

## Examiners' Report - Paper B (Electricity/Mechanics)

### 1 General considerations

Paper B is a test of a candidate's skill in revising the claims to the extent that will fulfil the requirements of the EPC whilst at the same time best representing the applicant, and in drafting a letter of response to the European Patent Office. Candidates should take into account the available prior art, the examiner's communication and the letter from the applicant. In accordance with the "Instructions to Candidates for Preparing Their Answers", arguments in defence of the revised claims should be presented.

### 2 Claims

#### 2.1 Independent Claim-General

D1 and D2 both describe liquid detectors that can be used in an industrial environment. D1 is directed to quantifying liquid collected, whereas, like the application, D2 is directed to detecting only the presence of liquid. Both D1 and D2 work by detecting an electric current flowing between two electrodes in the presence of a conductive fluid there between. Both D1 and D2 disclose receptacles in which the detection takes place. Both receptacles comprise non-conductive, liquid impermeable layer supports (cup 10 in D1 and waterproof element 1 formed into depressions 2 of D2).

##### 2.1.1 Preferred Solution

In order to distinguish the invention in its broadest form from the available prior art, it was necessary to claim a layer support, or a thin layer support, made of the material defined in the original claim 1, and to claim the characterising relationship between the receptacle (4,40) and the [thin] layer support (1).

There are many different equivalent ways of expressing the characterising portion of the claim and examiners awarded marks accordingly.

An example of a good solution based on the original claim 1, could be worded as follows:

"Liquid detector (100,200,300) comprising a first electrode (2,20), a second electrode (3) and a layer support made of electrically insulating liquid impermeable material on which the first electrode (2,20) and the second electrode (3) are arranged, characterised in that the insulating material is liquid impermeable whereby the liquid detector comprises a receptacle (4,40) for receiving liquid, and the first and second electrodes are arranged such that when sufficient electrically conductive liquid is in the receptacle (4,40) an electrical connection is established between them, characterised in that a hole is provided in the layer support for forming the receptacle."

Amongst other examples of good alternative characterising portions for the above are the following:

“characterised in that the receptacle comprises a hole whose depth extends at least partially through the layer support”.

“characterised in that the receptacle comprises a hole in the layer support of a depth less than or equal to the thickness of the layer support.”

It should be noted that in the original claims of the application, only a “material”, on which electrodes are arranged was claimed. Introducing the layer support feature enables the receptacle to be defined as a hole in the layer support.

No distinction in terms of marking was made between candidates using the expression “thin layer support” (Dünnschichtträger; support constitué d’une couche de faible épaisseur) and those choosing “layer support”.

Only one independent claim was expected, though a very small number of candidates claimed the first and second embodiment (as shown in figures 1 and 2 respectively) in separate independent claims, such claims could in total attract almost full marks. Other independent claims were generally not considered to achieve additional protection for the applicant, e.g. a method claim, and therefore these claims received no marks.

### 2.1.2 Inferior Solutions

Solutions that only partially achieved the protection potentially available to the applicant attracted fewer marks.

The following are examples of inferior solutions, such claims were awarded considerably fewer marks than the preferred solution or an equivalent thereto.

1. Claims protecting only one of embodiments 1 or 2, fig. 1 or 2 respectively.
2. Claims protecting only multiple detector arrangements embodiment 3, figs 3 and 4.
3. Claims restricted by the layer support being defined as flexible.
4. Claims being distinguished from the prior art merely in the shape or position of the electrodes.

### 2.1.3 Amendments not Supported by the Application as originally Filed, Art. 123(2) EPC.

As a general comment, amendments that were considered to be not recoverable in post grant proceedings (Art. 123(2) and (3) EPC trap) were severely penalised.

Claims that were considered not to fulfil the requirements of Art. 123(2) EPC, but which could later have been amended without extending the extent of protection, lost fewer marks. It should be noted that no marks were deducted under Art. 123(2) for candidates introducing the wording “support” based on the original wording “thin layer support”.

---

### 2.1.4 Clarity

As in previous years, examiners paid particular attention to the clarity of the independent claim. Claims that were unclear or missing essential features lost marks.

### 2.1.5 Novelty

Claims that were considered to lack novelty against either of the available prior art documents lost a considerable number of marks. For example, claims based on original claim 1 with the addition of a layer support made of liquid impermeable, electrically insulating material were considered to lack novelty since both D1 (cup 10) and D2 (rigid element 1) disclose such a support. For the remaining features refer to the examiner's communication.

### 2.1.6 Inventive Step

Claims that were considered to lack inventive step were also penalised but to a lesser extent than those that were not novel.

### 2.1.7 Unnecessary Limitations

Marks were deducted for unnecessary features that limited the scope of the independent claim. Claims that were severely limited in scope e.g. that the layer support is flexible were considerably penalised, see part 2.1.2 of this report.

### 2.1.8 Formal Matters

A small number of marks were deducted for claims where the two-part form was incorrectly applied with respect to the closest prior art chosen by the candidate.

## 2.2 Dependent Claims

Although most of the marks available for the claims were reserved for the independent claim, candidates were expected to retain appropriate dependent claims from the originally filed claims and to draft new dependent claims where meaningful fallback positions could be identified. Dependent claims that were not considered to offer a fallback position were awarded no marks.

Some examples of new dependent claims are:

1. The receptacle shape being concave;
2. Location of electrode terminal portions on the top or bottom of the layer support;
3. Defining the layer support as being flexible.

### **3 Argumentation**

#### **3.1 General Remark**

The following argumentation is considered appropriate for candidates having the preferred solution or an equivalent solution. For other solutions the arguments were marked on their merit in relation to the candidates claims.

#### **3.2 Source of Amendments**

When assessing amendments, examiners looked for correct references to the disclosure of the application as filed. For answers having a single independent claim covering all embodiments, a basis for features such as the layer support, should have been given for all embodiments, not, for example, only for embodiment 1. Many candidates amended the claims to include a wording that was not literally taken from the disclosure of the application. In such cases examiners looked for arguments to justify why the claimed feature was implicitly disclosed in the application as originally filed.

For example, in the preferred solution above, the wording “a hole” in the characterising portion is a generalisation of the blind hole of embodiment 1 and the hole passing completely through the layer support of embodiment 2. A really good argumentation would have included text references to the hole of both the first embodiment and the second embodiment and explained why it was justified to generalise the two kinds of holes disclosed to “a hole”.

#### **3.3 Novelty**

It is sufficient to identify a feature that is not present in a prior art document in order to prove novelty of a claim over that document. In cases where it is not immediately evident that this feature is not present, explanations were expected.

#### **3.4 Inventive Step**

Most candidates provided arguments that were structured to follow the problem solution approach for justifying inventive step. This approach generally gave a sound basis for justifying inventive step.

##### **3.4.1 Identifying the Closest Prior Art**

The choice of the closest prior art depended on the independent claim.

Really good answers discussed D1 and D2 and provided arguments as to why their chosen prior art was the closest to the invention. A mere statement that D1 or D2 was the closest prior art because it fulfilled the conditions laid out in the guidelines defining the closest prior art received very few marks. Arguments that could have been used include that the electrode arrangement of D1 most closely resembled that of the embodiments of the application. D1 relates more to quantifying liquid whereas in D2, as in the application, merely the presence of liquid is detected. Like the application, D2 has a relatively shallow cross-sectional profile, whereas D1 needs to be relatively tall in order to quantify the liquid in the cup.

### 3.4.2 Derivation of the Objective Problem

It was considered to be appropriate to apply the problem solution approach in justifying an inventive step for the chosen claim. Candidates achieved high marks for deriving the objective problem by applying the logical steps of the problem solution approach. These steps are listed in the Guidelines C IV 9.5.

Some answers attracted fewer marks due to inconsistencies in applying the problem solution approach. For example where the problem chosen was inconsistent with the closest prior art selected or where the derivation of the problem was based on features not found in the candidates amended claim.

Suitable problems could have been, for example, the problem of stability when D1 is chosen as the closest prior art or the problem of robustness when D2 is chosen as the closest prior art.

### 3.4.3 Arguments as to Why the Prior Art Does Not Lead to the Invention as Claimed

Convincing arguments relating to the substance of the case were expected. Where candidates only provided general statements that were not related to the technical aspects of the case, considerably lower marks were awarded.

A first line of argument which could have been used is, whether the person skilled in the art would combine documents D1 and D2. A second possible line of argument is, if you were to combine D1 and D2, is there a solution to the problem posed in the remaining available prior art.

It was noted that the arguments of the candidates were sometimes weakened by not addressing the fact that D1 discloses a water level detector used not only in the field of meteorology, but also used in the field of leakage monitoring in an industrial environment (refer to D1, the last two sentences). This aspect plays an important role in assessing a possible combination of the documents D1 and D2 and should not have been overlooked or ignored.

Examiners also noted that some candidates used expressions in the argumentation which were different in scope from those used in the claim under discussion. In some cases this led to arguments being made which were invalid for the chosen claim.

### 3.4.4 Presentation

As in previous years, papers that were muddled or illogical in presentation of the arguments received fewer marks than those that were clear and logically presented.

**EXAMINATION COMMITTEE I**

Candidate No. ....

Paper B (Electricity/Mechanics) 2004 - Schedule of marks

Category	Maximum possible	Marks awarded	
		Marker	Marker
Claims	50		
Argumentation	50		
Total	100		

Sub-Committee for Electricity/Mechanics agrees on .....marks and recommends the following grade to the Examination Board:

PASS  
(50-100)

FAIL  
(0-49)  
COMPENSABLE FAIL  
(45-49, in case the candidate sits  
the examination for the first time)

The Hague, 27 August 2004

\_\_\_\_\_  
Chairman of Examination Committee I