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**Datasheet for the decision
of 30 January 2018**

Case Number: T 0649/14 - 3.2.06

Application Number: 01967759.0

Publication Number: 1391414

IPC: B66B13/30, E06B5/16

Language of the proceedings: EN

Title of invention:

DOOR INSTALLED AT PLATFORM FOR ELEVATOR

Patent Proprietor:

MITSUBISHI DENKI KABUSHIKI KAISHA

Opponent:

Otis Elevator Company

Relevant legal provisions:

EPC Art. 56, 111(1), 123(2)

RPBA Art. 13(1)

Keyword:

Inventive step - (no)

Late-filed document - admitted (no)

Remittal to the department of first instance (no)

Late-filed auxiliary requests - admitted (no)

Convergency of requests should be met at the current state of proceedings



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Case Number: T 0649/14 - 3.2.06

D E C I S I O N
of Technical Board of Appeal 3.2.06
of 30 January 2018

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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
22 January 2014 concerning maintenance of the
European Patent No. 1391414 in amended form.**

Composition of the Board:

Chairman M. Harrison
Members: G. de Crignis
W. Ungler

Summary of Facts and Submissions

- I. By way of its interlocutory decision, the opposition division found that European Patent No. 1 391 414 as amended met the requirements of the European Patent Convention (EPC). It held that the main request was not allowable since the subject-matter of granted claims 6, 11, 13 and 14 was not sufficiently disclosed (Article 100(b) EPC / Article 83 EPC).
- II. The appellant/proprietor filed an appeal and requested that the patent be maintained as granted. It was argued that the opposition division's assessment of sufficiency of disclosure as regards the subject-matter of claims 6, 11, 13 and 14 was incorrect.
- III. The appellant/opponent filed an appeal against the decision and requested that the patent be revoked on the ground of lack of inventive step. It submitted the following documents which had already been submitted in the opposition proceedings:
- D1 Handbook of Plastics Test Methods, 2nd Edition, George Gudwin Ltd, p. 313-314
 - D2 Handbook of Plastics Analysis, Marcel Dekker Inc.
 - D4 CA-A-2 317 326
 - D6 WO-A-00/73055,
 - D7 US-A-5 830 582
 - D8 JP-A-09-194797
 - D12a-d: Abstracts ASTM C338-93, D3642-98, D6090-99, D6493-05
 - D16 Wikipedia (DMA)
 - D17 Perkin Elmer (DMA)
 - D18 US-A-5 678 369
 - D19 JP-A-2001/002931 / D19a partial translation.

IV. In reply to the appellant/proprietor's grounds of appeal, the appellant/opponent provided further arguments concerning lack of sufficient disclosure and additionally filed

D21 G.D. Sims, S.J.P. Gnaniah: Improved procedures for the determination of T_g by dynamic mechanical analysis, Symposium 2009.

V. In reply to the appellant/opponent's grounds of appeal, with letter dated 15 October 2014, the appellant/proprietor maintained its main request and further submitted auxiliary requests 1, 2a, 2b, 3a, 3b, 4a, 4b, 5a and 5b.

VI. In a communication prior to oral proceedings, the Board indicated its preliminary view *inter alia* that it considered the opposition division's finding of lack of sufficient disclosure concerning the dependent claims to have been correct.

VII. With letter dated 22 December 2017 the appellant/proprietor withdrew its main request as well as auxiliary requests 2a, 3a, 4a and 5a and submitted new auxiliary requests 5, 6, 7c, 7d and 8, while renaming and reordering previous auxiliary request 5b to be auxiliary request 7b. Additionally, it filed

D22a/b Wikipedia extracts relating to "primer"

D23 Handbook of Adhesive Technology, p. 208-220

D24 JIS C 6481-1996 (DMA measurement of T_g).

In addition, with telefax of 26 January 2018, the appellant/proprietor submitted "c" and "d" versions of auxiliary requests 2, 3 and 4.

VIII. Oral proceedings were held before the Board on 30 January 2018.

The appellant/opponent requested that the decision under appeal be set aside and the patent be revoked.

The appellant/proprietor requested that the opponent's appeal be dismissed (main request), auxiliarily that the patent be maintained in amended form on the basis of auxiliary requests 2b, 3b and 4b filed with letter dated 15 October 2014, on the basis of auxiliary requests 5 and 6 filed during the oral proceedings of 30 January 2018, or on the basis of auxiliary requests 7b and 8 filed with letter dated 22 December 2017. Furthermore, the proprietor maintained its request that the case be remitted to the department of first instance for further prosecution in regard to auxiliary requests 2b, 3b, 4b and 7b.

IX. Claim 1 of the main request reads as follows:

"A landing door for an elevator, comprising:
a front panel (21), and
a reinforcing member (22) bonded to the backside of the front panel through an adhesive layer (23) made of an organic adhesive containing a flame retardant."

Claim 1 of each of auxiliary requests 2b, 3b, 4b and 7b differs from claim 1 of the main request in that the following feature is added:

"further comprising a primer layer (25) provided between the adhesive layer and the front panel."

Claim 1 of auxiliary request 5 includes in addition the following feature:

"wherein the primer increases the adhesive strength between a metal bonding part on the backside of the front panel and the adhesive, wherein the provision of the primer layer (25) makes the adhesive strength between the front panel (21) and the adhesive layer (23) higher than that between the reinforcing member (22) and the adhesive layer (23)."

Claim 1 of auxiliary request 6 reads:

"A landing door for an elevator, comprising:
a front panel (21), and
a reinforcing member (22) bonded to the backside of the front panel through an adhesive layer (23) made of an organic adhesive containing a flame retardant,
wherein:
the organic adhesive contains a thermoplastic resin composition containing
(1) a radical polymerizable vinyl monomer,
(2) a polymerization initiator being an organic peroxide,
(3) a reducing agent, which reacts with the polymerization initiator to generate radicals, and
(5) optionally an elastomer component;
said flame retardant is (4) a phosphoric acid salt selected from polyphosphates; and
the amount of the phosphoric acid salt used is 30-75 parts per mass, per 100 parts by mass of said resin composition containing components (1), (2), (3) and optionally (5)."

Claim 1 of auxiliary request 8 reads:

"A landing door for an elevator, comprising:
a front panel (21), and

a reinforcing member (22) bonded to the backside of the front panel through an adhesive layer (23) made of an organic adhesive containing a flame retardant, further comprising a thermoplastic resin layer (26) provided between the adhesive layer and the reinforcing member."

- X. The arguments of the appellant/proprietor relevant to the decision may be summarised as follows:

Concerning claim 1 of the main request, when starting the assessment of inventive step from D4, the problem to be solved related to the landing door providing enhanced dimensional stability and safety in the event of fire, as set out in paragraph 10 of the patent in suit read in conjunction with paragraphs 3 and 22. Evidence that this problem had been solved was given in Example 1. Example 1 evaluated how quickly the reinforcing member was peeled off from the start of heating in a realistic test design in that steel plates having a thickness of 1.6 mm were used as representing the front panel. Table 6 was part of Example 10 and this was to be distinguished from Example 1 in that it evaluated a different type of distortion/warp than the previous examples; it was conducted to optimize the adhesive concerning its properties of use. Example 10 made use of a very thin (0.3 mm), easily bendable steel sheet in order to evaluate the deformation resulting from hardening shrinkage of the selected adhesives. Hence, it should not be used to imply that the stated problem was not solved over the whole scope of the claim.

The skilled person would not combine the teaching of D19 with the disclosure in D4. D19 concerned a different technical field and it did not teach use of the adhesive composition with metal parts. In fact, it

led away from the inventive concept underlying the claim.

Concerning claim 1 of auxiliary requests 2b, 3b, 4b and 7b, inventive step for a claim 1 including the feature of a primer layer had not been discussed during the proceedings before the opposition division and accordingly, the case should be remitted.

The provision of the primer led to a higher adhesive strength between the front panel and the adhesive layer than existing between the reinforcing member and the adhesive layer. As a result, in the case of fire, the reinforcing member selectively peeled off from the adhesive layer, while the adhesive layer remained attached to the back side of the front panel. Consistent therewith, the time of smoking was shortened and the time of flames occurring could be kept within 10 seconds or fully suppressed (as shown in Example 2). Neither D4 nor D19 pointed to these effects.

Evidence had been submitted by way of D22/D23 that the selection of a suitable primer for bonding an adhesive to a metal substrate was within the skilled person's common general knowledge. D25 should not be admitted; it was filed only during the oral proceedings before the Board, and its disclosure did not go beyond that in D22/D23.

Auxiliary request 5 should be admitted. Only in the course of the oral proceedings had it been understood which feature had to be included into claim 1 to arrive at the argued technical effect. Claim 1 was now clarified with regard to the claimed structural features. The skilled person understood which adhesive should be used.

Auxiliary request 6 should be admitted. Concerning claim 1 of this request, the additionally included features were based on originally filed (and granted) claim 5 and Example 12. No further selections were necessary. This claim was already present as independent claim 11 in auxiliary request 4b, which had been filed some four years previously and no objections against it had been put forward.

Auxiliary request 8 should be admitted into the proceedings. The auxiliary requests had been convergent at the time of their filing. The standard for considering convergency should be the procedural situation at the time of filing the request, not the series of requests which were ultimately considered by the Board.

XI. The arguments of the appellant/opponent may be summarised as follows:

The subject-matter of claim 1 of the main request lacked an inventive step starting from D4, for example in light of the teaching of D19.

The subject-matter of claim 1 differed from the disclosure in D4 only in that the organic adhesive contained a flame retardant. The problem to be solved when starting from D4 was merely the provision of an alternative adhesive composition.

Adhesives having flame retardants were common in the art, as shown for example by D6, D7, D8, D18 and D19. D19 provided data showing the technical effect that arose when a flame retardant was added to an organic adhesive. Table 3 of D19 disclosed various adhesive

compositions containing ammonium polyphosphate as a flame retardant. The data showed that peel strength was improved at high temperatures. The skilled person would be aware that flame retardants could be added to the adhesive composition of D4 and would have done so when looking to provide an alternative composition having the desired effect. Accordingly, the subject-matter of claim 1 lacked an inventive step.

Decreased peel strength at elevated temperature in the patent in suit was mentioned in paragraph 21 only in relation to the adhesive layer being made of an organic adhesive containing ammonium polyphosphate as a flame retardant. There were very distinct mechanisms by which flame retardants worked. No evidence was disclosed for this effect being generally linked to organic adhesives containing flame retardants. No basis for the presence of an inventive step over the whole scope of claim 1 was thus present.

Claim 1 of auxiliary request 2b - and also of auxiliary requests 3b, 4b and 7b - included the feature of a primer layer. The issue of inventive step for a claim 1 including the feature of a primer layer had not been discussed before the department of first instance and, accordingly, the case should be remitted.

D25 Engineered Materials Handbook, Vol 3, Adhesives and sealants, page "primers and coupling agents"

was evidence showing the well-known use of primers and should be admitted into the proceedings. It confirmed what was stated in D23 that it was common general knowledge to apply primer layers when desiring a good adhesive connection. This was thus nothing more than the application of common general knowledge. For

inventive step purposes, the use of a primer had to be considered independently of the feature concerning the presence of a flame retardant. Two independent partial problems thus resulted when starting from D4.

Auxiliary requests 5 and 6 should not be admitted. *Prima facie* there were objections under Articles 84 EPC and 123(2) EPC. Additionally, these requests should have been filed well before the oral proceedings because all objections were known before.

The subject-matter of claim 1 of auxiliary request 6 was based on originally filed claim 5 (identical to claim 5 as granted) and selections taken from example 12. Exactly this combination of features was not clearly and unambiguously disclosed such that Article 123(2) EPC was contravened. Additionally, no request including only this independent claim was previously on file, so there had been no necessity to make detailed objections against a claim with this combination of features.

Auxiliary request 8 was not convergent at least with respect to the preceding requests which the Board had considered. The fact that it may have been convergent at the time of filing was irrelevant. In the course of the proceedings, the insertion of requests preceding it had led to this request shifting the discussion back to broader and different subject-matter. Additionally, the Board had even pointed out the importance of convergency in the proprietor's requests at the very beginning of the oral proceedings. The chosen sequence of requests was contrary to economy of procedure. A further objection against admittance of this request concerned the complete absence of any arguments by the proprietor in writing as to why the subject-matter

claimed should involve an inventive step, such that any arguments for and against it would have to be presented the first time during oral proceedings. There was also no reason for such a late submission.

Reasons for the Decision

1. Inventive step - Main request - Claim 1

D4 represents the closest prior art, as also acknowledged by the parties. It discloses a landing door for an elevator. The door panel contains a front wall and a back wall that are connected to one another by a separable area of glue, which enables relative movement between the two walls under the action of heat (p. 2, l. 24/25). D4 refers to a heat-resistant connection which ensures that the lift door panel does not fall apart in the case of fire and thus remains able to be manipulated in its entirety, but which additionally has connecting means that are provided to release under the action of heat and hence avoid the door or the door panel warping under the action of heat (p. 2, l. 5-10). The heat-releasable connection can be made by glue which is disclosed as being *inter alia* an acrylic adhesive, an epoxy resin, a polyurethane or a cyanoacrylate adhesive (p. 6, l. 20-25).

1.1 Claim 1 differs from the disclosure in D4 by the presence of a flame retardant in the organic adhesive.

- 1.2 In accordance with the problem/solution approach for the assessment of inventive step, the objective technical problem should be defined such that it is actually solved by the distinguishing feature(s). It is also established case law of the Boards that such a solution should solve the problem over the whole scope of the claim.

- 1.3 In the description of the patent in suit, paragraph 10 relates the problem underlying the invention to obtaining a "landing door for an elevator that prevents inflammation or quickly extinguishes it, if inflammation occurs, produces a less amount of smoke, shows a shortened smoking time and is useful as a fire door." All these issues are related to some extent to the absence or presence of a flame retardant.

- 1.4 However, with reference to the wording in the above cited paragraph, the appellant/proprietor argued that improved dimensional stability of the landing door should be considered as the key aspect of the invention.

- 1.4.1 For further evidence in this respect the appellant/proprietor cited paragraph 3 of the patent in suit in which - albeit with regard to the background art - formation of warps in the landing door is referred to. The appellant/proprietor argued that it would not be necessary to refer, in the claim, to the effect of dimensional stability of the landing door because this effect would clearly be related to the adhesive containing a flame retardant. It was thus argued that the skilled person would be aware of this correlation in particular because paragraph 21 relating to embodiment 1 also stated that warping of the front panel was prevented, and in that data for distortion

were given in the Tables related to the experiments. Therefore, according to the appellant/proprietor, the objective technical problem should be formulated in line with that chosen by the opposition division, i.e. as being the provision of a landing door having a reinforcing member attached by an adhesive to a front panel, which landing door showed an enhanced dimensional stability and safety in the event of fire.

- 1.4.2 However, there is no evidence or conclusive data in the patent in suit supporting a dimensional stability of a landing door in particular in relation to its connection to a reinforcement member which is generally related to the presence and amount of a flame retardant composition.

In particular, the corresponding statement in paragraph 21 is not supported by any data or other evidence. Example 1 - which was pointed to in this respect by the proprietor - evaluates whether the reinforcing member was peeled off from the start of heating in the chosen test design (using steel plates having a thickness of 1.6 mm as representing the front panel). It is limited to very specific test conditions (embodiment 1), specific materials (ammonium polyphosphate as a flame retardant) and to a specific amount of flame retardant and thickness of adhesive layer. The relevance of these test data does not go beyond this specific combination.

- 1.4.3 The same applies to the experiments shown in Table 6. Table 6 summarizes results obtained in a procedure according to Example 10 which has to be distinguished from Example 1 in that it evaluates a different type of distortion/warp than the previous examples; its aim is to optimize the adhesive composition concerning its properties of use. Experiments 3-1 to 3-5 shown in

Table 6 are related to curing adhesive compositions each made of two agents and comprising ammonium polyphosphate in the same defined amount and used as a flame retardant. Table 6 however (as stated in the Board's communication item 2.3) does not show that there is a link between the presence of an amount of the flame retardant in the adhesive composition and the degree of distortion, but merely that the degree of distortion, storage elastic modulus and tensile shearing adhesive strength, depend on the compounds selected for the adhesive.

1.4.4 Although the proprietor argued that Table 6 related to obtaining different data than obtained regarding Example 1, Table 6 nevertheless shows that unacceptable distortion occurred in sample 3-1 even when using 45 parts ammonium polyphosphate in each of the first and second agents used as adhesive compounds. The fact that the sheet material for all the results in Table 6 used had a thickness of only 0.3 mm is irrelevant, since claim 1 does not define any thickness of panel and thus includes panels of 0.3 mm thickness.

1.5 Therefore, based on the information available, the Board cannot conclude that a problem related to dimensional stability has been solved - at least not over the whole scope of the claim - in particular in relation to simply any organic adhesive (as covered by the claim) containing any commercially available flame retardant (as also covered by the claim).

1.6 D4 states on page 2, line 5 et seq that "a heat resistant connection" is present which "ensures that the door panel does not fall apart in the case of fire and thus remains able to be manipulated as an entirety". Lines 24 and 25 make it clear that the

connection in D4 is the adhesive connection. The fact that the panel does not fall apart in the case of fire is thus a requirement for stability also under the action of heat.

- 1.7 Thus, when starting from D4 and considering the feature of claim 1 which differs therefrom, the objective technical problem to be solved can only be understood by the Board to be to find a suitable (or alternative) adhesive composition which helps to reduce the occurrence of flames. This problem is also in line with the problem given in paragraph [0010] of the patent, namely when starting from a landing door, to "prevent(s) inflammation".
- 1.8 The use of flame retardants in organic adhesives in order to reduce flames occurring is well-known in the art. D19 confirms this common general knowledge and has as an object the provision of a flame-retardant resin composition.
- 1.9 D19 discloses a resin composition (see e.g. paragraphs 9, 10) which is excellent in flame retardancy, heat resistance, adhesiveness, mechanical performance and thermal stability. The composition is "for use as an adhesive or structural plastics, in particular, for machine parts, electric/electronic parts, or automobile parts.". Still further concerning the use, D19 points in paragraph 26 to the use as a resin for the bonding of, for example, "metal foils such as copper, stainless steel, and aluminium ...". Accordingly, the composition disclosed in D19 clearly teaches a skilled person that it is suitable for application on such surfaces (i.e. metallic or plastics).

- 1.10 The provision of thermal stability is (see above) also what is desired in D4 to allow the door to be manipulated in its entirety. Accordingly, the skilled person starting from the disclosure in D4 and trying to find a suitable adhesive composition would consider the disclosure in D19.
- 1.11 Exemplarily, D19 refers to the use of ammonium polyphosphate as a particularly preferred phosphorous compound for flame retardation (see paragraph 10, final sentence) and exemplifies this by reference to Terraju C60TM of Chisso Corporation in Example 1 and Tables 3, 4. All examples in Table 3 of D19 satisfy the best flame retardancy criteria (which is class V-0).
- 1.12 The assertion of the appellant/proprietor that D19 leads away from the invention in that it concerns a different technical field, is not accepted. As stated above, D19 refers to the use of the flame-retardant resin composition as an adhesive for machine parts (paragraph 10) and explicitly points to the bonding of metal surfaces (paragraph 26). Its object is to provide a resin composition which should be excellent in mechanical performance and thermal stability (paragraph 10). Thus, although there is no reference to elevator technology (e.g. landing doors), the skilled person knows that bonding is mainly affected by the characteristics of the surfaces which are to be connected. Accordingly, the reference in D19 to metallic surfaces is sufficient to instruct the skilled person to use such resin compositions for such purpose. For this reason, the skilled person starting from the disclosure in D4, in light of the only difference in claim 1 compared to D4, and trying to solve the above cited objective problem would indeed contemplate using the resin compositions of D19 and would thus arrive at

the subject-matter of claim 1 without any inventive step being involved (Article 56 EPC).

1.13 Thus, the Board concludes that the subject-matter of claim 1 lacks an inventive step (Article 56 EPC).

2. *Admittance - D25*

2.1 D25 was submitted by the appellant/opponent in order to support its argument that primers and coupling agents are very commonly used when applying an adhesive to a metal surface.

2.2 In accordance with Article 13(1) RPBA it lies within the discretion of the Board to admit any amendment to a party's case after it has filed its grounds of appeal or reply. The exercise of this discretion depends on the facts of each case. In particular, the relevance of a late-filed submission or document as well as the question why it had not been earlier submitted should normally be factors which are taken into account when considering how to exercise this discretion.

2.3 The only reason given by the appellant/opponent for filing D25 during the oral proceedings before the Board was that the document had only been obtained the day before.

2.4 As stated above however, the application of a primer layer was acknowledged by the parties as being well-known when desiring to obtain a strong bonding. Thus, no further evidence was necessary for confirmation of this - in particular since D23, cited by the appellant/proprietor, already provided such an acknowledgement.

2.5 Additionally, the wording in D25 - relating to "virtually all" primer layers having this effect and that primers are used in an "almost axiomatic" manner for bonding - does not go beyond the information given in e.g. D23, because such terminology has no additional meaning when put in the context of the patent in question. The decision as to whether to use a primer, while as such obviously very common, will always depend on the specific field of application. Accordingly, D25 is no more relevant than D23.

2.6 Thus, the Board exercised its discretion under Article 13(1) RPBA not to admit D25 into the proceedings.

3. *Request for remittal concerning the auxiliary requests*

3.1 Under Article 111(1) EPC the Board of Appeal may either decide on the appeal or remit the case to the department which was responsible for the decision appealed. The appropriateness of a remittal is decided by the Board on the merits of the particular case. There is no absolute right to have every issue decided upon by two instances. Further, the criteria which can be taken into account when deciding on a remittal include the parties' requests, the general interest that proceedings are brought to a close within an appropriate period of time and whether or not there has been comprehensive assessment of the case during the proceedings.

3.2 The evaluation of inventive step of the subject-matter of claim 1 of the main request already took account of the disclosures in D4 and D19, and these documents had already been discussed in detail. Further, in regard to the auxiliary requests, claim 1 of the requests on file (excluding auxiliary request 8) all relate to use of a

primer. This however was already made part of the opponent's grounds of appeal (see e.g. item 51 thereof), as well as referred to in the communication of the Board preceding the oral proceedings (see point 4.2 thereof), such that there had been opportunity for comprehensive assessment of this case during the proceedings - which opportunity had also been taken (see reply to appeal, item 3.2.1 and letter of 22 December 2017, point 5) - and remittal is not appropriate for consideration of such requests at least for this reason.

3.3 Accordingly, rather than remitting the case to the opposition division to consider claim 1 of the auxiliary requests with regard to the matter of inventive step - in particular in the framework of D4 and D19 and the arguments already present concerning the user of a primer -, the Board finds it appropriate to deal with the requests and in particular the issue of inventive step.

3.4 Thus the Board, in exercising its discretion under Article 111(1) EPC, finds that the case can be dealt with directly and a further prolongation of the proceedings is not justified. The request for remittal is thus rejected.

4. *Auxiliary request 2b*

4.1 Claim 1 includes, in addition to claim 1 of the main request, the feature "further comprising a primer layer (25) provided between the adhesive layer and the front panel."

4.2 A primer layer is generally applied in the art in order to increase the adhesive strength between the adhesive

and the surface to which it is bonded. For evidence of this, the appellant/proprietor had itself submitted D22a/b as well as D23. The skilled person well knows that primers are usually applied for bonding of, in particular, metal or plastic surfaces. They are applied in order to ensure that the adhesive layer remains more securely fixed on the surface.

4.3 This effect is completely independent of the effect of a flame retardant which might be included in the adhesive composition. Accordingly, the feature of the provision of a primer layer represents a feature which has to be assessed with regard to its inventive concept independently thereof. In other words, starting from D4, two partial problems can be identified when using the problem/solution approach; the first as identified in regard to the main request and the second concerning the use of a primer.

4.4 Thus, the objective technical partial problem to be solved concerning the use of a primer relates to the provision of a firm and strong bonding of the adhesive connection between the reinforcement member and the front panel. The use of a primer as defined in the claim has exactly this function. Thus, the use of a primer in claim 1 is simply employing known properties of a primer to a particular application. In D4, although not stated, it would be obvious to use a primer exactly for its known purpose with known effects.

4.5 The appellant/proprietor argued that the problem to be solved concerned a shorter smoking time. However, the data in the patent in suit do not provide any evidence for the general shortening of smoking time due to the application of a primer. Although there is disclosed a

decreased smoking time (7 min) in example 2 using a primer layer when compared with smoking time in example 1 (11 min) without using a primer layer, this effect is only shown in relation to a specific primer layer (formed by coating the backside of the front panel with a 3 % solution whose main component was a hydrated organic phosphoric acid compound). Mainly in view of examples 3 and 4, the examples 1/2 cannot be understood to allow such a generalization : Examples 3 and 4 demonstrate that the smoking time (7 min in both examples) does not differ with or without a primer layer when also having a thermoplastic resin layer on the bonding part of the reinforcing member. Hence, other factors influence the smoking time and these are undefined. In any case, any such effect can only be regarded as a secondary or bonus effect since the use of a primer itself in D4, in the manner claimed, is already obvious due to the reason given in 4.4 above. Accordingly, this partial problem alleged by the proprietor to have been solved has not been taken into account.

4.6 The application of the primer layer on the metallic surface (underlying the understanding that the rear side of the front panel usually consists of such material) - leads a skilled person inevitably to the primer layer at least being provided between the adhesive layer and the front panel.

4.7 Accordingly, the skilled person desiring to improve/promote good adhesion between the reinforcing member and the front panel, would apply a primer on the metallic surface of the front panel. The position of the primer layer such as defined in claim 1 is the one which usually applies. Hence, the application of the

primer between the adhesive layer and the front panel is found to be obvious.

- 4.8 Thus, the partial problem is solved in an obvious manner by the user of primer as defined in the claim. The subject-matter of claim 1 therefore does not involve an inventive step (Article 56 EPC) and auxiliary request 2b is consequently not allowable.

5. *Auxiliary requests 3b, 4b and 7b*

Claim 1 of auxiliary requests 3b, 4b and 7b is identical to claim 1 of auxiliary request 2b. Accordingly, the finding set out above (see point 4) applies equally to the subject-matter of claim 1 of all these requests. Although the appellant/proprietor was given the opportunity to comment on these requests, it chose to remain silent on these but to maintain them anyway. Hence, the Board finds that these requests are not allowable either for the reasons already given.

6. *Auxiliary request 5*

- 6.1 Claim 1 of this request differs from claim 1 of auxiliary request 2b (and 3b, 4b and 7b), in that a feature was added which concerns the function of the primer ("wherein the primer increases the adhesive strength between a metal bonding part on the backside of the front panel and the adhesive, wherein the provision of the primer layer (25) makes the adhesive strength between the front panel (21) and the adhesive layer (23) higher than that between the reinforcing member (22) and the adhesive layer (23)").

- 6.2 This request was filed during the oral proceedings, hence at the latest possible stage in the proceedings.

According to Article 13(1) RPBA, it is at the discretion of the Board to admit any amendment to a party's case after it has filed its grounds of appeal or reply. In order to be admitted at such a late stage of proceedings, for reasons of procedural economy, such a request should normally be *prima facie* allowable at least in the sense that it overcomes the objections raised and does not give rise to new objections.

6.3 The appellant/proprietor argued that the request should be admitted as it was a reaction to the developments during the oral proceedings. This argument is not persuasive.

6.4 The request could and should have been filed earlier, the filing did not depend on any development during the oral proceedings. An objection concerning the issue of no disclosure being present for a controlled peeling of the reinforcing member was already expressed in the communication of the Board in which it had given its preliminary opinion. In its communication (see point 4.2 thereof), the Board had already indicated that no disclosure appeared to be present which gave support for any effect applying generally and independently of structural or application characteristics of a primer layer.

6.5 The appellant/proprietor argued that a basis for the added functional wording was present in originally filed paragraphs 27 to 30 and Figure 3.

6.6 The now generally claimed connection, which "makes the adhesive strength between the front panel (21) and the adhesive layer (23) higher than that between the reinforcing member (22) and the adhesive layer (23)" is a function which is disclosed (see paragraph 30)

however in relation only to embodiment 2 shown in Figure 3. This embodiment refers to a landing door which is produced by coating a primer to a small thickness on a bonding part, notably on the backside of the flat panel section 21a of the front panel 21. Figure 3 shows two bonding parts and a reinforcement member of a particular design. No structural (material) or application (extent/amount of application) characteristics of the reinforcing member or the adhesive layer are further, or in any way even generally, specified. However, in order to clearly result in the claimed connection, further structural and application characteristics would evidently need to be specified, such as for example the material characteristics of suitable combinations of primer and adhesive and the relative extension of the area to which the adhesive (and thus the primer and the reinforcing member) is to be applied. The position, extension and design of the "metal bonding part[s]" would also need to be defined since these features significantly influence the time for peeling off of the reinforcing member. This is technically apparent by the reference in paragraph 30 to a suitable combination which is exemplarily given as consisting of hydrated organic phosphoric acid compound that can increase the adhesive strength of, not just any adhesive, but an acrylic adhesive with the metal.

6.7 Accordingly, there is no disclosure of the connection now defined in claim 1, in particular such a connection which is independent of the specific combination of components mentioned. Thus the amendment results in subject-matter which at least *prima facie* contravenes the requirement of Article 123(2) EPC.

6.8 Additionally, the introduced features define a result to be achieved. It is evident to a skilled person that adhesive strength depends further on material characteristics which are not defined. In the absence of any limitation concerning the material characteristics of the reinforcing member and the adhesive for example, the strength of the connection between the reinforcing member and the adhesive could even be stronger than the connection between the primer and the adhesive. Thus the structural features of the connection are not clearly defined. Accordingly, the additional feature relates to the function of an unspecified primer layer, unspecified adhesive material and unspecified material and design of the reinforcing member. Thus, not only is there a contravention of Article 123(2) EPC, but the necessary structural features of the connection are not clearly defined, contrary to the requirement for the claim to be clear (Article 84 EPC).

6.8.1 Accordingly, at least *prima facie* this amendment does not lead to an allowable claim and the Board thus exercised its discretion under Article 13(1) RPBA not to admit auxiliary request 5 into the proceedings.

6.9 As a consequence of the foregoing, it was not necessary to further consider the issue of two independent claims being included in this request or whether the amendments were occasioned by a ground for opposition under Article 100 EPC and thus whether the requirements of Rule 80 EPC were fulfilled.

7. *Auxiliary request 6*

7.1 This request was also filed during the oral proceedings. Accordingly, the above considerations under point 6.2 apply equally.

7.2 The wording of the claim concerning the organic adhesive was amended to read:
"the organic adhesive contains a thermoplastic resin composition containing
(1) a radical polymerizable vinyl monomer,
(2) a polymerization initiator being an organic peroxide,
(3) a reducing agent, which reacts with the polymerization initiator to generate radicals, and
(5) optionally an elastomer component;
said flame retardant is (4) a phosphoric acid salt selected from polyphosphates; and
the amount of the phosphoric acid salt used is 30-75 parts per mass, per 100 parts by mass of said resin composition containing components (1), (2), (3) and optionally (5)."

7.3 Due to this wording, the organic adhesive is not limited to the defined thermoplastic resin composition but only has to contain it.

7.4 For a basis in the application as filed (with regard to the requirement of Article 123(2) EPC), the appellant/proprietor referred to originally filed claims 1 and 5 and Example 12. However, neither these claims nor Example 12 refer to an organic adhesive which contains a thermoplastic resin composition containing the components (1) to (5) as defined in claim 1. The wording of claim 1 allows the organic adhesive even to

contain (in addition) other thermoplastic resin compositions.

- 7.5 No disclosure of such general scope is present in the originally filed application.
- (a) Claim 1 as filed refers generally to "an adhesive layer made of an organic adhesive containing a flame retardant".
 - (b) Claim 5 as filed is dependent on claim 1 and specifies the organic adhesive such that it contains a polymerizable vinyl monomer, a polymerization initiator, a reducing agent and the flame retardant and defines for the amount of flame retardant a range of from 25 to 75 parts per 100 parts of the other components.
 - (c) Example 12 (in combination with the references to Example 10) indicates a specific example of the organic adhesive containing a flame retardant.
- Accordingly, while there may be a basis for an "organic adhesive" containing such a combination of features, there is no basis for an organic adhesive which contains a thermoplastic resin composition containing such a combination of features.
- 7.6 The appellant/proprietor referred in this respect mainly to Example 12 as set out under item (c) above. Example 12 concerns (page 63, line 1 to page 66, line 3) a specific example of the organic adhesive which contains a resin composition containing the compounds set out under point 7.2 (1) to (5) above. Concerning the material and use amount of the polymerizable initiator and of the reducing agent, Example 12 refers to the information given in Example 10 (page 63, line 11 - 14). Concerning the phosphoric acid salt which is used as a flame retardant, in Example 12 ammonium polyphosphate is the more preferred compound and it

should be used with a thermosetting resin when its particle surface is chemically untreated or micro-encapsulated (page 64, lines 3-6 and page 66, line 2).

- 7.7 Consistent therewith, Example 10, see page 31, lines 1 to 9 therein, refers to the use of the same flame retardant (ammonium polyphosphate) and the use in the claimed range in relation to a thermosetting resin composition. No part of the application as filed relates the combination of the compounds specifically defined in items (1) to (5) of claim 1 to a thermoplastic resin composition.
- 7.8 Accordingly, the specific combination of features of claim 1 does not result from a clear and unambiguous disclosure in the content of the application as originally filed, but instead is a non-disclosed selection which is at least *prima facie* not allowable under Article 123(2) EPC.
- 7.9 In terms of its admittance into the proceedings, the reference of the appellant to auxiliary request 4b as already including this subject-matter in its claim 11 is as such correct. It has to be noted in this context, however, that no written arguments with regard to this claim (i.e. this specific combination of features) - either as regards their basis in the application as filed, nor as to how they would contribute to an inventive step - were ever given.
- 7.10 Furthermore, in view of the preceding requests consistently including a differently worded claim 1, no necessity existed to consider this additional independent claim further, in that this subject-matter had never been separately pursued (i.e. in the form of a sole independent claim). Accordingly, it would be the

first time during the oral proceedings that this subject-matter would have to have been considered in detail. The need for procedural economy as set out in Article 13(1) RPBA is thus not met.

7.11 Accordingly, the Board exercised its discretion under Article 13(1) RPBA not to admit auxiliary request 6 into the proceedings.

8. *Auxiliary request 8*

8.1 Auxiliary request 8 was filed in reply to the communication of the Board. According to Article 13(1) RPBA, it lies within the discretion of the Board to admit any amendment to a party's case after it has filed its grounds of appeal or reply. In order to be admitted, the current state of the proceedings and the need for procedural economy are to be considered when exercising this discretion.

8.2 Although the actual numbering of auxiliary request 8 has not been altered, the sequence of the auxiliary requests has been changed markedly in the course of the appeal proceedings, in particular the oral proceedings, thus involving an amendment of the case which the Board had to deal with. In particular, the sequence of the requests has been changed during the oral proceedings such that new auxiliary requests 5 and 6 were introduced notably preceding auxiliary requests 7b and 8.

8.3 Although the Board did not require re-numbering of the requests, for the sake of simplicity for all involved, the selected sequence of the auxiliary requests leads to an evident lack of convergency in the requests (e.g. features in preceding auxiliary requests 2b, 3b, 4b, 5,

7b concerning the primer layer and in preceding auxiliary request 6 concerning the thermoplastic resin composition (now in claim 1 of auxiliary request 8) having been removed in those preceding requests). Such a change in the course of the proceedings does not meet the requirement for procedural economy as set out in Article 13(1) RPBA.

8.4 The fact that auxiliary request 8 may have been convergent with other requests on file at the time of filing, is not relevant. Convergency of the requests is not bound to the date of filing of a request. In view of the large number of requests submitted before the oral proceedings, the Board had already alerted the appellant/proprietor at the very beginning of the oral proceedings to the (non-)convergency of the claim requests should the main request fail. Hence, the appellant/proprietor was aware of this issue but chose to withdraw some of the auxiliary requests and to submit, during the oral proceedings, new auxiliary requests 5 and 6 as requests preceding auxiliary request 8. The deletion of features which were already discussed shifts the case back to broader and indeed entirely different subject-matter.

8.5 A further objection to admittance of this request was related to the complete absence of any arguments so far as to why the subject-matter of claim 1 of this request should be inventive. Any arguments concerning inventive step of the features of this claim 1 would have to have been presented for the first time during oral proceedings. At such a late stage of the proceedings, the first presentation of arguments in this respect cannot be considered as underlying an appropriate economy of procedure.

8.6 Accordingly, the Board exercised its discretion under Article 13(1) RPBA not to admit the request into the proceedings.

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:



M. H. A. Patin

M. Harrison

Decision electronically authenticated