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**D E C I S I O N**  
of 7 April 1999

**Case Number:** T 0059/96 - 3.3.1

**Application Number:** 89104232.7

**Publication Number:** 0328158

**IPC:** B28B 7/38

**Language of the proceedings:** EN

**Title of invention:**

A method for improving the release of a cast concrete item from the mould by applying to the mould a mould release composition

**Patentee:**

Castrol Limited

**Opponent:**

Societe d'Exploitation de Produits pour l'Industrie Chimique,  
S.E.P.P.I.C  
Binol Filium AB  
Fina Research

**Headword:**

Mould release/CASTROL

**Relevant legal provisions:**

EPC Art. 54, 56

**Keyword:**

"Novelty (yes) - a generic disclosure does not implicitly reveal a particular feature"  
"Inventive step (yes) - determination of the closest prior art - deterrent teaching of the state of the art"

**Decisions cited:**

T 0099/85, T 0229/85, T 0686/91, T 0482/92, T 0298/93

**Catchword:**

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Case Number: T 0059/96 - 3.3.1

**D E C I S I O N**  
of the Technical Board of Appeal 3.3.1  
of 7 April 1999

**Appellant:**  
(Proprietor of the patent) Castrol Limited  
Burmah Castrol House  
Pipers Way  
Swindon  
Wiltshire SN3 1RE (GB)

**Representative:**  
Ploughmann, Ole  
Ploughmann, Vingtoft & Partners  
Sankt Annae Plads 11  
P.O. Box 3007  
1021 Copenhagen K (DK)

**Respondent 01:**  
(Opponent 01) Societe d'Exploitation de Produits pour  
l'Industrie Chimique, S.E.P.P.I.C  
75 quai d'Orsay  
75321 Paris Cédex 07 (FR)

**Representative:**  
Huber, Philippe  
Cabinet Beau de Loménie  
158, rue de l'Université  
75340 Paris Cédex 07 (FR)

**Respondent 02:**  
(Opponent 02) Binol Filium AB  
Box 3137  
37482 Karlshamm (SE)

**Representative:**  
Berg, Sven Anders  
Albihns Patentbyra Stockholm AB  
Box 5581  
114 85 Stockholm (SE)

**Respondent 03:**  
(Opponent 03) Fina Research  
Zone industrielle C  
7181 Seneffe (Feluy) (BE)

Decision under appeal: Decision of the Opposition Division of the European Patent Office posted 25 October 1995 revoking European patent No. 0 328 158 pursuant to Article 102(1) EPC.

Composition of the Board:

Chairman: A. J. Nuss  
Members: R. Freimuth  
S. Perryman

## Summary of Facts and Submissions

I. The Appellant (Proprietor of the Patent) lodged an appeal on 27 December 1995 against the decision of the Opposition Division posted on 25 October 1995 revoking the European patent No. 328 158 which was granted on the basis of nineteen claims, the independent claims reading as follows:

"1. A method for improving the release of a moulded concrete body from the mould by applying an effective amount of a concrete release composition to the mould, said composition comprising one or more oily esters of aliphatic carboxylic acids with mono- or dihydric alcohols, with a melting point of at the most 35°C, the total number of carbon atoms in the esters being 8-46, in an amount of 26-100% by weight, calculated on the total composition, optionally in admixture with other additives such as mineral oils, vegetable oils, glycols, glycol ethers, alkanols, emulsifiers and/or water.

19. A method for improving the release of a moulded body from the mould by applying an effective amount of a concrete release composition to the mould, said composition being in the form of an emulsion of water in an oily component, an emulsion of an oily component in water or a microemulsion in which 26-100% by weight of the oily component is an ester as defined in any of claims 1-18."

II. Notice of Opposition had been filed by the Respondents 1, 2 and 3 (Opponents 1, 2 and 3 respectively), requesting revocation of the patent in its entirety (Respondents 1 and 3) or to the extent of claims 1 to 9 (Respondent 2) for lack of novelty and for lack of inventive step (Article 100(a) EPC), and

Respondent 3 additionally requesting revocation for lack of sufficient disclosure (Article 100(b) EPC). The following documents were submitted *inter alia* in opposition proceedings:

- (2) JP-A-49-16525, considered in the form of its English translation,
- (5) JP-A-50-97840, considered in the form of its English translation submitted on 18 April 1994,
- (7) Lubr. Sint., 1983, pages 37 to 56 and 235 to 249, and
- (8) Concrete Construction, April 1984, pages 417 and 420.

III. The decision under appeal was based on two alternative set of claims, i.e. as main request on claims 1 to 19 as granted and as auxiliary request on claims 1 to 19 as amended during opposition proceedings.

IV. The Opposition Division held that the objection of insufficient disclosure was not properly supported and rejected it.

The patent as granted was found to be novel over the cited state of the art. Document (5) differed from the subject-matter claimed in that the amount of fatty acid ester contained in the used mould releasing composition could not exceed 25% by weight. Document (8) did not disclose the specific fatty acid esters as defined in claim 1 and lacked an unambiguous and direct disclosure of an amount of fatty acid ester in the mould releasing

composition used falling within the claimed range of 26 to 100% by weight. Document (7) referred to lubricants and not to a method for improving mould release claimed in the present invention.

However, the patent as granted was held not to involve an inventive step. Document (5) was regarded as the closest prior art in the assessment of inventive step. The only difference between the mould releasing method described therein and that of the claimed invention consisted in that the amount of the mineral oil contained in the used mould releasing composition was lower in the latter. The presence of mineral oil served merely the purpose of adjusting the viscosity of that composition. The solution proposed by the claimed invention to the problem of reducing the amount of mineral oil to be used was obvious since there was no reason not to increase the content of fatty acid ester in the mould releasing composition if the desired viscosity was achieved. Furthermore document (8) confirmed that fatty acid esters were suitable for mould release. Although document (5) explicitly taught on page 7 that an amount of fatty acid ester exceeding that of fatty acids in the mould releasing composition reduced the releasing effect, that teaching was not generally valid as demonstrated by the examples of that document. In particular example 8, wherein the mould releasing composition comprised a significant higher amount of fatty acid ester than of fatty acids, showed the maximum value for mould release.

The Opposition Division found that the amendments made to the patent as granted according to the then pending auxiliary request did not satisfy the requirements of Article 123(2) EPC.

V. The **Appellant** defended the maintenance of the patent in suit in the form as granted on the basis of claims 1 to 19 indicated in point I above. He submitted that the subject-matter of the patent in suit was novel and involved an inventive step, essentially for the following reasons:

(a) Documents (5) and (8) were not novelty destroying. The corrected English translation of document (5), i.e.

(5a) JP-A-50-97840, considered in the form of its English translation submitted on 4 March 1996,

showed that this state of the art disclosed exclusively a mould releasing method which used a mould releasing composition comprising a higher amount of fatty acid than of fatty acid ester; that specific ratio of fatty acid to fatty acid ester resulted necessarily in a composition comprising less than 26% by weight of fatty acid ester in contrast to the claimed invention. Document (8) seemed rather diffuse; the fatty acid esters referred to were not identified and were certainly not of the particular type as defined in the present invention.

(b) Document (5a) represented the starting point in the assessment of inventive step. The major objective of the present invention consisted in providing a method for mould release wherein the used mould releasing composition showed advantages. These advantages were demonstrated by the results of example 3, of table I (attachment G), of table II (attachment H) and of table III of the patent in suit, and by the results of a fresh test report (attachment J), the attachments having

been submitted on 4 March 1996 annexed to the Statement of Grounds for Appeal. Document (5a) explicitly taught on page 8, lines 4 to 5 that the amount of fatty acid ester should be below a certain limit, otherwise poor releasing results occurred. Therefore the skilled person would not use a concentration of that ester in the mould releasing composition of at least 26% by weight as claimed in the present invention. Document (8) was directed to release agents for concrete moulding based on fatty acid ester. However, the term "based on" did not teach to use the fatty acid ester in an amount above the particularly low content taught in document (5a). Therefore, documents (5a) and (8) in combination did not hint to the claimed invention.

VI. The **Respondent 1** submitted that the claimed invention was neither novel nor involved an inventive step essentially for the following reasons:

- (a) Document (8) disclosed the use of a mould release agent based on esters formed by combining a fatty acid with an alcohol. Thus, these were synthetic fatty acid esters excluding triglyceride esters of natural origin. The term "alcohol" represented for the skilled person necessarily a monohydric alcohol. The term "based on" showed that the ester formed the major component in the mould releasing composition. All the features of claim 1 of the patent in suit being disclosed in document (8), it anticipated the claimed invention.
- (b) Having regard to inventive step, the simple variation of the amount of fatty acid ester in the mould releasing composition of document (8) led to the claimed invention without involving inventive ingenuity. Document (2) taught the use of a mould



releasing composition having a high content of vegetable oils, i.e. fatty acid esters of a trihydric alcohol. That teaching gave a clear incentive to the skilled person to incorporate into the mould releasing composition a high amount of fatty acid esters of a mono- or dihydric alcohol, since the latter were very similar to the former as regards their chemical structure and their properties. Any advantages arising from the claimed invention, as alleged by the Appellant, were not present and, thus, could not support inventive step.

VII. The **Respondent 2** has not made any submission as to the substance during appeal proceedings.

VIII. The **Respondent 3**, while withdrawing his objection of insufficient disclosure, submitted that the claimed invention was not based on an inventive step essentially for the following reasons:

- (a) Starting from document (5a) in the assessment of inventive step, the patent in suit did not achieve any surprising effect. Therefore the problem underlying the invention consisted in providing a further method for releasing a moulded concrete product from the mould using an ester containing mould releasing composition. Although document (5a) referred to an upper limit of the concentration of fatty acid ester of 25% by weight in that composition, it did not dismiss compositions having a higher ester content, as demonstrated in reference example 7. Document (8) was directed to release agents based on synthetic fatty acid ester, indicating implicitly that the ester formed the major part thereof, i.e. more

than 26% by weight. Therefore the question arose why the skilled person should not have increased the fatty acid ester content in the mould releasing composition above the upper limit indicated in document (5a).

Furthermore, the mineral oil additionally forming part of the mould releasing composition of document (5a) was defined to be a lubricating oil fraction. Document (7) taught that acid esters complying with the present invention showed lubricating properties. In view of fresh document

(16) Ullmanns Encyclopädie der technischen Chemie, fourth edition (1983), Vol. 23, pages 375 to 379,

submitted with Respondent 3's reply dated 5 November 1996, oils and fats were useful as release agents due to their lubricating properties. Thus, a person skilled in the art would not hesitate to substitute the acid esters of document (7) for the lubricating oil fraction used as mineral oils in document (5a). A prejudice against that substitution did not exist since the specification of the patent in suit acknowledged the state of the art proposal of replacing mineral oils by vegetable oils.

Thus, those documents rendered the subject-matter claimed obvious.

(b) The same conclusion applied when starting from document (8) in the assessment of inventive step.

IX. The Appellant requested that the decision under appeal be set aside and that the patent be maintained unamended.

The Respondents requested that the appeal be dismissed.

- X. Oral proceedings were held on 7 April 1999 in the absence of the Appellant and the Respondents 1 and 2 who, after having been duly summoned, informed the Board that they would not attend. At the end of the oral proceedings the decision of the Board was given orally.

### Reasons for the Decision

1. The appeal is admissible.
2. *Novelty*
  - 2.1 The Respondent 1 contested the novelty of the subject-matter claimed in respect of document (8). The Appellant and the Respondent 1 were divided upon the matter whether or not the esters referred to in that document were of the particular type as defined in claim 1 of the patent in suit, i.e. of aliphatic carboxylic acids with mono- or dihydric alcohols.

Document (8) discloses a release agent based on an ester which is formed by combining a fatty acid with an alcohol. The generic term "alcohol" used in that document characterises the chemical compound as comprising a functional hydroxy group without, however, indicating the number of hydroxy groups contained in that compound. Thus there is no basis for the finding that that alcohol is indeed mono- or dihydric, i.e. comprises one or two hydroxy groups. Therefore, document (8) does not disclose, either explicitly or implicitly, the essential feature of the claimed invention to use a mono- or dihydric alcohol.

The Respondent 1 argued that the general term "alcohol" necessarily amounted to the disclosure of a monohydric alcohol for the skilled man. However, in view of the silence about the number of hydroxy groups contained in that alcohol, the generic disclosure of "an alcohol" in document (8) does not reveal to the skilled person any particular number of hydroxy groups comprised therein, in the present case of one or two hydroxy groups as required by claim 1 of the patent in suit. It appears that the Respondent 1 interprets the disclosure of that document with the knowledge of the present invention, which the Board cannot accept.

Thus, in the Board's judgement, document (8) does not anticipate the subject-matter of the claimed invention for the reasons given above.

2.2 The Board is satisfied that the subject-matter of the patent in suit is not disclosed in any of the further cited documents. This being not in dispute between the Parties during appeal proceedings and the Opposition Division having already acknowledged novelty for the present claims, it is not necessary to give detailed reasons for this finding.

2.3 For the above reasons, the Board concludes that the subject-matter of the patent in suit is novel and meets the requirements of Articles 52(1) and 54 EPC.

### 3. *Inventive step*

3.1 In accordance with the "problem-solution approach" consistently applied by the Boards of Appeal to assess inventive step on an objective basis, it is necessary to establish the closest state of the art to be used as the starting point, to determine in the light thereof the technical problem which the invention addresses and

successfully solves, and to examine the obviousness of the claimed solution to this problem in view of the state of the art. In this context, the Boards of Appeal have developed certain criteria that should be adhered to in order to identify the closest state of the art to be treated as the starting point. One such criterion is that the "closest prior art" is normally a prior art document disclosing subject-matter aiming at the same objective as the claimed invention and having the most relevant technical features in common (see decisions T 686/91, point 4 of the reasons; T 482/92, point 4.1 of the reasons; T 298/93, point 2.2.2 of the reasons; none published in OJ EPO).

3.2 The patent in suit relates to a method for releasing a moulded concrete body from the mould by applying to the mould a release composition comprising an ester of aliphatic carboxylic acids with mono- or dihydric alcohols. The objective to be achieved, as indicated in the patent in suit, is that the concrete body should not adhere to the mould (page 2, line 18). In relation to that objective and to the relevant technical features in common, a selection among the documents cited in the proceedings must be made as to which is to be considered as the "closest prior art".

3.2.1 Document (5a) refers to a mould release agent for use in moulding concrete products (page 3, paragraph 1, line 7; page 4, paragraph 3, lines 5 and 6), which is to be applied on the mould (page 3, paragraph 2, penultimate line; page 4, last paragraph, penultimate line). The mould release agent comprises 1 part by weight of an oily agent and 1 to 20 parts by weight of a mineral oil. The oily agent comprises 4 to 50% by weight of a fatty acid ester of a C<sub>1-9</sub>-monohydric alcohol, for example butyl stearate (page 7, paragraph 2, line 4 and penultimate line; example 5), which is specifically listed in the patent in suit on

page 8, line 56. The amount of fatty acid ester exemplified in examples 1 to 8 on page 11 of document (5a) does not exceed 5% by weight of the total mould release agent (cf. attachment F, page 2). Based on a purely arithmetical calculation, the fatty acid ester content cannot exceed 25% by weight of the total mould release agent, as the mould release agent comprises not more than 50% by weight of the oily agent, the latter comprising for its part not more than 50% by weight of a fatty acid ester.

That document aims at providing a mould release agent having an excellent mould releasing effect (page 3, paragraph 3, number (1); page 4, paragraph 3, line 3), i.e. avoiding a portion of the moulded product adhering to the mould (page 3, paragraph 2, lines 5 and 6).

Thus, document (5a) aims at the same objective as the claimed invention and has all relevant features in common, except for the feature of 26 to 100% by weight fatty acid ester in the total mould releasing composition.

- 3.2.2 Document (8) relates to a release agent based on an ester which is formed by combining a fatty acid with an alcohol. The number of hydroxy groups comprised in that alcohol is not indicated (see point 2.1 above).

That document aims at providing a form release agent permitting clean release of the form from hardened concrete during stripping (page 417, left hand column, paragraph 1).

Document (2) is directed to a mould releasing agent for concrete comprising optionally up to 50% by weight of a vegetable oil, i.e. an ester of a fatty acid with glycerine; the latter, however, is a trihydric alcohol.

That document aims at avoiding the concrete material sticking on the mould (page 1, paragraph 1, line 3).

Thus, documents (2) and (8) aim at the same objective as the claimed invention, but do not point to the mould releasing composition comprising a fatty acid ester of an alcohol which is mono- or dihydric as in the patent in suit. The Board concludes therefore, that documents (2) and (8) represent prior art further away from the patent in suit than document (5a).

3.2.3 Document (7) relates to lubricants and document (16) to mould releasing agents in general without addressing the moulding of concrete. These technical fields, different to that of the patent in suit, disqualify those documents as closest prior art.

3.2.4 For these reasons, in the Board's judgement, document (5a) represents the prior art closest to the claimed invention and thus, the appropriate starting point in the assessment of inventive step.

3.3 In the next step, the technical problem which the invention addresses in the light of the closest state of the art is to be determined.

The technical problem as indicated in the patent in suit, which the Appellant emphasized also in appeal proceedings (Statement of Grounds of Appeal page 5, paragraph 4 to page 6, paragraph 1), consists in attaining several advantages when releasing a moulded concrete body from the mould, particularly with respect to the adherence to the mould, to the retardation of the curing of concrete, to the viscosity of the used

mould releasing composition and to the health and environmental hazards occasioned by the used mould releasing composition (cf. specification of the patent in suit, page 2, lines 21 to 24 and 34 to 38; page 3, lines 18 and 19).

3.4 As the solution to this problem, the patent in suit suggests a method for releasing a moulded concrete body from the mould by applying to the mould a release composition comprising an ester of aliphatic carboxylic acids with mono- or dihydric alcohols in an amount of 26 to 100% by weight calculated on the total composition.

3.5 The Appellant and the Respondents were divided on the matter whether or not the evidence provided convincingly demonstrates that the proposed solution successfully solves the technical problem as defined in point 3.3 above, i.e. to attain advantages over the state of the art. In support of his submission that the alleged advantages are in fact obtained by the claimed invention, the Appellant referred to the results of example 3, of table I (attachment G), of table II (attachment H) and of table III of the patent in suit, and to the results of a fresh test report (attachment J).

3.5.1 Example 3 of the patent in suit does not comprise any comparative example; therefore it cannot back up any advantage of the claimed subject-matter over the state of the art.

3.5.2 Table I (attachment G) encompasses tests according to the invention and the comparative tests no. 1, 2, 3 and 5. The mould releasing compositions used in the latter comparative tests do not comprise any fatty acid ester. These comparative tests, however, do not truly reflect the closest state of the art, i.e. document (5a), which



already discloses the use of mould releasing compositions comprising fatty acid ester. Therefore, table I (attachment G) does not support the alleged advantages of the claimed invention.

The same conclusion applies for table II (attachment H) since the mould releasing composition used in the sole comparative test no. 127 does not comprise any fatty acid ester.

3.5.3 Table III comprises tests using mould releasing compositions according to the invention comprising a fatty acid ester prepared with a mono- or dihydric alcohol and numerous comparative tests, wherein the mould releasing compositions used either do not contain any fatty acid ester or contain a fatty acid ester with a trihydric alcohol. Thus, the comparative tests are inconsistent with the closest document (5a), which already discloses the use of a mould releasing composition comprising the particular fatty acid esters of the present invention. For that reason, the Appellant cannot rely on table III as evidence for the alleged advantages of the claimed subject-matter over the closest state of the art.

3.5.4 Appellant's fresh test report (attachment J) relates to a method for mould releasing a concrete body from the mould by applying to the mould a releasing composition. That test report comprises overall 17 examples, all carried out in the same way, apart from the absence or the presence of fatty acid ester and the content thereof in the mould releasing composition. The absence of any fatty acid ester in the examples denoted "Ref. Example" 1 to 8 results in rejecting those examples as fair comparison since they do not reflect the closest document (5a), which already teaches to include fatty acid ester in the mould releasing composition. The examples denoted "Example" 1 to 8 are identical to the

examples 1 to 8 of document (5a). Reflecting the closest state of the art, they are to be regarded as fair comparative examples. The mould releasing composition used therein contains at most 5% by weight of fatty acid ester calculated on the basis of the total composition (example 5). The example denoted "Comparative example according to EP 0328158" uses a mould releasing composition containing 96% by weight of fatty acid ester calculated on the basis of the total composition, and hence, it is the only one in attachment J according to the present invention. Therefore, a comparison of the results of the latter example according to the invention with the comparative example 5 truly reflects the impact of the higher content of fatty acid ester in the mould releasing composition, distinguishing the solution suggested in the patent in suit from the method of closest document (5a).

That test report addresses the strength and the discoloration of the surface of concrete. With respect to the strength, attachment J specifies exclusively that the example according to the invention gives a mechanically strong surface of the concrete "superior" to those of the comparative examples. However, that qualitative statement of "superiority" expresses merely Appellant's subjective rating of the comparison of undisclosed quantitative test results of the examples. In the absence of those quantitative test results, neither the other Parties nor the Board are in a position to adequately verify on an objective basis the pertinence of Appellant's subjective rating with the consequence that it cannot be given any consideration. With respect to the discoloration, attachment J specifies exclusively that it was "nearly" not observed in the example according to the invention. Due to the

complete lack of indication of any discoloration occurring in the comparative examples, that test report cannot support the alleged advantageous discoloration of the claimed invention over the comparative closest state of the art.

Therefore, the fresh test report (attachment J) is unsuited to back up the advantages alleged by the Appellant.

3.5.5 To conclude, in the Board's judgement, the evidence on file does not properly demonstrate that the purported advantages of the claimed invention have successfully been achieved and that they are due to the higher content of fatty acid ester in the used mould releasing composition, i.e. the solution proposed by the patent in suit.

3.6 According to the jurisprudence of the Boards of Appeal, alleged but unsupported advantages cannot be taken into consideration in respect of the determination of the problem underlying the claimed invention (see e.g. decision T 20/81, OJ EPO 1982, 217, point 3, last paragraph of the reasons). Since in the present case the alleged advantages lack the required adequate support, the technical problem as defined in point 3.4 above needs reformulation. In view of the teaching of document (5a), the objective problem underlying the patent in suit can only be seen in providing merely a **further** method for releasing a moulded concrete body from the mould by applying to the mould a mould release composition.

During oral proceedings before the Board, the Respondent 3 formulated the problem underlying the patent in suit as to provide a further method for releasing a moulded concrete body from the mould by applying to the mould an **ester containing** mould release

composition. However, the feature "ester containing", defining the mould releasing composition, forms already part of the solution to the problem. To incorporate parts of the solution offered by the invention into the definition of the problem is inadmissible. It is established jurisprudence of the Boards of Appeal that the technical problem addressed by the invention must be formulated in such a manner that there are no pointers to the solution, otherwise an ex post facto view being taken of inventive activity (see decisions T 99/85, OJ EPO 1987, 413; T 229/85, OJ EPO 1987, 237). Therefore the Board cannot accept Respondent 3's argument.

- 3.7 Finally, it remains to decide whether or not the proposed solution to the objective problem underlying the patent in suit is obvious in view of the state of the art.
- 3.7.1 Document (5a) is directed to a mould release agent for use in moulding concrete products comprising 1 to 20 parts by weight of a mineral oil and 1 part by weight of an oily agent. The latter consists of (a) 50 to 96% by weight of a fatty acid and (b) 4 to 50% by weight of a fatty acid ester of a C<sub>1-8</sub>-monohydric alcohol, i.e. having a structure which complies with the present invention. On page 8, paragraph 1, last sentence that document teaches with regard to the oily agent that "if the amount of the fatty acid ester exceeds 50 wt%, the mold releasing effect may be reduced". This teaching advises against increasing the amount of fatty acid ester above that specific upper limit, otherwise the deleterious reduction of the releasing effect occurs, which is in fact the core effect of a releasing agent.

Not only that explicit teaching of document (5a) would be taken at its face value by the skilled person, it is moreover corroborated by experimental evidence shown in the table on page 11 of that document. The comparative "Ref. Example" 7, using a mould release agent wherein the oily agent comprises (a) about 45% by weight of fatty acid and (b) about 55% by weight of fatty acid ester, i.e. only slightly exceeding the specific upper limit, shows the degree of mould releasing of "8", which is a poorer result than the degree of "10" indicated for each of the examples 1 to 8 according to the invention carried out in the same way, apart from incorporating into the oily agent the fatty acid ester in an amount smaller than the specific upper limit.

In the light of the above, the specific upper limit of 50% by weight of fatty acid ester in the oily agent taught in document (5a) is a purposive limit and not an arbitrary borderline, since it has been proven that even going slightly beyond (cf. comparative "Ref. Example" 7) entails defects to the releasing effect of the release agent.

For these reasons, the Board concludes that the skilled person would have been deterred from contemplating an increase in the amount of fatty acid ester in the oily agent above the specific upper limit indicated in document (5a), which corresponds to an absolute upper limit of 25% by weight of the total release agent on the basis of a purely arithmetical calculation (cf. point 3.2.1 above). The amount of fatty acid ester exemplified in document (5a) does even not exceed 5% by weight of the total release agent. Thus, the skilled person was discouraged from investigating that route as being unpromising when trying to solve the problem underlying the invention as defined in point 3.6 above. This means that going beyond the upper limit taught in that document, i.e. to incorporate 26 to 100% by weight

of fatty acid ester of a mono- or dihydric alcohol calculated on the total release agent, which is indeed the solution proposed by the claimed invention, cannot be treated as obvious.

The Board's conclusion having regard to the above teaching of that piece of prior art deviates from that of the Opposition Division in the decision under appeal since the document (5a) was not before the first instance. The Appellant has provided in appeal proceedings the fresh translation (5a) of document (5), the latter document having been considered by the Opposition Division, in order to correct misprinted values specified in the examples contained in the table of document (5). The correction of those values, which has never been contested by the Respondents, reverses the weight ratio of (a) fatty acid to (b) fatty acid ester in the oily agent and renders the examples consistent with the teaching of document (5a) as set out above.

- 3.7.2 Document (8) relates to the use of a release agent in the moulding of concrete "based on" an ester formed by combining a fatty acid with an alcohol and is silent about any specific teaching beyond that. However, that document neither provides a pointer to the relevant feature specified in the patent in suit to use a fatty acid ester of a mono- or dihydric alcohol, nor does the term "based on" teach any particular quantity of the fatty acid ester in the release agent, as required by the claimed invention. The Respondents' argument, that that term indicated an amount of ester exceeding 25% by weight, is not convincing as it is based on information available to the skilled person only from the disclosure of the patent in suit, i.e. on hindsight. Therefore, document (8) cannot render the proposed solution obvious.

3.7.3 Document (2) refers to a mould releasing agent for concrete comprising optionally up to 50% by weight of a vegetable oil, which is an ester of fatty acids with the trihydric alcohol glycerine (see point 3.2.2 above). However, that document diverges from the relevant feature specified in the claimed invention to use a fatty acid ester of a mono- or dihydric alcohol. Therefore, that document does not point to the proposed solution.

The Respondent 1 argued that the teaching of document (2) to use in the mould release agent optionally an amount of up to 50% by weight of vegetable oils, which are fatty acid esters of the trihydric alcohol glycerine, gave an incentive to the skilled person to increase the content of fatty acid ester in the release agent known from document (5a) above its upper limit of 25% by weight calculated on the total release agent, thus arriving at the claimed invention. However, in document (2) the feature to use an amount of up to 50% by weight in the release agent is taught only in combination with those particular fatty acid esters of a trihydric alcohol. Hence, the skilled person would not isolate that feature from those particular fatty acid esters and he would not separately transfer it to the mould release agent of document (5a) as the latter uses a different type of fatty acid esters, i.e. those of a monohydric alcohol. The skilled person is even more deterred from doing so since the teaching of document (5a) diverts him from exceeding the upper limit of 25% by weight calculated on the total release agent when using fatty acid esters of a mono- or dihydric alcohol, as set out in point 3.7.1 above.

For these reasons, the Board is convinced that document (2) does not give an incentive to arrive at the solution suggested by the patent in suit.

3.7.4 In view of document (7) the Respondent 3 argued that acid esters complying with the present invention were already known to show a lubricating effect which was essential for release agents according to document (16). Since the mould release agent of document (5a) comprised, in addition to the fatty acid and fatty acid ester forming the oily agent, mineral oils which were characterised on page 8, paragraph 1, line 2, to be inter alia a lubricating oil fraction, the skilled person would substitute the acid esters of document (7) for the lubricating oil fraction used as mineral oils in the release agent of document (5a) and arrive at the claimed invention. That substitution, so he argued, would not be rejected by the skilled person as the specification of the patent in suit acknowledged prior art suggesting replacing mineral oils by vegetable oils. The Respondent 1 supported that view and argued that the mould release agent of document (2) comprised alternatively either mineral oils or vegetable oils, both being considered equivalent.

However, it is to be noted that document (7) is directed to lubricants for turbine motors which is a technical field substantially different from and unrelated to that of the present invention, i.e. to the release of a moulded concrete body from the mould. Therefore, a person skilled in the art does not take that teaching into consideration at all when looking for a solution to the problem underlying the patent in suit. Moreover, the teaching of document (5a) deterring the skilled person from exceeding the upper limit of 25% by weight of acid ester calculated on the total release agent, as set out in point 3.7.1 above,



discourages him even more from substituting the acid esters of document (7) for the lubricating oil fraction in the release agent of document (5a) as that substitution would entail exceeding that limit in order to arrive at the claimed invention.

Therefore, the skilled person would ignore document (7) when looking for a solution to the problem underlying the patent in suit.

- 3.7.5 To summarise, in the Board's judgement, none of the documents addressed above renders the claimed invention obvious, either taken alone or in combination.

The Respondents not relying on further documents in order to support their objection of obviousness, the Board is satisfied that none of the other documents in the proceedings renders the proposed solution obvious.

- 3.8 For these reasons, the Board concludes that the subject-matter of claim 1, and by the same token that of dependent claims 2 to 18 and of independent claim 19, referring to a mould releasing method by applying an emulsion of the oily component as defined in claim 1, involves an inventive step within the meaning of Articles 52(1) and 56 EPC.

**Order**

**For these reasons it is decided that:**

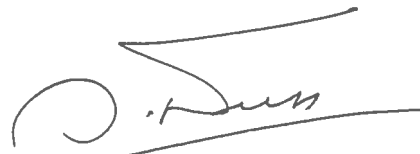
1. The decision under appeal is set aside.
2. The patent is maintained unamended.

The Registrar:



E. Görgmaier

The chairman:



A. Nuss

