

Examiners' Report Paper F 2026

Part 1

Pursuant to Rule 6(6) IPREE, the Examination Board has decided to set the grade threshold for passing part 1 to 60% (30 marks) of the total achievable marks (50 marks) in that part.

The criteria for determining the threshold take into account that the paper is designed to test the declarative knowledge of the candidates that can be expected after one year of professional experience.

Question 1 (3 marks)

1. International applications filed under the PCT can be the subject of proceedings before the EPO. In such proceedings, the provisions of the EPC will prevail in cases of conflict between the provisions of the PCT and the provisions of the EPC.
2. The European Patent Office and the European Patent Organisation are synonyms for the same legal entity.
3. The European Patent Office is the only authority in Europe competent to act as International Searching Authority under the PCT.
4. A granted European patent allows the proprietor under all circumstances to make, use, sell and distribute the invention in all the contracting states to the EPC.

Answers

1. **FALSE** – Article 150(2) EPC
2. **FALSE** – Article 4(2) EPC
3. **FALSE** – PCT-EPO Guidelines C-IV.2.1
4. **FALSE** – A patent gives the patent proprietor the right to exclude third parties from using the protected invention: it does not automatically allow the patent proprietor to produce and sell matter that is protected by the patent.

Question 2 (4 marks – 2 marks awarded when only one of the answers is incorrect)

M is a natural person of Spanish nationality residing in Poland. M wishes to file a European patent application, EP-M. Spanish is an official language of Spain and Polish is an official language of Poland.

1. Spanish is an official language of the EPO.
2. To obtain a date of filing, EP-M can be filed in Spanish.
3. Now assume that the language of proceedings for EP-M is English. M intends to file a reply letter to a communication under Article 94(3) EPC without amending the application documents for EP-M.
M may file the reply letter in Polish if a translation in English, French or German is filed within one month of filing the reply letter.
4. Now assume again that the language of proceedings for EP-M is English. M intends to file a reply letter to a communication under Article 94(3) EPC without amending the application documents for EP-M.
M may file the reply letter in French.

Answers

1. **FALSE** – Article 14(1) EPC
2. **TRUE** – Article 14(2) EPC (and Rule 40 EPC)
3. **TRUE** – Article 14(4) and Rule 3(1) EPC
4. **TRUE** – Rule 3(1) EPC

Question 3 (4 marks – 2 marks awarded when only one of the answers is incorrect)

European patent application EP-B validly claims priority of an earlier patent application, PR-B. The subject-matter of EP-B and of PR-B is identical. EP-B complies with all the requirements of the EPC.

1. The date of filing which is accorded to EP-B is the date of priority, i.e. the date of filing of PR-B.
2. The date of priority counts as the effective date for the purpose of determining what is comprised in the state of the art.
3. EP-B will be published as soon as possible after the expiry of 18 months from the date of priority or, at the request of the applicant, before the expiry of that period.
4. The 20-year term of EP-B, if granted, is calculated from the date of priority.

Answers

1. **FALSE** – The date of priority only counts as the date of filing for the purposes mentioned in Article 89 EPC
2. **TRUE** – Article 89 EPC
3. **TRUE** – Article 93(1) EPC
4. **FALSE** – Articles 63(1) and 89 EPC

Question 4 (4 marks – 2 marks awarded when only one of the answers is incorrect)

Pending European patent application EP-Y was filed on 7 March 2024.

1. The renewal fee for the third year will be due on:
 - 7 March 2026
 - 9 March 2026
 - 31 March 2026
 - 30 September 2026

2. The renewal fee for the third year can be validly paid today.

Answers

1. **31 March 2026** – Rule 51(1) EPC
2. **TRUE** – Rule 51(1) EPC

Question 5 (3 marks)

European patent application EP-Z was validly filed on 2 December 2025 with the following elements: a description, drawings, claims and an abstract. EP-Z validly claims priority of a national application, DK-Z.

Which of the following elements belong to EP-Z “as filed” within the meaning of Article 123(2) EPC?

(Multiple select)

1. The description
2. The claims
3. The drawings
4. The abstract
5. The priority application DK-Z

Answers

1. **TRUE** – GL H-IV, 2.1 and 2.2
2. **TRUE** – GL H-IV, 2.1 and 2.2
3. **TRUE** – GL H-IV, 2.1 and 2.2
4. **FALSE** – Article 85 EPC; GL F-II, 2.7
5. **FALSE** – GL H-IV, 2.2.6

Question 6 (3 marks)

D is the applicant for European patent application EP-D. Yesterday, D received a communication informing them of the text in which the examining division intends to grant EP-D. D wishes to proceed to grant with EP-D.

Which of the following acts need to be performed by D within four months of receipt of the communication?

1. Reply to the communication and explicitly declare their approval of the text in writing.
2. Pay the fee for grant and publishing.
3. File a translation of the claims in the two official languages of the European Patent Office other than the language of the proceedings.
4. File a translation of the description in the two official languages of the European Patent Office other than the language of the proceedings.

Answers

1. **FALSE** – Rule 71(5) EPC; GL C-V, 2
2. **TRUE** – Rule 71(3) EPC
3. **TRUE** – Rule 71(3) EPC
4. **FALSE** – Rule 71(3) EPC

Question 7 (3 marks)

Company T filed a European patent application, EP-T, with the following claims:

Claim 1: an apparatus comprising feature A

Claim 2: the apparatus of claim 1 comprising feature B

Claim 3: the apparatus of claim 1 comprising feature C

The description of EP-T as filed additionally discloses an embodiment with features A, B and C in combination.

EP-T was granted with a single claim directed to an apparatus comprising features A and B together with the description as filed.

Company O filed an opposition on the grounds of lack of novelty of the single granted claim. In the notice of opposition, document D1 was cited. Said document D1 is a prior art document under Article 54(3) EPC disclosing an apparatus comprising features A and B.

During opposition proceedings, which of the following is an appropriate reaction to maintain EP-T?

1. Company T can amend the opposed claim to: “an apparatus comprising feature A”.
2. Company T can amend the opposed claim to: “an apparatus comprising features A and C”.
3. Company T can amend the opposed claim to: “an apparatus comprising features A, B and C”.

Answers

1. **FALSE** – Article 123(3) EPC and also Article 54(3) EPC with regard to D1
2. **FALSE** – Article 123(3) EPC
3. **TRUE** – Claim 3 is not dependent on claim 2. However, features A, B and C are disclosed together in an embodiment and hence can be combined. The requirements of Article 123(2) and (3) EPC are met. The subject-matter of such a claim is also new over D1.

Question 8 (3 marks)

European patent EP-U does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

1. EP-U may be amended to correct this deficiency by adding further features which were not disclosed in the application as filed.
2. An admissible opposition was filed against EP-U in its entirety based on the sole ground that it does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art. During the opposition, the patent proprietor may file amendments to overcome another ground for opposition, e.g. lack of novelty.

Answers

1. **FALSE** – Article 123(2) EPC, GL F-III, 2
2. **TRUE** – Rule 80 EPC

Question 9 (4 marks – 2 marks awarded when only one of the answers is incorrect)

Applicant A is a Dutch national and intends to file an international patent application PCT-A in Dutch with the Netherlands Patent Office (NPO).

1. PCT-A can be filed in Dutch with the NPO acting as receiving Office.
2. If PCT-A is filed in Dutch with the NPO, the International Bureau will act as receiving Office.
3. The competent International Searching Authority for PCT-A is the European Patent Office.
4. The competent International Searching Authority for PCT-A is the International Bureau.
5. PCT-A must be translated into English, French or German for the purpose of the international search.
6. Dutch is a language in which PCT-A can be published.

Answers

1. **TRUE** – PCT Applicant's Guide, Annex C, NL
2. **FALSE** – Rule 19.4 PCT
3. **TRUE** – PCT Applicant's Guide, Annex C, NL
4. **FALSE** – PCT Applicant's Guide, Annex C, NL
5. **FALSE** – PCT Applicant's Guide, Annex D, EP
6. **FALSE** – Rule 48.3 PCT

Question 10 (3 marks)

An admissible opposition was filed by company O against European patent EP-P based on the ground of lack of novelty. In the notice of opposition, a public prior use was alleged which would be a novelty-destroying disclosure if proven. The alleged public prior use is supported by an offer to give evidence by a witness. The facts which the testimony of the witness is supposed to corroborate are relevant to the decision. In the reply to the notice of opposition, the proprietor of EP-P contests the prior use.

1. Hearing of witnesses is a means of obtaining evidence in proceedings before the EPO.
2. In the above case, it is to be expected that the witness will be heard.
3. A summons to give evidence before the EPO must contain an indication that the witness may request to be heard by a competent court in their country of residence.

Answers

1. **TRUE** – Article 117(1)(d) EPC
2. **TRUE** – GL E-IV, 1.2 and 4.1 – The testimony of the witness is decisive for the final decision such that disregarding the offer to hear the witness would infringe the right to be heard (Art. 113(1) EPC) of at least one of the parties.
3. **TRUE** – Rule 118(2)(d) EPC

Question 11 (4 marks – 2 marks awarded when only one of the answers is incorrect)

Company C is the owner of a European patent, EP-C, which was granted with two independent claims. Company C would like to limit EP-C to the first independent claim and delete the second independent claim.

1. Company C can file a request for limitation only within nine months of the publication of the mention of the grant of the European patent EP-C in the European Patent Bulletin.
2. Company C cannot file a request for limitation if the patent has expired.
3. If opposition proceedings in respect of EP-C are pending, the request for limitation will be stayed until a decision is taken in the opposition proceedings.
4. If a request for limitation does not comply with at least one of the requirements of Arts. 84 and 123(2) and (3) EPC, the examining division will immediately reject the request.

Answers

1. **FALSE** – GL D-X, 1 – There is no restriction on the period between the grant of the patent and the filing of the request.
2. **FALSE** – GL D-X, 1 – The request can be filed even after expiry of the patent.
3. **FALSE** – Rule 93(1) EPC – The request for limitation will be deemed not to have been filed.
4. **FALSE** – Rule 95(2) EPC – The Examining Division will give the requester one opportunity to correct any deficiencies noted, and to amend the claims and, where appropriate, the description and drawings, within a period to be specified.

Question 12 (4 marks – 2 marks awarded when only one of the answers is incorrect)

European patent application EP-X claims priority from French patent application FR-X. EP-X was filed by the same applicant and within the twelve-month period.

Consider the following situations:

(a) FR-X as filed claims and describes a lunch box made of aluminium. EP-X as filed claims and describes a lunch box made of metal. Aluminium is a metal.

(selection of one of the elements 1-3)

1. The priority claim of EP-X is valid.
2. The priority claim of EP-X is not valid.
3. The priority claim of EP-X is partially valid.

(b) FR-X as filed claims and discloses a lunch box made of metal and EP-X as filed claims and describes a lunch box made of aluminium.

(selection of one of the elements 4-6)

4. The priority claim of EP-X is valid.
5. The priority claim of EP-X is not valid.
6. The priority claim of EP-X is partially valid.

Answers

Correct answers are 3 (GL F-VI, 1.5: generic “OR” claim situation, metal being more generic than aluminium) and 5 (GL F-VI, 2.2: the specific metal aluminium is not disclosed in the priority document).

Question 13 (3 marks)

EP-S is a pending European patent application claiming subject-matter S. In a communication under Article 94(3) EPC, the examining division raised the objection that subject-matter S did not involve an inventive step in view of document D1 as the closest prior art taken in combination with the prior art documents D2 and D3. D1 is a feasible starting point for assessing inventive step of subject-matter S.

You want to convince the examining division that subject-matter S does involve an inventive step.

1. It is sufficient to show, in a first step, that there is another prior-art document, say D4, which is “closer” to subject-matter S than D1, and, in a second step, that subject-matter S is not obvious in view of D4 as the closest prior art.
2. It is sufficient to argue that the combination of more than two documents implies that there is an inventive step.

Answers

1. **FALSE** – GL G-VII, 5.1
2. **FALSE** – GL G-VII, 6

Question 14 (3 marks)

1. The amount of the filing fee for filing a European patent application is independent of the method of filing.
2. The filing fee shall be paid within one month of filing the European patent application.
3. The filing fee falls due at the end of a one-month period after the filing.

Answers

1. **FALSE** – Article 2(1) RFees, item 1
2. **TRUE** – Rule 38(1) EPC
3. **FALSE** – GL A-X, 5.2.1 or 5.1.1

Question 15 (2 marks)

International patent application PCT-Q was filed on 20 July 2024. It claims priority from an Italian national application IT-Q filed on 1 August 2023.

The time limit for entering the European phase of PCT-Q ends on:
(Multiple choice)

- 1 March 2026
- 2 March 2026
- 1 February 2026
- 2 February 2026
- 20 February 2027
- 22 February 2027
- 20 January 2027

Answer

2 March 2026 (Rule 159(1) EPC: 31 months from the priority date -> 1 March 2026 (Sun) -> extends to 2 March 2026 (Mon) under Rule 134(1) EPC)

Part 2

Pursuant to Rule 6(6) IPREE, the Examination Board has decided to set the grade threshold for passing part 2 to 64% (32 marks) of the total achievable marks (50 marks) in that part.

The criteria for determining the threshold take into account that the paper is designed to test the declarative knowledge of the candidates that can be expected after one year of professional experience.

Question 1 (2 marks)

Are all the items D1 to D4 considered as being comprised in the state of the art under the EPC?

YES – The application was filed on 12 February 2026 without claiming priority.

The prior art elements have the following publication dates:

- The prior art video D1 was published on 31 December 2025;
- Document D2 was published in 1980;
- Document D3 was published in 2023;
- Document D4 was published in the 1960s.

All the prior art elements have publication dates before the filing date of the present application. Hence, they are prior art elements under Article 54(2) EPC.

Question 2 (5 marks)

The subject-matter of claim 1 as originally filed is novel over the prior art D1 to D4.

2.1 D1

YES – Prior art video D1 does not disclose a construction element having a reinforcement structure comprising fibres. In particular, prior art video D1 does not disclose that the construction element “concrete block” comprises a reinforcement structure. The “carpet” is a textile structure comprising fibres but it is not embedded in a matrix of a construction element.

2.2 D2

YES – Document D2 does not disclose a reinforcement structure comprising fibres. The description of the European patent application defines that “[s]teel rods are not fibres”. Hence the steel rods of document D2 cannot be considered as being a reinforcement structure comprising fibres.

2.3 D3

NO – Document D3 discloses:

A construction element (“textile-reinforced concrete construction element”) for a building (“for buildings”), the construction element comprising:

a reinforcement structure (“woven fabric as a reinforcement structure”) comprising fibres (“made of glass fibres”), and

a matrix (“concrete matrix”), wherein

the reinforcement structure is embedded in the matrix (“comprises a woven fabric as a reinforcement structure”).

2.4 D4

NO – Document D4 discloses:

A construction element (“clay bricks”) for a building, the construction element comprising:

a reinforcement structure comprising fibres (“reinforced with ... straw fibres”), and

a matrix (“clay”), wherein

the reinforcement structure is embedded in the matrix (“with embedded loose straw fibres”).

Question 3 (4 marks)

The subject-matter of claim 2 as originally filed is novel over the prior art D1 to D4.

3.1 D1

YES – yes, the reasons are the same as for question 2.

3.2 D2

YES – yes, the reasons are the same as for question 2.

3.3 D3

Both answers, YES and NO, were accepted as correct answers

Document D3 discloses:

The construction element according to claim 1 (see question 2 for claim 1), wherein the matrix (“concrete matrix”) comprises a mineral aggregate (the description of the European patent application defines that “[c]oncrete [...] is a composite material comprising a mineral aggregate”) and cement (here it depends whether the “concrete matrix” of D3 is a direct and unambiguous disclosure of “cement”), and wherein the reinforcement structure is a textile structure comprising the fibres (“woven fabric is made of glass fibres”).

The description of the European patent application defines that concrete comprises “a mineral aggregate, such as gravel or sand, and a binder, which is normally cement”.

Only very few candidates noticed that, when applying this definition, there is a strong argument that there is no direct and unambiguous disclosure for “cement” in D3.

3.4 D4

YES – Document D4 does not disclose a mineral aggregate and cement.

Question 4 (3 marks)

The subject-matter of claims 3 to 5 as originally filed is novel over the prior art D3.

4.1 Claim 3

Both answers, YES and NO, were accepted as correct answers

Document D3 discloses:

the construction element according to claim 2 (see question 3 for claim 2), wherein the fibres are glass fibres (“made of glass fibres”), wherein the glass fibres are preferably made of an alkali-resistant glass (optional feature).

For the same reasons as mentioned with regard to question 3.3, the answer to this question depends on whether the “concrete matrix” of D3 is a direct and unambiguous disclosure of “cement”.

4.2 Claim 4

YES, if answer to question 4.1 is YES, NO, if answer to question 4.1 is NO

Document D3 discloses:

The construction element according to claim 3 (see above for claim 3), wherein the fibres are coated with an epoxy resin (“the fabric is coated with an epoxy resin”).

For the same reasons as mentioned with regard to question 3.3, the answer to this question depends on whether the “concrete matrix” of D3 is a direct and unambiguous disclosure of “cement”.

4.3 Claim 5

YES – Document D3 does at least not disclose that the textile structure is a non-crimp fabric.

Question 5 (4 marks)

The subject-matter of claim 6 as originally filed is novel over the prior art D1 to D4.

5.1 D1

NO – Document D1 discloses:

A building (“room” with “wall made of conventional concrete blocks”) comprising a construction element (“blocks”), wherein
the construction element comprises concrete (“concrete blocks”), wherein
the building further comprises a textile structure (“carpet”).

5.2 D2

YES – Document D2 does not disclose a textile structure.

5.3 D3

NO – Document D3 discloses:

A building comprising a construction element (“building comprising such construction elements”),
wherein
the construction element (“textile-reinforced concrete construction element”) comprises concrete
 (“concrete construction element”), wherein
the building further comprises a textile structure (“textile-reinforced ... construction element...
comprises a woven fabric” and “building comprising such construction elements”).

5.4 D4

YES – Document D4 does not disclose a textile structure.

Question 6 (3 marks)

Which of the prior-art documents D1 to D4 can be considered the closest prior art with regard to claim 5 as originally filed?

Selection from:

- D1
- D2
- D3
- D4

D3

Document D3 because it is directed to a construction element for a building and is thus from the same technical field as the subject-matter of claim 5, whereas the prior art video D1 deals with replacing wallpaper which is another technical field. Also, document D3 discloses that the reinforcement structure is a textile structure comprising the fibres, whereas documents D2 and D4 do not disclose any textile structure. Document D2 discloses a reinforcement structure made of steel rods, and document D4 discloses loose fibres which don't form a textile structure.

Therefore, when comparing the documents, the construction element of document D3 requires the minimum structural modifications to arrive at the subject-matter of claim 5 (GL G-VII 5.1).

Question 7 (5 marks – 3 marks awarded when only one of the answers is incorrect)

The amended set of claims does not comply with the requirements of Article 84 EPC because:

7.1 The expression “in a building” renders amended claim 1 unclear.

TRUE – The expression “in a building” makes it unclear whether the textile structure is claimed without the building, or whether the building with a textile structure is claimed, see GL F-IV, 4.15.

7.2 The expression “ultra-high molecular weight” renders amended claim 2 unclear.

FALSE – The description of the European patent application defines that “[u]ltra-high molecular weight polyethylene is a well-known material”. Hence, the expression has a well-recognised meaning and is therefore clear in this context, see GL F-IV, 4.6.1.

7.3 The expression “woven fabric” defines a product-by-process feature which is not allowable under Article 84 EPC.

FALSE – The expression “woven fabric” defines a fabric which has the technical property of being in a woven shape, see fig. 2(a) of the European patent application. The adjective “woven” defines a special arrangement of the fabric. It is therefore not unclear. Moreover, product-by-process features are not per se unallowable, see GL F-IV 4.12.

7.4 Amended claims 1 and 3 contradict each other.

TRUE – The textile structure is defined as being a “woven fabric” in claim 1. Claim 3 also has this feature through its dependency on claim 1. However, claim 3 then states that the textile structure is a “non-crimp fabric”. The textile structure cannot be a “woven fabric” and at the same time be a “non-crimp fabric”. Said two options are mutually exclusive. This leads to the lack of clarity in claim 3.

Question 8 (2 marks)

Amended claim 7 is dependent on amended claim 4.

NO – Any claim which includes all the features of any other claim is termed a "dependent claim", see Rule 43(4) EPC or GL F-IV, 3.4. Amended claim 7 does not comprise glass fibres. Amended claim 4 comprises glass fibres. For this reason, amended claim 7 does not comprise all the features of amended claim 4. Therefore, amended claim 7 is not dependent on amended claim 4.

Question 9 (4 marks)

Amended claims 1 to 3 meet the requirements of Article 123(2) EPC.

9.1 Amended claim 1

NO – In view of the GL F-IV, 4.15, amended claim 1 can be interpreted as being directed to the textile structure as such, i.e. in isolation from the building.

The European patent application as filed does not provide basis for the generic concept of a textile structure as such.

The textile structure is mentioned throughout the European patent application as a reinforcement structure embedded in a construction element. The description states that “it is essential for the invention that the known steel reinforcement structure be replaced by a reinforcement structure comprising fibres and that the reinforcement structure be embedded in the matrix”.

There is a structural relationship (the textile structure being embedded in the construction element) and a functional relationship (reinforcement of the construction element).

The removal of the features concerning the “construction element” confronts the skilled person with information which is not directly and unambiguously derivable from the originally filed application, see Guidelines H-V 3.1.

9.2 Amended claim 2

NO – The reasons are the same as mentioned above for amended claim 1.

9.3 Amended claim 3

NO – The reasons are the same as mentioned above for amended claim 1.

Question 10 (5 marks – 3 marks awarded when only one of the answers is incorrect)

Amended claims 4 to 7 meet the requirements of Article 123(2) EPC.

10.1 Amended claim 4

YES – Amended claim 4 is a combination of claims 1, 2 and 3 as filed without the optional feature, whereby “the glass fibres are preferably made of an alkali-resistant glass”. Claim 3 as filed is dependent on claim 2 as filed and claim 2 as filed is dependent on claim 1 as filed.

10.2 Amended claim 5

YES – Amended claim 5 is a combination of claims 1, 2 and 3 as filed, as mentioned above, including the optional feature.

10.3 Amended claim 6

NO – There is no basis for the expression “coated with an epoxy resin improving the bond between the glass fibres and the matrix”. Even though the European patent application as filed discloses the coating with an epoxy resin, it does not mention the effect of improved bonding. This effect is also not implicitly achieved. The European patent application as filed discloses that a “protective effect can already be achieved by a thin coating having a thickness of 0.1 mm”, whereas it is clear from D3 that, for the bonding effect, a coating with a thickness “between 0.5 mm and 1 mm” is needed.

10.4 Amended claim 7

YES – Replacing the glass fibres by carbon fibres makes the subject-matter of amended claim 7 correspond to the subject-matter of claims 1 and 2 as filed with the further limitation that the fibres of the textile structure are carbon fibres. Claim 2 as filed is dependent on claim 1 as filed. Claim 2 as filed also provides basis for the generic concept of a reinforcement structure being a textile structure comprising the fibres, wherein the fibres are not necessarily glass fibres.

The description of the European patent application as filed states:

“In a preferred embodiment of the invention, the fibres of the reinforcement structure are either carbon fibres or glass fibres.”

Question 11 (4 marks)

The subject-matter of amended claim 1 is novel over the prior art D1 to D4.

11.1 D1

NO – Prior art video D1 discloses:

A textile structure (“carpet”) in a building (“room”), wherein the textile structure is a woven fabric (“woven textile carpet”).

11.2 D2

YES – Document D2 does not disclose a textile structure.

11.3 D3

NO – Document D3 discloses:

A textile structure (“woven fabric”) in a building (“a building comprising such construction elements”), wherein the textile structure is a woven fabric (“woven fabric”).

11.4 D4

YES – Document D4 does not disclose a textile structure. As mentioned in the description of the European patent application, “a collection of loose fibres is not a textile”. The straw fibres are therefore not a textile structure.

Question 12 (3 marks)

The subject-matter of amended claims 5 to 7 is novel over the prior art D3.

12.1 Amended claim 5

YES – Document D3 does at least not disclose that the glass fibres are made of an alkali-resistant glass.

12.2 Amended claim 6

Both answers, YES and NO, were accepted as correct answers

Document D3 discloses:

A construction element (“textile-reinforced concrete construction element”) for a building (“for buildings”), the construction element comprising:

a reinforcement structure (“woven fabric as a reinforcement structure”) comprising fibres (“made of glass fibres”), and

a matrix (“concrete matrix”), wherein

the reinforcement structure is embedded in the matrix (“comprises a woven fabric as a reinforcement structure”)

wherein

the matrix comprises a mineral aggregate and cement (for the same reasons as mentioned with regard to question 3.3, the answer for this feature depends on whether the “concrete matrix” of D3 is a direct and unambiguous disclosure of “cement”), wherein

the reinforcement structure is a textile structure comprising the glass fibres (“woven fabric is made of glass fibres”),

the fibres are coated with an epoxy resin improving the bond between the glass fibres and the matrix (“The fabric is coated with an epoxy resin to improve the bond between the glass fibres and the concrete matrix”).

12.3 Amended claim 7

YES – Document D3 at least does not disclose carbon fibres.

Question 13 (2 marks)

The applicant considers filing another amended independent claim with the following wording:

A construction element for a building, the construction element comprising:
a reinforcement structure comprising carbon fibres and glass fibres, and
a matrix, wherein
the reinforcement structure is embedded in the matrix.

Would such an amended claim be allowed by the examining division?

NO – Article 123(2) EPC. The combination of glass fibres and carbon fibres is not disclosed in the application as filed. The description of the European patent application refers to the carbon fibres as an alternative to glass fibres.

Question 14 (2 marks)

The applicant may expect that the subject-matter of amended claim 2 was covered by the search performed during the search phase.

NO – Said subject-matter relates to a non-working embodiment. Moreover, it was not claimed in the application as filed and it is not described as a preferred or likely fallback position. Applying the principles of Art. 92 EPC and the GL B-III, 3, it may not be expected that the subject-matter of amended claim 2 was covered by the search.

Question 15 (2 marks)

The applicant may expect that the subject-matter of amended claim 5 was covered by the search performed during the search phase.

YES – Amended claim 5 is a combination of claims 1, 2 and 3 as filed. Also, alkali-resistant glass was present in the original claims through an optional feature. Applying the principles of Art. 92 EPC and the GL B-III, 3, it may be expected that the subject-matter of amended claim 5 was covered by the search.

European patent application as filed on 12 February 2026 without claiming priority

Description

The present application is directed to construction elements for buildings.

Concrete is a well-known construction material which is much appreciated for its durability. It is a composite material comprising a mineral aggregate, such as gravel or sand, and a binder, which is normally cement.

Concrete has a very high compressive strength (resistance to breaking when squeezed by two opposing forces along the same axis). However, for many applications, its tensile strength (resistance to breaking when pulled apart) is not sufficient.

To address this problem, reinforcement structures having a higher tensile strength than the concrete are embedded into the concrete. Such reinforcement structures are often steel rods or steel cages. The material into which the reinforcement structure is embedded is called “matrix”.

A problem with these known steel-based reinforcement structures is that they need to be protected against corrosion due to contact with water and oxygen which infiltrates through the concrete.

This problem is normally solved by applying a concrete cover of sufficient thickness to insulate the steel reinforcement structure from these environmental influences. The concrete cover is defined as the distance between the reinforcement structure and the outer surface of the concrete matrix (see Figure 1).

The manufacture of concrete is responsible for about 4% to 8% of global carbon dioxide emissions. Hence, it is desirable to reduce the thickness of the concrete cover to reduce the environmental impact of concrete-based construction elements.

The present invention addresses this problem by providing a construction element with the features as defined by claim 1. Preferred aspects of the invention are defined by the dependent claims.

It is essential for the invention that the known steel reinforcement structure be replaced by a reinforcement structure comprising fibres and that the reinforcement structure be embedded in the matrix. Many fibre materials are less prone to corrosion than steel such that the thickness of the concrete cover can be reduced.

A fibre is a substance that is significantly (more than 1 000 times) longer than it is wide. Many natural substances are fibres such as cotton, wool or straw fibres. For applications requiring high tensile strength, synthetic fibres such as carbon fibres, glass fibres or ultra-high molecular weight polyethylene fibres are available. Ultra-high molecular weight polyethylene is a well-known material and often abbreviated as UHMWPE. Steel rods are not fibres.

In a preferred embodiment of the invention, the fibres of the reinforcement structure are either carbon fibres or glass fibres. UHMWPE fibres do not adhere to the concrete and cannot be used as a reinforcement structure with concrete.

In the case of glass fibres, the fibres are preferably made of an alkali-resistant glass. The concrete matrix has an alkaline environment and alkali-resistant glass fibres are more durable in these environments than other types of glass fibres. As an alternative or in addition to using alkali-resistant glass fibres, it is possible to coat the glass fibres with an epoxy resin to protect the fibres from the alkaline environment. The protective effect can already be achieved by a thin coating having a thickness of 0.1 mm.

Carbon fibres are sufficiently resistant in the alkaline environment of the concrete matrix such that no protective measures against the alkaline environment are needed.

In a preferred embodiment, the reinforcement structure is a textile structure made of the fibres. A textile structure is a two-dimensional sheet-like structure made of fibre materials. Such structures are also called fabrics. A collection of loose fibres is not a textile.

Suitable textile structures for the present invention are woven fabrics or non-crimp fabrics.

Figure 2 shows example structures of a woven fabric (a) and a non-crimp fabric (b) in a top view (top) and cross-sectional view (bottom). A woven fabric is obtained by interlacing at least two thread systems of fibre material at right angles to one another (see horizontal and vertical threads in Figure 2). The interlacement of the threads leads to a certain amount of waviness of the threads. This waviness is undesired because the fibres are not optimally aligned within the matrix reducing the available tensile strength of the fibres. Non-crimp fabrics overcome this drawback. These fabrics are made of multiple flat layers of threads of fibre material (two layers are shown in Figure 2(b)), wherein the layers are fixedly connected to each other, e.g. by glue or yarns.

Claims

1. A construction element for a building, the construction element comprising:
a reinforcement structure comprising fibres, and
a matrix, wherein
the reinforcement structure is embedded in the matrix.
2. The construction element according to claim 1, wherein
the matrix comprises a mineral aggregate and cement, and wherein
the reinforcement structure is a textile structure comprising the fibres.
3. The construction element according to claim 2, wherein
the fibres are glass fibres, wherein
the glass fibres are preferably made of an alkali-resistant glass.
4. The construction element according to claim 3, wherein
the fibres are coated with an epoxy resin.
5. The construction element according to any of claims 3 to 4, wherein
the textile structure is a non-crimp fabric.
6. A building comprising a construction element, wherein
the construction element comprises concrete, wherein
the building further comprises a textile structure.

Figures

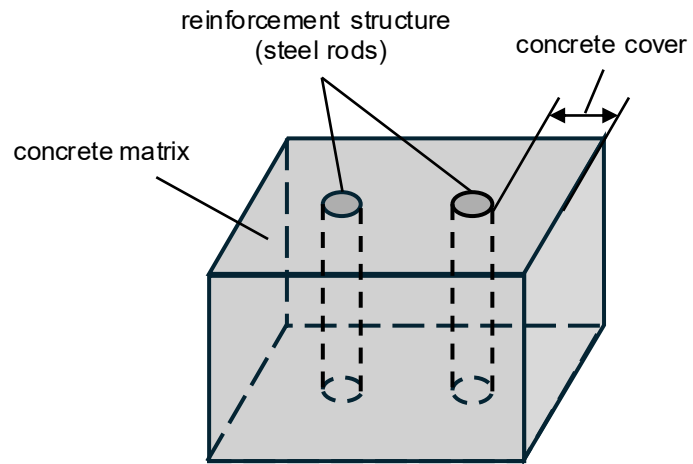


Figure 1: Steel-reinforced concrete construction element with concrete cover

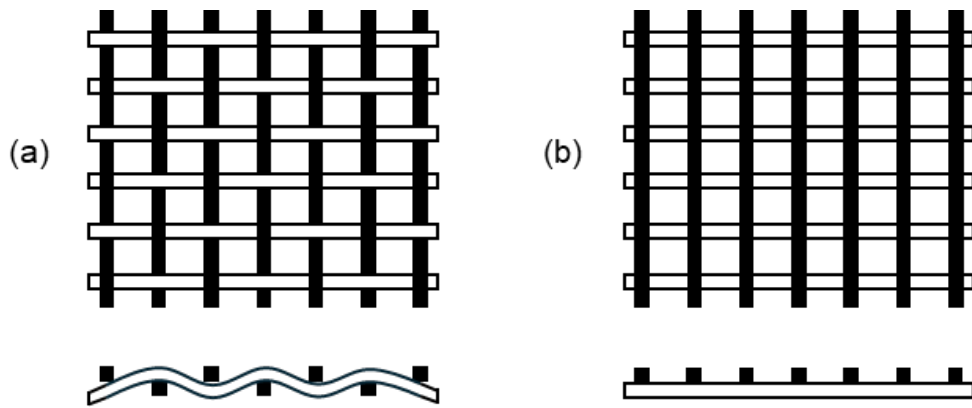


Figure 2: Woven fabric (a) and non-crimp fabric (b)

Available prior art

D1 – Video published online on internet platform on 31 December 2025

The video relates to a do-it-yourself blog and shows an influencer explaining best practices for replacing wallpaper. In addition to the influencer, the video shows the interior of a room with a blank wall from which the old wallpaper has been removed, revealing a wall made of conventional concrete blocks. The floor of the room is covered with a woven textile carpet.

D2 – US patent application published in 1980

Conventional concrete construction element with a steel rod reinforcement structure.

D3 – EP patent application published in 2023

A textile-reinforced concrete construction element for buildings comprises a woven fabric as a reinforcement structure. The woven fabric is made of glass fibres. The fabric is coated with an epoxy resin to improve the bond between the glass fibres and the concrete matrix. The effect of improved bonding is only achieved if the coating has a thickness of between 0.5 mm and 1 mm.

Also disclosed is a building comprising such construction elements.

D4 – History book from the 1960s about construction methods in ancient Egypt

Clay bricks reinforced with embedded loose straw fibres.

Amended claims filed during substantive examination

1. Textile structure in a building, wherein the textile structure is a woven fabric.
2. The textile structure of claim 1, wherein the woven fabric comprises ultra-high molecular weight polyethylene fibres.
3. The textile structure of claim 1, wherein the textile structure is a non-crimp fabric.
4. A construction element for a building, the construction element comprising:
a reinforcement structure comprising glass fibres, and
a matrix, wherein the reinforcement structure is embedded in the matrix, wherein the matrix comprises a mineral aggregate and cement, wherein the reinforcement structure is a textile structure comprising the glass fibres.
5. The construction element according to claim 4, wherein the glass fibres are made of an alkali-resistant glass.
6. The construction element according to claim 4 or 5, wherein the fibres are coated with an epoxy resin improving the bond between the glass fibres and the matrix.
7. The construction element according to claim 4, wherein the textile structure comprises carbon fibres instead of glass fibres.