Patents Act 1977 **Opinion Number** **11/22**

OPINION UNDER SECTION 74A

Patent	GB2588834
Proprietor(s)	RYTONS BUILDING PRODUCTS LIMITED
Exclusive Licensee	-
Requester	Alumasc Building Products Limited trading as Timloc Building Products
Observer(s)	-
Date Opinion issued	05 July 2022

The request

1. The comptroller has been requested to issue an opinion as to whether GB2588834 (the Patent) is invalid for lack of an inventive step in light of its own background disclosure and several pieces of evidence. The request was received on 14th March 2022. However, since opinions can only be requested for granted patents, the effective date of the request is taken to be the date of grant of the Patent 6th April 2022.

2. Observations were filed on the 6th May 2022 and observations in reply were filed on 20th May 2022.

Evidence

3. The various submissions were accompanied by numerous pieces of evidence. That filed with the original request was

D1 - Rytons Cavity and Underfloor Ventilators product guide, Issue 15 dated July 2014;

D2 - The Building (Amendment) Regulations 2018 No. 1230;

D3 - Explanatory Memorandum to the Building (Amendment) Regulations 2108 No. 1230;

D4 - Official Journal of the European Communities, dated 19 October 1996, reporting Commission Decision of 4 October 1996 establishing a list of products

belonging to Classes A 'No contribution to fire', 96/603/EC

D5 - Wikipedia Article, "Die Casting", version of the article available as of 7 January 2019;

D6 - Wikipedia Article, "Zinc Alloy Die Casting", version of the article available as of 26 June 2019;

D7 - Wikipedia Article, "Injection Moulding", version of the article available as of 9 January 2019;

D8 - Die cast aluminium air vent for sale on Amazon.co.uk (https://www.amazon.co.uk/Aluminium-Wall-Vent-Round-sizes/dp/B01LY5DRCC?th=1) [available since 13 September 2016];

D9 - UKIPO Decision BL O/930/21;

D10 - Screen shot from a video entitled "An introduction to Rytons cavity weeps and vents" uploaded to the Vimeo video sharing website at https://vimeo.com/143884329 on or around 28 October 2015 and available online from that date.

4. The evidence filed with the observations was

E1 - Wikipedia home page with 'Welcome to Wikipedia the encyclopaedia that anyone can edit' highlighted;

E2 - Amazon.co.uk seller page for "YourDIYShop"

E3 - https://www.pmcdermottsomagh.com/ homepage;

E4 - https://www.pmcdermottsomagh.com/product-range/

E5 - dorseyconstructionmaterials.com/safeseal landing page for 'Safeseal A1 Fire Rated Stainless Steel Cavity Tray System' and keyfix.com/wp-content/uploads/2021/07/Keyfix-Brochure-Web.pdf showing 'Non-combustible Cavity Tray System' including a stainless steel weep vent.

E6 - Photograph title 'Rytons A1 Fire-rated Metal Special Louvre Grills'

E7 - amazon.co.uk/Aluminium-Wall-Vent-Round--sizes/dp/B01LZS23UP?th=1 an extract from the Die cast aluminium air vent page showing customer ratings;

E8 - https://www.amazon.co.uk/Stainless-Grille-Circle-Ducting-Ventilation/dp/B09DJ7SR3C/ref=asc_df_B09DJ7SR3C/?tag=googshopuk-21&linkCode=df0&hvadid=535908606674&hvpos=&hvnetw=g&hvrand=15393917308708995971&hvpone=&hvptwo=&hvqmt=&hvdev=c&hvdvcmdl=&hvlocint=&hvlocphy=1007135&hvtargid=pla-1425095651015&th=1 shopping page for air vent grill made from sheet stainless steel;

5. Finally, the evidence filed with the observations in reply was

D11- Extract from Premier Engineered Products Website, published 19 March 2018 https://diecasting.com/blog/die-casting-vs-injectionmolding/#:~:text=Although%20there%20are%20some%20variations,molding%20uses%20plastic%20or%20polymers.

D12 – Extract from the register hosted by Companies House, which identifies the directors for Rytons Building Products Limited https://find-and-update.company-information.service.gov.uk/company/01058924/officers

D13 – Document entitled "Why Zinc Diecastings?", which was published in 2006 by The International Zinc Association Europe http://www.outillageprogress.com/img/cms/BROCHURE-ZAMAK-EN.pdf

D14 – Is an extract from a catalogue of Tor7, a German manufacturer of garage doors, under the Hörmann brand, dated 1 August 2012 https://www.tor7.de/media/pdf/8e/92/18/Industrie-Sectionaltore_Baureihe_20.pdf

6. The request references some Wikipedia articles D5-D7 relating to die-casting in general, zinc die-casting and injection moulding. With E1 the observations point to the 'anyone can edit' policy of Wikipedia and suggest it is an unreliable source which should be given little weight.

7. Following the 'anyone can edit' link leads to an introduction page and thence policies and guidelines for editing. These indicate that Wikipedia articles should be neutral and based on data drawn from reliable sources and that any article will likely be considered by multiple editors and represent a consensus rather than an individual view.

8. The observations do not point to any particular faults in D5-D7 or explicitly challenge their factual content. The articles appear to be suitably referenced with reliable sources in line with the Wikipedia guidelines. Hence, I do not see evidence that D5-D7 are not reliable and think they should be given the same weight normally accorded reference sources.

The Patent

9. The Patent was filed on 9th December 2019, claiming priority from an earlier GB application dated 6th November 2019. The Patent concerns 'a cavity weep hole duct made of metal'. It can be best understood with reference to the figures.

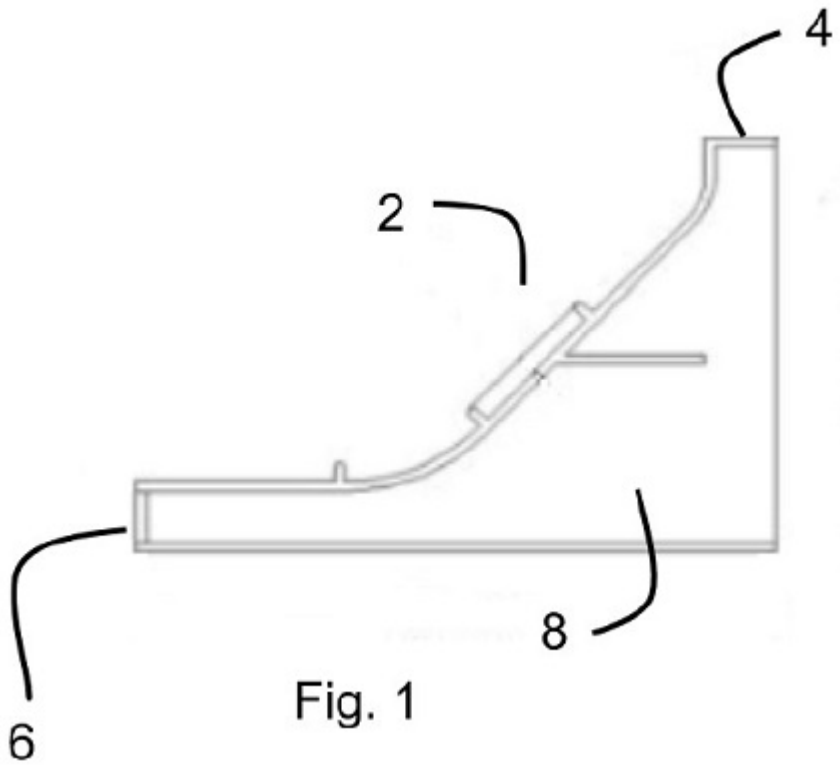

Fig. 1

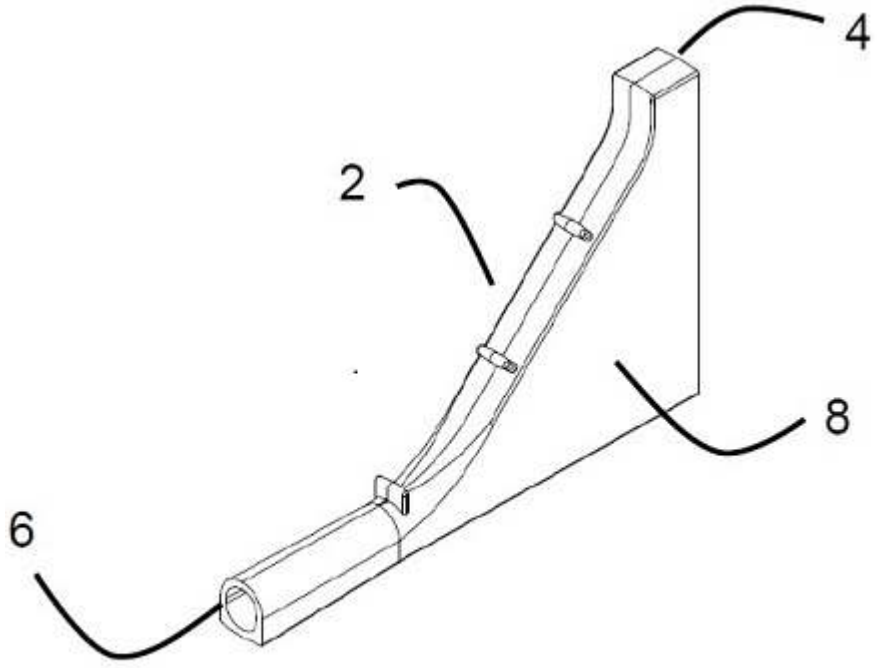

Fig. 3

10. The invention is a structure which is substantially hollow, open along one edge (the right side in the above figures) and with a channel 6 on the opposite side. In use it would typically be inserted into the vertical gap between the end faces of two bricks with the open edge by an interior cavity and the channel by the exterior face. The

duct would thus provide moisture within the cavity with a route of egress.

11. The Patent description notes that previously similar ducts had typically been made of plastic, possibly high-impact polystyrene, but that changes to building regulations had triggered a move to non-combustible materials in some use cases. Hence, the invention proposes a duct formed by die-casting fire rated zinc.

12. Since there are some arguments about the person skilled in the art and their common general knowledge I will defer construction of the claim until those points have been considered.

Inventive Step

13. To determine whether or not an invention defined in a particular claim is inventive over the prior art, I will rely on the principles established in Pozzoli SPA v BDMO SA [2007] EWCA Civ 588, in which the well known Windsurfing steps were reformulated:

> *(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.*

Helpfully this approach was adopted in the original request and the subsequent arguments have been focussed on the various Pozzoli steps.

The Person Skilled in the Art

14. The request proposes this person skilled in the art (PSA).

> *The skilled person is a manufacturer of ventilation products and components, which include; ducts, including cavity weep hole ducts; vents, including die-cast aluminium vents; and grilles, etc., for use in buildings.*

15. The observations only take exception with the PSA manufacturing die-cast aluminium vents. Which particular ducts/vents/grilles the PSA is aware of is arguably a question of the PSA's knowledge and not their nature, hence I will defer consideration of those points to the next step.

16. Hence, I think the PSA would be a manufacturer of ventilation products and components for buildings, including vents, grills, ducts and the like.

The Common General Knowledge of the Person Skilled in the Art

17. The request proposes five pieces of common general knowledge of which two do not

seem to be contested.

18. Firstly, that the PSA would be aware of the building regulations applicable to ventilation and in particular those relating to fire safety, including D2-D4.

19. D4 is of particular relevance, listing construction materials considered to make no contribution to fire. The listed metals are iron/steel, copper, zinc, aluminium and lead. At various places the observations assert that aluminium is not non-combustible, but do not justify this position. In light of D4 I think the observer has misinformed themselves on this point and will proceed on the basis that aluminium is among the non-combustible metals.

20. Secondly, that the PSA would be aware of common materials used to manufacture ventilation products, including plastics and metals.

21. The knowledge of the PSA on the remaining three points is partially contested in the observations.

22. Firstly, there is the question of knowledge of commonly available ducts, cavity trays, vents and grilles including the duct of D1 [a plastic weep hole duct manufactured by the Patentee] and D8 [a die-cast aluminium wall vent]. I think D1 and D8 are both specific disclosures which amount to public knowledge, somewhat like a patent disclosure, rather than common general knowledge and they will be considered on that basis.

23. Secondly, there is the knowledge of common engineering processes such as injection moulding, and other moulding/casting techniques suitable for metals such as die casting, including the information of D5-D7. The observations raise arguments with respect to knowledge of die casting.

24. Thirdly, there is a question as to whether die-casting and injection moulding are equivalent processes for metals and plastics respectively. Whilst the observations argue this point, I do not think they contest the actual nature of die-casting and injection moulding (i.e. injecting molten material into moulds under pressure). A PSA aware of both processes would clearly appreciate their similarity, therefore this similarity will inevitably form part of the PSA's common general knowledge if die-casting does and vice versa.

25. So, does the PSA's common general knowledge in this instance include die-casting?

26. The reply argues that because the Patent does not detail the die-casting that die-casting must be common general knowledge, otherwise the Patent is not enabled. The disclosure in the Patent is brief, only saying that die casting is used, that it involves pouring molten zinc into die mould and that it is slower and requires more quality monitoring than plastic injection moulding. Therefore, the PSA is essentially left to determine all the detail of the die-casting themselves, as argued in the reply. However, based on the documents submitted I think that both parties agree that expertise in die-casting is readily available once the PSA brings it to mind. Thus, since the Patent directs the PSA to use die-casting, they will seek out this expertise and enablement is not an issue. The question being asked with respect to inventive step is whether the PSA's common knowledge includes die-casting absent the

prompting of the Patent.

27. The request substantially relies upon the Wikipedia article D5 and D6 to show that die-casting is a commonly known manufacturing process for metal parts.

28. The observations acknowledge that die-casting will be known within the building/construction industry taken as a whole and that details of die-casting would be readily available online once somebody was aware of it. However, the observations argue that they are not aware of the three largest ventilation manufacturers ever having made die-cast products. They assert instead that manufacturing from sheet steel/aluminium is the norm.

29. The observations also raise questions about the die-cast vent of D8. They point out that the retailer of the vent is not a manufacturer. However, since someone must have manufactured the vent and in doing so be a ventilation manufacturer, the retailer's nature is not relevant. The observations also argue that the vent does not seem to have been particularly popular.

30. In their reply the requestor points out that four of the five largest weep duct manufacturers have a portfolio of building products which extend beyond ventilation, including die cast products, and that ventilation manufacturers would be exposed to this broader field of engineering, again including the die-casting. However, I note that they do not appear to contradict the rarity of die-casting within ventilation in particular, or the use of sheet metal in the ventilation sector.

31. The reply also argues that given the age and wide application of die-casting it would be part of the basic training of an engineer (which I will take to mean manufacturing engineer) and that it is not credible that a PSA would lack this knowledge.

32. It does not seem to be disputed that die casting would be part of the common general knowledge of a person skilled in manufacturing in general or in the broader construction sector. The argument in the observations is that die-casting is not used in the ventilation sector and that it would therefore fall outside the common general knowledge in that field. However, the die-cast vent of D8, even if it is unpopular, is sufficient to show that die casting is not something completely dismissed in the ventilation field. Thus, I think that die casting, whilst rarely be chosen as a manufacturing technique, is not one that would be presumed to be beyond consideration. Therefore, I think that the PSA's common general knowledge would mirror that of manufacturers more generally and include die casting and by extension an appreciation of the similarities between die-casting and injection moulding.

Claim construction

33. I 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 PSA would have understood the patentee to have used the language of the claim to mean.

34. Section 125(1) of the Act states that:

> *For the purposes of this Act an invention for a patent for which an application has been made or for which a patent has been granted shall, unless the context otherwise requires, be taken to be that specified in a claim of the specification of the application or patent, as the case may be, as interpreted by the description and any drawings contained in that specification, and the extent of the protection conferred by a patent or application for a patent shall be determined accordingly.*

35. And the Protocol on the Interpretation of Article 69 of the EPC (which corresponds to section 125(1)) states that:

> *Article 69 should not be interpreted in the sense that the extent of the protection conferred by a European patent is to be understood as that defined by the strict, literal meaning of the wording used in the claims, the description and drawings being employed only for the purpose of resolving an ambiguity found in the claims. Neither should it be interpreted in the sense that the claims serve only as a guideline and that the actual protection conferred may extend to what, from a consideration of the description and drawings by a person skilled in the art, the patentee has contemplated. On the contrary, it is to be interpreted as defining a position between these extremes which combines a fair protection for the patentee with a reasonable degree of certainty for third parties.*

36. The Patent has a single claim

> *1. A method of manufacturing a cavity weep hole duct, the duct having a unitary body made from fire-rated zinc and having an open wall along a vertical edge and a channel extending at least part of the way along a horizontal edge, the method comprising the process of die-casting.*

37. The request does not explicitly address construction but does include an analysis of claim 1 restating the method as steps 1(a)-(e) and making a brief comment about each. The observations do not address claim construction directly or comment upon the claim analysis part of the request.

38. Considering claim 1 directly, the material to be used, zinc, and the manufacturing process, die-casting, are easily understood.

39. When viewed in light of the description the structural limitations, the open wall and channel, would be readily understood by the skilled reader.

40. The skilled reader would also readily understand that the requirement for a unitary body requires that the weep hole duct not be made up of multiple parts fixed together.

41. This is broadly in agreement with the analysis found in the request, which hasn't

been challenged in the observations. Hence, the claim can be straightforwardly understood as written.

Identify the Inventive Concept

42. When discussing the inventive concept within the process of assessing inventive step neither the Requestor nor the Patentee has really referred to the claim. The request identifies the inventive concept as

> *The replication of a known plastic weep hole duct in a fire rated form such that it would meet modern building regulations. This is achieved by forming a known plastic weep hole duct from zinc, or zinc alloys, using die casting.*

43. Meanwhile the observations identify the inventive concept as

> *The inventive concept is therefore to replicate the physical construction of the Proprietor's plastic weep duct from a fire-resistant material that meets building regulations without changing its style, structure or performance.*

44. Both of these seem to relate more to the motivation for the invention and replicating existing plastic weep ducts is an element not found in the invention as claimed.

45. Considering the Patent itself, the structure of the weep hole duct appears to be conventional, therefore the essence of the invention lie in the material and manufacturing aspects. Thus, I think that the inventive concept is 'Die-casting a weep hole duct as a single zinc piece.'

What Differences Exist between the Prior Art and the Inventive Concept?

46. The request takes as its starting point the background information provided in the Patent. In particular references to plastic weep ducts being injection moulded and formed from high impact polystyrene. They consider the Patentee's Rytweep duct disclosed in D1 and D10 to be an example of such a prior art duct. Clearly the PSA cannot be considered to be in possession of the Patent as prior art against itself, therefore it is necessary to consider D1 and D10 absent the disclosure of the Patent and determine what they disclose.

47. D1 and D10 both show transparent weep ducts whose structure appears to be identical to that shown in the figures of the Patent. Neither D1 nor D10 explicitly mention the material that the duct is formed from nor its method of manufacture. This leaves the PSA to imply the material and method used to manufacture the prior art weep duct.

48. In the observations, the proposed inventive concept (copied above) mentions replication of the Patentee's plastic weep duct, hence, I think it can be taken as conceded that the prior art weep duct of D1 and D10 is manufactured from plastic. Furthermore, whilst the Figures in D1 are of too poor a quality to allow useful

information to be derived, the video D10 was drawn from is clearer, and here the weep duct certainly appears to be manufactured from plastic.

49. It is not clear that the PSA could deduce the method of manufacture of the prior art weep duct from D1 and D10, and the request provides no argument in this regard, instead relying upon knowledge of the Patent. The observations make no mention of injection moulding beyond questioning its similarity to die casting and thus do not challenge the request's assertion that the prior art weep duct is injection moulded. Thus, the argument in the request appears flawed but the point appears to have been conceded in the observations. It is not necessary to resolve the question to determine the differences between the prior art and the claim, therefore I will defer consideration until such time as it is apparent whether it affects the validity of the claim.

50. The request takes the existing plastic Rytweep weep duct, seen in D1 and the video screenshot D10 was taken from, as being the closest prior art and the observations do not contradict this position.

51. From here the request identifies the difference between this prior art and the invention as being the choice of material, zinc, and the choice of manufacturing technique, die-casting. Again, the observations do not disagree on this point.

Do these difference amount to steps which would have been obvious to the person skilled in the art?

52. Both the requestor and the patentee agree that the PSA would be aware of the changes to the building regulation which would preclude the use of plastic weep ducts in certain scenarios, and that the PSA would be motivated to create a fire rated weep duct which would serve those use cases.

53. Neither the request nor the observations suggest that there are any deficiencies with the prior art weep duct other than the material that it is made from. Hence, the PSA would not be motivated to depart from the existing design beyond what was necessitated by the change of material.

54. The building regulations clearly direct the PSA to the list of fire rated materials in D4. Both the request and the observations limit their discussions to the provision of weep vents manufactured in various metals and, other than the assertion that aluminium is combustible which I think was made in error, the list of non-combustible materials in D4 has not been challenged. Thus, the PSA would be led by D4 to consider iron, steel, copper, zinc, aluminium and lead as potential materials for the weep duct.

55. No arguments have been presented about the raw material costs of the various metals or their mechanical and/or chemical properties, and their resulting suitability for use in weep ducts. Hence, based on the available evidence, the PSA would consider there to be a reasonable expectation that any of the metals listed in D4 would be suitable for manufacturing fire rated weep ducts.

56. Thus, the PSA has their existing plastic weep duct from D1/D10, a list of potential fire rated metals and a list of potential manufacturing processes and must determine one or more metal/process pairs which can economically produce a weep duct.

57. Whilst there are presumably many potential metal/manufacturing process combinations the inventiveness of one (die-cast zinc) will not in general dependent upon the inventiveness of the others. Hence, I will not be considering options other than the die-cast zinc of the claim and the sheet metal which has been raised in the observations.

58. The underlying argument in the request is that die-casting a metal weep duct would be obvious to the PSA, whilst the observations put forwarded the view that the mindset of the PSA is such that they would gravitate towards using sheet metal, probably steel, and not give consideration to die-casting.

59. None of the request, observations or reply assert that the weep duct shape could not be formed by die-casting. With respect to sheet metal the observations provide a narrative of the actual invention process where they say that a weep duct could be formed in this manner, but that the Patentee considered it to be less good.

60. None of the request, observations or reply directly comment on the absolute or relative price of die-cast weep ducts. The observations do comment that ‘cast’ weep ducts could be produced in quantity at a market friendly price. The observations also note that the die-cast aluminium vent of D8 cost twice as much as a sheet metal vent.

61. The observations reference a metal weep duct in E5, but the date of disclosure has not been clearly established and the URL suggests it is from July 2021, after the priority date. Thus, I do not think I can consider this disclosure. In the absence of weep ducts, the request, observations and reply have turned to vents as examples of metal working in the ventilation field. The request puts forward a die-cast aluminium vent D8, in response the observations put forward galvanised steel E6 and sheet stainless steel E8 vents (though don’t establish the dates of availability) and in the reply the requestor puts forward a die-cast aluminium vent D14.

62. I think the telling point with respect to this evidence is one made in the observations ‘It will be appreciated that none of the stainless steel products discussed above are weep vents. They are all wall vents having an entirely different purpose, have a fairly simple construction and are targeted at a different consumer.’ I think this observation would apply equally well to the die-cast vents.

63. In light of this I think that the metal vents are sufficient to show that ventilation manufacturers are aware of the various materials and manufacturing techniques used but little more. I do not think these disclosures are enough to show that a preference for or against a particular metal or manufacturing technique when used in

vents would be carried across to other dissimilar products like weep vents. It also leads me to think that the relative pricing of die-cast and sheet metal vents cannot be reliably transposed to weep ducts.

64. Considering all these points, I think that, whilst the Patentee has made a convincing case that manufacturing a weep duct from sheet metal would likely be obvious, the argument that the PSA's mindset was so biased towards the use of sheet metal that they would not consider using die-casting to manufacture a metal weep duct fails.

65. D5 indicates that, of the metals listed as fire rated in D4, zinc, aluminium, lead and copper are considered readily compatible with die casting. Therefore, one of the material/manufacturing process combinations open to the PSA for manufacturing the fire rated weep duct would be die-casting of zinc.

66. Nothing presented suggests that a die-cast zinc weep duct could not be manufactured or that the manufacturing would be difficult or not cost competitive. Therefore, the PSA would have a reasonable expectation that manufacturing a die-cast zinc weep duct would be viable, rendering claim 1 obvious.

67. The above analysis has not needed to consider whether the prior art plastic weep ducts were injection moulded or not. Therefore, it is not necessary to resolve whether injection moulding is disclosed by D1 and D10, which was left open in the discussion of the prior art above.

Opinion

68. In conclusion, it is my opinion that claim 1 of the Patent lacks an inventive step over the prior art plastic weep ducts shown in D1 and D10 when viewed in light of common general knowledge in the art.

Application for review

69. 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.

Owen Wheeler
Examiner

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.