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Datasheet for the decision of 12 March 2024

Case Number: T 1348/21 - 3.2.03

Application Number: 15763631.7

Publication Number: 3194674

IPC: E03F1/00, E03F5/10

Language of the proceedings: EN

Title of invention:
A PLASTIC INFILTRATION UNIT, A SYSTEM COMPRISING A PLURALITY OF PLASTIC INFILTRATION UNITS

Patent Proprietor:
Wavin B.V.

Opponent:
Pipelife Nederland B.V.

Relevant legal provisions:
EPC Art. 52(1), 54, 56, 123(2), 104(1)
RPBA 2020 Art. 13(2), 13(1), 16(1)

Keyword:

Auxiliary requests 4, 9, 10 - added subject-matter (yes)
Auxiliary requests 4-1, 5-1, 5-2, 5-3 - prima facie not allowable - admittance (no)
Auxiliary requests 5, 7, 8 - novelty (no)
Auxiliary requests 7-1, 8-1 - admittance (yes) - novelty (yes) - inventive step (no)
Different apportionment of costs - (no)

Decisions cited:

T 2255/12, T 0099/13, T 0667/08, J 0014/19, T 2892/19, T 1848/12

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Case Number: T 1348/21 - 3.2.03

D E C I S I O N
of Technical Board of Appeal 3.2.03
of 12 March 2024

Appellant: (Patent Proprietor)	Wavin B.V. Stationsplein 3 8011 CW Zwolle (NL)
Representative:	Hoffmann Eitle Patent- und Rechtsanwälte PartmbB Arabellastraße 30 81925 München (DE)
Appellant: (Opponent)	Pipelife Nederland B.V. Flevolaan 7 1601 MA Enkhuizen (NL)
Representative:	Nederlandsch Octrooibureau P.O. Box 29720 2502 LS The Hague (NL)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 18 June 2021 concerning maintenance of the European Patent No. 3194674 in amended form.**

Composition of the Board:

Chairman	C. Herberhold
Members:	M. Olapinski
	N. Obrovski

Summary of Facts and Submissions

I. The appeals were filed by the patent proprietor and by the opponent against the interlocutory decision of the opposition division finding that, on the basis of auxiliary request 2 then on file, the patent in suit (hereinafter "the patent") met the requirements of the EPC.

II. As both parties are appellants, they will be referred to in the following by their role in the opposition proceedings as patent proprietor and opponent rather than by their role in the appeal proceedings.

III. Oral proceedings were held before the Board.

IV. At the end of the oral proceedings the parties' requests were as follows:

The patent proprietor requested that the decision under appeal be set aside and the patent be maintained in amended form in accordance with one of auxiliary requests 4, 5, 7, 8, 9 or 10 filed with the statement of grounds of appeal, auxiliary request 5-1 filed by letter dated 31 January 2024, or auxiliary requests 4-1, 5-2, 5-3, 7-1 or 8-1 filed by letter dated 8 March 2024. The order of these requests was: 4, 4-1, 5, 5-1, 5-2, 5-3, 7, 7-1, 8, 8-1, 9, 10.

The opponent requested that the decision under appeal be set aside and the patent be revoked. It further requested a different apportionment of costs.

V. The claims under consideration are the following.

1.1 Claim 1 of auxiliary request 4 (the request found allowable in the decision under appeal) differs from claim 1 as granted by Features M1 and M2 (feature designations added in square brackets) and reads as follows:

"A plastic infiltration unit comprising:

a top deck (4) which extends in a plane, at least one pillar (6) extending from the top deck (4) for supporting the top deck (4), wherein:

the top deck (4) is provided with at least one integrated connector (3, 5) arranged to connect the plastic infiltration unit with another at least one integrated connector, of another plastic infiltration unit in a side by side arrangement, and

a perimeter (13) of the top deck (4) comprises a plurality of edge regions (15, 17, 19, 21) including a plurality of edges, respectively,

at least one of the plurality of edge regions (15, 17, 19, 21) is arranged to come into alignment with at least one edge region of the another plastic infiltration unit, each of the plurality of edges of the plastic infiltration unit and the another plastic infiltration unit is provided with at least one of said integrated connectors (3, 5), respectively, and the integrated connectors (3, 5) are arranged to connect with each other; wherein

each of the plurality of edge regions (15, 17, 19, 21) is provided with an integrated male connector (5) and an integrated female connector (3) disposed as a pair of said integrated connectors, of which the female

connector is arranged to connect with a male connector of the another plastic infiltration unit and the male connector is arranged to connect with a female connector of the another plastic infiltration unit, and

the pairs of connectors are arranged on each edge region in a manner alternating, around the perimeter (13), between a male connector (5) and a female connector (3),

characterised in that

the male connector (5) is for being slotted into the female connector (3) in the direction of the thickness of the top deck (4),

[**M1**] and in that the at least one pillar (6) has a proximal end (14) and a distal end (16) with respect to the top deck (4), the pillar (6) further comprises an intermediate portion (18) located between the proximal end (14) and the distal end (16), the proximal end (14) comprises a socket (20) and the distal end (16) comprises a foot (22),

[**M2**] and the connection is made in such a way that when the foot of the at least one pillar falls into a socket of a plastic infiltration unit below, one of the integrated connectors slides over its counterpart and engages by itself".

1.2 Claim 1 of auxiliary request 4-1 differs from claim 1 of auxiliary request 4 in that (amendments highlighted):

a) each occurrence of "another plastic infiltration unit" is replaced with "another identical plastic infiltration unit" and

b) "a plastic infiltration unit below" is replaced with "~~a~~ the another identical plastic infiltration unit below".

1.3 Claim 1 of auxiliary request 5 differs from claim 1 of auxiliary request 4 in that Features M1 and M2 are replaced by Features M1' and M2' as follows (feature designations in square brackets added):

"[**M1'**] and in that the at least one pillar (6) comprises a foot (22) located at a distal end (16) of the at least one pillar, and wherein pillars are provided

[**M2'**] and the connection is made in such a way that when the feet of the pillars fall into a respective socket of a plastic infiltration unit below, one of the integrated connectors slides over its counterpart and engages by itself."

1.4 Claim 1 of auxiliary request 5-1 differs from claim 1 of auxiliary request 5 in that Feature M1' is replaced by Feature M1 from auxiliary request 4 with the addition "and wherein pillars are provided".

1.5 Claim 1 of auxiliary request 5-2 differs from claim 1 of auxiliary request 5 by the same amendments a) and b) as in auxiliary request 4-1.

1.6 Claim 1 of auxiliary request 5-3 differs from claim 1 of auxiliary request 5-1 by the same amendments a) and b) as in auxiliary request 4-1.

1.7 Claim 1 of auxiliary request 7 differs from claim 1 as granted by additional Features Q1 to Q4 and M3 (see below). That is, it differs from claim 1 of auxiliary request 4 by deleting Features M1 and M2 and by specifying the additional characterising features (feature designations added in square brackets):

"[**Q1**] in that the top deck (4) is a quadrilateral construction extending in a first direction (y) and a second direction (x), and having a thickness extending in a third direction (z), the first, second and third directions being different from one another,

[**Q2**] wherein the perimeter (13) of the quadrilateral construction comprises two pairs of opposing edge regions: a first pair of opposing edge regions (15, 17) comprising a first and a second opposing edge region and a second pair of opposing edge regions (19, 21) comprising a third and fourth opposing edge region, respectively, wherein the first pair of opposing edge regions extend in the first direction and the second pair of opposing edge regions extend in the second direction,

[**Q3**] wherein if a female connector (3) is provided at a location on at least one of the first and third opposing edge regions, a male connector (5) is provided at the same corresponding location on the second and fourth opposing edge regions, respectively, and vice versa, so that when the plastic infiltration unit is arranged side by side with the another (second) plastic infiltration unit having the same arrangement of integrated connectors as the plastic infiltration unit, when at least one of the first and second opposing edge regions of the plastic infiltration unit is brought

into alignment with at least one of the first and second opposing edge regions of the another (second) plastic infiltration unit, the plastic infiltration unit connects with the another (second) plastic infiltration unit, at the first or second opposing edge region respectively,

[**Q4**] in that when at least one of the second and fourth opposing edge regions (19, 21) of the plastic infiltration unit is brought into alignment with at least one of the second and fourth opposing edge regions of the another (second) plastic infiltration unit, the plastic infiltration unit connects with the another (second) plastic infiltration unit, at the second and fourth or fourth and second opposing edge regions respectively, and

[**M3**] in that the first and second edge regions (15, 17) are provided with two pairs of integrated connectors."

1.8 Claim 1 of auxiliary request 7-1 differs from claim 1 of auxiliary request 7 in that (amendments highlighted):

a) each occurrence of "another" (second) plastic infiltration unit is specified to refer to "another identical" (second) plastic infiltration unit, and

b) Feature M3 is amended to specify "two of the pairs of the integrated connectors".

1.9 Claim 1 of auxiliary request 8 is identical to claim 1 of auxiliary request 7.

1.10 Claim 1 of auxiliary request 8-1 is identical to claim 1 of auxiliary request 7-1.

1.11 Claim 1 of auxiliary request 9 and claim 1 of auxiliary request 10 are identical. They differ from claim 1 of auxiliary request 7 by the additional Feature M1 from auxiliary request 4.

VI. In the present decision, reference is made to the following documents:

D1: WO 2007/054130 A1
O1: JP 2013 181280 A with machine translation
O2: JP 2007 321388 A with machine translation

VII. The opponent's arguments can be summarised as follows.

Auxiliary request 4 - Article 123(2) EPC

Auxiliary request 4 was not allowable, because the omission of the interrelation between the socket and foot of the at least one pillar of the unit of claim 1 represented an unallowable intermediate generalisation.

Auxiliary request 4-1 - admittance

Claim 1 of auxiliary request 4-1 filed four days before the oral proceedings was *prima facie* not allowable, because it required a connection while the same "another" unit was arranged side by side as well as below the claimed unit, which was neither clear nor originally disclosed. It was thus requested that auxiliary request 4-1 not be admitted.

Auxiliary request 5 - novelty, O1

The subject-matter of claim 1 of auxiliary request 5 lacked novelty over the embodiment of Figures 1 to 6 in O1.

Auxiliary requests 5-1, 5-2 and 5-3 - admittance

Auxiliary request 5-1 filed one-and-a-half months before the oral proceedings was *prima facie* not allowable for the same reasons as auxiliary request 4. Auxiliary requests 5-2 and 5-3 filed four days before the oral proceedings were *prima facie* not allowable for the same reasons as auxiliary request 4-1. It was thus requested that these auxiliary requests not be admitted.

Auxiliary request 7 - novelty, O1

The subject-matter of claim 1 of auxiliary request 7 lacked novelty over the embodiment of Figures 1 to 6 of O1.

Auxiliary request 7-1

Auxiliary request 7-1, filed only four days before the oral proceedings, was not to be admitted for lack of exceptional circumstances and because claim 1 was *prima facie* not allowable under Articles 123(2) and 54 EPC.

Furthermore, the subject-matter of claim 1 of auxiliary request 7-1 was not novel over O1 or did at least not involve an inventive step starting from O1 in combination with the skilled person's common general knowledge.

Auxiliary requests 8, 8-1, 9 and 10

As claims 1 of auxiliary requests 8 and 8-1 were identical to claim 1 of auxiliary requests 7 and 7-1, respectively, these auxiliary requests were not allowable either. Claim 1 of auxiliary requests 9 and 10 was not allowable under Article 123(2) EPC for the same unallowable intermediate generalisation as in claim 1 of auxiliary request 4.

Request for a different apportionment of costs

The late submission of five new requests by the patent proprietor just four days before the oral proceedings led to extra effort and expense over the weekend on the part of the opponent and amounted to an abuse of procedure, for which a different apportionment of costs was requested.

VIII. The patent proprietor's arguments can be summarised as follows.

Auxiliary request 4 - Article 123(2) EPC

The restriction of a defined interrelationship between the socket and the foot of the pillar was on the one hand implicit to the skilled person and on the other hand not inextricably linked with the claimed subject-matter. Claim 1 thus did not contravene Article 123(2) EPC.

Auxiliary request 4-1 - admittance

The admittance of auxiliary request 4-1 was justified as a timely response to the Board's preliminary opinion, and the additional specification of claim 1 was clearly understandable for the skilled person in

line with the content of the application as originally filed.

Auxiliary request 5 - novelty, O1

The subject-matter of claim 1 of auxiliary request 5 was novel in view of O1.

Auxiliary requests 5-1, 5-2 and 5-3 - admittance

Admittance of auxiliary requests 5-1, 5-2 and 5-3 was not prejudiced by a lack of *prima facie* allowability, for the same reasons as set out with respect to auxiliary requests 4 and 4-1.

Auxiliary request 7 - novelty, O1

The subject-matter of claim 1 of auxiliary request 7 was novel over the embodiment of Figures 1 to 6 of O1.

Auxiliary request 7-1

Auxiliary request 7-1 was filed as a timely response to the new objection and argument raised in the Board's preliminary opinion. Claim 1 was specified in line with the parties' understanding of the claim prior to the Board's communication, based on the figures of the patent, and providing novelty over O1. Admittance of auxiliary request 7-1 was thus justified.

In addition, the subject-matter of claim 1 involved an inventive step vis-à-vis O1.

Auxiliary requests 8, 8-1, 9 and 10

As to the allowability of auxiliary requests 8, 8-1, 9 and 10, the same arguments applied as set out for auxiliary requests 7, 7-1 and 4.

Request for a different apportionment of costs

The filing of new auxiliary requests in response to new issues raised in the Board's preliminary opinion represented a *bona fide* attempt to defend the proprietor's patent, not an abuse of procedure. The costs on the part of the opponent were caused by the fact, not the timing, of the filing of these requests. Furthermore, the proprietor withdrew five requests at the same time as filing five new ones. Hence a deviation from the general principle that each party has to bear the costs it has incurred was not justified.

Reasons for the Decision

1. Auxiliary request 4 - Article 123(2) EPC

1.1 It is common ground that Feature M1, in particular the specification that "the proximal end [of the at least one pillar] comprises a socket", is taken from page 17, line 32, to page 18, line 7 of the application as filed.

1.2 In the opponent's view, specifying that "the proximal end comprises a socket" without defining the interrelation between the socket and the foot of the at least one pillar represented an unallowable intermediate generalisation of the original disclosure on page 18 relating to the embodiment of Figure 4 and of the overall teaching of the application as filed regarding the pillar-to-deck stacking of the units.

1.3 Indeed, the specification from page 17, line 32 to page 18, line 7 of the application as filed relates to "[t]he at least one pillar 6" defined in the preceding paragraph. This paragraph concerns "the system" according to a "further aspect of the present invention", namely a "system" according to the first full paragraph on page 17, comprising a first plurality of plastic infiltration units forming a first layer extending in a first plane (Figure 9) and a second plurality of plastic infiltration units forming a second layer stackable on the first layer to form a three-dimensional array (Figure 10; page 17, lines 4 to 19). Accordingly, the specification of feet and sockets of the pillars is disclosed in the context of this three-dimensional stacking of units. As Figure 10 discloses that the array is formed from units of the same type as shown in Figures 1 to 4, the application

as filed unambiguously discloses how the feet of the pillars of the claimed unit interact with the respective sockets in the unit below, i.e. with the sockets formed in corresponding pillars in the top deck of the unit below, namely in that feet of the pillars fit into the correspondingly shaped sockets to provide stable positioning and alignment. Hence the structure of the feet 22 and sockets 20 of the at least one pillar must correspond within the same plastic infiltration unit.

This requirement is also explicitly disclosed on page 18, lines 18 to 21, disclosing that "the foot 22 is insertable in the at least one respective socket 20".

1.4 In contrast thereto, claim 1 only implies that "the foot of the at least one pillar falls into **a** socket of **a** plastic infiltration unit below". As claim 1 is directed to an individual "infiltration unit" and does not specify the structure of the "infiltration unit below", it does not require that the claimed infiltration unit and the "infiltration unit below" be "the same" or "identical" (see page 5, lines 10 to 15). Hence the quoted feature in claim 1 merely implies that the foot of the at least one pillar must be suitable for falling into an unknown socket of an unknown "plastic infiltration unit below". Accordingly, claim 1 does not specify any interrelation between the socket 20 of the pillar and the foot 22 of the pillar in the claimed unit.

1.5 The patent proprietor argued, referring to T 2255/12, that the assessment of the requirements of Article 123(2) EPC was to be made from the skilled person's standpoint, avoiding an overly formalistic or literal reading. The skilled person would have

understood from the definition in Feature M2 that the foot of the pillar "falls into a socket of a plastic infiltration unit below" that the socket in the "unit below" (Feature M2) had to correspond to the socket at the proximal end of the claimed unit (Feature M1). Hence, in the skilled person's understanding, claim 1 specified the required interrelation between foot and socket.

Furthermore, according to the patent proprietor, claim 1 defined a single unit and not a three-dimensional array. The reference to the "another" unit side by side and to the "unit below" were only mentioned to define the structure of the single claimed unit. Hence for the claimed subject-matter of a single unit it was not necessary that the socket of this unit have a shape corresponding to the foot of the same unit. Moreover, the connection mechanism of Feature M2 merely required that the socket provide enough space to allow the pillar to fall into the socket, so that the engagement with another unit side by side could occur. Hence a structural correspondence or fit between the foot and socket was not required for the claimed function, either. Indeed, claim 1 as filed did not define a socket at all. Accordingly, the claimed subject-matter was neither structurally nor functionally inextricably linked with a particular interrelation or correspondence between the foot and socket within the claimed unit, and this limitation could thus be omitted without contravening the requirements of Article 123(2) EPC.

1.6 The Board does not agree with the patent proprietor's line of argument for the following reasons.

As submitted by the proprietor, claim 1 is directed to a single unit and neither specifies a system nor the "unit below". From the claim alone, the skilled person could thus not infer that the unknown socket in the unknown "unit below" is in any way related to the socket at the other end of the claimed unit, i.e. the socket at the proximal end of the at least one pillar. Even according to the description originally filed, the units that are arranged "in layers and/or stacked" are only "in embodiments", i.e. optionally, "constructed in the same way" or "the same, that is identical" (page 5, lines 7 to 13). Hence the proprietor's allegation that the skilled person would understand that the socket in the "unit below" corresponded to the socket at the proximal end of the claimed pillar is unfounded. As to the patent proprietor's submission regarding T 2255/12, this assessment is not based on an overly formalistic or literal reading of the claim features, but takes account of the technical content of the claim in the light of the patent's description. Claim 1 thus neither explicitly nor implicitly specifies any interrelation between the socket and foot of the pillar. Accordingly, this technical information is omitted in claim 1 vis-à-vis the original disclosure.

It may be true that the mechanism of Feature M2, which was taken from page 8, lines 14-17, does not require a specific shape or correspondence, that is, any specific alignment or guiding function, between the feet of the pillars and the socket(s) of the unit below except enough space to allow the feet of the pillars to "fall into the socket". However, a basic functional correspondence between the foot and socket of the at least one pillar is necessary to allow the stacking of units of the same type to form a three-dimensional array as shown in Figure 10 and described on pages 17

to 18, the passage from which Feature M1 was taken. In this passage, the correspondence between the foot and socket is presented as an essential feature inextricably linked with the function of the foot at the distal end and the socket at the proximal end of the at least one pillar.

The fact that these features are disclosed for the individual units of Figures 1 to 4, and not only in combination with an entire system comprising a three-dimensional array of such units, means that the features can be incorporated in claim 1 directed to a single unit. While it is true that claim 1 as filed provides a basis for omitting the foot as well as the socket, this does not mean that the foot and socket can be separately claimed or claimed without their corresponding structure, which would isolate them from their intended interrelating function as originally disclosed. Hence the patent proprietor's argument, that it would not be essential *for the claimed subject-matter* that the foot and socket within the claimed unit have a corresponding structure because the claim is not directed to a three-dimensional system or because claim 1 as filed does not define foot and socket, is not convincing. This would mean that the socket of the pillar could be completely unrelated to the foot of the pillar, which would amount to technical information not derivable from, and thus extending beyond, the content of the application as filed.

1.7 Accordingly, the omission of the interrelation between the foot and socket of the at least one pillar in claim 1 extends beyond the content of the application as filed, contrary to the requirements of Article 123(2) EPC. Therefore auxiliary request 4 is not allowable.

2. Auxiliary request 4-1 - admittance

2.1 Auxiliary request 4-1 submitted on 8 March 2024 represents an amendment to the patent proprietor's appeal case pursuant to Article 13(2) RPBA. In the exercise of its discretion regarding the admittance of this request under Article 13(2) RPBA, the Board may also rely on criteria as set out in Article 13(1) RPBA, such as whether the amendment *prima facie* overcomes the issues raised in the proceedings and does not give rise to new objections, i.e. whether the request appears *prima facie* allowable.

2.2 Claim 1 of auxiliary request 4-1 specifies *inter alia* that the connection according to Feature M2 (i.e. the *lateral* connection of the integrated connectors with the "another" identical plastic infiltration unit in a ***side by side*** arrangement) is made when the at least one pillar of the claimed unit falls into a socket of "the another identical" plastic infiltration unit ***below***.

Accordingly, claim 1 of auxiliary request 4-1 requires that the connection with the "another identical" unit at its ***side*** be established while the same "another identical" unit is ***below*** the claimed unit.

Such an arrangement is neither originally disclosed nor is it clear (Article 84 EPC) how the bottom end of the pillar could fall into the top deck of the another unit at the same time when the units are arranged side by side.

2.3 Hence the subject-matter of claim 1 of auxiliary request 4-1 is *prima facie* not allowable.

2.4 For this reason, the Board decided not to admit auxiliary request 4-1 into the appeal proceedings, pursuant to Article 13(2) RPBA 2020.

3. Auxiliary request 5 - novelty, O1

Claim 1 of auxiliary request 5 corresponds to claim 1 as granted with the additional Features M1' and M2'. Novelty of claim 1 will be analysed in the following in two steps, first considering the features of claim 1 as granted and subsequently the additional Features M1' and M2' of claim 1 of auxiliary request 5.

3.1 Features of claim 1 as granted

3.2 The opponent submitted that claim 1 as granted lacked novelty over the plastic infiltration unit according to Figure 4 in O1, essentially for the same reasons as set out in the decision under appeal for the embodiment of Figure 7 in O1. In particular, integrated connectors 3a and 3b were disposed as a pair on each edge region of the top deck of the unit. The connectors of these pairs were arranged in a manner alternating, around the perimeter of the unit's top deck, between a male connector and a female connector. The presence of additional elements or connectors on the perimeter not belonging to these pairs of the integrated connectors did not affect the configuration as required by claim 1.

3.3 The patent proprietor submitted that the reference to Figure 4 in O1 in the opponent's reply of 10 March 2022 (point 9 and page 3, lower half) was a new interpretation of O1 representing an amendment of the opponent's case. This line of argument had not been submitted with the grounds of appeal, went beyond the

scope of a judicial review of the decision under appeal (Article 12(2) RPBA) and should not be admitted into the proceedings, pursuant to Article 12(4) RPBA.

Furthermore, the connectors 3a and 3b in Figure 4 of O1 could not be considered to be "disposed as a pair". The proprietor submitted that the word "disposed" concerned a particular positional arrangement and a "pair" referred to "two things of the same or similar kind that match or are considered together". In combination, this feature required positioning of the integrated connectors "in the vicinity" of each other. Otherwise, the meaning of "disposed as a pair" would be rendered void or simply disregarded.

3.4 The Board does not agree with the proprietor's line of argument for the following reasons.

3.4.1 Figures 1 to 6 in O1 relate to the same embodiment. The objection of lack of novelty of the subject-matter of claim 1 as granted in view of this embodiment had already been raised in the notice of opposition, set out in detail in the opponent's letter of 19 March 2021 and discussed during the oral proceedings with respect to the main request (see minutes, points 4.1.2 and 4.1.3 mentioning explicitly Figures 1 to 4). The opponent raised this objection again in its reply of 10 March 2022 to the proprietor's grounds of appeal defending claim 1 as granted. Hence it was "admissibly raised and maintained in the proceedings leading to the decision under appeal" and is thus not to be regarded as an amendment within the meaning of Article 12(4) RPBA 2020.

3.4.2 As per the patentee's submission, the word "pair" refers to "two things of the same or similar kind that

match or are considered together". The integrated connectors 3a and 3b are shown in Figure 4 of O1 on each edge. Accordingly, each edge contains a connector 3a and a connector 3b, which are similar objects that match and hence fall within the above definition of a "pair". In addition, "considered together" makes it clear that the question of whether two things are a "pair" is a matter of perception or consideration rather than of an objective structure. As such, it is irrelevant whether the connectors 3a and 3b are explicitly referred to as a "pair" in O1. The Board holds that the connectors 3a and 3b on each edge, which are both involved in connecting to (the corresponding connectors of) a neighbouring unit, can be considered together to be "disposed as a pair" in the sense of claim 1, because they are deliberately placed in order to operate together as a pair of connectors for forming the connection to a neighbouring unit.

The Board does not see any reason why a certain proximity would be required by the expression "disposed as a pair" either. This derives neither from the common understanding of the terms nor from the function of the connectors in the context of claim 1. Moreover, a more restrictive definition of the expression is not apparent from the patent specification either.

3.4.3 According to the *obiter dictum* on page 19 of the decision under appeal, better understandable in the light of the opposition division's preliminary opinion, the embodiment of Figure 4 in O1 did not comply with the feature that "the pairs of connectors are arranged on each edge region in a manner alternating, around the perimeter, between a male connector and a female connector", because further (male and female) elements were present between the integrated connectors 3a and

3b and because the overall sequence of (male and female) elements 5-3b-3d-4a on each edge was not alternating between male and female connectors.

The Board disagrees. When considering the connectors 3a-3b to represent the claimed "pair", claim 1 only requires that *these pairs* are arranged around the perimeter of the top deck in a manner alternating between male and female connectors. Claim 1 does not exclude further connectors (or protruding/recessed elements, connectors or pairs of a different kind) on the perimeter between the claimed pairs and does not require that all such elements on the edge be alternating between male and female. The connectors 3a, 3b which are considered to be "disposed as a pair" in O1 comply with the claimed alternating arrangement.

3.5 Features M1' and M2'

3.5.1 O1 discloses that each unit comprises a plurality of pillars ("legs" 2, Figure 1). According to the last sentence of paragraph [0018] in the machine translation of O1, a connecting protrusion (foot) for vertical connection and a connecting recess (socket) corresponding thereto are formed at the tip (distal end) of each leg 2 for stacking the units as shown in Figure 3. Hence O1 discloses Feature M1'.

3.5.2 When connecting the legs of a unit with the legs of a (reversed) unit "below", the feet of the pillars fall into the sockets of the legs of the unit below. The connection between adjacent units is established by slotting the male connector 3a into its counterpart on the adjacent unit and receiving, in the female connector 3b, its male counterpart on the adjacent unit. Hence the connection between adjacent units is

made in such a way that, during the vertical movement when connecting the legs, one of the integrated connectors slides over its counterpart on the adjacent unit and engages by itself.

3.5.3 The patent proprietor argued that Feature M2' required a two-step connection process in which "slides over" and "engages by itself" referred to two separate steps. The expression "slide over" referred to a horizontal movement for bringing the connectors into alignment to allow the subsequent vertical engagement movement, where the male connectors "slide into" their counterpart female connectors. According to Feature M2', these steps had to take place "when the feet of the pillars fall into a respective socket of a plastic infiltration unit below". In this regard, the proprietor referred to paragraph [0022] and Figures 5 to 8.

Still according to the proprietor, in O1, the insertion of the integrated connectors 3d into the female connectors 3b represented the engagement. However, O1 did not disclose that one of the integrated connectors "slides over" its counterpart concurrently with the insertion of the feet of the pillars into the sockets of the pillars, i.e. when the feet fall into the respective sockets of the unit below.

3.5.4 This line of argument is not convincing.

To begin with, the Board does not agree with the proprietor that there is a clear difference between the expressions "slides over", "slides along", "slides into" and "is slotted into" with respect to the integrated connectors in the context of claim 1. It cannot be established from claim 1 or the patent (e.g.

paragraph [0022] and Figures 5 to 8), either, that "slides over" refers to a horizontal movement and could not thus relate to or be equated with the vertical "engagement" movement. Accordingly, in the Board's view, the language of claim 1 does not support the proprietor's narrow understanding.

Moreover, the fact that two different expressions are used in Feature M2' can be explained by the fact that two different aspects of the same movement are emphasised, for example the *activity* of *sliding* and the *result* of a stable *engagement* or that the connection is achieved "*by itself*". Hence the two expressions "slides over" and "engages by itself" do not necessarily relate to different movements or steps.

While it is clear that a horizontal alignment (movement) of the connectors is indispensable before the vertical engagement/slotting movement can take place, the patent does not disclose that *both* movements are associated with and occur "when the feet of the pillars fall into the respective socket", either.

Accordingly, the Board comes to the conclusion that the expressions "slides over" and "engages by itself" can be considered to relate to the same movement of the male connector being slotted into the female connector in the direction of the thickness of the top deck (first characterising feature of claim 1).

Lastly, the Board does not share the patent proprietor's understanding that "falling" of the foot into the socket means that the lowest point of the pillar is below the highest point of the socket (fifth paragraph on page 20 of the grounds of appeal) and its apparent understanding that the temporal condition

"when" in Feature M2' referred to complete simultaneity either. In the Board's view, the falling of the foot into the socket begins already before the lowest point of the foot is within the socket, and it is sufficient to comply with the temporal condition if a part of the "engagement" occurs contemporaneously with a part of the vertical movement of "falling".

This is the case in O1, where (after horizontal alignment) one of the integrated connectors (e.g. the male connector 3a) "slides over" its counterpart on the another unit and "engages by itself" during the vertical movement in which the foot of the leg of the (upper) unit falls into the socket in the leg of the unit below. This can be seen from the fact that the connectors extend along the entire thickness of the top deck (Figure 1) and the legs and top decks are aligned after completion of the connection as shown in Figure 3.

3.6 Hence O1 discloses all the features of claim 1 of auxiliary request 5. Auxiliary request 5 is thus not allowable.

4. Auxiliary requests 5-1, 5-2 and 5-3 - admittance

Auxiliary request 5-1 was filed by the letter dated 31 January 2024 as an amendment to the proprietor's appeal case pursuant to Article 13(1) RPBA. Claim 1 of auxiliary request 5-1 contains the same deficiency under Article 123(2) EPC as set out above for auxiliary request 4, and is thus *prima facie* not allowable. The Board therefore decided not to admit auxiliary request 5-1 into the proceedings.

Auxiliary requests 5-2 and 5-3 were submitted on 8 March 2024 and thus represent amendments falling under Article 13(2) RPBA. The Board decided not to admit these requests for lack of *prima facie* allowability for the same reasons as set out for claim 1 of auxiliary request 4-1.

5. Auxiliary request 7 - novelty, O1

Claim 1 of auxiliary request 7 corresponds to claim 1 as granted with the additional Features Q1 to Q4 and M3.

5.1 As reasoned above, O1 discloses all the features of claim 1 of auxiliary request 4 and hence of claim 1 as granted.

5.2 It was undisputed that O1 also discloses units having the top deck in a quadrilateral construction in accordance with Features Q1 to Q4.

5.3 The opponent submitted that the pairs of elements 4a-5 and 40a-4b of the embodiment of Figures 1 to 6 in O1 represented, respectively, a further pair of integrated connectors on each edge. The elements 4a and 5 at least restricted transverse movement and complied with all the claimed restrictions of a pair of integrated "connectors". The elements 40a-4b complied with Feature M3, as it did not require two pairs of integrated connectors of the same kind.

5.4 The patent proprietor submitted that elements 4a and 5 could not be considered "connectors", as they did not link the units together. The elements 40a and 4b in Figures 2 and 4 of O1 could be considered as a further pair of connectors. However, they were not arranged to

connect with the another unit in a side by side arrangement. Furthermore, these pairs of connectors were not arranged in a manner alternating, around the perimeter, between a male connector and a female connector.

5.5 Indeed, the connectors 40a and 4b (Figures 5 and 6) are not for connecting between laterally adjacent units but for connecting and aligning vertically stacked units, as shown in Figure 5 of O1. Furthermore, since the connectors 40a-4b are located at the same circumferential location of each edge, they cannot be considered to be arranged "in a manner alternating, around the perimeter, between a male connector and a female connector".

However, Feature M3 does not require that the two pairs of integrated connectors be identical or of the same type as defined in claim 1 as granted. In this context, the Board is not of the opinion that this understanding amounted to an overly formalistic and literal reading of claim 1 as advocated by the patent proprietor in view of T 2255/12, T 99/13 and T 667/08. On the contrary, it would not be justified to read into the claim the additional limitation that "two pairs of integrated connectors" necessarily related to the same kind of connectors. Hence the elements 40a-4b represent further pairs of integrated connectors, and, together with the pairs of connectors 3a-3b, the embodiment of Figures 1 to 6 in O1 also discloses Feature M3.

5.6 Therefore claim 1 of auxiliary request 7 lacks novelty over O1.

6. Auxiliary request 7-1

6.1 Admittance

Auxiliary request 7-1 was filed on 8 March 2024 as a reaction to the objection of lack of novelty raised against claim 1 of auxiliary request 7 in the Board's preliminary opinion including the Board's observation - which was made *ex officio* by the Board in the appeal proceedings - that Feature M3 did not require that the two pairs of integrated connectors be identical or of the same type. Auxiliary request 7-1 specifies the two pairs to be "two of the pairs of the integrated connectors", which corresponds to the understanding of this feature by both parties prior to the Board's communication. The Board thus considered the filing of this claim request, submitted within one month of the Board's communication, a legitimate reaction thereto.

The Board did not consider claim 1 of auxiliary request 7-1 to be *prima facie* unallowable either. More specifically, the above-mentioned specification is supported in the figures of the patent showing throughout two of the pairs of the integrated connectors as claimed, having the same reference numerals, on two opposite edge regions (Article 123(2) EPC). As the connectors 40a-4b of O1 do not comply with the features of "the pair of integrated connectors" (see point 5.5 above), and the pair of elements 4a-5 are not considered to represent "connectors" in the context of claim 1, as they are not "arranged to connect" the unit with the another laterally adjacent unit in the sense of linking and holding them together, claim 1 of auxiliary request 7-1 is also *prima facie* novel over O1.

Applying the above admittance criteria in an overall assessment, the Board considered that there were

exceptional circumstances justifying the admittance of auxiliary request 7-1 pursuant to Article 13(2) RPBA.

6.2 Novelty

The opponent further submitted that two adjacent units in O1 could together be considered to represent a plastic infiltration unit formed from two identical subunits. Such a unit disclosed "two of the pairs of the integrated connectors" on each of two opposite edge regions as required by the amended Feature M3 in claim 1. Hence the subject-matter of claim 1 of auxiliary request 7-1 was not novel.

The Board does not agree. In the skilled person's understanding, a "unit" as defined in claim 1 represents a basic building block. It is not formed from two independent subunits themselves representing complete basic building blocks which can be connected, separated and reconnected with each other or with other "subunits". Hence the skilled person would not have considered two of the square units of O1 together as a "plastic infiltration unit" as claimed. O1 thus does not disclose a unit with two of the pairs of the integrated connectors in this sense either.

Accordingly, the subject-matter of claim 1 is novel over O1.

6.3 Inventive step

6.3.1 As O1 does not disclose two of the pairs of the integrated connectors defined in the preamble of claim 1 for the reasons set out above under points 6.1 (with reference to point 5.5) and 6.2, the subject-matter of claim 1 differs from the embodiment of Figures 1 to 6

in O1 in that a second of the pairs of the integrated connectors is provided on each of two opposite edge regions.

6.3.2 The opponent pointed to paragraph [0014] of O1, according to which the shape of the top deck of the units was not limited to a square (as shown in the figures) but could be a rectangle having an aspect ratio of 1:2 (first paragraph on page 6 of the machine translation). Starting from this embodiment, the skilled person was then confronted with the question of how to embody a particular unit with a 1:2 aspect ratio. In view of the lack of "directionality" taught by O1, such that units rotated by multiples of 90° can be combined (paragraph [0022]), the need for sufficient stability of the connection, and the wish to connect long and short sides and to combine single and double units, it would have been obvious to configure a unit with a 1:2 aspect ratio by fusing two adjacent square units depicted in Figure 4.

6.3.3 The patent proprietor submitted that, starting from the idea of a unit with a 1:2 aspect ratio, it was not obvious to arrive at two of the pairs of the connectors on the long edge regions. Firstly, such a unit could be embodied by stretching a square unit to the required aspect ratio or by halving one of the square units of O1. Hence the aspect ratio was not linked to the number of connectors. Secondly, the actual problem of the distinguishing feature was improved stability of the connection as disclosed at paragraph [0033] of the patent. However, this was not addressed in the problem-solution approach by the opponent and there was no teaching about stability and the number of connectors in O1. In fact, more connectors made the alignment and connection more difficult, so it was not obvious

without hindsight to increase the number of pairs of integrated connectors on the long edge regions. Thirdly, it would at least not have been obvious for this problem to use connectors as claimed, i.e. pairwise and alternating between male and female connectors, and with the exact factor of two. Finally, in view of the above, arriving at the claimed solution would have required several selections from multiple lists of alternatives (e.g. stretching/halving/ doubling, maintaining or increasing the distance between the pairs, the selection of the type and number and pairwise configuration of connectors), which demonstrated that the claimed solution was not obvious and claim 1 involved an inventive step.

6.4 The Board comes to the conclusion that the distinguishing feature does not account for an inventive step, for the following reasons.

The Board agrees with the opponent that, when trying to implement the variant of a unit with a rectangular planar shape of the top deck with an aspect ratio of 1:2, disclosed in paragraph [0014] of O1 without further detail on its configuration, the skilled person would inevitably be confronted with the problem of devising a concrete configuration for this kind of unit.

It is true that O1 does not provide direct guidance as to the structure and number of connectors of such a unit. However, the Board is convinced that the skilled person would obviously have followed the examples of O1 and would not have selected freely from all sorts of possible types, numbers and configurations for the connectors. Hence it would have been obvious to implement pairs of integrated connectors with the

claimed properties as shown in Figures 1 to 6 of O1 without having to select from among many alternative options.

O1 does not disclose whether the unit with a 1:2 aspect ratio is larger or smaller than the unit with a square shape or that it represents a "double" unit. The skilled person would nevertheless have provided the shorter edge region of the rectangular unit with the same set of connectors as disclosed for the square units in the embodiment of Figures 1 to 6 in O1. The reason is that this example discloses a minimum configuration necessary for the required functionality of a plastic infiltration unit according to O1. The skilled person would thus have ruled out "halving" the single square units to arrive at an aspect ratio of 1:2, because this would not have led to a functional basic unit.

The parties controversially discussed whether the skilled person would have configured the connectors of the longer edge region by "stretching" the configuration of a corresponding edge region of a square unit as disclosed in Figure 4 of O1, or by "fusing" two of these edge regions, i.e. by repeating twice the configuration of a square unit on the long edge region of the unit with a 1:2 aspect ratio.

The Board finds it convincing that the skilled person would have sought to implement a connector configuration that allows connections between units rotated by multiples of 90° (i.e. without "directionality", see paragraph [0022] of O1) and with compatibility of the connector positions for connecting two short edge regions to one long edge region. This is obvious in view of the integer aspect ratio of 1:2,

which allows brick-style arrangements that make better use of the available space, and corresponds to the above-mentioned approach of "fusing", resulting in two of the pairs of the integrated connectors provided on the long opposite edge regions.

Accordingly, the approach of "fusing" submitted by the opponent would have led the skilled person to the subject-matter of claim 1 of auxiliary request 7-1 based on straightforward considerations and without requiring several selections from multiple lists of alternatives, hence in an obvious manner.

6.5 To conclude, the subject-matter of claim 1 does not involve an inventive step in view of the disclosure of O1.

7. Auxiliary requests 8 and 8-1

As claim 1 of auxiliary request 8 is identical to claim 1 of auxiliary request 7, the subject-matter of claim 1 of auxiliary request 8 is not novel over O1 for the same reasons as set out for auxiliary request 7.

Similarly, the subject-matter of claim 1 of auxiliary request 8-1, which is identical to claim 1 of auxiliary request 7-1, does not involve an inventive step, as set out above.

Hence auxiliary requests 8 and 8-1 are not allowable.

8. Auxiliary requests 9 and 10

The identical claim 1 of auxiliary requests 9 and 10 differs from claim 1 of auxiliary request 7 by the additional Feature M1 of claim 1 of auxiliary request 4

specifying a proximal end comprising a socket and a distal end comprising a foot of the at least one pillar of the claimed unit.

Like claim 1 of auxiliary request 4, claim 1 of auxiliary requests 9 and 10 does, however, not specify the interrelation between the foot and socket deriving from the passage of the application as filed from which Feature M1 was taken. Hence auxiliary requests 9 and 10 are not allowable under Article 123(2) EPC for the same reasons as set out for claim 1 of auxiliary request 4.

9. Summary

As none of the patent proprietor's claim requests is allowable, it follows from the above that the patent is to be revoked.

10. Request for a different apportionment of costs

The opponent requested a different apportionment of costs in its favour due to the patent proprietor's alleged abusive behaviour in regard to the submission of five new claim requests four days before the oral proceedings.

For abusive behaviour to be acknowledged, the patent proprietor would have had to have filed these claim requests not in pursuit of a legitimate aim, such as that the patent be maintained on the basis of one of these requests, but rather primarily to cause damage to the opponent. The burden of proof for an abuse of rights is on the person claiming it and such an abuse must be established without doubt (see J 14/19, Reasons 13.1). Persistently pursuing own interests in proceedings before the EPO does not as such amount to

an abuse of procedure (T 2892/19, Reasons 5). Moreover, preparations for discussing the admittance and substance of late-filed submissions are part of the normal work that can be expected of any party and its representative (see T 1848/12, Reasons 2.1).

In the case at hand, the opponent did not provide any proof as to the patent proprietor's possible intention to cause harm, nor is the Board aware of any such indication. The mere fact that the claim requests concerned were not admitted or allowed by the Board, or were possibly unlikely to be admitted or allowed, does not constitute any such indication. The Board also points out that it admitted auxiliary request 7-1, i.e. one of the claim requests concerned, into the appeal proceedings, as it considered its filing a legitimate reaction to the Board's observations in its preliminary opinion (see point 6.1 above).

The Board therefore sees no reasons of equity which could justify diverging from the principle of Article 104(1) EPC whereby each party should bear the costs it has incurred.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

3. The request for apportionment of costs is refused.

The Registrar: The Chairman:

C. Spira C. Herberhold

Decision electronically authenticated