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**Datasheet for the decision
of 27 April 2021**

Case Number: T 2166/17 - 3.3.06

Application Number: 11843783.9

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Language of the proceedings: EN

Title of invention:
Multilayer reinforced polymeric pipe and system of pipes

Patent Proprietor:
Obschestvo S Ogranichennoy Otvetstvennostyu
"Gruppa Polymerteplo"

Opponent:
REHAU AG + Co

Headword:
Multilayer reinforced polymeric pipe / GRUPPA POLYMERTEPLO

Relevant legal provisions:
EPC Art. 83, 100(b), 111(1)
RPBA 2020 Art. 11

Keyword:

Sufficiency of disclosure - (yes)

Remittal - (yes)

Decisions cited:

T 0219/85, T 0694/92, T 0190/99, T 1011/01

Catchword:



Beschwerdekammern

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Case Number: T 2166/17 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 27 April 2021

Appellant: Obschestvo S Ogranichennoy Otvetstvennostyu
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 2 August 2017
revoking European patent No. 2574833 pursuant to
Article 101(3) (b) EPC.**

Composition of the Board:

Chairman J.-M. Schwaller
Members: L. Li Voti
R. Winkelhofer

Summary of Facts and Submissions

I. The appeal from the patent proprietor is against the decision of the opposition division to revoke European patent no. 2 574 833 on the grounds of Articles 100 (b) and 83 EPC.

II. The granted claims read as follows:

"1. A multilayer reinforced polymeric pipe comprising a base layer (1), at least one barrier layer (2), at least one reinforcing layer (3) made in the form of a mesh, an adhesive layer (4) and a protective layer (5), characterized in that the adhesive layer (4) is made of a material which does not adhere to the material of the reinforcing layer (3) and forms channels for the reversible movement of the fibers of the reinforcing layer (3)."

"2. The multilayer pipe according to Claim 1, characterized in that the base layer (1) is made of cross-linked or heat-resistant polymer, preferably polyethylene or polybutene."

"3. The multilayer pipe according to Claim 1, characterized in that the reinforcing layer (3) is made of high-strength and high-modular polymeric fibers, preferably aramid, polyester or polyethylene fibers."

"4. The multilayer pipe according to Claim 1, where the barrier layer (2) is made of polar and nonpolar polymers."

"5. *The multilayer pipe according to Claim 1, characterized in that the protective layer (5) is made of polyethylene of medium density.*"

"6. *The multilayer pipe according to Claim 1, characterized in that thickness of the protective layer (5) is at least 3 mm.*"

"7. *A system of pipes for transportation of water, preferably hot water in central heating and water supply networks, consisting of two or more multilayer pipes according to any of Claims 1 to 6.*"

III. With its statement of grounds the appellant defended the patent as granted and filed four sets of amended claims as auxiliary requests 1 to 4 along with documents B1 to B10. Moreover, it requested the reimbursement of the appeal fee.

Its arguments regarding sufficiency of disclosure were essentially based on document **D12** (Handbook of Adhesives and Sealants - Edward M. Petrie, 2000, pages 425-428, 441-443) filed in opposition proceedings.

IV. The respondent (also the opponent) maintained its objections under Article 100(b) EPC and contested the admission and consideration of the auxiliary requests.

V. With a submission dated 3 August 2018 the appellant filed amended versions of auxiliary requests 1 to 4 along with documents B11, **B12** (European Standard EN 15632-2, February 2010, "*District heating pipes - Pre-insulated flexible pipe systems - Part 2: Bonded plastic service pipes - Requirements and test methods*") and an amended version of document **D12** including additional pages 282, 285 and 415.

- VI. Following the board's preliminary opinion that the claimed invention appeared to be sufficiently disclosed, the appellant requested that the case be remitted to the department of first instance.
- VII. During the oral proceedings held on 27 April 2021 the appellant withdrew its request for reimbursement of the appeal fee. The final requests of the parties were as follows:

The appellant requests that the decision under appeal be set aside and that the opposition be rejected.

The respondent requests that the appeal be dismissed.

Reasons for the Decision

Main request (patent as granted)

1. *Sufficiency of disclosure of the invention (Articles 100(b)/83 EPC)*
 - 1.1 Claim 1 concerns a multilayer reinforced polymeric pipe comprising a base layer, at least one barrier layer, at least one reinforcing layer made in the form of a mesh, an adhesive layer and a protective layer, with the adhesive layer being made of a material which does not adhere to the reinforcing layer and forms channels for the reversible movement of the fibers of the reinforcing layer.
 - 1.1.1 It is directly apparent from the wording of claim 1 that the layers constituting the pipe are characterised merely by their function. Claim 1 further does not require any precise sequence of the layers apart from

that the adhesive layer must be present on one side of the reinforcing mesh.

Figure 1 of the patent (see also paragraphs [0019] and [0020]) shows that the adhesive layer, which does not adhere to the reinforcing mesh, forms channels by adhering to its adjacent layer and/or through the mesh to the layer present on the other side of the reinforcing layer. The required formation of channels for the reversible movement of the fibers of the reinforcing layer is thus a necessary consequence of the lack of adhesion of the adhesive layer to the reinforcing mesh and of its adhesion to the other layers.

- 1.1.2 In its paragraphs [0013] to [0020], the patent in suit describes suitable materials for the respective base, protective and reinforcing layer. As discussed further in paragraphs [0002] to [0008] of the patent, it is not disputed that multilayer pipes containing a base layer, a protective layer, a barrier layer, a reinforcing layer and even adhesive layers were well-known in the art.

The required properties of the materials constituting such multilayer pipes, for example for the transport of hot water, were also known to the skilled person since there exists standards like the European standard for bonded plastic service pipes including bonded multilayer pipes (see in this respect B12, page 5, point 1 and page 6, Table 1). As apparent from page 5 of B12, several standards already existed for various applications of such multilayer pipes.

Moreover, the adhesives having the required bonding characteristics and which are compatible with a use in

such a multilayer pipe, for instance elastomeric adhesives, were also commonly known to the skilled person (see D12, page 262 and 285).

- 1.1.3 The board notes that document B12 and the new version of document D12 being prima facie relevant for the discussion of sufficiency of disclosure, and the respondent having not objected to their admission and consideration by the board, there is no reason to disregard them.
- 1.1.4 In the board's view, it follows from the above considerations that person skilled in the art was able to select suitable materials for the various layers of the claimed multilayer pipe on the basis of the teaching of the patent and from common general knowledge.
- 1.2 The respondent objected to that the patent did not contain any example of a suitable material for the adhesive layer not adhering to the reinforcing mesh and argued that even taking into account common general knowledge such as D12, the skilled person was not able to perform the invention over the extremely broad area claimed without undue burden. In agreement with established jurisprudence of the boards of appeal (Case Law of the Boards of Appeal of the EPO, 9th edition 2019, Chapter II.C.3.1, page 349; in particular T 1011/01, T 0219/85 and T 0694/92) the claimed invention was therefore not sufficiently disclosed.
 - 1.2.1 The respondent further referred to point 4.2 of the decision under appeal concluding that the skilled person was not able to choose a suitable adhesive material for an embodiment of the claimed invention in which the adhesive layer would adhere to a protective

layer made of medium density polyethylene (MDPE) (as defined in claim 5 at issue) or to a base layer made of polyethylene (PE) (as defined in claim 2 at issue) but not to a reinforcing layer made of PE fibers (as defined in claim 3 at issue).

1.3 For the board, since the patent indeed does not contain any example of a suitable adhesive material, it has to be established if the skilled person would have been able to select such a material without undue burden and without inventive skill on the basis of common general knowledge.

1.3.1 As regards the specific embodiments obtained by combining the subject-matter of claim 2 or 5 with that of claim 3, the board follows the jurisprudence in T 190/99 (catchword) that a skilled person reading the claims with common sense would rule out illogical embodiments.

In the specific case illustrated by the respondent, if a hypothetical material chosen for the so-called adhesive layer were not able to adhere to the reinforced mesh of polyethylene (claim 3), it also would not adhere to other layers made of similar polyethylene, for example the base layer of claim 2 or the protective layer of claim 5. The board notes that in this hypothetical case the layer containing such an "adhesive" material would however not adhere to any layer of the multilayer pipe and would thus not be an "adhesive layer" as required in claim 1 at issue.

It is thus clear that such hypothetical embodiments are even not encompassed by the claims.

By the way, the board notes that dependent claims 2, 3 and 5 all refer back to claim 1 only and are not linked together by reference, so that also the text of the claims was not intended to cover this illogical combination of layers.

It follows that this incorrect interpretation of the claims cannot be used for disputing sufficiency of the disclosure.

- 1.3.2 The board further notes that, as stated in D12 (pages 415, lines 10-17), it is common general knowledge that no adhesive is able to fulfil every application and that an adhesive system has to be selected on the basis of the type and nature of the substrate to be bonded. As also stated in D12, page 425, lines 34-35, "*[t]he adhesive selection process begins with a general knowledge of the material being bonded.*"

D12 (page 425, lines 1-3 and 7-12) in particular teaches that tables alike table 11.1, based on adhesive properties of materials known to the skilled person, can be used in order to find out an adhesive family that best matches a particular substrate and that is suitable for adhering different substrates. Moreover, D12 states that important criteria for selecting a suitable adhesive, especially an elastomeric adhesive as mentioned above, include the chemical compatibility of the adhesive with the substrate to be bonded and its modulus similarity.

- 1.3.3 The skilled person which in the present case is a technical expert in the field of adhesives, was definitely able on the basis of its general knowledge of adhesives and substrate materials to find without undue burden a class of adhesive materials not suitable

for bonding specific substrates because of chemical incompatibility and very different modulus. Therefore it was also able to find a material that does not adhere to the material of the reinforcing mesh of claim 1.

In this respect it is observed that the respondent did not bring any evidence at all that such a choice would require undue burden or inventive skill.

- 1.3.4 Similarly, the skilled person was also able on the basis of its knowledge of substrate materials and of adhesive properties shown for example in the discussed tables of D12 (Table 11.1, page 426 and Table 11.5, page 443), to select substrates to which such an adhesive material adheres and which can be used as adhering barrier, protective or basis layer in the claimed multilayer pipes. This is especially true in the present case in which the claimed subject-matter does not require any specific bonding strength of the adhered layers or specific properties for the multilayer pipe.

The appellant, referring to D12, has in fact brought several examples of suitable combinations of layers complying with the requirements of claim 1 (pages 7-9 of the statement of grounds). The respondent on the contrary did not provide any evidence that would disprove these convincing appellant's arguments.

- 1.3.5 Therefore, even though claim 1 covers a very broad field of multilayer pipes, the skilled person was able, even in the absence of any example of suitable adhesive layer, to complete the missing information necessary for carrying out the invention by using common general knowledge and to select suitable functional layers of

the claimed multilayer pipe across the whole extent of the claims.

1.4 The board therefore concludes that the skilled person was able on the basis of the teaching of the patent and of common general knowledge to choose without undue burden and without inventive skill suitable adhesive materials complying with the requirements of claim 1, with the consequence that Articles 100(b)/83 EPC do not prejudice the maintenance of the patent as granted.

2. Remittal (Article 111(1) EPC)

2.1 The decision under appeal was based only on the grounds of Article 100(b) EPC, the other grounds of opposition under Article 100(a) EPC having not been discussed in the decision or by the parties during appeal. It is moreover apparent from the above that the decision of the opposition division was also based on an incorrect interpretation of the claims.

These are thus special reasons that justify a remittal of the case to the department of first instance under Article 111(1) EPC and Article 11 RPBA 2020, in order to enable a fair discussion on the remaining issues under Article 100(a) EPC, on the basis of the above interpretation of the claims.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the opposition division for further prosecution.

The Registrar:

The Chairman:



A. Pinna

J.-M. Schwaller

Decision electronically authenticated