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Datasheet for the decision of 1 March 2017

Case Number: T 0568/14 - 3.3.09

Application Number: 06825328.5

Publication Number: 1928942

IPC: C08J7/04, C08L75/04

Language of the proceedings: EN

Title of invention:
ANTI-FROST FILM ASSEMBLIES, METHOD OF MANUFACTURE, AND ARTICLES MADE THEREOF

Patent Proprietor:
SABIC Global Technologies B.V.

Opponent:
SDC Technologies, Inc.

Headword:

Relevant legal provisions:
EPC Art. 100(b), 54, 56, 84, 123(2)
RPBA Art. 12(2)

Keyword:
Clarity in opposition proceedings
Added subject-matter
Sufficiency of disclosure
Novelty
Inventive step
Admission of inventive step attack
Admission of claim request

Decisions cited:
G 0003/14, T 0253/06, T 1732/10, T 1784/14, R 0017/11

Catchword:

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Beschwerdekammern
Boards of Appeal
Chambres de recours

European Patent Office
D-80298 MUNICH
GERMANY
Tel. +49 (0) 89 2399-0
Fax +49 (0) 89 2399-4465

Case Number: T 0568/14 - 3.3.09

D E C I S I O N
of Technical Board of Appeal 3.3.09
of 1 March 2017

Appellant: (Patent Proprietor)	SABIC Global Technologies B.V. Plasticslaan 1 4612 PX Bergen op Zoom (NL)
Representative:	Stiebe, Lars Magnus Balder Paseo de la Castellana 93, 5 28046 Madrid (ES)
Appellant: (Opponent)	SDC Technologies, Inc. 45 Parker Suite 100 Irvine, CA 92618 (US)
Representative:	Barton, Matthew Thomas Forresters Skygarden Erika-Mann-Strasse 11 80636 München (DE)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 23 January 2014 concerning maintenance of the European Patent No. 1928942 in amended form.**

Composition of the Board:

Chairman	W. Sieber
Members:	M. O. Müller
	I. Beckedorf

Summary of Facts and Submissions

I. This decision concerns the appeals filed by both the opponent and the patent proprietor against the decision of the opposition division finding that European patent No. EP 1 928 942 as amended met the requirements of the EPC.

II. With the notice of opposition the opponent had requested revocation of the patent in its entirety on the grounds under Article 100(a) (lack of novelty and inventive step), 100(b) and 100(c) EPC.

The documents submitted during the opposition proceedings included:

D1: US 2005/0064101 A1;

D2: WO 2003/092448 A1;

D3: WO 2004/013063 A1;

D4: US 5,877,254 A;

D5: US 5,262,475 A;

D6: US 4,467,073 A;

D14: Technical information sheet "Visgard® Fog Free Film" from Film Specialties, Inc., July 2003, 4 pages;

D18: First declaration by Mr W. S. Creasy, signed 7 January 2011, including documents D18A to D18D;

D20: Second declaration by Mr Creasy, signed 22 August 2011; and

D20A: Letter of Mr G. H. Gumpert dated 1 May 1987.

III. The opposition division's decision was based on the claims as granted (main request) and auxiliary requests 1 and 2.

The claims as granted comprise two independent claims 1 and 14, which read as follows:

"1. A condensation resistant article comprising:

a transparent substrate having a first surface;

an anti-frost film assembly (110) comprising

a transparent film (130) having a first surface (132) and a second surface (134) opposite the first surface (132); and

a transparent anti-frost layer (120) formed from a polyurethane-film forming composition effective to provide the layer with anti-frost properties at temperatures that alternate between -23°C and 65°C, wherein the anti-frost layer is disposed on an area of the first surface of the film;

wherein an installation solution had been applied between the anti-frost film and the substrate, and wherein, when applied, the installation solution comprised 50 vol% to 70 vol% water, 10 vol% to 40 vol% alcohol, 2 vol% to 8 vol% wetting solution, and less than or equal to 3 vol% salt."

"14. A method of producing a condensation resistant article, comprising:

applying an installation solution between a transparent anti-frost assembly and a substrate, wherein the installation solution comprises 50 vol% to 70 vol% water, 10 vol% to 40 vol% alcohol, 2 vol% to 8 vol% wetting solution, and less than or equal to 3 vol% salt;

applying the transparent anti-frost layer (110) to the substrate, wherein the transparent anti-frost assembly (110) comprises

a transparent film (130) having a first surface (132) and a second surface (134) opposite the first surface (132); and

a transparent anti-frost layer (120) formed from a polyurethane-film forming composition comprising a surfactant having an isocyanate-reactive moiety and a hydrophobic region and a hydrophilic region effective to provide the layer with anti-frost properties at temperatures that alternate between -23°C and 65°C, wherein the anti-frost layer is disposed on an area of the first surface of the film."

According to the opposition division, the main request was sufficiently disclosed since the anti-frost properties required by claim 1 could be obtained by the skilled person with the information given in the patent. However, the subject-matter of claim 1 of the main request lacked novelty over D1.

Claim 1 of auxiliary request 1 read as follows (amendments to claim 1 as granted underlined):

"1. A condensation resistant article comprising:

a transparent substrate having a first surface;

an anti-frost film assembly (110) comprising

a transparent film (130) having a first surface (132) and a second surface (134) opposite the first surface (132); and

a transparent anti-frost layer (120) formed from a polyurethane-film forming composition effective to provide the layer with anti-frost properties at temperatures that alternate between -23°C and 65°C, wherein the polyurethane film forming composition is a polyisocyanate-containing component, an active hydrogen-containing component reactive with the polyisocyanate-containing component, and a hydroxyl-bearing surfactant having a hydrophobic region, and a hydrophilic region or a polyisocyanate prepolymer having reactive isocyanate groups, a hydrophilic polyol, and a hydroxyl-bearing surfactant having a hydrophilic region and a hydrophobic region, wherein the anti-frost layer is disposed on an area of the first surface of the film;

wherein an installation solution had been applied between the anti-frost film and the substrate, and wherein, when applied, the installation solution comprised 50 vol% to 70 vol% water, 10 vol% to 40 vol% alcohol, 2 vol% to 8 vol% wetting solution, and less than or equal to 3 vol% salt."

According to the opposition division, auxiliary request 1 met the requirements of Rule 80 EPC, Articles 123(2) and (3) EPC and 83 EPC and furthermore was novel over D1 and the alleged public prior use. However, the subject-matter of claim 1 was not inventive in view of D1 in combination with D3.

Claim 1 of auxiliary request 2 read as follows (amendments to claim 1 as granted underlined):

"1. A condensation resistant article comprising:

a transparent substrate having a first surface;

an anti-frost film assembly (110) comprising

a transparent film (130) having a first surface (132) and a second surface (134) opposite the first surface (132); and

a transparent anti-frost layer (120) formed from a polyurethane-film forming composition effective to provide the layer with anti-frost properties at temperatures that alternate between -23°C and 65°C, wherein the anti-frost layer is disposed on an area of the first surface of the film, and wherein the anti-frost film assembly further comprises an adhesive layer (140) on an area of the second surface (134) of the film, wherein said adhesive layer allows the assembly to be repositioned on a substrate;

wherein an installation solution had been applied between the anti-frost film and the substrate, and wherein, when applied, the installation solution comprised 50 vol% to 70 vol% water, 10 vol% to 40 vol% alcohol, 2 vol% to 8 vol% wetting solution, and less than or equal to 3 vol% salt."

According to the opposition division, auxiliary request 2 met the requirements of Rule 80 EPC, Articles 123(2) and (3) EPC, 84 EPC, 83 EPC, 54 EPC and 56 EPC.

IV. Appeals were filed by both the proprietor and the opponent. As the proprietor and the opponent are thus each appellant and respondent in the present appeal proceedings, for simplicity the board will continue to refer to them as the proprietor and the opponent.

V. In the written appeal proceedings, the proprietor filed:

Auxiliary requests 1 to 6 (already submitted with letter of 11 November 2013 in the opposition proceedings);

Auxiliary requests 2A and 3A (letter dated 2 February 2017);

D22: Internet printout "Film Installation Guidelines" from Madico, 1 page;

D23: Printout from the website of Franklin Adhesives and Polymers, 2 pages.

VI. The opponent filed the following documents

A1: Internet archive webpage relating to "Visgard® Anti-Fog Films", 2 pages;

A2: Internet archive webpage relating to "Visgard® Dual Coating", 2 pages;

A3: Extract from "Pressure-Sensitive Adhesives and Applications", second edition, revised and expanded by I. Benedek, Marcel Dekker Inc., 2004, 1 page;

A4: WO 2004/048124 A2;

A5: Extract from FGMA "Glazing Manual 1990 Edition", 12 pages;

AD18b: Internet archive webpage relating to "News - GE Structured Products and Film Specialties Announce Agreement on Coated Sheet and Film Products", 1 page;

D24: Third declaration by Mr Creasy, signed on 16 September 2014; and

D25: Larousse, Dictionary of Science and Technology, 1988, 4 pages.

VII. With its communication dated 23 August 2016, the board issued its preliminary opinion in which it observed *inter alia* that D14 might be novelty-destroying.

VIII. During the written appeal proceedings, the parties made *inter alia* the following supplementary requests, which

were modified or withdrawn during the oral proceedings (see point IX below):

- Opponent:

  - reimbursement of the appeal fee due to two substantial procedural violations having been committed by the opposition division, firstly by not giving any reason why claim 14 of the main request met the requirements of Article 83 EPC, and secondly by disregarding Mr Creasy's declared evidence without giving reasons in its decision;

  - hearing of Mr Creasy as a witness on the alleged public prior use.

- Proprietor:

  - non-admission of A1 to A5, AD18b and D2 to D6;

  - refusal of the attempt to reintroduce the alleged public prior use at the appeal stage.

IX. On 1 March 2017, oral proceedings took place before the board, during which

the opponent

- withdrew its request for reimbursement of the appeal fee since the opposition division had not given any reason why claim 14 of the main request met the requirements of Article 83 EPC; and

- specified that the request that Mr Creasy be heard as a witness on the alleged public prior use meant

that he be heard regarding the publication date of D14;

the proprietor

- withdrew its request that documents A1 to A5, AD18b and D2 to D6 not be admitted into the proceedings;

- requested that the opponent's new inventive-step attack on the basis of D14 as the closest prior art not be admitted into the proceedings; and

- accepted that the documents cited in the opposition proceedings as regards the alleged public prior use were in the proceedings and specified that its request that the attempt to reintroduce the alleged public prior use at the appeal stage be refused was a request to the effect that any new facts and evidence that extended over those invoked as regards the alleged public prior use during the opposition proceedings not be admitted into the proceedings.

X. The main request and auxiliary requests 1 and 2 are identical to the corresponding requests before the opposition division (see point III above).

Apart from other amendments, claim 1 of auxiliary requests 2A, 3 and 3A contains the same amendment as claim 1 of auxiliary request 2 (see underlined portion in point III above).

The claims of auxiliary request 4 differ from the granted claims only by the deletion of claims 1 to 13.

The claims of auxiliary request 5 differ from those of auxiliary request 4 in that in claim 1 the substrate has been defined as a "a glass substrate, wherein said substrate is a refrigerated panel".

Auxiliary request 6 is not relevant to the present decision.

XI. So far as relevant to the present decision, the opponent's arguments can be summarised as follows:

Main request

- The invention as defined in the main request was insufficiently disclosed. Claim 1 referred to polyurethanes in general and it was inconceivable that all polyurethanes had the claimed anti-frost effect. Furthermore there was no teaching as to how to select appropriate polyurethanes that gave this effect, and the examples of the patent were not according to the claims, so that the burden of proof already initially lay on the proprietor to show that the patent was sufficiently disclosed.

- The subject-matter of claim 1 lacked novelty over D14, which disclosed all features of claim 1 except for the installation solution, which however was not limiting for claim 1. Contrary to the proprietor's assertion, this document had been made public before the priority date of the opposed patent, as evidenced by the date printed on it and the fact that it was aimed at users. This was confirmed by declarations D18 and D20 from Mr Creasy. The handwritten amendments contained in D14 did not imply that D14 was a draft that had possibly never been published. On the contrary,

they had been made for a second publication in 2007, as shown by D20.

- The subject-matter of claim 1 furthermore lacked novelty over D1.

Auxiliary request 1

- For the same reasons as given with regard to the main request, the invention as defined in auxiliary request 1 was insufficiently disclosed.

- The subject-matter of claim 1 furthermore lacked novelty over a combination of D14 with D4.

- The subject-matter of claim 1 was not inventive over D14 as the closest prior art, from which it differed in terms of the type of surfactant. More specifically, the selection of a surfactant as claimed was obvious, since it was hinted at in D4.

Auxiliary request 2

- Claim 1 had been amended so that the anti-frost film assembly further comprised an adhesive layer that allowed the assembly to be repositioned on the substrate. This feature could be objected to under Article 84 EPC, since it was not present in any of the granted claims. It lacked clarity, since it represented a result to be achieved and because it was not clear which of the adhesives disclosed in the description of the patent fell under the definition of claim 1. Furthermore, it was not clear whether the repositionability was permanent or only lasted until a drying step.

- The subject-matter of claim 1 lacked novelty over D14, which disclosed pressure-sensitive adhesives which allowed repositioning.

Auxiliary request 4

- Auxiliary request 4 should not be admitted into the proceedings, since it diverged from the higher-ranking auxiliary requests and had never been commented on by the proprietor.

- The invention as defined in claim 1 of this request was insufficiently disclosed, since the patent did not provide any information as to how to attach the anti-frost film assembly to the substrate without adhesive.

- The subject-matter of claim 1 lacked inventive step over D14. The first distinguishing feature was the type of surfactant which, for the same reasons as with regard to auxiliary request 1, was obvious in view of D4. The second distinguishing feature was that the installation solution in claim 1 had to contain an alcohol, which was absent from D14. The problem solved thereby was to prevent the installation solution from freezing. However it had been commonly known before the priority date that this problem could be solved by the addition of an alcohol.

Auxiliary request 5

- The feature of a refrigerated panel introduced into claim 1 lacked clarity. In view of paragraph [0037] of the patent it was in particular not clear whether this meant a cold or warm surface.

- This feature furthermore did not comply with Article 123(2) EPC, since the application as filed nowhere disclosed the provision of an installation solution on a surface that was refrigerated and hence cold. Contrary to the proprietor's assertion, the first sentence of the first full paragraph on page 13 did not provide a basis, since the refrigerated panels disclosed therein could be warm in view of the definition given in the preceding paragraph bridging pages 12 and 13.

- The subject-matter of claim 1 lacked inventive step in view of D14 as the closest prior art. The additional distinguishing feature, namely the type (temperature) of substrate, was an arbitrary choice and thus could not contribute to inventive step.

XII. So far as relevant to the present decision, the proprietor's arguments can be summarised as follows:

Main request

- The invention as defined in the main request was sufficiently disclosed. Contrary to the opponent's assertion, claim 1 did not cover polyurethane film-forming compositions in general but only those that were effective in providing the required anti-frost properties. Also contrary to the opponent's assertion, the description and working examples of the patent provided sufficient guidance to identify appropriate polyurethane film-forming compositions. The fact that the examples were not according to the claims did not matter since the difference to the claims did not reside in the polyurethane film-

forming compositions but in the installation solution.

- D14 was not novelty-destroying for the subject-matter of claim 1. The opponent had not proven that D14 was public before the priority date of the patent. Declarations D18 and D20, on which the opponent was relying, were not credible since Mr Creasy had made an erroneous statement and was therefore not trustworthy. Furthermore, D14 contained handwritten amendments so that it seemed to have been a draft that possibly had never been made public. Lastly, D14 did not disclose the presence of an installation solution as required by claim 1.

Auxiliary request 1

- The opponent's inventive-step attack on the basis of D14 should not be admitted into the proceedings, since it had been filed for the first time during the oral proceedings.

Auxiliary request 2

- The amendment that the anti-frost film assembly further comprised an adhesive layer that allowed the assembly to be repositioned on the substrate could not be objected to under Article 84 EPC, since it came from granted claim 7. Furthermore, it was clear that it meant that the adhesive allowed repositioning on the substrate only initially, up to the point in time at which it was dried, as set out in paragraph [0038] of the patent.

Auxiliary request 4

- This request should be admitted into the proceedings. Contrary to the opponent's assertion, it did converge since in the higher-ranking auxiliary requests the product claims had been limited more and more and had now been deleted entirely. The fact that no explanation had been given during the written proceedings as to why this request overcame the opponent's objections did not prejudice admissibility either. It was in particular self-evident that the deletion of all product claims avoided the opponent's objection that the installation solution cited therein was not limiting.

- The invention defined in this request was sufficiently disclosed. Contrary to the opponent's assertion, the anti-frost film assembly could adhere to the substrate without adhesive by way of, e.g., static interactions.

- The subject-matter of claim 1 was inventive. It differed from the closest prior art D14 in that the installation solution contained an alcohol. This solved the problem of providing a method of applying an anti-frost film assembly to a substrate, such as a refrigerator panel, with the help of an installation solution, without frost forming in the installation solution, even though the refrigerator was kept in operation and thus its panel was cold. Even though it was true that it had been known before the priority date that freezing could be avoided by the addition of alcohol, it would not have been obvious to add alcohol to the installation solution of D14, since this document

was not about applying installation solutions to cold surfaces.

Auxiliary request 5

- The term "refrigerated panel" introduced by amendment into claim 1 was clear in itself; it meant that the panel was cold. This was not changed by the passage in the description the opponent was relying on.

- The amended term was furthermore based on the application as filed, in particular the first sentence of the first full paragraph on page 13. The passage referred to by the opponent in the paragraph bridging pages 12 and 13 defined a refrigerator rather than a refrigerated panel and thus was not linked to the disclosure in the first sentence of the first full paragraph on page 13.

- The subject-matter of claim 1 was inventive in view of D14 as the closest prior art. It differed from this document in that the installation solution contained an alcohol and in that it was applied to a panel that was cold. The problem solved by the subject-matter of claim 1 was the same as for auxiliary request 4. There was no hint whatsoever in the prior art to apply an installation solution to a cold panel and to add alcohol to avoid frosting.

XIII. The proprietor requested that

- the decision under appeal be set aside and

- that the patent be maintained as granted (main request); or

- in the alternative, that the patent be maintained in amended form on the basis of the set of claims filed as auxiliary request 1 with letter dated 11 November 2013; and

that the opponent's appeal be rejected as inadmissible as regards its objections to claims 14 and 15 for lack of sufficiency of disclosure; or

- in the alternative, that the opponent's appeal be dismissed, i.e. that the patent be maintained in amended form on the basis of auxiliary request 2 found by the opposition division in its decision to meet the requirements of the EPC and filed with letter dated 11 November 2013; or

- in the further alternative, that the patent be maintained in amended form on the basis of one of the sets of claims filed as:

  - auxiliary request 2A with letter dated 2 February 2017;

  - auxiliary request 3 with letter dated 11 November 2013;

  - auxiliary request 3A with letter dated 2 February 2017;

  - auxiliary requests 4 to 6 with letter dated 11 November 2013;

- that any new facts and evidence that extended over those invoked as regards the alleged public prior use during the opposition proceedings not be admitted into the proceedings;

- that the opponent's request be dismissed that Mr Creasy be allowed to speak as a technical expert or be heard as a witness on the alleged public prior use.

XIV. The opponent requested

- that the proprietor's appeal be dismissed; and

  that the decision under appeal be set aside;

  and that European patent No. 1 928 942 be revoked;

- that auxiliary requests 2A, 3, 3A and 4 to 6 not be admitted into the proceedings; and

- that Mr Creasy be heard as a witness on the publication date of D14 or be allowed to speak as a technical expert;

- that the appeal fee be reimbursed, since the opposition division, in violation of the opponent's right to be heard, had disregarded Mr Creasy's declared evidence without giving reasons in its decision.

Reasons for the Decision

Main request (claims as granted)

1. Sufficiency of disclosure

1.1 Claim 1 is directed to a condensation-resistant article comprising

- a transparent substrate and
- an anti-frost film assembly (110) comprising
  - a transparent film (130) and
  - a transparent anti-frost layer (120) formed from a polyurethane film-forming composition effective to provide the layer with anti-frost properties at temperatures that alternate between minus 23°C and 65°C.

Claim 14 refers to a process for producing such an article (for the detailed wording of claims 1 and 14, see point III above).

1.2 The proprietor requested that the opponent's appeal be rejected as inadmissible as regards its insufficiency objections to claims 14 and 15. During the oral proceedings the board decided to refuse this request. Since the board however does not find these objections convincing (points 1.3 to 1.6 below), there is no need to deal with the issue of admissibility in more detail.

1.3 The opponent argued that claims 1 and 14 referred to polyurethane film-forming compositions in general and

that it was inconceivable that all polyurethane film-forming compositions had the required anti-frost properties.

The board does not agree. Claims 1 and 14 do not cover polyurethane-film forming compositions in general, but only those that are effective in providing anti-frost properties at certain temperatures.

1.4 The opponent further argued that there was no teaching in the patent which allowed the skilled person to identify suitable polyurethane film-forming compositions which would provide the required anti-frost properties. It would thus be an undue burden for the skilled person to select appropriate polyurethane film-forming compositions.

1.4.1 The board does not agree with that either. The patent discloses in paragraph [0014] that the polyurethane may comprise a surfactant having a hydrophobic and hydrophilic region and that such a structure makes it possible to reduce the interfacial tension between the surface of the anti-frost layer and the condensing moisture, thereby enhancing anti-frosting. Thereafter, in paragraphs [0023] and [0024], it discloses specific isocyanate and polyol components to be used for the polyurethane film-forming composition. It describes *inter alia* a composition comprising the hydrophilic polyol Visgard® part A and the isocyanate prepolymer Visgard® part B. This composition is also used in the working examples of the patent (table I on page 7), where it leads to polyurethane layers that have the required anti-frost properties.

Contrary to the opponent's assertion, the patent thus provides detailed guidance for identifying suitable

components for the polyurethane film-forming compositions.

1.4.2 This finding is not compromised by the fact that, as argued by the opponent, the examples of the patent are not according to claims 1 and 14. The difference between these examples and the claims lies in the type of installation solution rather than in the polyurethane film-forming composition. Hence, even though not in accordance with claims 1 and 14, the examples provide information as to which polyurethane film-forming compositions to select to obtain the desired anti-frost properties.

1.5 With regard to claim 1 of auxiliary request 4, the opponent raised the further objection that the patent did not provide any information as to how to attach the anti-frost film assembly to the substrate without adhesive. Since claim 1 of auxiliary request 4 corresponds to claim 14 of the main request, this objection will be dealt with here.

As set out by the proprietor, the anti-frost film assembly may adhere to the substrate by means of static interactions without any adhesive. The opponent has not argued why this is not possible, let alone provided any evidence. The opponent's argument must therefore fail.

1.6 The ground for opposition under Article 100(b) EPC hence does not prejudice maintenance of the patent on the basis of the main request.

2. Novelty

2.1 D14 is a technical information sheet from the company Film Specialities, Inc., on the products Visgard® 275

and Visgard® 200 (title). In the left-hand corner at the bottom of the second page, the date "7/03" is printed, which is more than two years before the earliest priority date of the patent. D14 *inter alia* gives instructions as to how to apply the two products disclosed therein with laminating machinery or by hand (points 6 and 7 on page 3), provides care instructions (point 9 on page 4) and contains a legal disclaimer instructing users to carry out their own tests (box on the bottom of page 4). There can thus be no doubt that D14 was directed to the users of the films disclosed therein. It would therefore be contrary to life experience to assume that this document had not been made available to them within two years after the date printed on D14, and thus before the priority date of the patent.

In fact, this is confirmed by Mr Creasy's declarations D18 and D20. In D18 (point 8) he stated that D14 ("E14" in D18) was freely available to the public at the date printed on the document, and in D20 (point 5) he explained in more detail that the company Film Specialties, Inc., had made D14 ("E14" in D20) freely available to its customers at the date printed on the document and had continued to do so up to the earliest priority date of the opposed patent.

2.2 It is therefore beyond reasonable doubt that D14 became public before the priority date of the opposed patent.

2.3 This is not at variance with the proprietor's argument that D14 contains handwritten amendments and thus only constituted a draft, which was possibly never made public.

More specifically, in its declaration D20 (point 5), Mr Creasy declared that these handwritten amendments were changes made to the text when it was updated for (a second) publication in June 2007, and were not contained in the copies of D14 that Film Specialties, Inc., had distributed to its customers from July 2003 up to the earliest priority date of the patent. The board has no reason to doubt this statement.

In particular, the board does not find the proprietor's argument persuasive that the credibility of this statement was compromised by the fact that Mr Creasy was not trustworthy, since he had erred on another occasion, namely as regards the date of a certain exhibit that had been annexed to its declaration (exhibit 5, D20A in the present proceedings). First of all, this error is an isolated one and thus no proof that Mr Creasy's testimony cannot be relied on. Secondly, it is entirely unrelated to his statement about the handwritten notes in D14.

2.4 The proprietor's argument that the opponent should have provided more evidence, e.g. a copy without handwritten notes, is likewise not persuasive. A decision has to be taken on the basis of the evidence as it stands. If this evidence is convincing, as in the present case, this cannot be changed by the fact that other evidence would have possibly been even more convincing.

2.5 D14 is thus prior art.

2.6 D14 discloses two fog-free films Visgard® 275 and Visgard® 200. Visgard® 200 consists of an anti-fog coating cured on a thin polyester base with an adhesive and a release liner on the reverse side (first paragraph on page 1). The film is bonded in D14 to

glass to test its adhesive bond strength (point 5 on page 3). D14 furthermore discloses the use of an installation solution ("detergent solution" in D14), such as a solution of the detergent Chemwet 29 in distilled water (point 7 on page 3).

Under the title, D14 makes reference to D4 ("US Patent 5877254"). As not disputed by the proprietor, this implies that the Visgard® films of D14 are patented in D4. This implies in turn that their composition is at least according to the broadest disclosure of D4, namely a cured polymer composition comprising (i) an isocyanate prepolymer having unreacted isocyanate groups, (ii) a hydrophilic polyol and (iii) a surfactant with isocyanate-reactive groups (claim 1 in conjunction with column 1, lines 6 to 8 of D4).

The glass of D14 corresponds to the transparent substrate of claim 1. The thin polyester base of D14 corresponds to the transparent film (130) of claim 1. The anti-fog coating of D14 corresponds to the transparent anti-frost layer (120) of claim 1. The assembly of the thin polyester base and the anti-fog coating of D14 thus corresponds to the anti-frost film assembly (110) of claim 1. This was not disputed by the proprietor.

2.7 As set out above, D14 discloses an installation solution containing a detergent and water. This is different from the installation solution defined in claim 1, which in addition to a wetting solution (i.e. detergent) and water contains 10 vol% to 40 vol% alcohol.

It was a matter of dispute between the parties whether the installation solution cited in claim 1 was limiting

for this claim and thus could establish novelty over D14.

2.7.1 Claim 1 is a product claim. The installation solution cited therein is part of a product-by-process feature defining the claimed product by a process step as follows (emphasis added by the board):

> "wherein an installation solution had been applied between the anti-frost film and the substrate."

2.7.2 Claim 1 is not limited as regards to what happened to the product after the installation solution "had been applied" to it. It thus does not exclude the installation solution disappearing completely, e.g. by being evaporated or squeezed out completely when the anti-frost film is pressed onto the substrate. That the skilled person would read these options into claim 1 is supported by D22, which provides tips for applying installation solutions and suggests (heading "Squeegee") exerting as much pressure as possible to remove the installation solution after its application. Hence, claim 1 covers products not containing any installation solution.

2.7.3 The proprietor argued that the installation solution cited in claim 1 implied the presence of a surfactant and that this always left some residue which would inevitably still be present in the final product. The proprietor referred in this respect to the statement in D22 that the soapy portion of an installation solution ("Applicator Solution" in D22) can leave some residue. However, that the soapy portion of the solution can leave some residue implies that it can also be completely removed. Hence D22 actually confirms that claim 1 covers embodiments where after the application

of the installation solution, any residue is completely removed.

2.7.4 In view of the above, the product-by-process feature that an installation solution had been applied does not limit claim 1.

2.8 Since all remaining features of claim 1 are disclosed in D14, the subject-matter of this claim lacks novelty over this document. The main request is thus not allowable.

2.9 The opponent raised another novelty objection on the basis of D1. During the oral proceedings, the board expressed the opinion that the subject-matter of claim 1 was novel over this document. In view of the above finding, there is however no need to address this issue in the present decision.

Auxiliary request 1

3. Claim 1 of auxiliary request 1 differs from claim 1 of the main request in that the polyurethane film-forming composition has been specified as being (i) a polyisocyanate-containing component, an active hydrogen-containing component reactive with the polyisocyanate-containing component, and a hydroxyl-bearing surfactant having a hydrophobic region, and a hydrophilic region, or (ii) a polyisocyanate prepolymer having reactive isocyanate groups, a hydrophilic polyol, and a hydroxyl-bearing surfactant having a hydrophilic region and a hydrophobic region.

4. Novelty

The opponent attacked novelty of the subject-matter of claim 1 on the basis of D14 in combination with D4. During the oral proceedings, the board came to the conclusion that the subject-matter of claim 1 was novel over this combination of documents. Since, however, the board decided that this combination was prejudicial to inventive step (see point 5 below), there is no need to elaborate on this issue in the present decision.

5. Inventive step

5.1 The invention underlying the opposed patent relates to multilayer film assemblies useful for preventing frosting (paragraph [0001]). It addresses in particular the need to improve visibility into refrigerator and freezer cases (paragraph [0006]).

5.2 D14 refers to films that prevent the formation of vision-obscuring fog on glass or plastic lenses, windows and mirrors (first sentence on page 1). D14 thus relates to a technical field and objective very similar to those of the opposed patent. As argued by the opponent, D14 therefore constitutes the closest prior art.

5.3 The proprietor requested that the attack based on D14 as the closest prior art not be admitted into the proceedings since it was new and had been filed for the first time during the oral proceedings.

The board acknowledges that until the oral proceedings the opponent had not relied on D14 as the closest prior art for any inventive-step attack. However, in its preliminary opinion (point 7.2.2), the board had

highlighted the relevance of D14 by observing that it appeared to be novelty-destroying for the subject-matter of claim 1 of the main request, provided that the installation solution referred to in this claim was not limiting. It was therefore to be expected that this document would be used by the opponent also for novelty attacks against the auxiliary requests, and if any such attack failed, as closest prior art for inventive step. In fact, the proprietor did not argue that it was not in a position to address this attack during the oral proceedings, let alone give reasons why.

The board therefore decided to admit this attack.

5.4 As set out above, the Visgard® films in D14 are a cured polymer composition comprising (i) an isocyanate prepolymer having unreacted isocyanate groups, (ii) a hydrophilic polyol and (iii) a surfactant with isocyanate-reactive groups. The nature of the isocyanate-reactive groups of the surfactant is not disclosed in D14. As agreed by both parties, the subject-matter of claim 1 thus differs from D14 in that the surfactant contains hydroxyl groups ("hydroxyl-bearing surfactant" in claim 1 of auxiliary request 1).

5.5 No evidence is available that these hydroxyl groups, compared to other isocyanate-reactive groups, have any technical effect. The objective technical problem is therefore the provision of an alternative condensation-resistant article.

5.6 The solution to this problem is already known from D4, where hydroxyl-groups containing surfactants are disclosed as the preferred surfactant of anti-fog layers made of polyurethane (column 3, lines 19 to 21).

The skilled person looking for an alternative would thus have applied this type of surfactant in D14 and would thereby have arrived at the subject-matter of claim 1.

5.7 Thus, the subject-matter of this claim lacks inventive step over D14 in combination with D4. Auxiliary request 1 is therefore not allowable.

Auxiliary request 2

6. Amendments - Article 84 EPC

6.1 Claim 1 of auxiliary request 2 differs from claim 1 of the main request in that the anti-frost film assembly has been defined by further comprising an adhesive layer that allows the assembly to be repositioned on a substrate. According to the opponent, this feature lacked clarity.

6.2 A first point of dispute was whether this feature could be examined in opposition appeal proceedings at all for compliance with Article 84 EPC.

According to the proprietor, this feature was already present in claim 7 as granted and thus, pursuant to G 3/14, could not be examined as to compliance with Article 84 EPC. However the amendment in claim 1 of auxiliary request 2 is not the result of incorporating granted claim 7 word-for-word into granted claim 1. In fact, granted claim 7 requires that the assembly is repositionable on a substrate, while amended claim 1 requires the adhesive layer to allow the assembly to be repositioned on a substrate. Whether the assembly is repositionable and whether the adhesive layer allows this are two different issues. Therefore, if this

feature is unclear, it introduces a lack of clarity not present in the granted claims. It can thus be examined for compliance with Article 84 EPC.

6.3 Amended claim 1 does not put any restriction on the point in time up to which the adhesive layer has to allow the repositioning of the assembly on the substrate. Therefore, on a literal basis, this repositionability must be unlimited in time, i.e. permanent. However, the proprietor stated that amended claim 1 meant that the adhesive layer only allowed the assembly to be repositioned initially, when it was applied onto the substrate, before the adhesive was dried in a subsequent step. This is supported by the description of the patent (paragraph [0038]), where it is stated that after application of the adhesive, "... the film can be repositioned until satisfactorily positioned, and form a bond upon drying". This implies that the repositionability is only possible up to the drying step, hence not on a permanent basis. It is thus not clear whether the amended portion of claim 1 implies that the adhesive allows for permanent repositionability (as implied by the literal meaning of claim 1) or only until a drying step (as implied by the description).

6.4 Therefore, the amendment in claim 1 with regard to repositionability lacks clarity. Auxiliary request 2 is thus not allowable.

Auxiliary requests 2A, 3 and 3A

7. Claim 1 of auxiliary requests 2A, 3 and 3A contains the same amendment as claim 1 of auxiliary request 2, namely that the anti-frost film assembly further comprises an adhesive layer that allows the assembly to

be repositioned on a substrate. As set out above for auxiliary request 2, this amendment lacks clarity. Auxiliary requests 2A, 3 and 3A are thus not allowable.

In view of this, there was no need for the board to decide on the opponent's request that these requests not be admitted into the proceedings.

Auxiliary request 4

8. Admissibility

8.1 The opponent requested that this request not be admitted into the proceedings.

8.2 The claims of auxiliary request 4 differ from the granted claims only by the deletion of product claims 1 to 13. The only remaining claims are thus method claims 14 and 15 as granted (now claims 1 and 2).

8.3 The opponent argued that this request should not be admitted since it diverged from the higher-ranking requests. The board does not agree. In the higher-ranking requests, the product claims were successively restricted, and in present auxiliary request 4 this restriction was taken further by the deletion of the product claims.

8.4 The opponent furthermore argued that the proprietor had not commented on auxiliary request 4 when filing it with its statement of grounds of appeal, and thus had not complied with Article 12(2) RPBA.

The board acknowledges that auxiliary requests, if filed without any explanation, may be deemed inadmissible or not validly filed (see e.g. T 253/06,

catchword). This does not however apply if no explanation as to why amendments are filed is needed because they are self-explanatory (T 1732/10, catchword; T 1784/14, point 3.4). This condition is met in the present case. More specifically, it had been a matter of constant discussion during the opposition proceedings whether the product-by-process feature of applying an installation solution in the product claims was limiting and thus could distinguish the claimed product from the prior art. In its decision (point 1.2), the opposition division decided that this was not the case. It is self-evident that the deletion of all product claims overcomes this objection. There can in particular be no doubt, and it has never been disputed by the opponent, that all remaining claims, which are method claims, are limited by the step of applying the installation solution. The amendment in auxiliary request 4 is thus self-explanatory. The lack of any explanation as to why this amendment was made therefore does not compromise the admissibility of auxiliary request 4.

8.5 The board therefore decided to admit this request into the proceedings.

9. Inventive step

9.1 For the same reasons as given above with regard to auxiliary request 1, D14 is the closest prior art.

9.2 As agreed by both parties, the process of claim 1 differs from D14 by the type of the installation solution. More specifically, while claim 1 requires the installation solution to contain a certain amount of alcohol, no alcohol is present in the installation solution of D14 (see point 1.6 above).

9.3 The proprietor argued that the presence of the alcohol could prevent the installation solution from freezing and thereby developing optically undesirable frost at low temperatures. It could thus be applied to substrates when cold. This had the advantage that panels of e.g. refrigerators could be provided with anti-frost properties while the refrigerator was in operation and the panel was thus cold. There was hence no need to turn the refrigerator off and to warm it up to avoid frost formation when the installation solution was applied. The problem solved by the subject-matter of claim 1 was thus to provide a method of applying an anti-frost film assembly to a substrate, such as a refrigerated panel, with the help of an installation solution, which method did not lead to frost formation of the installation solution, even though the refrigerator was kept in operation and thus its panel was cold.

However, this argument is too specific in relation to the breadth of claim 1. More specifically, the method of claim 1 does not require the substrate to be a refrigerator panel that is cold at the point in time when the installation solution is applied. In fact it does not define the temperature of the substrate at all. The problem referred to by the proprietor is thus not the objective technical problem.

All that claim 1 reflects is cooling at some point ("effective to provide the layer with anti-frost properties at temperatures that alternate between -23°C and 65°C"). One can therefore argue in the proprietor's favour that the problem solved by the presence of the alcohol in the installation solution is to stop it freezing and thus developing optically undesirable

frost between the anti-frost film assembly and the substrate when the substrate is cooled at some point, e.g. after the installation solution has been applied.

9.4 However, even when formulating the problem in this way, the subject-matter of claim 1 is still not inventive. More specifically, as not disputed by the proprietor, it was commonly known before the priority date of the patent that the freezing of aqueous liquids could be avoided by adding alcohol. For instance, it was common general knowledge that alcohol needed to be added to liquids in cars before winter in order to prevent them from freezing. The skilled person confronted with the problem of avoiding frost formation in the installation solution in D14 would thus have added an appropriate amount of alcohol. He would thereby have arrived at the subject-matter of claim 1.

9.5 The subject-matter of claim 1 therefore lacks inventive step over D14 as the closest prior art.

9.6 It is to be noted that the opponent considered the type of surfactant to be a further distinguishing feature with regard to D14. In fact, however, unlike in claim 1 of auxiliary request 1, the surfactant in claim 1 of auxiliary request 4 is no longer restricted to hydroxyl-bearing surfactants. Therefore, the presence of hydroxyl groups and thus the type of surfactant is no longer a distinguishing feature.

However, even if, for the sake of argument, one adopts the opponent's position, which in fact is favourable to the proprietor, the subject-matter of claim 1 still lacks inventive step. More specifically, as set out above for auxiliary request 1, this (allegedly) additional distinguishing feature does not contribute

to inventive step, since the selection of hydroxyl-bearing surfactants is obvious in view of D14 in combination with D4.

Auxiliary request 5

10. Admissibility

10.1 The claims of auxiliary request 5 differ from those of auxiliary request 4 in that the substrate has been defined as a glass substrate which is a "refrigerated panel". The opponent has not provided any arguments why this additional amendment prejudices the admissibility of this request. In fact, apart from this amendment, auxiliary request 5 is derived from the main request by the simple deletion of all product claims. Hence, the findings above regarding the admissibility of auxiliary request 4 apply here too.

10.2 The board therefore decided to admit auxiliary request 5.

11. Amendments - Articles 123(2) and 84 EPC

11.1 The opponent acknowledged that the term "refrigerated panels" in claim 1 normally meant that the panels were cold. However, it argued that page 5, lines 36 to 37 of the patent shed doubt on this interpretation. More specifically, this passage equated refrigerated and hence cold units with refrigerators, which could be turned off and thus warm. This led to confusion about what the term "refrigerated panel" in claim 1 actually meant, in particular whether it had to be cold or could also be warm.

11.2 The passage cited by the opponent reads as follows:

> "... the film assemblies are particularly suited for use in refrigerated units, including refrigerators and freezers"

Hence, in this passage, refrigerators are cited as a specific example of refrigerated and hence cold units. The refrigerators must thus be turned on, otherwise they would not be an example of a cold unit. So, contrary to the opponent's assertion, this passage does not equate refrigerated, and thus cold, units with refrigerators that are turned off and thus warm. Hence, also in view of this passage, it is clear that the term "refrigerated panel" in claim 1 refers to a cold panel.

The amendment in claim 1 thus meets the requirements of Article 84 EPC.

11.3 The opponent argued that the application as filed did not provide a basis for the provision of an installation solution on a cold surface. The amendment in claim 1 thus did not meet the requirements of Article 123(2) EPC.

11.3.1 However, on page 13 (first sentence of first full paragraph), the application as filed discloses that "When incorporated into existing refrigerated panels, prevention of frost formation between the anti-frost film and the glass is desirable. This frost formation can be inhibited using an installation solution that is applied between the glass and the film" (emphasis added by the board). From this statement, it is directly and unambiguously derivable that the installation solution is applied to refrigerated and thus cold panels. In fact, this is confirmed by the next paragraph, where it is stated that "This installation solution has enabled

good optics through the film after installation on the glass, even when the glass is cold, e.g. 0°C" (emphasis added by the board).

These two paragraphs of the application as filed thus provide a basis for the amendment of claim 1.

11.3.2 The opponent argued that the paragraph preceding the above two paragraphs (paragraph bridging pages 12 and 13) of the application as filed defined the term "refrigerator panel" such that it could be warm. However, there is no link between this definition and the refrigerated panels or the cold glass cited in the above two paragraphs. The opponent's argument must therefore fail.

12. Sufficiency of disclosure

The opponent maintained the objections raised against the higher-ranking requests. For the reasons given above in points 1.2 to 1.5, these objections are not convincing. The invention as defined in the claims of auxiliary request 5 is therefore sufficiently disclosed.

13. Novelty

The opponent did not raise any objections, and the board is satisfied that the subject-matter of claims 1 and 2 of auxiliary request 5 is novel.

14. Inventive step

14.1 In the same way as for auxiliary request 4, D14 is the closest prior art.

14.2 The subject-matter of claim 1 differs from that of D14 in that the installation solution contains an alcohol and is applied to a refrigerated and thus cold panel.

14.3 In the same way as for auxiliary request 4, the proprietor argued that the problem was the provision of a method of applying an anti-frost film assembly to a refrigerated panel with the help of an installation solution, which method did not lead to frost formation of the installation solution, even though the refrigerator was kept in operation and thus its panel was cold.

Unlike in auxiliary request 4, this problem is now commensurate with the breadth of claim 1, since the substrate is now restricted to refrigerated panels. It is thus the objective technical problem.

14.4 As set out above, D14 discloses the application of an anti-frost film assembly to a glass substrate with the help of an installation solution. However, neither D14 nor any of the other prior-art documents cited suggests that this glass substrate can be cold when the installation solution is applied, let alone that an alcohol should be added to the installation solution to avoid frost formation during its application. The skilled person would thus not have been motivated to add an alcohol and to apply the resulting installation solution to a panel of a refrigerator in operation.

14.5 Therefore, the subject-matter of claim 1 and by the same token of the only remaining claim 2 is inventive.

Further procedural requests

15. The proprietor requested that any new facts and evidence that extended over those invoked as regards the alleged public prior use during the opposition proceedings not be admitted into the proceedings. Since the board in the present decision does not rely on any public prior use, let alone new facts and evidence related thereto, there is no need to decide on this request.

16. The opponent stated that the opposition division had disregarded Mr Creasy's declared evidence about the alleged public prior use and that this had infringed its right to be heard. Hence a substantial procedural violation had occurred which justified the reimbursement of the appeal fee.

However, irrespective of whether this constitutes a procedural violation, the opponent's representative contributed to it by not commenting at all on the alleged public prior use during the oral proceedings before the opposition division. It is to be noted in this respect that it is the representative's responsibility to raise any point during the oral proceedings which it fears could be overlooked, and to insist that this point be considered (R 17/11, point 18). As in the present case the opponent's representative did not assume this responsibility, it would not be equitable to reimburse the appeal fee, even if the opposition division did commit a procedural violation.

17. The opponent requested that Mr Creasy be heard as a witness regarding the publication date of D14. Since the board decided on this issue in the opponent's

favour (points 2.1 to 2.5 above), there was no need to hear Mr Creasy as a witness and thus to decide on the opponent's request.

18. The opponent requested that Mr Creasy be allowed to speak as a technical expert. During the oral proceedings, the board stated that it had taken Mr Creasy's written declarations into account and that it saw no reason to hear Mr Creasy as a technical expert. The opponent did not object.

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 with the order to maintain the patent in amended form on the basis of claims 1 and 2 filed as auxiliary request 5 with letter dated 11 November 2013, and a description to be adapted.

The Registrar: The Chairman:

M. Cañueto Carbajo W. Sieber

Decision electronically authenticated