Paper Ref	Sheet	Percentage Mark Awarded
FD4	1 of 27	64%

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Spare set of claims

Claims

1. An insulation panel comprising:

a rigid central portion; and

integral deformable side portions on each side of the central portion configured to conform to spaces adjacent the central portion;

wherein the central portion comprises a polyisocyanurate core faced with a metal foil.

2. The insulation panel of claim 1, wherein the side portions comprise polyurethane foam.

3. The insulation panel of claim 2, wherein the sides include 40%–50% polyurethane foam and 50%–60% mineral wool.

4. The insulation panel of claim 2 or 3, wherein the metal foil extends over the side portions.

5. The insulation panel of any preceding claim, wherein the panel is more than 10 cm thick.

6. A method of installing the insulation panel of claims 1–5, the method comprising:

cutting the central portion and the side portions to a desired length; and

installing the insulation panel between two surfaces by conforming the side portion to the space between the central portion and the two surfaces.

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Construction

Whenever "comprising" appears in the claims, it is construed as meaning including, but not limited to – i.e. the claimed products must include it but can have further features (Virgin v Premium)

1. Claim 1
    a. "An insulation panel comprising". The patent describes the purpose of insulating as reducing heat loss during the cold winter months and keeping the insides of the building cool in the summer (p4 ll2-4), i.e. it provides thermal insulation (p4 l2). Non-limiting examples of panels include those used in a building's walls, ceilings or floors (p4 l3). But, they also have applications in other situations where thermal insulation is desired (p5 l33). Therefore, the panel must be able to provide thermal insulation by preventing heat loss or heat entry depending on the ambient temperature. This can be achieved by a PIR core (p4 ll5-7 – they provide good levels of insulation). The dimensions of the panel are not specified by this claims, but they must include panels which are both more than, and less than, 10 cm thick, in view of claim 5 (which specifies they must be more than 10 cm thick, and it dependent on claim 1, so claim 1 must be broader than this otherwise claim 5 would be redundant), and also p5 l27 (can be provided in a variety of thicknesses) They are also "normally rectangular" (p6 l2), so include rectangle shapes, but can be different shapes as well. ✓✓
    b. "a rigid central portion; and". The patent describes something as being rigid if it "does not flex or conform to obstacles around it" (p4 ll22-23). ✓✓

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Therefore, the core cannot conform. A polyisocyanurate (PIR) core would fulfil this purpose (see later in the claim, and also p4 l22 – "rigid PIR"). The "central" positioning is shown in the non-limiting examples (e.g. Figure 2) where the core is between two side portions and aluminium foil. Therefore, it will be central if it is between two side portions and the metal foil (specified later in the claim). The patent describes how the central portion "still provides the bulk of the insulative coverage" (p5 l9), which suggests that the central portion must occupy a greater volume in the panel than the side portions. ✓

c. "integral deformable side portions on each side of the central portion".

   i. In the non-limiting example, the side portions are "adhered" to opposite sides of the central portion (p6 l14), which suggests that adhering to the central portion allows the side portions to become "integral". The adherence, together with the figures always showing that the side portions are attached to the central portion, ✓ suggests that this term means that the side portions cannot be removed from the panel during use – they are attached to it ✓ (though the means of attachment are not limiting so long as they remain attached).

   ii. The patent notes in the non-limiting example that the side panels are able to adopt a range of sizes during installation (p7 ll24-25) owing to their deformable properties, allowing them to fill gaps in the central portion (p5 ll1-3). Therefore, this is purpose of the term ✓✓ "deformable". In non-limiting example, the deformability is provided by specific materials such as polyurethane foam and mineral wool (see claims 2 and claims 3, both of which depend

either directly or indirectly on claim 1, and so claim 1 must include these features but be broader than them).

iii. The number of side portions is not specified by the claim, but the use of the plural suggest that there must be at least two, and this is confirmed by the figures. The claim, however, is not literally limited to two, but it would appear that this is what is intended, based on the non-limiting figures. The claim also refers to "each side" of the central portion but there are four sides to the central portion. Considering Figure 2 and figure 4, there are two side portions which are on opposite sides of the central portion, and they abut the vertical studs 304 of the exemplary wall tile (Figure 4). Therefore, I construe this term as meaning the side portions are on opposite sides of the central portion, and are in line with the plane of the panel (as opposed to be perpendicular to it; also referred to as being "on the long sides of the panel" on p6 l2), and are arranged on the sides that do not face the room/exterior. ✓ ✓

d. "configured to conform to spaces adjacent the central portion;". This feature is a result to be achieved, and requires the side portions to be arranged such that they can conform as noted in the claim. Spaces adjacent to the central portion arise due to imperfect fits of the rigid central portion in relation to e.g. wall studs (p4 ll5-27) which impact insulating performance. Therefore, the side portions must be able to conform to these spaces and fill the gaps during use, which increases the installation tolerance of the insulation panel (p5 ll7-8). This is achieved by the "deformable" nature and "on each side" location as previously recited in this claim. It will be satisfied so long as the side portions can conform to fill the spaces left by the rigid core, easing installation tolerance. ✓

e. "wherein the central portion comprises a polyisocyanurate core"

Polyisocyanurate is also known ad PIR, and is a term of the art because it is "very commonly" used to insulate buildings. The patent refers to PIR foam being used in the prior art for rigid cores, but it is not clear whether the PIR core in the invention is made of PIR foam. Presumably this is the case, since the patent aims to improve on the rigid PIR foams of the prior art. "Comprises" takes its normal meaning, and so the core can comprise other materials than PIR.

f. "faced with a metal foil." In the non-limiting examples, the metal is aluminium 106 (Figure 2, also p5 l21), so is not limited to this metal. The term "foil" is not defined, but considering the Figure 2 and 4, it suggests that the foil does not appreciably add to the thickness of the panel. Considering the Figures 2 and 4, the metal is located on the long face of the central core, i.e. the faces that are presented to the room/exterior, and not the sides where the side portions are on. The claim encompasses embodiments where the metal extends over the side portions but is broader than this, including situations where it does not extend over the side portions (because claim 4, which is indirectly dependent on claim 1, requires this, so claim 1 must be broader than it otherwise claim 4 would be redundant). In non-limiting examples, the foil can also be adhered (or not) to the side portions (p5 ll25-26). In the non-limiting example, the foil extends over the entire front and rear surfaces (p6 ll18-20). The foil can also be on only one of the panels of the central portion (p5 l21). However, I construe the claim as being faced with metal foil so long as there is sufficient metal to improve the insulation performance of the panel (p5 l22).

2. Claim 2

a. "The insulation panel of claim 1," Requires all the features of claim 1, and the below.

b. "wherein the side portions comprise polyurethane foam." The side portions must comprise polyurethane foam, but can have other materials inside. The amount of polyurethane foam is not specified in this claim, but would include the values mentioned in claim 3. ✓

3. Claim 3

a. "The insulation panel of claim 2, " Requires all the features of claims 1+2 (due to dependency), and the below.

b. "wherein the sides include 40%–50% polyurethane foam and 50%–60% mineral wool." The claim refers to "the sides" which does not have antecedent basis – this would be read as referring to the side portions. ✓✓ The claim says "include" which would take the same meaning as comprising, implying that there can be other components in the side portions. However, when these values are mentioned in the description, it refers to the "remainder" of the side portion being filled with filler such as mineral wool (p5 ll17-18). There is also no suggestion that other materials are used, so I take this wording as being closes (i.e. requiring only those two components). ✓✓ Furthermore, the claim is not clear, because it might allows for an illogical combination of 50% polyurethane foam and 60% mineral wool. I read the claim in light of the description at p5 ll19-20, in that the first percentage of polyurethane foam is balanced with remaining mineral wool (i.e. 40+60 or 50+50). Additionally, the claims is not clear because it does not specify percentage in relation to anything, though ✓✓ from the description it is clear that this should be measured by weight, not volume (p5 l14).

4. Claim 4

a. "The insulation panel of claim 2 or 3, " Requires all the features of claims 1+2, or 1+2+3, and the below.

b. "wherein the metal foil extends over the side portions." The claim requires that the foil goes beyond the central portion and goes over the side portions, which can further improve insulative performance (p5 l25). As noted for claim 1, in non-limiting examples, the foil can also be adhered (or not) to the side portions (p5 ll25-26). ✓

5. Claim 5

a. "The insulation panel of any preceding claim," Requires all the features of claims 1, 1+2, 1+2+3, 1+2+4 or 1+2+3+4, and the below.

b. "wherein the panel is more than 10 cm thick.". The dimension to which "thick" refers to has to be inferred from the description. Figure 2 has a letter "t" which is apparently not referred to in the description, but presumably represents the thickness of the exemplary panel. Similarly, Figure 3 as a dimension "d" which is referred to as "depth", but it is not clear whether this is "thickness". The description mentions how thicknesses above 10 cm are difficult to cut with standard hand tools (p5 ll28-30). It also mentions how the panels are "cut to length" (p7 l7). Therefore, if cutting to length (as represented by "h" in Figure 3), it appears that the panel is cut along the axis "d" in Figure 3, equivalent to "t" in Figure 2. Therefore, it is the axis which runs between the faces of the panel (i.e. between the room/exterior) that this dimension refers to. The wording of the claim says "greater than", which implies that 10 cm itself would not be included, but any value above this would be. There is no upper limit on the value, but presumably a nonsensical thickness that would not be appropriate to be an insulating panel would be excluded. ✓

6. Claim 6

a. "A method of installing the insulation panel of claims 1–5 ,the method comprising:". This is a new independent claim – a method claim. It refers back to the panel of claims 1-5, and therefore requires that a panel be used which fulfils the features of claims 1, 1+2, 1+2+3, 1+2+4, 1+2+3+4, 1+5, 1+2+5, 1+2+4+5, or 1+2+3+5, or 1+2+3+4+5.

b. "cutting the central portion and the side portions to a desired length; and". As discussed for claim 5, the panel is cut along axis "t" of e.g. Figure 2, which cuts through both the central and side portions. This allows it to match the height (p7 l7, referring to Figure 3) of the frame it is to go into. The method of cutting is not specified, but the description suggests that standard hand tools are a non-limiting embodiment (p5 l28), as well as specialist tools (p4 l28). This would also include in a further non-limiting embodiment using a saw (p6 l4). Any method that allows the panel to be cut to length will be captured by the claim. ✓

c. "installing the insulation panel between two surfaces by conforming the side portion to the space between the central portion and the two surfaces." The claim does not specify any other dimensions, such as the width or the depth but presumable not all widths and depths are permitted, otherwise the panel would not fit between any two surfaces. Therefore, the claim implies that, to be installed, there must be a pre-selection step where the width is larger than the spacing between the surfaces, and the depth is equal or narrower to the depth of the surfaces, as described on p7 ll1-5. "Surfaces" in this context includes non-limiting surfaces such as wall studs (Figure 3, 304) but can also include surfaces in floors and ceilings, or other situations where thermal insulation is desired (p5 ll32-33). The description also describes two non-limiting methods of conforming – conform takes its meaning as construed in claim ✓ ✓

1. "Conforming" therefore includes conforming as the panel is pushed into place (p7 l15) but also includes pre-compression before putting into place (p7 l18), for example with the aid of a tool

✓ ✓

dep. ✓ ✓

MARKS AWARDED: 16

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Infringement

Doc B describes the client's product EdgeFlex. It also describes installation of the EdgeFlex, which is relevant to claim 6.

It is worthwhile considering EdgeFlex as sold, and EdgeFlex when in use (i.e. once it is installed), because the product has different features depending on this – though the EdgeFlex when in use will still have the features of the EdgeFlex as sold, just with additional features that the installer adds.

EdgeFlex as sold

1. Claim 1
    a. "An insulation panel comprising". Yes. EdgeFlex is described as an "insulation board" (p12 l5) which uses the thermal efficiency of PIR (p12 l3). It therefore provides thermal insulation when in use. ✓ ✓
    b. "a rigid central portion; and". Yes – Figure 1 shows a core of PIR in between two side portions and metal foil. It is therefore "central". Additionally, PIR cores are known to be rigid – see construction. ✓ ✓
    c. "integral deformable side portions on each side of the central portion". No. EdgeFlex has two fillable pockets either side of the central portion. Doc B only mentions the side pockets being attached to the central core – there is no suggestion that they can be removed during use. Therefore, they are "integral". They are also located on either side of the central portion, in line with the plane of the panel (See Figure 1 where this is clear). However, the side portions are not "deformable", because they cannot fill ✓ ✓

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gaps in the central portion. As sold, the pockets are not filled, so they are not able to deform within my construction. ✓✓

d. "configured to conform to spaces adjacent the central portion;". Yes. The side pockets can expand to fill gaps adjacent to the core once they are filled (p13 ll10-11). This eases installation tolerance, because it can be used "even by beginners" (p12 l12). They are therefore configured to conform, in the sense that they can conform once foam is added. ✓ ✓

e. "wherein the central portion comprises a polyisocyanurate core" Yes. EdgeFlex uses a "standard foil-face PIR panel" (p13 l5). As show in Figure 1. ✓

f. "faced with a metal foil." Yes. There is a foil facing on the EdgeFlex (Figure 1). We are also told it uses a standard foil-face PIR panel (p12 l5). This is known in the art (it is "very commonly used" – see Doc A p4 l5) and uses a thin metal foil (p4 l9). ✓

EdgeFlex as sold does not have all the features of claim 1.

2. Claim 2

   a. "The insulation panel of claim 1," No – see above.

   b. "wherein the side portions comprise polyurethane foam." No. The product as sold does not have polyurethane foam in the side portions – polyurethane "can be injected" into them (p12 l8), and this is done by the user (i.e. when in use) ✓✓

EdgeFlex as sold does not have all the features of claim 2.

3. Claim 3

   a. "The insulation panel of claim 2, " No – see above.

   b. "wherein the sides include 40%–50% polyurethane foam and 50%–60% mineral wool." No. The side portions are fillable pockets of plastic

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membranes (p12 l9). Doc B does not describe what the are initially filled with, but presumably it is just air. ✓✓

EdgeFlex as sold does not have all the features of claim 3.

4. Claim 4
    a. "The insulation panel of claim 2 or 3, " No – see above.
    b. "wherein the metal foil extends over the side portions." No – Figure 1 appears to show that the foil only lies on the PIR core. There is nothing to suggest it goes over the plastic side pockets. ✓✓

EdgeFlex as sold does not have all the features of claim 4.

5. Claim 5
    a. "The insulation panel of any preceding claim," No for all options – see above.
    b. "wherein the panel is more than 10 cm thick.". No. Doc B refers to thickness in relation to wall constructions (p12 l20, which suggests that its description of thickness aligns with my construction – i.e. the depth of the wall/running between the faces of the panel. Doc B only mentions two types – 5 cm and 10 cm (p12 l20). Furthermore, it mentions how EdgeFlex is designed to be cut with standard handsaws (p13 l2). This would appear to rule out being greater than 10 cm both literally, and purposively, in view of my construction. ✓
        i. It is worth considering whether the 10 cm disclosed in Doc B might read onto the "more than 10 cm" feature by equivalents (Actavis v ICOS). The first part of the test is whether the variant achieves substantially the same result in substantially the same way. In this case, the result achieved by having a greater than 10 cm thickness is that cutting with standard hand tools is made

markedly more difficult (p5 l29). Clearly, based on the discussion above, having the EdgeFlex being 10 cm does not achieve this same result. Therefore, it fails at the first part of the equivalents test, and is not infringed by equivalents either.

EdgeFlex as sold does not have all the features of claim 5.

EdgeFlex when in use/after installation

1. Claim 1
    a. "An insulation panel comprising". Yes. As for EdgeFlex as sold.
    b. "a rigid central portion; and". Yes – As for EdgeFlex as sold.
    c. "integral deformable side portions on each side of the central portion". Yes. In addition to the discussion above, once installed, Doc B notes that, once filled with polyurethane foam, they fill any gaps in spaces adjacent to the central panel (p12 l9). Doc B also notes how they can fill in "any uneven or curved sections" (p13 l11) which suggests that they can adopt a range of sizes during installation. Therefore, they are "deformable".
    d. "configured to conform to spaces adjacent the central portion;". Yes, As for EdgeFlex as sold.
    e. "wherein the central portion comprises a polyisocyanurate core" Yes. As for EdgeFlex as sold.
    f. "faced with a metal foil." Yes. As for EdgeFlex as sold.

EdgeFlex when installed has all the features of claim 1.

2. Claim 2
    a. "The insulation panel of claim 1," Yes – see above.

b. "wherein the side portions comprise polyurethane foam." Yes. When installed, the side portions are filled with polyurethane foam (p13 l10-11).

EdgeFlex when installed has all the features of claim 2.

3. Claim 3
    a. "The insulation panel of claim 2, " Yes – see above.
    b. "wherein the sides include 40%–50% polyurethane foam and 50%–60% mineral wool." No. When installed, the side portions are filled with polyurethane foam (see claim 2). However, there is no disclosure of them being filled with mineral wool.

EdgeFlex when installed does not have all the features of claim 3.

4. Claim 4
    a. "The insulation panel of claim 2 or 3, " Yes for claim 1+2, no for claim 1+2+3 – see above.
    b. "wherein the metal foil extends over the side portions." Yes. Doc B advises that foil tape is applied over the top of the filled pockets (p13 ll15-16), which are the side portions. This would also inherently improve insulative performance, fulfilling my construction. It is also adhered (see Figure 3) which is encompassed by my construction.

EdgeFlex when installed does not have all the features of claim 4 (due to dependency)

5. Claim 5
    a. "The insulation panel of any preceding claim," Yes for claim 1, 1+2, 1+2+4 and no for claims 1+2+3, or 1+2+3+4 - see above.
    b. "wherein the panel is more than 10 cm thick.". No. See analysis above for EdgeFlex as sold.

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The method described in Doc B

6. Claim 6

   a. "A method of installing the insulation panel of claims 1–5 ,the method comprising:". Doc B describes how the panel is installed starting on p 12 l15. For the EdgeFlex as sold – no. For the EdgeFlex as installed (where the method would be installing the panel in its final form) – it would satisfy the features of claim 1, 1+2, 1+2+4 and no for claims 1+2+3, or 1+2+3+4, see above. However, the "installed" EdgeFlex is not installed because it is already installed – therefore, Doc B does not actually disclose a method of installing the EdgeFlex as installed (i.e. it would never be installed when the foam is already inside the side pockets – this is not what Doc B teaches).

   b. "cutting the central portion and the side portions to a desired length; and". Yes – both the central and side pockets are cut to match the height of the wall (p13 l1-3). As per my construction, the "height" referred to in Doc B is the same as the "length" referred to in this claim, because it corresponds t the height in Figure 3 of Doc A. The cutting method is e.g. a handsaw, encompassed by my construction. ✓ ✓

   c. "installing the insulation panel between two surfaces by conforming the side portion to the space between the central portion and the two surfaces." Yes. The width and thickness of the panel are first pre-selected (p12 ll15-20), which satisfied my construction. The surfaces are wall studs (p13 l4). The method of conforming used in Doc B is filling with foam after installation (p13 l10). Conform takes its meaning in my constructions as filling gaps adjacent to the central portion (see claim 1). This is satisfied by this type of conforming (see p13 ll11-13). ✓ ✓ ✓ ✓

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The method described in Doc B does not have all the features of claim 6

Comments on infringement:

- There is no direct infringement under s60(1) for any of the claims.
- However, when the product is installed, it has all the features of claims 1 and 2. There is likely a case for contributory infringement under s60(2) by the client for these claims:
    - The EdgeFlex as sold would be regarded as a means essential for carrying out the invention because it provides a panel which can be used to create deformable side portions.
    - Supply is in the UK (see client latter p2 ll5-7 – shops in the UK).
    - It is intended that the invention is put into effect in the UK, as presumably people buying from physical UK shops would use them in the UK.
    - It could not be argued that the EdgeFlex is a staple commercial product to try and find a s60(3) defence. This is because it is a heavily modified version of the standard PIR insulating material. ✓ ✓
    - Therefore, contributory infringement is likely.
- Similar s60(2) analysis for the independent hardware shops in the UK who sell it to customers for use. ✓
- The private end users will have the installed product, and so would infringe under s60(1) for claims 1 and 2. However, they would be protected as this is private and non-commercial use (s60(5)). ✓
- Professional tradespeople would be doing the installing. Therefore, they could also be liable under s60(2) for the same reasons as above. Notably, they would also be using a method of installing within the meaning of claim 6. I found that this claim was not infringed by installation of the EdgeFlex, but if I am wrong, ✓

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they could be liable for infringement under s60(2), as it would be reasonable to expect that they would be infringing the patent

dep. ✓ ✓

MARKS AWARDED: 16

16

Novelty

There are several embodiments to consider.

- The PIR insulation panels described in the patent at p4 ll5-20, and as illustrated in Figure 1. These are acknowledged in the patent as prior art, so would form state of the art under s2(2). Additionally, it is acknowledged as being "very commonly" known to use this, so it would be part of the person skilled in the art's common general knowledge.
- The disclosures in Doc C. The patent did not claim priority and was filed in July 2022. Therefore, the internet disclosure – which is from a "reputable internet archive service", so can be trusted – is prior art under s2(2), given it was published in February 2016. ✓
    - The rigid PIR boards together with filled gaps using polyurethane (described by Bob at p14 ll10-12)
    - The board developed by Fatima, as shown in Doc C's figure.

As the PIR board described in Doc A is modified by Bob in Doc C, I will only consider this embodiment, because it is closer to the patent claims (and has all the features of the PIR board).

PIR + Bob embodiment

1. Claim 1
    a. "An insulation panel comprising". Yes. The CGK panel can provide thermal insulation to buildings (p4 ll5-6). ✓

b. "a rigid central portion; and". Yes. It uses a PIR core (p4 ll5-6), which is rigid. It is also central, because the foam from Bob (p14 ll10-12) will form side portions which means the core is centrally located. ✓

c. "integral deformable side portions on each side of the central portion". No. The side portions may be regarded as the foam sprayed by Bob (see above for part b). Presumably it could be sprayed either side of the central portion because they can go "in any gap" (p14 l13). But they are not integral because they are sprayed on after the panel has been installed (p14 ll10-12), and there is no indication that they are attached to the core. Therefore, it would be possible to remove the foam side portions during use, which does not satisfy my construction. The foam is deformable, however, because it can expand to fill the gap (p14 l15). ✓ ✓

d. "configured to conform to spaces adjacent the central portion;". Yes – the foam side portions can expand to fill the entire gap (p14 l15)

e. "wherein the central portion comprises a polyisocyanurate core" Yes – the core is PIR, as noted above.

f. "faced with a metal foil." Yes. Doc A describes how this is a feature of the prior art PIR cores (p4 ll9-10). It inherently improves insulation. ✓

Claim 1 is novel over PIR+ Bob embodiment

2. Claim 2

a. "The insulation panel of claim 1," No – see above.

b. "wherein the side portions comprise polyurethane foam." Yes – this is what is sprayed (p14 ll 10-12). ✓

Claim 2 is novel over PIR + Bob embodiment

3. Claim 3

a. "The insulation panel of claim 2, " No – see above.

b. "wherein the sides include 40%–50% polyurethane foam and 50%–60% mineral wool." No. This embodiment only uses polyurethane. There is no disclosure of mixing with mineral wool. ✓

Claim 3 is novel over PIR + Bob embodiment

4. Claim 4
   a. "The insulation panel of claim 2 or 3, " No – see above.
   b. "wherein the metal foil extends over the side portions." No – the CGK embodiment only describes this as being over the core itself (p4 ll910) ✓

Claim 4 is novel over PIR + Bob embodiment

5. Claim 5
   a. "The insulation panel of any preceding claim," No – see above.
   b. "wherein the panel is more than 10 cm thick.". Yes. This is not explicitly disclosed. However, it is implicit in the fact that "a range of thicknesses are available for insulating different structures" (p4 ll10-11). Presumably, the standard PIR panel is suitable for very thick panelling. ✓

Claim 5 is novel over PIR + Bob embodiment

6. Claim 6
   a. "A method of installing the insulation panel of claims 1–5 ,the method comprising:". No, as the insulating panel of claims 1-5 is not disclosed. However, Doc C does describe the installation of a panel (p14 ll10-12 – cutting the board, then filling the gaps)
   b. "cutting the central portion and the side portions to a desired length; and". No. The central portion is cut ("Cut the rigid boards" – p14 l11) but the side portions are not – the foam is sprayed later. ✓

c. "installing the insulation panel between two surfaces by conforming the side portion to the space between the central portion and the two surfaces." Yes. The side portions in my construction are the polyurethane foam which is sprayed to fill the gaps. As noted, it "expands to fill the entire gap" (p14 l15) which satisfies my construction. ✓

Claim 6 is novel over the installation of PIR + Bob embodiment

In summary: all claims novel over PIR + Bob embodiment

Fatima's embodiment

1. Claim 1
    a. "An insulation panel comprising". Yes. Fatima's panel is being used to insulate her garden room as "it gets very cold in the winter" (p14 l4). Therefore, the panel provides thermal insulation. It uses a PIR core. ✓
    b. "a rigid central portion; and". Yes. The PIR core is used (see Figure), which is a rigid material – see construction. ✓
    c. "integral deformable side portions on each side of the central portion". Yes. Mineral wool is used as side portions – there are two, on opposite sides of the central panel, and presumably in line with the plane of the wall (see Figure with wool either side). They are also integral as they are glued on (p14 ll26-27) which suggests that they cannot be removed from the panel during use. In addition, they are deformable because they can compress "down to the necessary size to fill nearly all of the gaps" (p14 l28). ✓ ✓
    d. "configured to conform to spaces adjacent the central portion;". Yes – as noted above, the wool fills the gaps. These are adjacent to the central portion because they form between the studs (p14 ll6-7). Therefore, the side portions can conform in this way.

e. "wherein the central portion comprises a polyisocyanurate core" Yes – see Figure, it is a PIR core.

f. "faced with a metal foil." Yes – see Figure, it is "foil-faced". As noted previously, standard CGK PIR panels have thin metal foil (p4 ll9-10), so this foil is metal. ✓

Claim 1 is not novel over Fatima's embodiment.

2. Claim 2

   a. "The insulation panel of claim 1," Yes – see above.

   b. "wherein the side portions comprise polyurethane foam." No. The side portions are mineral wool, there is no disclosure of foam being used. ✓✓

Claim 2 is novel over Fatima's embodiment.

3. Claim 3

   a. "The insulation panel of claim 2, " No – see above.

   b. "wherein the sides include 40%–50% polyurethane foam and 50%–60% mineral wool." No – as noted above, there is no polyurethane. ✓

Claim 3 is novel over Fatima's embodiment.

4. Claim 4

   a. "The insulation panel of claim 2 or 3, " No – see above.

   b. "wherein the metal foil extends over the side portions." No – this is not disclosed, and the Figure only shows it over the PIR ✓✓

Claim 4 is novel over Fatima's embodiment.

5. Claim 5

   a. "The insulation panel of any preceding claim," Yes for claim 1, no for claims 1+2, 1+2+3, 1+2+4 or 1+2+3+4, see above.

b. "wherein the panel is more than 10 cm thick.". No. Doc A notes how panels over this size cannot easily be done by beginner's or those without specialist equipment. The context of Doc C suggests Fatima is a beginner, so it is not likely that the panel is over this thickness.

Claim 5 is novel over Fatima's embodiment.

6. Claim 6

a. "A method of installing the insulation panel of claims 1–5 ,the method comprising:". Yes for claim 1, no for claims 1+2, 1+2+3, 1+2+4, 1+2+3+4, 1+5, 1+2+5, 1+2+4+5, or 1+2+3+5, or 1+2+3+4+5.

b. "cutting the central portion and the side portions to a desired length; and". Yes. The boards are cut along the length (Fatima cuts them at p14 l26). Presumably she also cuts the side portions to the same length, because they match the length of the final board in the figure.

c. "installing the insulation panel between two surfaces by conforming the side portion to the space between the central portion and the two surfaces." Yes. Fatima pushes them into place (p14 ll26-27) and the wool fills nearly all of the gaps. Therefore, the wool conforms between the spaces. Presumably there was also a pre-selection phase where Fatima judges the other dimensions of the panel to fit into her surface.

✓

✓

In summary, claim 1 not novel, claim 6 not novel (due to claim 1 dependency) remaining claims all claims novel over Fatima's embodiment

con: ✓

MARKS AWARDED: 12.5

12.5

<u>Inventive step</u>

Adopting the Pozzoli approach for inventive step.

PSA

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Examiner's use only

The person skilled in the art (PSA) for claims 1-5 (the product claims) is an engineer who develops thermal insulation for buildings (p4 ll2-4). For claim 6 (the method claim), the PSA would include a team of the aforementioned engineer, and an installer of building insulation.

✓ ✓ ✓

CGK (common general knowledge)

The CGK of the PSA would include:

- The fact that it has been standard practice for many years to add adhesive foil tape over any exposed foam at the sides of polyisocyanurate (PIR) boards (p2 ll31-32)
- The fact that PIR foam is "very commonly used to insulate buildings" – the PSA would be aware of this PIR panel being used to insulate buildings as part of their CGK.
- The fact that the "classic method" used "for 30 years" to try and reduce gapping in the insulation is to use expanding polyurethane foam from a can (see Bob's comments on p14 ll10-12)

✓ ✓ ✓ ✓

Claim 1

The inventive concept of claim 1 is providing an insulating panel that is able to effectively fill gaps adjacent to the central portion of the panel (p5 ll1-3)

✓

Doc C describes Fatima's panel which is used for insulation and which is used to provide more effective insulation. This is the state of the art or starting point for the PSA, as the PSA would be seeking to modify the panel to find "quicker and easier" ways to increase the effectiveness of insulation (p14 l30).

Fatima's panel already discloses the inventive concept of using a panel which can fill gaps adjacent to the central portion (p14 l28). There are no further differences between

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Fatima's embodiment and claim 1. Therefore, there are no features which could make this claim inventive, and it is obvious. ✓✓

Claim 2

The inventive concept of claim 2 is the providing effective insulation together with deformability, through the use of polyurethane (p5 ll12-13) ✓✓

The PSA would again start from Fatima's embodiment for the same reason as claim 1. In addition, they would be motivated to find a way to fill in the remaining gaps that remain unfilled from her wool side portions (p14 l28 notes that it only fills "nearly" all the gaps).

Fatima's embodiment does not teach the inventive concept of using polyurethane foam to fill the gaps and improve thermal insulation. This is the difference between the embodiment and claim 2. ✓

The PSA would understand from the CGK that polyurethane foam can be sprayed from a can to effectively fill gaps. They would therefore be motivated to fill the remining gaps using polyurethane. The polyurethane would then form part of the integral wool side portions, reaching all features of the claim. Indeed, the PSA would learn from Bob's comment at p14 ll16-17 that spraying with foam can be messy, so they would be motivated to use the spray within the side walls of the panel itself. ✓

Therefore, the claim is obvious.

Claim 3

The inventive concept of claim 3 is that it provides very effective insulation using polyurethane foam, over 75% the performance of PIR even when compressed (p5 ll18-20). ✓✓

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The PSA would start from Fatima's embodiment as the state of the art for the same reasons as claim 2.

The difference between Fatima's embodiment and the inventive concept is that it does not disclose the claimed proportions of polyurethane and wool.

Although the CGK teaches using polyurethane to fill the gaps, there is no teaching towards these particular proportions as providing particularly effective insulation. ✓ ✓

Therefore, the claim is inventive.

Claim 4

The inventive concept of claim 4 is it extends the reflective effect of the foil over the side portions, which improves overall insulative performance (p5 l25). ✓ ✓

The PSA would start from Fatima's embodiment as the state of the art for the same reason as claim 2 – they would be trying to increase the insulative performance of the panel.

Dependency on claim 2: According to my novelty analysis, Fatima's embodiment does not have foil on the side portions. So, the inventive concept is not disclosed and this is the difference here. However, it is CGK to extend the foil over the sides of the core. ✓ Therefore, there is nothing inventive about this feature. The claim is obvious.

Dependency on claim 3: the claim is inventive, for the reasons discussed under claim 3.

Claim 5

The inventive concept of claim 5 must be construed – it is that the panel is made suitable for applications where thicker panels are needed.

The PSA would start from Fatima's embodiment as the state of the art for the same reason as claim 2. Additionally, they would be seeking to use the gap-filling concept of the previous claims and applying this to other buildings.

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Fatima's embodiment does not disclose using panels over 10 cm thick, or applications to buildings that require thicker surfaces – this is the difference. ✓

The PSA is aware of the CGK PIR panel. They would be aware that "a range of thicknesses are available" (p4 ll10-11). Therefore, they would be motivated to use the panel from Fatima and obviously apply its teaching to a thicker panel, over 10 cm. ✓✓

Therefore, the claim is not inventive.

Claim 6

The inventive concept of claim 6 is providing a method whereby the deformable side portions can adopt a range of sizes during installation (p7 ll24-25).

The PSA would start from Fatima's embodiment and her described method of installing it as the state of the art, for the same reason as claim 2. This method also describes how to install a panel which deforms on the side, so the PSA would seek to extend its teaching and develop other methods to install such panels.

There is no difference between the concept of claim 6 and the state of the art (see novelty). Therefore, there is no features in claim 6 which could make the claim inventive. ✓ ✓

Therefore the claim is not inventive.

13

Summary: claim 3 is inventive, the remaining claims are not.

MARKS AWARDED: 13

<u>Sufficiency</u>

There are some points from Doc A with relevance to sufficiency:

- P5 ll14-17 notes that using less than 40% or more than 50% polyurethane by weight leads to poor insulation or no improvement in installation, respectively. There is an argument to be made that claim 2 (which refers generally to polyurethane) is not enabled across its scope on either side of these ranges,

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because then the panel would not be able to fulfil its function of being insulating. This could be solved by an amendment to incorporate these ranges into claim 2.

- P5 ll28-30 note that cutting with standard tool becomes markedly more difficult for thicknesses about 10 cm. Therefore, the method claim 6 is arguably not enabled across its scope when dependent on claim 5, because claim 6 encompasses any cutting method. This could be solved by removing the dependency on claim 5.

✓
✓

1

MARKS AWARDED: 1

Amendments

Possible amendment include:

- Putting the subject-matter of claim 3 into claim 1, which would make all the claims valid. Note, this claim should be amended in line with my construction to specify that the % is by weight, and in line with my sufficiency comments to requires that the polyurethane is within these ranges (e.g. with basis at p5 ll19-20).
- Amending the method claim to use the pre-conforming method.

✓
✓

1

MARKS AWARDED: 1

Advice

- Threats:
    - The email from ScrewStore is a threat because our client is aggrieved and there is a threat of infringement proceedings (p2 l5). It is not a permitted communication, because they have requested our client to cease productions and sales. However, our client is a manufacturer (p2 l4), so the threat is not actionable.
    - The hardware shops are also aggrieved by the threat even though they haven't received the letter because it will force them to consider whether to stop selling the product. They are not manufacturers or importers, so

✓

✓

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they could take action against the unjustified threat. For example, they could ask for an injunction, or declaration of unjustified threats. ✓✓

- I would explain to the client that they currently fall foul of s60(2) and contributory infringement, despite the client thinking that this is not possible – the bags are still integral. The GB patent A is granted, and in force because the renewal fee is not yet due. So, it could be enforced by ScrewStore. It could also be enforced against the hardware stores. ✓✓
    - They could be sued for damages or an account of profits. Or an injunction. As they have been put on notice, can no longer plead innocent infringement.
    - They could apply for an interim injunction, but as EdgeFlex has been on the market for some time now (since January), I doubt they would be successful. ✓✓
- However, the patent is not valid.
    - I would suggest filing a revocation action against the patent. This could be done at the High Court as IPEC is limiting on damages. ✓
    - We should argue the lack of patentability over Doc C's embodiments and the CGK.
    - If they take the obvious amendment to claim 3, then the client's product would no longer infringe when installed, because the pockets are entirely filled with polyurethane, so it does not fall within the required ranges.
    - We can explain this to the hardware stores if they become aware of it, so they will not take their business elsewhere. ✓

5

MARKS AWARDED: 5

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