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Datasheet for the decision of 14 July 2017

Case Number: T 0509/15 - 3.3.09

Application Number: 08171642.5

Publication Number: 2196492

IPC: C08J7/04, C09D5/18

Language of the proceedings: EN

Title of invention:
Elastomeric body with elastic fire retardant coating

Patent Proprietor:
Trelleborg Industrial Products UK Ltd

Former Opponent:
Carl Freudenberg KG

Headword:

Relevant legal provisions:
EPC Art. 83, 111

Keyword:
Sufficiency of disclosure - (yes)
Remittal for further prosecution

Decisions cited:

Catchword:

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Case Number: T 0509/15 - 3.3.09

D E C I S I O N
of Technical Board of Appeal 3.3.09
of 14 July 2017

Appellant: (Patent Proprietor)	Trelleborg Industrial Products UK Ltd International Drive Tewkesbury Business Park Tewkesbury GL20 8UQ (GB)
Representative:	Awapatent AB P.O. Box 5117 200 71 Malmö (SE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 3 February 2015 revoking European patent No. 2196492 pursuant to Articles 101(2) and 101(3)(b) EPC.**

Composition of the Board:

Chairman	W. Sieber
Members:	J. Jardón Álvarez
	F. Blumer

Summary of Facts and Submissions

I. This decision concerns the appeal filed by the patent proprietor of European patent No. 2 196 492 against the decision of the opposition division to revoke it.

II. The granted patent contained 21 claims, claim 1 reading as follows:

"1. An elastomeric body (1) suitable for anti-vibration and suspension, **characterised in that** said body (1) comprises at least one layer of an elastic and flexible fire retardant coating (4, 5, 6) covering at least a portion of said body (1), wherein said at least one layer of fire retardant coating (4, 5, 6) is non-halogenated and comprises a fire retardant substance and an elastic binder material, said fire retardant substance comprising expandable graphite, and wherein said at least one layer of coating (4, 5, 6) has an elasticity greater than 20%."

The remaining claims were directly or indirectly dependent claims.

III. The opponent had requested revocation of the patent in its entirety on the grounds of Article 100(a) (lack of novelty and inventive step), (b) and (c) EPC.

IV. The opposition division's decision was based on a main request (claims as granted) and seven auxiliary requests. The main request and auxiliary requests 1 to 5 were refused for lack of sufficiency; auxiliary requests 6 and 7 were not admitted into the proceedings.

The only request before the opposition division that is relevant for the present appeal proceedings is the main request (granted claims). The reasoning of the opposition division's for this request can be summarised as follows:

- The subject-matter of the patent did not extend beyond the content of the application as filed. The subject-matter of granted claim 1 was derivable from the combination of claims 1, 12 and 15 as filed. Further basis for the introduction of the feature "said fire retardant substance *comprising* expandable graphite" (emphasis by the opposition division) into claim 1 could be found on page 4, lines 25 to 29 and on page 10, lines 15 to 20.

- The patent did not satisfy the requirements of sufficiency of disclosure essentially because the skilled person did not know how to measure "an elasticity greater than 20%". The patent specification neither defined the term "elasticity" nor mentioned a method for measuring it. The general knowledge and the teaching of the patent in suit did not put the skilled person in a position to arrive at the subject-matter of claim 1 without performing an extensive research program.

- The opposition division did not deal with the issues of novelty and inventive step.

V. This decision was appealed by the patent proprietor (in the following: the appellant). The statement setting out the grounds of appeal was filed on 3 June 2015, including 27 auxiliary requests and the following test reports:

TR1: "Comparative Test Data for EPIKOTE™ 357/877 Versus DragonCoat™", J. Patel, 27 October 2014, 11 pages (a report already filed on 6 November 2014 during the opposition proceedings); and

TR2: Report No: MDL 12562. "Tensile/Elongation Properties of DragonCoat®", J. Patel, 26 May 2015, 5 pages.

VI. With its reply filed on 12 October 2015, the opponent requested that the appeal be dismissed because the patent did not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a skilled person (see Article 83 EPC).

VII. By letter dated 13 October 2016, the opponent withdrew its opposition and is therefore no longer party to the proceedings.

VIII. In a communication dated 7 April 2017, the board indicated the points to be discussed during the oral proceedings. It also noted that if any of the requests were to be seen as fulfilling the requirements of Articles 83, 84 and 123(2) EPC, remittal to the opposition division appeared to be appropriate because novelty and inventive step had not been dealt with in the appealed decision.

IX. With letter dated 14 June 2017, the appellant filed a further submission, including the following document:

D5: A. Ciesielski "An Introduction to Rubber Technology", 1999, Rapra Technology Limited, pages 7, 93 and 115.

X. On 14 July 2017 oral proceedings were held before the board during which the appellant filed the following documents:

D6: ASTM D 412-06a, Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers - Tension, ASTM International, West Conshohocken, PA, United States, 2007 (14 pages);

D7: ASTM D 1349-07, Standard Practice for Rubber — Standard Temperatures for Testing, ASTM International, West Conshohocken, PA, United States, 2007 (1 page); and

D8: BRITISH STANDARD BS EN 13913:2003, Railway applications - Rubber suspension components - Elastomer-based mechanical parts, British Standards Institution, 389 Chiswick High Road, London, 2003 (60 pages).

XI. The arguments of the appellant, insofar as they are relevant for the present decision, may be summarised as follows:

- Based on the examples and the information disclosed in the patent, the skilled person would know how to reduce the invention into practice, that is, to produce an elastomeric body provided with a fire retardant coating according to the disclosure of the patent.

- In the field of rubber technology at the filing date of the patent the skilled person would understand the term "elasticity" as the capability of a strained body to recover its size and shape after deformation. The skilled person would from

the patent itself understand that elasticity was not to be understood as compression set or elongation at break.

- The skilled person would test the elasticity in analogy to the elasticity measurement as defined in international standards such as ASTM D 412, because the apparatus for such measurement was often present at the premises of a manufacturer of rubber articles and because the procedure actually measures a physical property and did not introduce any unforeseen variable. In any case, the actual measured value was basically independent of the choice of test procedure.

XII. The appellant requested that the decision under appeal be set aside and that the board of appeal finds:

(a) that the claims of the main request (granted claims), or of any of auxiliary requests 1 to 27, as filed with the statement of grounds of appeal, comply with the requirements of Article 83 EPC, and

(b) that the case be remitted back to the opposition division for handling of the remaining grounds of opposition.

Reasons for the Decision

MAIN REQUEST (granted claims)

1. Amendments (Article 100(c) EPC)

1.1 The opposition division stated in its decision that the amendments made fulfilled the requirements of Article 100(c) EPC.

1.2 The former respondent did not raise any objection to that finding of the opposition division in its reply to the statement of grounds of appeal.

1.3 The board does not see any reason either to raise an objection of its own in this connection.

2. Sufficiency of disclosure

2.1 The invention relates to an elastomeric body suitable for anti-vibration and suspension applications wherein the said body comprises at least one layer of an elastic fire retardant coating (see [0001] of the patent specification). The invention aims to provide improved fire retardant coatings that are sufficiently elastic to remain on the elastomeric product, when subjected to frequent and continuous surface elongation (see [0011]).

2.2 The key feature of the invention is the use of an elastic and flexible fire retardant coating that is defined both by its components (it is non-halogenated and comprises a fire retardant substance comprising expandable graphite and an elastic binder material) and by its properties ("has an elasticity greater than 20%"). In particular, the latter feature is said

to distinguish the coatings of the invention from standard intumescent coatings (see [0011]).

2.3 According to the patent specification, natural rubber, ethylene acrylic rubber, epoxidised natural rubber, and styrene butadiene (SBR) can be used amongst other materials as binder material in the fire retardant coating (see [0054]). Figure 1a shows a cross sectional view of an elastomeric body with one layer of an elastic fire retardant coating, and Figure 1b that of an elastomeric body with two layers of elastic fire retardant coatings. The coating of Figure 1a and the second coating of Figure 1b contain expandable graphite as the fire retardant substance and polyurethane as the binder material. They have "an elasticity over 100%" (see [0036] and [0041]).

2.4 The opposition division considered that the patent was insufficiently disclosed because the term "elasticity" was not defined and no method for measuring "an elasticity greater than 20%" was mentioned in the patent. As a consequence, the skilled person would have had to carry out an excessively large number of trial and error assays in order to identify a coating that would exhibit the required elasticity.

2.5 It is indeed true that there is no explicit definition of the term "elasticity" in the opposed patent and no method of measurement is indicated. Thus, in the present case, the questions to be answered in relation to sufficiency of disclosure are therefore whether the general information available from the opposed patent and the common general knowledge at the filing date of the opposed patent can compensate this lack of information so that the skilled person knows:

- (1) how to understand the term elasticity in the context of the invention?; and

- (2) how to determine the elasticity of the coating?.

2.6 Concerning the first question, the board agrees with the appellant that the patent was written with the standard meaning of "elasticity" in mind, i.e. the capability of a strained body to recover its size and shape after deformation.

2.6.1 The terms "elastic" and "elasticity" are well-known to the person skilled in the art and are defined in dictionaries and relevant standards. In Merriam-Webster, for example, the following definitions are found:

Elasticity
"1: the quality or state of being elastic: such as a: the capability of a strained body to recover its size and shape after deformation".
Elastic
"1.a *of a solid*: capable of recovering size and shape after deformation."

Handbook D5 (page 7, Section 1.3 lines 3 to 5), which can be considered to represent the common general knowledge in the field of the patent, namely rubber technology, provides a similar definition:

"The dictionary definition of rubber is, 'a material that when stretched returns quickly to its approximate original shape'."

These definitions are confirmed in the standard ASTM D1566 "Standard Terminology Relating to Rubber" (referred to by the appellant in the statement setting out the grounds of appeal), which reads:

elastic, adj-of or pertaining to elasticity.
elasticity, n-rapid recovery of a material to its approximate initial shape and dimensions after substantial deformation by force and subsequent release of that force.

Furthermore, it is well-known to make deformation dimensionless by defining it in percent [%]. This is, for instance, defined in ASTM D1566:

elongation, percent, n-extension of a uniform section of a specimen expressed as percent of the original length.

2.6.2 The fact that the term "elasticity" has to be given this general meaning is also reflected in the patent itself. Thus, when discussing standard intumescent coatings in [0011], it is made clear that the coating is elastic in the sense that it can be elongated:

"These coatings are however unsuitable for elastomeric products, due to the fact that they are not sufficiently elastic to remain on an elastomeric product, when the product is subjected to frequent and continuous **surface elongation.**" (emphasis by the board).

Again, in [0018], when discussing the different layers of the coating, it is made clear that elasticity in the context of the patent relates to elongation:

"The first layer of fire retardant coating may have a greater elasticity than the second layer of the fire retardant coating, which is advantageous in that the fire retardant coating can withstand **surface elongation** of the elastomeric body better." (emphasis by the board).

2.6.3 The board disagrees with the view of the former opponent and the opposition division that the skilled person could also measure elasticity based on another property expressed in percentage, such as compression or elongation at break. By reading the patent, the skilled person would dismiss such interpretations.

The fact that the fire retardant is made to "withstand surface elongation of the elastomeric body better" as mentioned [0018] clearly tells the skilled person that the coating is to be expandable. With this in mind, the skilled person would not understand the term "elasticity" to be related to compression. It would make no sense to specify compression properties of the coating, since this is clearly specified to be made to withstand surface elongation of the elastomeric body on which it is applied.

It is also evident from the patent that "elasticity" is not referring to elongation at break. In [0016] it is stated that:

"The inventive elastomeric body is advantageous in that it is provided with at least one layer of an elastic fire retardant coating, making the body fire retardant while maintaining its elastic characteristics".

Thus, the coating provides fire retardant properties to the elastomeric body, and if the coating was damaged

this would influence the fire retardant properties. Thus, when defining the elasticity of the coating it is clear that the properties of the coating should not be affected when being transformed between a non-deformed state and a deformed state. The elongation at break, which is understood to be the elongation it takes for breaking a test piece in two parts, is of no clear relevance in this context, since the properties of the coating will be affected before reaching the elongation at break.

2.6.4 In summary, the skilled person would understand the term elasticity as referring to surface elongation.

In the context of the patent this means that, if the claimed elastomeric body is subjected to a deformation resulting in a surface elongation greater than 20% and the coating is able to remain on the product and to recover its size and shape after deformation, the coating exhibits an elasticity greater than 20%.

2.7 It remains then to investigate whether the skilled person would know how to determine an elasticity greater than 20% (second question above).

2.8 It is undisputed that there is no information in the specification as to how the measurement of the elasticity of the layer of coating is made. Nevertheless, taking into account the meaning of elasticity in the context of the patent, the skilled person would understand that tensile stress/strain tests have to be carried out to determine whether the coating has the required elasticity.

2.8.1 In practice, it is, however, almost impossible to subject a product that is, for example, designed to act

as a suspension of a railway vehicle, to a deformation resulting in a surface elongation greater than 20%. The skilled person would therefore apply the coating to a test piece which can easily be deformed sufficiently to be able to evaluate if the coating has the sufficient elasticity or not. The only test to be made is to stretch the test piece in a tensometer to a given elongation (greater than 20%), then return it to the start position, and inspect the coating visually during and/or after the stretching.

2.8.2 As to a possible test, the skilled person having knowledge of elastomeric materials would turn to widely recognised international standards for the measurement of rubber strain/stress properties such as ASTM D 412 Method A "Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension" (D6) or ISO 37 (as referred to in the appellant's letter of 10 June 2010 filed during examination proceedings) "Rubber, vulcanized or thermoplastic: Determination of tensile stress-strain properties" and perform the test according to the conditions disclosed therein (e.g. specimen, testing machine, extension rate, temperature).

2.8.3 The appellant had already provided during the examination procedure a test report comparing the elasticity of the coating of the invention with other known coatings. With the statement of grounds of appeal it filed a study comparing a coating according to the invention against a prior art epoxy coating (TR1, already filed in opposition proceedings).

In these tests, the appellant evaluated the elasticity of coatings on test pieces using a tensometer and test conditions in accordance with the above-mentioned

international standards. The prepared specimens were stretched to a predetermined percentage and visually examined.

2.8.4 As to the temperature of measurement, which was emphasised by the opposition division in its decision and which indeed has a considerable influence on elasticity, the international standards indicate that, unless otherwise specified, they have to be carried out at the standard temperature of 23 ± 2°C (see D6, page 4, point 9.1; see also D7, page 1, point 2.3). As the patent does not contain a comment to the contrary, the board accepts the appellant's argument that elasticity has to be evaluated at the standard temperature. This is supported by D8 (page 28, point 7.1.1.2), a British standard for railway applications, rubber suspension components and elastomer-based mechanical parts, which is a preferred field application of the patent, e.g. [0036], [0046] and [0073].

2.8.5 For these reasons, the answer to the second question above is also yes, the skilled person would know how to determine the elasticity of a coating.

2.9 Consequently, the board concludes that the requirements of sufficiency of disclosure are fulfilled.

3. Remittal

Considering that the opposition division has not yet taken a decision on novelty and inventive step and that the appellant has requested remittal of the case to the opposition division for further prosecution, the board considers it appropriate to exercise its discretion under Article 111(1) EPC to remit the case to the

opposition division for further prosecution on the basis of the claims as granted (main request).

AUXILIARY REQUESTS

Since the board has decided to remit the case for further prosecution on the basis of the main request, there is no need to deal with these requests.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the opposition division for further prosecution on the basis of the claims as granted (main request).

The Registrar: The Chairman:

M. Cañueto Carbajo W. Sieber

Decision electronically authenticated