

Internal distribution code:

- (A) [] Publication in OJ
(B) [] To Chairmen and Members
(C) [X] To Chairmen
(D) [] No distribution

D E C I S I O N
of 21 November 2001

Case Number: T 1033/98 3.3.3

Application Number: 94203400.0

Publication Number: 0655484

IPC: C08L 95/00

Language of the proceedings: EN

Title of invention:
Road surfacing composition

Applicant:
COLAS S.A

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 84

Keyword:
"Claims - clarity (no) - determination of essential feature
not possible"

Decisions cited:
-

Catchword:
-



Europäisches
Patentamt

European
Patent Office

Office européen
des brevets

Beschwerdekammern

Boards of Appeal

Chambres de recours

Case Number: T 1033/98 - 3.3.3

D E C I S I O N
of the Technical Board of Appeal 3.3.3
of 21 November 2001

Appellant: COLAS S.A
7 Place René Clair
F-92653 Boulogne-Billancourt Cédex (FR)

Representative: Michelet, Alain
Cabinet Harlé et Phélip
7, rue de Madrid
F-75008 Paris (FR)

Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 18 June 1998
refusing European patent application
No. 94 203 400.0 pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: R. Young
Members: P. Kitzmantel
J. C. M. De Preter

Summary of Facts and Submissions

- I. This appeal, which was filed on 14 August 1998, lies against the decision of the Examining Division dated 18 June 1998, refusing European patent application No. 94 203 400.0 filed on 22 November 1994 in the name of SHELL INTERNATIONALE RESEARCH MAATSCHAPPIJ B.V. (later assigned to COLAS S.A.), and published under No. 0 655 484. The appeal fee was paid together with the Notice of Appeal and the Statement of Grounds of Appeal was filed on 21 October 1998.
- II. The decision under appeal was based on the following Claim 1 filed on 17 April 1998:
- "1. A slurry for the use in road surfacing, comprising a bituminous emulsion and coarse and fine aggregates each having a substantially uniform size, characterized in that the coarse aggregate has a greater particle size than the fine aggregate by at least 4 mm, and in that the volume ratio of coarse: fine aggregate is such that in the slurry and in the resulting road surfacing the proportion of gaps between the particles of the aggregates varies in the range of 3 to 25% of the gaps existing in the absence of fine aggregate."
- III. This decision held that Claim 1 did not meet the requirements of Article 84 EPC in that it contained the vague terms "substantially uniform particle size" as well as "coarse" and "fine aggregates", which could neither be distinguished from one another nor from optionally present filler particles. Moreover, Claim 1 lacked methods of measurement of the particle size of the aggregates and of the gap-volume between the "coarse" and the "fine aggregates".

IV. With the Statement of Grounds of Appeal and with its responses to the Rapporteur's communications of 8 December 2000 and 10 May 2001 the Appellant filed respectively amended versions of Claim 1.

Claim 1 as submitted with the Appellant's submission of 19 October 2001 reads as follows:

- "1. A slurry for the use in road surfacing comprising:
- 5 to 15% by volume of a bituminous emulsion;
 - 55 to 75% by volume of a coarse aggregate having a particle size ranging from 6 mm to 20 mm;
 - 15 to 25% by volume of a fine aggregate consisting of sand having a particle size of up to 3 mm;
 - the particle size of the coarse aggregate being greater than the particle size of the fine aggregate by at least 4 mm;
 - the volume ratio of both aggregates being such that the proportion of gaps in the slurry and in the resulting road surfacing varies in the range of 3 to 25% by volume of the gaps existing therein in the absence of fine aggregate."

This Claim 1 of the Appellant's submission of 19 October 2001 belongs to a set of claims furthermore comprising Claims 2 to 9, which are dependent on Claim 1, Claim 10, which relates to a road surfacing obtainable by curing a slurry according to any preceding claim, and Claim 11, which relates to a method of road surfacing comprising applying to a road

a slurry according to any one of Claims 1 to 9.

- V. In its written submissions and at the oral proceedings held on 21 November 2001 the Appellant argued that the terms objected to by the Examining Division resulted from the particle size measurement according to British Standard sieving methods and therefore had a clear meaning. Nor was there any overlap between "fine aggregates" and filler particles, because, in practice, the former were much bigger than the latter. As to the "gap volume", this was a consequence of the volume ratio of coarse and fine aggregates and not merely a "result to be achieved" and could be determined by standardized computer-aided methods.
- VI. The Appellant requested that the decision under appeal be set aside and the patent be granted on the basis of the set of claims filed on 19 October 2001.

Reasons for the Decision

1. The appeal is admissible.
2. *Article 84 EPC, Claim 1*
 - 2.1 To import a meaning to the feature of Claim 1 that the volume ratio of both aggregates is such that the proportion of gaps in the slurry and in the resulting road surfacing varies in the range of 3 to 25% by volume of the gaps existing therein in the absence of fine aggregate it is necessary to know the structure of the particle agglomeration before and after the addition of the fine aggregate to the coarse aggregate.

However, the application as filed does not comprise all necessary information.

- 2.1.1 According to the statement on page 2, lines 20 to 25 of the original application the volume ratio of coarse: fine aggregate should be such that there is insufficient fine aggregate to totally fill the gaps between the coarse aggregate particles.

The Appellant agreed that, in the absence of a more detailed information, this means that the particles of the fine aggregate fit into the space left between the particles of the coarse aggregate which themselves form a close packed assembly, wherein adjacent particles are in contact with each other.

- 2.1.2 The Appellant also agreed that to a first approximation it is reasonable to assume that the particles of both aggregates have a (polyhedral) shape which, for the pupose of visualizing the aggregate structure, may be considered to be about spherical.

- 2.1.3 However, the structure resulting from these particulars is inconsistent with the particle sizes of the coarse and fine aggregates, because an aggregate structure solely consisting of (coarse) aggregate in the indicated size range of 6 to 20 mm does not leave sufficiently wide gaps to accomodate (fine) particles having sizes up to 3 mm. This was not contested by the Appellant.

The larger particles of said fine particle size range - and it is evident from all the worked examples in the application as filed that the fine aggregate comprises a **mixture** of particle sizes within the claimed range

of 0 to 3 mm (preferably 0 to 2 mm) - simply do not fit into the gaps left between particles of coarse aggregate. This is especially conspicuous in the case of a coarse aggregate constituted by 10 mm particles as used according to Example 1 (cf. page 6, lines 18 to 31). If a 3 mm particle is mixed to a 10 mm aggregate it pushes the large particles, which had been in contact with each other, apart, thus changing their relative position, partly filling the previous gap, but also **creating** new gap volume: the more of such small particles are present, the bigger the structural change.

2.1.4 Since this is an inevitable consequence of the relative particle sizes of the coarse and fine aggregates and since the gap volume established by the particles of the coarse aggregate in the absence of fine aggregate is different if calculated (i) on the basis of the initial structure (before the addition of fine aggregate) or (ii) on the basis of the spaced-apart structure after addition of the fine aggregate (which, for the purpose of calculating the gap volume are deemed to be absent), this essential characteristic of the claimed invention is unclear.

2.2 This conclusion could not be invalidated by the assumption (suggested by the drawing made by the Appellant during the oral proceedings) that, before incorporation of the fine aggregate, the particles of the coarse aggregate do not form a close packed assembly but are spaced apart, because the application as filed lacks any information as to such a structure which would permit the calculation of the gap volume before incorporation of the fine aggregate.

2.3 A further deficiency of the definition of the reduction of the gap volume lies in the fact that, in addition to the coarse and fine aggregate, the slurry may contain considerable amounts of

- (i) "further particles" of a particle size up to 10 mm (page 2, lines 6 to 10; page 15, line 5 to page 17, line 8, Example 4 (especially page 15, line 33); page 18, line 18 to page 20, line 8, Examples 6 and 7 (especially page 18, line 26 and page 19, line 26) and
- (ii) filler (Claim 4), as well as minor amounts of
- (iii) fibrous thickening agent (Claim 5) and
- (iv) cement (Claim 8),

which all contribute to a change of the gap volume of the slurry as compared to the gap volume in the presence only of coarse aggregate.

The application as filed is silent on the contribution of these further ingredients to this change of the gap volume. It is, however, evident that the "further particles", which are in the order of magnitude of the coarse aggregate, will have an important impact on the overall gap volume and that the filler particles, which are considerably smaller than the coarse aggregate, will fill the gaps between its particles (cf. page 2, lines 30 to 36).

Since according to Claim 1 there is no limitation on the presence of these further particulate ingredients and since the application as filed leaves it open if

their volume contribution has to be taken into account for the calculation of the gap volume reduction, their possible incorporation is a further reason for the non-compliance of this feature with the requirements of Article 84 EPC.

- 2.4 A further lack of clarity objection results from the feature in Claim 1 that the particle size of the coarse aggregate is greater than the particle size of the fine aggregate by at least 4 mm, because the claim does not specify how this feature is to be determined. In view of the fact that, in practice, aggregates have a certain particle size distribution, which is not disclosed in the application as filed, it remains unclear, whether this requirement is to be fulfilled for all particles of the respective aggregates or only for the respective mean particle sizes.
- 2.5 Claim 1 does not, therefore, comply with the requirements of Article 84 EPC.
3. In view of the afore-mentioned fatal defects of Claim 1 there is no need to discuss any further deficiencies, including those relating to other requirements of the EPC, of the set of claims underlying this decision.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

E. Görgmaier

R. Young