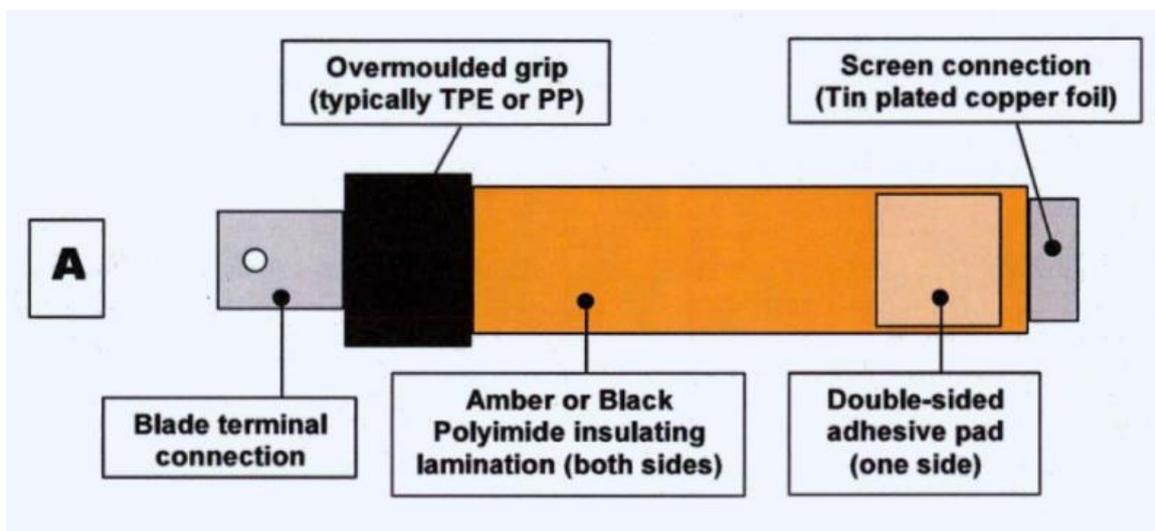
27. It can be seen in the image that there is an item – which I believe would be

understood by the person skilled in the art to be a release liner – which covers the entire width of the connector. Whilst it can be considered implicit from Annex 1 that there is at least some adhesive under the release liner, there is no disclosure in Annex 1, either explicitly or implicitly, of an adhesive layer itself *covering the entire width* of the connector. Thus, in my opinion, claim 11 is novel in light of Annex 1. Similarly, claim 1 requires intermittently applying adhesive material *across the entire width* of the connector, and is also novel in light of Annex 1.

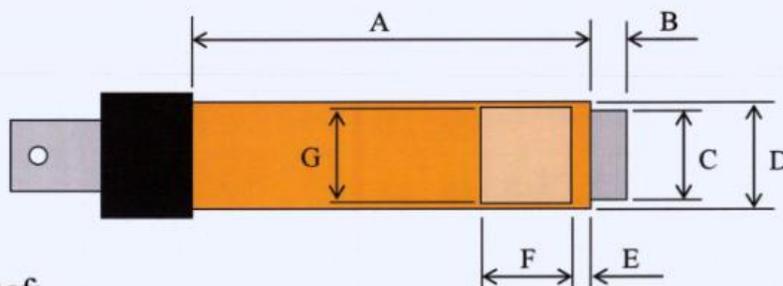
28. Annex 2 discloses connectors similar to Annex 1 – see image below – and in particular discusses details of the connector components including the use of an adhesive patch.



29. However, there is no disclosure of an adhesive layer *covering the entire width* of the connector. Thus, in my opinion, claims 1&11 are novel in light of Annex 2.
30. Annex 3 discloses details of connectors in slides 33&34 of the presentation – see images below respectively.



## Flexible Screen Connector Specifications



### Dimension Ref:

- A. Variable from 30 mm minimum
- B. Variable (typically 5 - 10 mm)
- C. Standard sizes 6.25, 10.0, 15.0 & 17.0 mm (other sizes up to 20mm are possible)
- D. Standard sizes 9.0, 14.0, 19.0 & 21.0 mm (other sizes up to 22mm are possible)
- E. Variable from 2 mm minimum
- F. Variable in 5 mm increments from 20 mm minimum (other sizes below 20mm are possible at extra cost)
- G. Standard sizes 8.0, 14.0, 19.0 & 21.0 mm (other sizes up to 22mm are possible)

31. The connector in Annex 3 clearly has a flat copper strip encased in a non-conductive insulating thin film and is suitable for installation in a windscreen. Exposed ends can be seen in the images and a double sided adhesive pad can be seen located towards one end of the non-conductive material, which extends along a minor portion of the non-conductive material. From the images it is clear that the adhesive pad does not cover the entire width of the connector. However, the requester has pointed out that that slide 34 lists possible widths 'D' for the non-conductive material and possible widths 'G' for the adhesive pad, and notes that even using the given standard sizes the strip width can be matched with the same adhesive pad width. However, what is actually disclosed in Annex 3 is simply a number of standard sizes for the dimensions of various features of the connector. There is no disclosure of any one standard size being used with another standard size – such that 'D' matched 'G', for example. Furthermore, there is no disclosure in this document of the adhesive pad covering the entire width of the connector. Thus, in my opinion, claims 1&11 are novel in light of Annex 3.
32. Whilst I am of the opinion that Annexes 4,6&7 do not form part of the state of the art, even if it could be demonstrated that they were, I do not consider them to provide any information additional to Annexes 1-3. In particular Annexes 4,6&7 do not disclose an adhesive pad covering the entire width of the connector. I note that Annex 7 shows “double sided tape” across the entire width of the connector. However, there is no disclosure of the adhesive itself (rather than a release liner for the tape, for example) covering the entire width of the connector in Annex 7. Furthermore, Annex 5 provides no technical information on the connectors. Thus, in my opinion, claim 11 would be novel in light of Annexes 4-7.

### Claim 10

33. Claim 10 relates to a method of continuously forming connectors. It is noted that claim 10 is not limited to adhesive material across the entire width of the connector

as per claims 1&11.

34. The requester states that Annex 1 discloses custom built lamination machine for producing flexible connector strips to individual applications, of the type shown in the image. The requestor has argued that the features in claim 10 can be deduced from Annex 1. In particular, it is suggested that since the non-conductive layers in the connectors of Annex 1 are incomplete, it is implicit that the non-conductive material must have been applied intermittently.
35. Slide 29 of Annex 3 shows machinery for producing glazing products – see the image below



36. The requester has argued that when reviewed as a whole, Annex 3 discloses the features of claim 10.
37. The proprietor has argued that there is insufficient detail in the Annexes, in particular there being no evidence that the skilled person would have understood the method of manufacture from the product itself.
38. In my opinion there is no disclosure in Annexes 1-3 of the specific steps for forming connectors in method claim 10. Whilst Annexes 1&3 discuss lamination in general, and Annex 3 shows cutting implements per se, there is no disclosure of intermittently encasing with non-conductive material, and there is no disclosure at all of how adhesive is applied. Nor is there an implicit disclosure of the method and apparatus features from the product itself in Annexes 1-3, as the non-conductive material could have been applied continuously and then cut (for example). Therefore, in my opinion claim 10 is novel in light of Annexes 1-3.

39. Whilst I am of the opinion that Annexes 4,6&7 do not form part of the state of the art, even if it could be demonstrated that they were, they provide no information on how connectors are formed. Furthermore, Annex 5 provides no technical information on the forming of connectors. Thus, in my opinion, claim 10 would be novel in light of Annexes 4-7.

### **Claim 16**

40. When properly construed, as I have discussed above, claim 16 is a claim to the product (i.e. connector), and is not rendered novel merely by the fact it is produced by means of a new process.

41. It is my opinion that Annexes 1-3 disclose a connector meeting the requirements of claim 16. I also note that claim 16 is dependent on the method of claim 10, and thus any product formed by this method does not require adhesive material across the entire width of the connector. Consequently, claim 16 is not novel in light of Annexes 1-3.

42. Whilst I am of the opinion that Annexes 4,6&7 do not form part of the state of the art, if it could be demonstrated that they were, they show similar connectors, and would consequently disclose the connector of claim 16. Annex 5 provides no technical information on the connectors, and thus claim 16 is novel in light of Annex 5.

### **Inventive Step**

43. The requestor has also argued that the claims lack an inventive step in light of Annexes 1-7. To determine whether or not an invention defined in a particular claim is inventive over the prior art, I will rely on the four step test established in *Pozzoli SPA v BDMO SA [2007] EWCA Civ 588* which reformulated the well-known *Windsurfing* test. The Pozzoli steps are as follows:

(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, determine whether those differences constitute steps which would have been obvious to the person skilled in the art.

44. Neither the requester nor the proprietor have identified the person skilled in the art or their common general knowledge (CGK). I have identified the person skilled in the art as a designer or manufacturer of connectors for vehicles. Their CGK would, I think, include a general understanding of apparatus and processes used to form connectors for heated windscreens. He/she would also understand the need to

effectively secure a connector to the glass surface of a windshield.

45. I will now consider steps (2)-(4) of the Pozzoli test for each of the independent claims, in light of the identified person skilled in the art and their CGK.

### **Claims 1&10**

46. The inventive concept of claims 1&10 relate to an apparatus and method for continuously forming connectors including intermittently encasing a conductive strip with non-conductive material, intermittently applying adhesive to the non-conductive material and cutting the exposed parts of the conductive strip transversely to provide plural connectors, *or* cutting the non-conductive material longitudinally at a position between continuous lengths of the conductive material, *or* providing *both* of the cuts. Claim 1 also specifies that the adhesive material is applied across the entire width of the non-conductive material.
47. The requester has argued that the features of claim 1&10 are immediately derivable from Annex 1, in particular being implicit from the products shown and the use of a custom built lamination machine. The requester has also referred to slide 29 of Annex 3 and the guillotine unit for cutting the connectors as required.
48. The proprietor has argued that no apparatus is disclosed in Annex 1 and that it is impossible to ascertain from Annexes 1-3 how the products shown were constructed. The suggestion that the features are implicit is also refuted.
49. I consider the differences between the matter in each of Annexes 1-3 and the inventive concept to be numerous, as none of these Annexes provide any details of an apparatus or method of forming connectors. In particular, Annexes 1-3 do not disclose intermittently encasing a conductive strip with non-conductive material, intermittently applying adhesive to the non-conductive material, nor is there any disclosure of what is cut using the guillotine or how it is used. Furthermore, Annexes 1-3 do not disclose applying adhesive material across the entire width of the non-conductive material. Nor are any of these processes implicit as the connectors shown in Annexes 1-3 do not *necessarily* have to be formed using the steps defined in claims 1&10.
50. Thus in light these numerous differences, when presented with what is disclosed in Annexes 1-3, I consider that the person skilled in the art would have to use at least a degree of inventive ingenuity in order to arrive at the apparatus and method of claims 1&10. Consequently, it is my opinion that claims 1&10 are inventive in light of Annexes 1-3.
51. Whilst I am of the opinion that Annexes 4,6&7 do not form part of the state of the art, even if it could be demonstrated that they were, they provide no information on how connectors are formed. Furthermore, Annex 5 provides no technical information on the connectors. Thus, in my opinion, claims 1&10 would be inventive in light of Annexes 4-7.

### **Claim 11**

52. The inventive concept of claim 11 is a connector comprising a flat strip of electrically

conductive material encased in a non-conductive material such that ends of the strip are exposed. The connector also has an adhesive layer covering the entire width of the connector which is located at or towards an end of the connector which extends along a minor portion.

53. The difference between the inventive concept and Annex 1&3 is that an adhesive layer covers the entire width of the connector. The difference between Annex 2 and the inventive concept is that the connector has an adhesive layer covering the entire width of the connector which is located at or towards an end of the connector which extends along a minor portion.
54. I think the question at step 4 of the *Pozzoli* test for claim 11 can be summarised as: Would the particular dimensions and extent of an adhesive layer – such that it covers the entire width of the connector – be obvious to the person skilled in the art?
55. The requester has argued that such a difference would be known in the art and constitute common general knowledge. The proprietor has submitted that their Patent has solved the issue of effective location of the adhesive strip across the entire width of the connector in the particular way that the connectors are processed in parallel. In particular by ensuring that the adhesive is exactly the same width as the connector the passage of moisture at the periphery is inhibited.
56. It is clear that connectors with adhesive across the entire width of the connector have not been demonstrated to be CGK, as none of the Annexes show such an arrangement. However, Annex 1 shows a release liner across the entire width of the connector and Annex 3 discloses that a standard adhesive pad width can be the same standard width as the connector. Furthermore, the arguments provided by the proprietor appear to indicate that the inventive step lies in *how* the connectors are formed with adhesive across its entire width – with the adhesive applied across the entire width of a strip and then cut – rather than the concept itself of having adhesive across the entire width of a single connector.
57. Thus it is my opinion that when presented with what is disclosed in Annex 1 or Annex 3, it would be obvious to the person skilled in the art to have the adhesive layer across the entire width of a connector – in particular to ensure the connector is effectively secured and moisture ingress is inhibited. Whilst it may be preferable to have a release liner extend beyond the adhesive layer so that it can be easily peeled away, I think that it would be readily apparent to the person skilled in the art that the overlap could be across the connector rather than at its edge.
58. As Annex 2 does not disclose *any* details of location of the adhesive patch, it is my opinion that claims 1&10 involve an inventive step in light of this document.
59. Whilst I am of the opinion that Annexes 4,6&7 do not form part of the state of the art, if it could be demonstrated that they were, they show similar connectors, and would consequently render obvious the connector of claim 11. Annex 5 provides no technical information on the connectors, and thus claim 11 is inventive in light of Annex 5.

## **Dependent claims**

60. Since I have found independent claim 1 to be novel and inventive, it follows that dependent claims 2-9 are also novel and inventive.
61. Claims 12-15 are dependent on claim 11, which I have found to not be inventive. Claims 12-15 relate to the dimensions of the conductive material, the location and dimensions of the adhesive, and a margin layer for the non-conductive material. These claims contain the terms “preferably”, “for example”, “say from”, “may be” along with “and/or” which make construing them problematic. Nevertheless, it is my opinion that the person skilled in the art would construe these claims as per their broadest scope and, consequently, claims 12-15 are not felt to provide an inventive step as they define obvious choices for the dimensions and/or locations of connector features based on Annexes 1&3.

## **Opinion**

62. It is my opinion that the Annexes 4,6&7 submitted by the requester do not form part of the state of the art.
63. I consider that the invention as defined in claim 16 of the Patent is not novel in view of Annexes 1-3 submitted by the requester.
64. I am of the opinion that claims 11-15 are not inventive in light of what is disclosed in Annexes 1&3.

## **Application for review**

65. Under section 74B and rule 98, the proprietor may, within three months of the date of issue of this opinion, apply to the comptroller for a review of the opinion.

Ben Widdows  
Examiner

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## **NOTE**

*This opinion is not based on the outcome of fully litigated proceedings. Rather, it is based on whatever material the persons requesting the opinion and filing observations have chosen to put before the Office.*