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# Datasheet for the decision of 29 May 2013

**Case Number:** T 0250/10 - 3.2.01

**Application Number:** 01943486.9

**Publication Number:** 1294595

**IPC:** B60S 1/38

**Language of the proceedings:** EN

**Title of invention:**
Reinforced wiper element

**Patent Proprietor:**
N.V. BEKAERT S.A.

**Opponent:**
ArcelorMittal Wire France

**Headword:**
-

**Relevant legal provisions:**
-

**Relevant legal provisions (EPC 1973):**
EPC Art. 56

**Keyword:**
"Inventive step (no)"

**Decisions cited:**
-

**Catchword:**
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

**Case Number:** T 0250/10 - 3.2.01

# D E C I S I O N
**of the Technical Board of Appeal 3.2.01**
**of 29 May 2013**

**Appellant:** (Opponent)
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**Decision under appeal:**
**Interlocutory decision of the Opposition Division of the European Patent Office posted 21 December 2009 concerning maintenance of European patent No. 1294595 in amended form.**

**Composition of the Board:**

**Chairman:** G. Pricolo
**Members:** H. Geuss
T. Karamanli

## Summary of Facts and Submissions

I. The appeal of the opponent is directed against the interlocutory decision posted on 21 December 2009 maintaining the European patent No. 1294595 in amended form.

The Opposition Division held that the subject-matter of claims 1 and 7 according to the auxiliary request filed on 18 June 2009 was inventive over the documents

**(B1)** Bezalplast, "Votre alternative couleur aux fils inoxyables", Bekaert, Commercial brochure, 03/2000, and

**(D)** EP 0667266 B.

II. During the oral proceedings before the Board of Appeal held on 29 May 2013 the appellant (opponent) requested that the decision under appeal be set aside and the patent be revoked.

The respondent (patent proprietor) requested that the appeal be dismissed, or that the decision under appeal be set aside and that the patent be maintained in amended form on the basis of the claims according to the first auxiliary request filed with letter of 20 July 2010.

III. Claim 1 forming the basis of the interlocutory decision of the Opposition Division reads as follows:

> A wiper element (10) comprising a wiper blade (12) made of an elastomeric material; said wiper blade (12) being reinforced with at least one elongated

element (14,30); said elongated element (14,30) comprising a core (32) and a coating system (36); said core (32) being a steel wire and said coating system (36) comprising a zinc alloy coating and an other coating; said steel wire having a tensile strength of at least 1500 N/mm$^2$ and a carbon content ranging between 0,60 and 0,85%; said zinc alloy coating being applied on said core (32) and said another coating being applied on top of said zinc alloy coating; said another coating comprising a polyester coating; characterized in that said elongated element (14,30) has cut ends and is provided with at least one notch (38); said notch (38) having lateral edges, whereby the cut ends and the lateral edges of said notch (38) are uncoated and whereby said coating system (36) is providing said elongated element (14) with corrosion protection at said uncoated cut ends and at said uncoated lateral edges of said notch (38).

IV. Claim 1 according to the first auxiliary request reads as follows (difference in respect to claim 1 forming the basis of the interlocutory decision of the Opposition Division in bold):

A wiper element (10) comprising a wiper blade (12) made of an elastomeric material; said wiper blade (12) being reinforced with at least one elongated element (14,30); said elongated element (14,30) comprising a core (32) and a coating system (36); said core (32) being a steel wire and said coating system (36) comprising a zinc alloy coating and an other coating; said steel wire having a tensile strength of at least 1500 N/mm$^2$ and a carbon

content ranging between 0,60 and 0,85%; said zinc alloy coating being applied on said core (32) and said another coating being applied on top of said zinc alloy coating; said another coating comprising a polyester coating; characterized in that said elongated element (14,30) has cut ends and is provided with at least one **edge-punched** notch (38); said notch (38) having lateral edges, whereby the cut ends and the lateral edges of said notch (38) are uncoated and whereby said coating system (36) is providing said elongated element (14) with corrosion protection at said uncoated cut ends and at said uncoated lateral edges of said notch (38).

V. The appellant's submissions may be summarized as follows:

Document B1, which is the closest prior art document, discloses all features of claim 1 except the feature that the elongated element is provided with a notch. However, this feature is commonly known in the field of wiper techniques and is disclosed in document D. By providing the elongated element of B1 with a notch according to claim 1 the skilled person would also rely on the cathodic protection of the ZnAl coating. Even if the skilled person were to consider a difference between the uncoated end and the uncoated notch with respect to corrosion behaviour, he would be aware that the end and the notch - both uncoated - would follow the same corrosion mechanism, and further that the uncoated end and the notch stand to benefit from the cathodic protection. Consequently the skilled person, when providing a notch in an elongated element

according to B1, would check whether the corrosion behaviour is satisfactory, and in particular whether it is in accordance with given specifications. In this respect, salt spray tests as shown in tables 1 and 2 of the contested patent are commonly known and form part of any development in this technical area.

Thus, the provision of a notch in an elongated element according to B1 and the performance of a salt spray test would be performed by the skilled person without involving an inventive step.

The supplementary feature of claim 1 of the (first) auxiliary request, namely that the notches are edge-punched, does not justify a different conclusion in respect of inventive step. Indeed, also in the discussion of the main request, the notches have been considered as edge-punched. The argument of the patent proprietor relates to the fact that material stress - caused by the punching process - exacerbates corrosion sensibility. Still, this would not prevent the skilled person to check whether the notch benefits form cathodic protection.

VI. The respondent's rebuttal was essentially as follows:

Document B1 is considered to be the closest prior art document. However, although B1 describes the application of Bezalplast for windscreen wipers, B1 does not disclose an elongated element for wiper blades. Although wiper blades are mentioned as a possible application for a Bezal-product, it remains open which part of the wiper is meant. A wiper consists of more than a reinforcement member, e.g. the spring or

the wiper arm. However, even assuming that B1 is describing an elongated element for the reinforcement of a wiper blade, B1 does not disclose an elongated element for reinforcing a wiper blade with notches.

By providing notches in an elongated element according to B1, the skilled person would be faced with several problems: By punching a notch in an elongated element high deformation and consequently high stresses are created in the element. As the stresses are considerably higher at the edges of a notch compared to the edges of a cut end, the edges of a notch are more prone to corrosion. Further, the wettability and the adsorption of water causes more problems in the edge of a notch compared to the cut ends: in the corners of a notch water is accumulated. Finally, the elongated element for the reinforcement of a wiper is under tension since the wiper blade is dynamically loaded, and thus the elongated element is negatively influenced with respect to corrosion resistance.

For these reasons, a skilled person would not expect that the coating comprising a zinc alloy layer and a PET layer as described in B1 would offer cathodic protection to a notch, in particular an edge-punched notch, in a coated elongated element.

Therefore, since an untreated notch would go against his professional experience, a skilled person would not take salt spray tests into account. In fact, the only reinforcement elements provided with notches known at the time of filing of the application were stainless steel elements.

The additional feature of claim 1 of the auxiliary request is a clarification that the notch is edge-punched. It strengthens the arguments brought forward with respect to claim 1 forming the basis of the interlocutory decision of the Opposition Division as by edge-punching the stresses created at the edges of a notch are higher than for example as by cutting.

## Reasons for the Decision

1. The appeal is admissible.

2. The invention as defined by the features of claim 1 forming the basis of the interlocutory decision of the Opposition Division does not involve an inventive step according to the provisions of Article 56 EPC 1973. Document B1 is considered to be the closest prior art and discloses all features of claim 1 except the feature that the elongated element is provided with notches. This was also undisputed in the proceedings before the Opposition Division (see points 14.1 and 14.2 of the decision under appeal).

2.1 In the appeal proceedings, the respondent (proprietor) alleged that B1 does not disclose a reinforcing element for a wiper blade. In the respective passage of B1 example applications for Bezalplast are listed, including a wiper. However a wiper consists of more elements than only the reinforcement member, for example, the wiper arm or the wiper spring. However, considering that B1 discloses wires intended for use in wipers (see the second figure from the left on the bottom of the first page and the text on the third page

under the heading "Essayez-le") and that as an example of such wires B1 discloses the elongated element in black colour that is shown on the second and third pages of B1, it emerges clearly and unambiguously for the skilled person that such elongated element is intended for use as a reinforcement element of a wiper blade. Consequently the Board regards this features as disclosed in B1.

2.2 The technical problem to be solved with the feature distinguishing the subject-matter of claim 1 from the elongated reinforcement member according to B1, namely that the elongated element is provided with a notch, is to deliver an alternative fixation of the wiper blade.

The solution of the problem as defined by claim 1 does not involve an inventive step for the following reasons:

2.2.1 The respondent did not dispute that reinforcement members for wiper blades provided with notches are well known in the art, cf. document D. In fact, the fixation between the reinforcement element and the wiper-arm can be obtained with or without yoke, whereby both alternatives are used and therefore generally known by a skilled person.

2.2.2 Further, the respondent agreed to the above-mentioned definition of the technical problem to be solved. The respondent, however, submitted that the skilled person would not punch notches without any further corrosion treatment in an elongated reinforcement element with a ZnAl coating and a PET coating according to document B1. In other words, the skilled person would not combine

documents B1 and D. The respondent argued that an edge-punched notch is more prone to corrosion than uncoated ends for reasons of stress caused by material deformation during the punch process, wettability and the fact that a wiper blade is under tension in use. Consequently, the skilled person would avoid leaving the edge-punched notch untreated and would not even take salt spray test into account, since untreated punched notches would go against assumptions based on general knowledge.

2.2.3 The Board follows the repondent's argument in so far as tables 1 and 2 of the patent in suit show that notches in general are more critical for corrosion than uncoated ends, regardless of their protection system. In particular, the tables show that a ZnAl coating provides a cathodic protection for uncoated ends and notches (cf. row 2 in each of tables 1 and 2). Moreover it is shown that a two-layer coating comprising a layer of ZnAl and PET improves considerably the corrosion protection for both untreated ends and notches similary (cf. row 3 of tables 1 and 2); however, the sensitivity to corrosion is also given for ends and edges when the elongated member is provided with a ZnAl-PET coating. In the Board's opinion this confirms that edge punched notches in the reinforcement member according to the invention follow the well known corrosion mechanism - even though in a weaker form - and can be protected by a cathodic protection system, supplemented by a PET layer.

2.2.4 In contrast to the respondent, who concludes that a skilled person would not go against his professional experience, the Board holds that the skilled person

would not deny *a priori* the effectiveness of cathodic protection at the notches, but would rather expect that the principle of cathodic protection would also work at the notches, irrespective of how the notches are obtained, e.g. by the undisputedly well-known method of edge-punching. The sole question for the skilled person would be whether or not the cathodic protection of the notches provided by the coatings is sufficient in order to fulfil given requirements. In order to answer such issues, it is a professional-standard measure to carry out salt spray tests to evaluate the corrosion resistance of a given element. In the underlying case, the Board holds that the skilled person would perform a salt spray test to evaluate the corrosion behaviour of the edge-punched notches and would recognize that the notches can remain untreated since the cathodic protection is sufficient for a reinforcement member of a wiper blade. These measures are based on general knowledge and would be taken without any inventive effort.

3. For the reasons as discussed for claim 1 forming the basis of the interlocutory decision of the opposition division, the subject-matter of claim 1 of the first auxiliary request also lacks inventive step.

3.1 The supplementary feature of claim 1 of the first auxiliary request clarifies the notch as an edge-punched notch. At the oral proceedings it was also not disputed by the parties that this feature did not introduce any new aspect into the discussion on inventive step as it had already been considered in the discussion in respect of claim 1 forming the basis of the interlocutory decision of the opposition division.

3.2 This is reflected in the above reasoning in respect of claim 1 forming the basis of the interlocutory decision of the opposition division, which takes into account the aspects relating to the fact that the notches are edge-punched, i.e. the fact that punching has an influence on material stress and as a consequence on the corrosion behaviour.

Consequently, also the subject-matter of claim 1 of the auxiliary request does not involve an inventive step, within the meaning of Article 56 EPC 1973.

**Order**

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

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chairman:

E. Goergmaier G. Pricolo