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Examiner's Comments

General

The infringing article comprises many layers which need to be considered and exists in two versions. Candidates who did well considered which of the many combinations of layers of the infringing article might fall within the terms of the claim, and selected those layers that presented the best case for infringement. Prior art Document C also has many layers which need to be considered and candidates who did well also considered the several layers of Document D and selected those layers that presented the best case for lack of novelty. Candidates who settled for a particular selection of "panel" and "membrane" and who were blind to the possibilities of different elements fulfilling these terms often gained fewer marks.

Every year it appears that some candidates have difficulty in managing time or their approach to answering the question. We refer candidates to previous years' Examiners' comments which have provided detailed advice on these matters.

Construction (23 Marks)

Claim 1 is not long yet more than half the marks (13) available for construction were allocated to this claim. Candidates gained more marks by dividing the claim into small phrases, identifying the many issues. Candidates who lumped words together into longer phrases were less likely to spot all the issues.

For example "door leaf" may be less than a door and may be merely the panel without the door furniture (hinges, handle). This may have a bearing on novelty *vis-à-vis* Document C. "Suitable for…marine bulkhead" is an important phrase. The client indicates a lack of conviction as to whether Koolstoor infringes "since we are offering marine bulkheads". Many candidates recognised that "suitable for" extends to a door leaf that is not necessarily designed for the purpose, provided it is suitable, but this alone does not advance the analysis very far. The question is "what attributes must a

door have for it to be suitable for closing off an opening in a marine bulkhead?" or "what features would make it wholly unsuitable?" There are many clues in the first two paragraphs. Most candidates understood the meaning of "comprising", but not so many pointed out that: "two" means "at least two"; "a membrane" means "at least one"; and "each" means "both, individually".

The phrase "relatively high flexural rigidity" gave rise to a wide range of interpretations. What matters is that it is relatively rigid, not relatively flexible. It must be rigid relative to something intrinsic to the claim (not extrinsic factors such as "prior art" or "a standard membrane") and certainly not relative to the absence of a membrane (i.e. relative to nothing). It must be rigid relative to each panel.

"Lower than that of the core membrane" did not present such difficulty, but many candidates lost sight of the requirement that is the thermal conductivity of the membrane against which the panels are measured and not the thermal conductivity of the core. It is the core membrane (i.e. "the aforesaid membrane in the core region" and not "the membrane at the core").

"Each thicker than" required construing.

As with the independent claim, there were several issues of construction in each of the dependent claims. The rest of the available marks for construction were spread evenly over the remaining claims, i.e., 2 marks for claim 2, 2 marks for claim 3, 3 marks for claim 4 and 3 marks for claim 5.

In claim 2, "outer" has no antecedent. Are these the same as the panels in claim 1, or must be they the outermost panels ? Some candidates pointed out the contradiction in "outer panels in the core region" and eliminated this interpretation. It is, of course, the air gap that is in the core region, but this should be stated. What constitutes an air gap? Does the term cover gas in cells of foam?

Many candidates pointed out that claims 3 and 4 have improper dependencies, but not all of these candidates came to a conclusion as to what this means, i.e. how the claims are to be interpreted. "Corrugations" was generally well dealt with. "The transverse

walls" and "the base walls" have no antecedents. What does this mean? It means that claim 4 requires the presence of transverse walls and base walls. What are these? Must they be planar for an angle between them to be measured? These are more important questions than the specifics of whether a range includes its end points or whether 90° encompasses 89.5° or 87.5° etc. Vague references to purposive construction did not impress the Examiners.

The importance of "fibre-reinforced cement material" and "outward-facing skin" become apparent when one considers the prior art. The candidates who explored whether "composed of" and "exhibiting" imply that only the skin is made of fibre-reinforced cement material and whether the panel could be constructed of more than one layer were positioned pick up more marks. The documents are all silent on relative densities so candidates had to draw conclusions on densities of the various materials from clues which lie in the stated purpose (impact protection and/or fixing of furniture).

As always there are candidates who spend too much time on construction with long explanations which can easily be expressed in a much more concise way. It is important to make every thing that is written actually mean something to the reader.

Infringement (24 Marks)

While there is no set approach, by far the most logical way to proceed with the analysis is to consider infringement of all the claims first and then consider validity.

The task here is to consider whether the alleged infringing product can be considered to fall within the scope of the claims. To put it another way, given the construction of the claims, can one present a theory of infringement? In the present case the client is the patentee and is seeking to read the claims onto the infringing product. Candidates are not giving their client a good service if they do not look for the best theory of infringement (and the same would be true if the client were the alleged infringer, because the candidate would do his or her client a disservice if he or she did not point out to the client the patentee's best case for infringement). Too many candidates opted for a selection of panels and membrane which led to a finding of non-

infringement. Some candidates were hampered by having included in their interpretation section unnecessary limitations to the claims and were thus unable to find infringement. While it is possible to pass this examination with an analysis based on a finding of non-infringement, in most cases the path taken to this conclusion will have missed out on marks associated with a more in depth analysis. If a candidate is quite unable to find any theory of infringement, he or she should consider whether the claim interpretation taken is unnecessarily limiting, or whether a more imaginative attorney might find a theory for infringement.

The complexity in this paper lies in the variety of layers in the infringing article that might be construed as panels and/or membranes. There are many permutations. For example, the core may extend from the inner surface of vermiculite panel 18B to the inner surface of vermiculite 18A, or it may extend from the outer surface of steel plate 14 to the outer surface of steel plate 12. Accordingly, there are various options for the "two panels with a core region between the panels", including: fibre-reinforced cement panels 20A and 20B, steel plates 14 and 12, vermiculite panels 18B and 18A, or any two of these, or all three of these options. In addition candidates needed to consider the effect of claim 2 which had introduced the term "outer" without an antecedent. For the membrane, there are various candidates: mild steel plate 14 (with or without vermiculite layer 18B); spring steel 19; and mild steel plate 12 (with or without vermiculite layer 18A). Some candidates even considered the steel rectangular seam frame 10A, 10B, 10C and 10D as a possible "membrane".

When one considers the requirements for relative rigidity and relative conductivity, the best theories for infringement consider the panels 20B and 20A as the "two panels" and either the mild steel plate 12 or the spring steel 19 as the "membrane". Steel plate 12 is a better option than steel plate 14, because the latter is not apparently thinner than each of the two 20B and 20A (panel 20A in particular being thinner than plate 14). Steel plate 12 might be considered a better option than spring steel 19 because it is probably more rigid.

Candidates were not expected to know that spring steel is harder (more rigid) than mild steel, and this is not necessarily even relevant. But in selection of the membrane it had to be considered whether it was enough that the material is rigid, or whether

must the membrane confer rigidity to the structure. The spring steel 19 probably confers only horizontal rigidity but candidate can draw from the patent (in their construction) that it is the corrugated steel membrane which is indicated in claim 1 by the reference number (11) which has the "relatively high flexural rigidity".

If plate 12 is selected as the "membrane", claim 3 will not be infringed under this theory. Neither can one simply take a different membrane for claim 3. The better candidates, in analysing claim 1, recognised that there were different possible theories of infringement (with different merits to the different theories), and recognised that one of these theories needs to be abandoned when considering claim 3.

Candidates had to consider whether the doors shown in Document A are suitable for marine use. This is an important question. The client specifically says "I am not as convinced that Koolstoor infringes". However, Koolstoor claim that their door is designed to prevent damage "through the most intense of fires". There is also a smoke and water-proof seal and it is a plug fit. It therefore seems likely that it would pass the standard fire-resistance test for marine bulkheads provided in the patent and candidates should state they assumed that until tests were conducted to prove the point.

Candidates who failed to see that the spring 19 was not necessary for a finding of infringement in claim 1 missed out on marks available for a thorough discussion of the XYZ-123-B product. When considering claim 2, it needed to be considered whether the product must have an "air gap" when sold or when the material has foamed and expanded into pumice-like insulation. Also some candidates considered whether it would be "air" in the gap, and what would constitute "air". If this feature had not been construed in the construction section, candidates could make a quick construction at this point in their answer and pick up marks for construction. Clearly this product does not infringe claim 3.

As with construction more marks were available for claim 1 than the individual dependent claims. The marks for each claim were as follows:

Claim 1: 10

Claim 2: 4

Claim 3: 2

Claim 4: 4

Claim 5: 4

Novelty (23 Marks)

Some candidates considered novelty and inventive step claim-by-claim. This is perfectly acceptable, but the more thorough approach is to consider novelty first and then inventive step. Some candidates considered Document D first, perhaps believing it to be more relevant. The order in which the documents are considered is of no consequence. Another approach is to consider the claims element-by-element against Documents C and D together.

Document C

A fair proportion of candidates did not observe that Document C relates to bulkheads and panels, but not apparently to doors. Candidates needed to question whether a panel is a door leaf or *vice versa*. It is certainly not enough to conclude that all the claims are novel *vis-à-vis* Document C merely because Document C does not describe a door. Candidates who ended their analysis at this point missed out on many marks and generally fared badly when it came to inventive step analysis.

As with infringement, the task here is to consider whether the features of Document C fall within the scope of the claims as construed. Put another way, for each element of the claim, is there an element in Document C that satisfies that element of the claim?

In Document C there are two embodiments (Figs 1 and 3), each having multi-layered panels and various choices of membranes. Candidates who identified that one or both of layers 18 and 19 form a "panel" and that layer 9 alone forms a "membrane" generally provided a better analysis. Layer 9 appears thinner than layer 18 and probably thinner than layer 19 and certainly thinner than the combination of 18 and 19. Candidates who considered metal layer 9 with its vermiculite covering layers 10 as the "membrane" generally picked up fewer marks. This layer is obviously thicker

than layer 9 alone. The membrane in Document C was obviously corrugated but the issue of transverse and base walls and whether there was an angle with the base wall was not considered carefully by a lot of candidates. It was important to determine whether this feature was present either for novelty or inventive step purposes.

A few candidates noted from their personal knowledge or from the clues in Document D that asbestos is fibrous. (Note that just because Document C uses the term "asbestos" and Document D distinguishes between "asbestos" and "asbestos cement" does not mean that these documents are using these terms in the same way. Document C may indeed be using the term "asbestos" in the more common usage as meaning panels of rigid material with asbestos fibres bound in some binding, e.g. cement. Candidates are not expected to enter into this level of discussion, but marks are available for recognising that Document C may indeed disclose fibre-reinforced cement material.)

Document D

Candidates generally dealt well with Document D, discussing whether it is suitable for a marine bulkhead notwithstanding that it is intended for a mine, and discussing whether the steel sheet 16 is relatively more rigid or the fibre reinforced cement slabs 14 and 15 are relatively more rigid. The analysis needs to be consistent with construction, infringement and novelty vis-à-vis Document C. The available marks were generally picked up quite easily by candidates who methodically addressed the features of the claims. Given the variety of potential answers with respect to novelty the marking schedule allowed for flexibility of allocation of marks within the following framework:

Claim 1: 10
Claim 2: 3
Claim 3: 3
Claim 4: 3
Claim 5: 4

Inventive Step (15 Marks)

There were marks available for discussion of inventive step of each of the claims. Marks are not awarded for knowing the Windsurfer approach to inventive step. Marks are awarded for selecting a suitable starting point and applying the analysis.

Claim 1 can be considered to lack novelty vis-à-vis Document D. This does not mean that inventive step cannot be an issue and considered as an alternative approach to invalidity. If there is a potential alternative argument, for example if Document D can be considered to be in a different technical field and not suitable for marine use, or in terms of the relative flexural rigidity of the steel sheet and the fibre reinforced cement slabs, the obviousness of the use in a marine environment or the claimed relative rigidity can be considered over Document D alone, as well as the obviousness vis-à-vis Document C. This latter discussion is important because it has a bearing on claims 2 and 3.

Document D is a "Regulation" (for bulkhead design in mines). Can anything be inferred from this?

Who is the person of ordinary skill in the art? A shipbuilder? A maker of bulkhead doors generally?

Most candidates decided that claims 2-5 are all novel vis-à-vis both Documents C and D, so inventive step of each of these claims needs to be considered, taking either document as a starting point. The better candidates noted that claims 2 and 3 stand or fall with claim 1 based on the inventiveness of claim 1 over Document C (the additional features being also present in that document). A minority of candidates noted that although the shape of the corrugations (claim 4) is said to confer certain advantages, the trade-offs between different shapes may be well known in the field of corrugated materials and expert evidence may be required.

The marks available for the inventive step discussion were as follows:

Claim 1: 5

Claim 2: 3

Claim 3: 1

Claim 4: 2

Claim 5: 4

Amendment (3 Marks)

Probably due to time pressure, discussion here tended to focus on which of the dependent claims would make suitable candidates for amendment – i.e. little more than a summary of the analysis so far. Disappointingly few candidates considered picking individual features from the dependent claims or the description (e.g. the angle of the transverse corrugations without reference to the base walls, or the direction of the corrugations) to find a claim that is new, arguably inventive and is infringed (albeit perhaps easy to avoid).

Sufficiency (1 Mark)

Sufficiency was not really an issue this year. There is no disclosure of how to make a skin of higher density cement, and no clear definition of relatively higher flexural rigidity.

Memorandum of Advice (8 Marks)

Any summary of issues so far should be brief. As ever, the Examiners are looking for practical advice. Running off all the remedies that are theoretically available at trial, let alone interim remedies, are of little use when the client is not worried by infringement and would be very content to license the invention to a party operating in a different field (strong rooms) and not in competition.

Candidates need to demonstrate awareness of the advantages of amending first and awaiting the end of the opposition period before approaching Koolstoor. Also, the dangers of issuing threats. Practical advice can be given on gathering intelligence on Koolstore's product and sales of versions XYZ-123-A and XYZ-123-B.

3 Floating Marks

Examiners had discretion to award up to 3 marks for issues outside the above framework or issues addressed with particular thoroughness or insight. Examples include thorough discussion of the transformation of the XYZ123-B product under heat, and discussion of the general state of the art mentioned in the documents.