PACKAGING STRUCTURE AND PACKAGING BOX FOR FRAGILE ARTICLE

CROSS-REFERENCES TO RELATED APPLICATIONS

[0001] The present application claims priority to Chinese patent application No. 202421520889.1 filed with the China National Intellectual Property Administration on June 28, 2024, and entitled "Packaging Structure and Packaging Box for Fragile Article", the entire contents of which are incorporated herein by reference.

FIELD

[0002] The present application relates to the field of logistics packaging, and in particular to a packaging structure and a packaging box for a fragile article.

BACKGROUND

[0003] With the development of e-commerce logistics, fragile articles such as fresh products, ceramics, glass, and electronic products are susceptible to irreversible damage during transportation due to their physical properties.

[0004] In the related art, in order to fix and cushion a fragile article during transportation, methods such as using air-filled bags in combination with corrugated cardboard boxes or foamed plastic boxes are employed to prevent physical processes such as sliding, jolting, and impact of the fragile article within the package during storage and transportation logistics. However, these packaging materials still cause compression to the fragile article inside when subjected to external pressure, resulting in damage to the fragile article.

BRIEF SUMMARY

[0005] In view of the above, it is necessary to provide a packaging structure and a packaging box for a fragile article to address the problem in the related art that the fragile article is damaged due to compression of packaging materials.

[0006] According to embodiments of the present application, there is provided a packaging structure for a fragile article, including a first base tray and a first film, where:

the first base tray includes a first base body and a first opening surface, the first film is fixedly arranged on the first opening surface, and a cavity is formed between the first film and the first base body; and

the first film is extensible, and the first film extends toward a bottom direction of the first base body when subjected to pressure from a target fragile article, and a gap exists between an extended first film and a bottom as well as a side surface of the first base body.

[0007] In an embodiment, the packaging structure further includes a second base tray and a second film, where:

the second base tray includes a second base body and a second opening surface, and the second film is arranged on the second opening surface; the second film is extensible, and a gap exists between an extended second film and a bottom as well as a side surface of the second base body; and

the first base tray and the first film form a first structure, and the second base tray and the second film form a second structure; in case that the first structure and the second structure are combined, an elastic space for wrapping a target fragile article is formed between the first film and the second film.

[0008] In an embodiment, each of the first base tray and the second base tray is provided with a plurality of reinforcing structures, and extended first film and extended second film are not in contact with any of the plurality of reinforcing structures.

[0009] In an embodiment, the first opening surface is provided with an opening hole, and the second opening surface is provided with a snap-fit member; and

where when the first structure and the second structure are combined, the snap-fit member is snapped into the opening hole to fix the first structure and the second structure.

[0010] In an embodiment, the first film is bonded to the first opening surface by hot melting, and the second film is bonded to the second opening surface by hot melting.

[0011] In an embodiment, the first base tray and the second base tray are paper pulp molded base trays.

[0012] In an embodiment, the paper pulp molded base trays are manufactured by a semi-wet pressing process.

[0013] In an embodiment, the first film and the second film are made from a material selected

from one of thermoplastic polyurethane (TPU), polyethylene (PE), and polyvinyl chloride (PVC).

[0014] In an embodiment, the first film and the second film are provided with vent holes.

[0015] According to embodiments of the present application, there is also provided a packaging box for a fragile article, including a box body and the packaging structure of the embodiments mentioned above arranged inside the box body.

[0016] The packaging structure for a fragile article provided by the embodiments of the present application includes a first base tray and a first film, where the first base tray includes a first base body and a first opening surface, the first film is arranged on the first opening surface, a cavity is formed between the first film and the first base body, and the first film is extensible. When subjected to pressure from a target fragile article, the first film extends toward a bottom direction of the first base body, and a gap exists between an extended first film and a bottom as well as a side surface of the first base body. The target fragile article can be placed on the first film. During transportation, when the target fragile article shakes, the extensibility of the first film provides a certain cushioning space for the fragile article. Meanwhile, since a gap exists between an extended first film and the bottom as well as side surfaces of the first base body, the target fragile article is not in contact with the first base body and thus is not subjected to compression or impact, thereby improving the safety of the fragile article during transportation.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] For a better description and illustration of the embodiments and/or examples of the present application, reference may be made to one or more of the accompanying drawings. The additional details or examples used to describe the drawings shall not be construed as limiting the scope of any of the disclosed application, the presently described embodiments and/or examples, or the best mode presently understood of these applications.

[0018] FIG. 1 is a schematic entire structural diagram of a packaging structure for a fragile article according to an embodiment.

[0019] FIG. 2 is a schematic side diagram of the packaging structure for a fragile article according to the first embodiment.

[0020] FIG. 3 is a schematic internal structural diagram of the packaging structure for a fragile

article according to the first embodiment.

[0021] FIG. 4 is a schematic partial structural diagram of a packaging structure for a fragile article according to an embodiment.

[0022] FIG. 5 is a schematic entire structural diagram of a packaging structure for a fragile article according to another embodiment.

[0023] FIG. 6 is a schematic side diagram of a packaging structure for a fragile article according to still another embodiment.

[0024] FIG. 7 is a schematic structural diagram of a packaging box for a fragile article according to an embodiment.

[0025] Description of reference signs:

10: first base tray; 11: first reinforcing structure; 12: second reinforcing structure; 13: first opening surface; 14: opening hole; 15: first base body;

20: second base tray; 21: third reinforcing structure; 22: fourth reinforcing structure; 23: second opening surface; 24: snap-fit member; 25: second base body;

30: first film;

40: second film;

51: first cavity; 52: second cavity; 53: elastic space;

60: packaging box.

DETAILED DESCRIPTION

[0026] In order to make the above-mentioned objects, features, and advantages of the present application more apparent and understandable, the specific implementations of the present application will be described in detail below with reference to the accompanying drawings. In the following description, numerous specific details are set forth to facilitate a thorough understanding of the present application. However, the present application may be implemented in many other ways different from those described herein, and those skilled in the art may make similar modifications without departing from the scope of the present application. Therefore, the present application is not limited to the specific embodiments disclosed below.

[0027] In the description of the present application, it should be understood that, if terms such as “center”, “longitudinal”, “lateral”, “length”, “width”, “thickness”, “upper”, “lower”, “front”, “rear”, “left”, “right”, “vertical”, “horizontal”, “top”, “bottom”, “inner”, “outer”, “clockwise”, “counterclockwise”, “axial”, “radial”, “circumferential”, etc., appear, these terms indicate orientations or positional relationships based on the orientations or positional relationships shown in the accompanying drawings, and are only for the convenience of describing the present application and simplifying the description, rather than indicating or implying that the referenced devices or elements must have a specific orientation or be constructed and operated in a specific orientation. Therefore, they shall not be construed as limiting the present application.

[0028] Furthermore, if the terms “first” and “second” appear, these terms are used for descriptive purposes only and shall not be construed as indicating or implying relative importance or implicitly indicating the quantity of the technical features referred to. Thus, a feature defined by “first” or “second” may explicitly or implicitly include at least one such feature. In the description of the present application, if the term “plurality” appears, “plurality” means at least two, for example, two, three, etc., unless otherwise expressly and specifically defined.

[0029] In the present application, unless otherwise expressly specified and limited, if terms such as “mounting”, “connecting”, “coupling”, “fixing”, etc., appear, these terms should be broadly construed. For example, they may refer to a fixed connection, a detachable connection, or an integral formation; they may refer to a mechanical connection or an electrical connection; they may refer to a direct connection or an indirect connection via an intermediate medium, and may refer to internal communication between two elements or the interaction relationship between two elements, unless otherwise expressly limited. For those of ordinary skill in the art, the specific meanings of the above terms in the present application may be understood according to the specific circumstances.

[0030] In the present application, unless otherwise expressly specified and limited, descriptions such as a first feature being “on” or “under” a second feature may mean that the first feature and the second feature are in direct contact, or that the first feature and the second feature are in indirect contact via an intermediate medium. Moreover, the first feature being “above”, “over”, or “on top of” the second feature may mean that the first feature is directly above or obliquely above the second feature, or merely that the first feature has a higher horizontal level than the second feature.

The first feature being “below”, “under”, or “beneath” the second feature may mean that the first feature is directly below or obliquely below the second feature, or merely that the first feature has a lower horizontal level than the second feature.

[0031] It should be noted that if an element is referred to as being “fixed to” or “disposed on” another element, it may be directly on the other element or there may be an intervening element. If an element is considered to be “connected” to another element, it may be directly connected to the other element or there may be an intervening element at the same time. If present, the terms “vertical”, “horizontal”, “upper”, “lower”, “left”, “right”, and similar expressions used in the present application are for illustrative purposes only and do not indicate that they are the only implementations.

[0032] Referring to FIG. 1, FIG. 2, and FIG. 3, an embodiment of the present application provides a packaging structure for a fragile article. FIG. 1 is a schematic entire structural diagram of the packaging structure for a fragile article according to an embodiment of the present application, FIG. 2 is a schematic side diagram of the packaging structure of FIG. 1, and FIG. 3 is a schematic internal structural diagram of the packaging structure of FIG. 1.

[0033] The packaging structure of the present embodiment includes: a first base tray 10 and a first film 30.

[0034] The first base tray 10 includes a first base body 15 and a first opening surface 13, and the first film 30 is fixedly arranged on the first opening surface 13; and a cavity is formed between the first film 30 and the first base body 15.

[0035] The first film 30 is extensible. When subjected to pressure from a target fragile article, the first film 30 extends toward a bottom direction of the first base body 15, and a gap exists between an extended first film 30 and a bottom as well as a side surface of the first base body 15.

[0036] The target fragile article includes, but not limited to, fresh products, ceramics, glass, electronic products, and other articles that are easily damaged during transportation.

[0037] Specifically, the first base tray 10 is mainly used to bear the weight of the entire packaging structure. The first base tray 10 includes the first base body 15, and the first base body 15 is mainly used to support the packaging structure. If the target fragile article is placed in the

packaging structure, the first base body 15 is used to withstand jolting and pressure during transportation. The first base tray 10 further includes the first opening surface 13 directly connected to the first base body 15. The first opening surface 13 is a plane corresponding to an opening direction of the packaging structure, and an opening through which the target fragile article is placed into the packaging structure is provided in the first opening surface 13. The first film 30 is used to cover the first opening surface 13 of the first base tray 10, so that a horizontal surface around the opening of the first opening surface 13 is completely covered by the first film 30. The target fragile article can be placed through the first film 30 at the opening of the first opening surface 13. At this time, a cavity, for example, a first cavity 51, is formed between the first film 30 and the first base body 15.

[0038] At this point, the packaging structure is jointly formed by the first base tray 10 and the first film 30. The target fragile article is placed at the opening corresponding to the first film 30. When the first film 30 is subjected to pressure from the target fragile article, the first film 30 extends in a direction of the pressure according to its own extensibility, i.e., extends toward the bottom direction of the first base body 15. The depth of extension is positively correlated with the magnitude of the pressure from the target fragile article. For example, the target fragile article may be grapes. When grapes are placed on the first film 30, the first film 30 is deformed toward the bottom direction of the first base body 15, and a gap exists between an deformed first film 30 and both the bottom as well as the side surfaces of the first base body 15, so that the target fragile article is not in direct contact with the first base tray 10, and the weight of the target fragile article is directly borne only by the first film 30.

[0039] The packaging structure for a fragile article provided by the embodiments of the present application includes a first base tray 10 and a first film 30, where the first base tray 10 includes a first base body 15 and a first opening surface 13, the first film 30 is fixedly arranged on the first opening surface 13, a cavity is formed between the first film 30 and the first base body 15; and the first film 30 is extensible. When subjected to pressure from a target fragile article, the first film 30 extends toward a bottom direction of the first base body 15, and a gap exists between the extended first film 30 and a bottom as well as a side surface of the first base body 15. The target fragile article can be placed on the first film 30. During transportation, when the target fragile article shakes, the extensibility of the first film 30 provides a certain cushioning space for the fragile

article. Meanwhile, since a gap exists between the extended first film 30 and the bottom as well as side surfaces of the first base body 15, the target fragile article does not come into contact with the first base body 15 and thus is not subjected to compression or impact, thereby improving the safety of the fragile article during transportation.

[0040] FIG. 4 is a schematic partial structural diagram of the packaging structure for a fragile article according to an embodiment of the present application. In an exemplary embodiment, the packaging structure further includes a second base tray 20 and a second film 40.

[0041] The second base tray 20 includes a second base body 25 and a second opening surface 23, and the second film 40 is arranged on the second opening surface 23; the second film 40 is extensible, and a gap exists between an extended second film 40 and a bottom as well as a side surface of the second base body 25.

[0042] The first base tray 10 and the first film 30 form a first structure, and the second base tray 20 and the second film 40 form a second structure. In case that the first structure and the second structure are combined, an elastic space 53 for wrapping the target fragile article is formed between the first film 30 and the second film 40.

[0043] Specifically, the first base tray 10 and the second base tray 20 can be combined to form a packaging structure closed on all sides, and the packaging structure can bear the weight in at least six directions, namely, up, down, left, right, front, and rear. The second base tray 20 includes the second base body 25 mainly used to support the packaging structure. If the target fragile article is placed in the packaging structure closed on all sides, both the first base body 15 and the second base body 25 can bear jolting and pressure during transportation. The second base tray 20 further includes the second opening surface 23, which is directly connected to the second base body 25. The second opening surface 23 is a plane corresponding to the opening direction of the packaging structure, and an opening is provided in the second opening surface 23, through which the target fragile article is placed into the second film 40. The second film 40 is used to cover the second opening surface 23 of the second base tray 20, so that the surface around the opening of the second opening surface 23 is completely covered by the second film 40, and the target fragile article can be placed through the second film 40 at the opening of the second opening surface 23.

[0044] Based on the above, the first base tray 10 and the first film 30 can form a bottom load-

bearing structure, i.e., the first structure, and the second base tray 20 and the second film 40 can form a top load-bearing structure, i.e., the second structure. The target fragile article is enclosed by the first film 30 of the bottom load-bearing structure and the second film 40 of the top load-bearing structure. That is, after the bottom load-bearing structure and the top load-bearing structure are combined, the target fragile article is wrapped by the first film 30 and the second film 40, and the target fragile article is not in direct contact with either the first base tray 10 or the second base tray 20. A gap exists between the target fragile article and the bottoms as well as side surfaces of the first base body 15 and the second base body 25, for example, the first cavity 51 and the second cavity 52.

[0045] As shown in FIG. 5, which is a schematic entire structural diagram of the packaging structure for a fragile article according to an embodiment of the present application, the packaging structure may be composed of the first base tray 10, the first film 30, the second base tray 20, and the second film 40, where the first base tray 10 and the second base tray 20 are buckled in a mirror manner such that the first opening surface 13 and the second opening surface 23 are buckled with each other. At this time, the first film 30 and the second film 40 are in contact with each other, so that the first film 30 and the second film 40 wrap the target fragile article through being bonded with each other.

[0046] As shown in FIG. 6, which is a schematic internal structural diagram of the packaging structure for a fragile article according to an embodiment of the present application, when the first structure and the second structure are combined, an elastic space 53 is formed. The elastic space 53 is used to prevent the target fragile article from colliding with the packaging structure. The elastic space 53 may be formed based on the wrapping of the target fragile article by the first film 30 and the second film 40. The first structure itself has a first space 51, and the second structure itself has a second space 52. When the target fragile article is being transported and undergoes turning over or jolting, the target fragile article wrapped by the first film 30 and the second film 40 may compress the first space 51 and the second space 52, but the target fragile article is not in direct contact with the first base body 15 or the second base body 25.

[0047] In the embodiments of the present application, the first structure formed by the first base tray 10 and the first film 30, and the second structure formed by the second base tray 20 and the second film 40 are combined, so that the target fragile article is wrapped by the first film 30 and

the second film 40. Since the target fragile article is suspended in the cavity formed by the first structure and the second structure, the packaging structure, during transportation, does not cause the target fragile article to collide with the first structure or the second structure even when being turned over or transported, thereby further improving the transportation safety of the target fragile article.

[0048] In an exemplary embodiment, as shown in FIG. 3 and FIG. 4, each of the first base tray 10 and the second base tray 20 is provided with a plurality of reinforcing structures, and the extended first film 30 and the extended second film 40 are not in contact with any of the reinforcing structures. The reinforcing structures may be divided into lateral reinforcing structures and longitudinal reinforcing structures, and the number of the reinforcing structures is not particularly limited. For example, the lateral reinforcing structures may be reinforcing beams, and the longitudinal reinforcing structures may be reinforcing ribs, where the reinforcing beams and the reinforcing ribs are perpendicular to each other. In FIG. 3, a first reinforcing structure 11 represents a longitudinal reinforcing structure corresponding to the first base tray 10, and a second reinforcing structure 12 represents a lateral reinforcing structure corresponding to the first base tray 10. In FIG. 4, a third reinforcing structure 21 represents a longitudinal reinforcing structure corresponding to the second base tray 20, and a fourth reinforcing structure 22 represents a lateral reinforcing structure corresponding to the second base tray 20.

[0049] In the embodiments of the present application, the plurality of reinforcing structures can improve the load-bearing capacity of the first base tray 10 and the second base tray 20 themselves, further enhancing the safety of the packaging structure.

[0050] In an exemplary embodiment, as shown in FIG. 3 and FIG. 4, the first opening surface 13 is provided with an opening hole 14; the second opening surface 23 is provided with a snap-fit member 24. When the first structure and the second structure are combined, the snap-fit member 24 is snapped into the opening hole 14 to fix the first structure and the second structure together.

[0051] Specifically, the opening hole 14 is disposed on the first opening surface 13, and the snap-fit member 24 is disposed on the second opening surface 23. When the first structure and the second structure are combined, the opening hole 14 and the snap-fit member 24 can be fixed together.

[0052] In an embodiment, a folding device is provided between any side of the first opening surface 13 and the side of the second opening surface 23 corresponding to the any side. For example, the folding device may be a hinge, and the first structure and the second structure are connected through the hinge so that the first structure and the second structure can be folded via the hinge, facilitating the combination of the first structure and the second structure.

[0053] In the embodiments of the present application, the opening hole 14 and the snap-fit member 24 can combine the first structure and the second structure together, preventing the first structure and the second structure from loosening during transportation, which would otherwise cause the target fragile article to fall out, thereby improving the safety of the packaging structure.

[0054] In an exemplary embodiment, the first film 30 is bonded to the first opening surface 13 by hot melting; the second film 40 is bonded to the second opening surface 23 by hot melting. By using hot melting, bonding stability between the first film 30 and the first opening surface 13 can be improved, and bonding stability between the second film 40 and the second opening surface 23 can be improved.

[0055] In an exemplary embodiment, the first base tray 10 and the second base tray 20 are made of paper pulp molded material. The first base tray 10 and the second base tray 20 are paper pulp molded base trays. The paper pulp molded base trays are manufactured by a semi-wet pressing process. Specifically, paper pulp molded material can be adopted to reduce the cost and weight of the packaging structure and improve transportation efficiency, and the semi-wet press manufacturing method can enhance the load-bearing capacity of the trays, ensuring the safety of the packaging structure.

[0056] In an exemplary embodiment, the first film 30 and the second film 40 are made from a material selected from one of TPU, PE, and PVC. Specifically, the load-bearing capacity and extensibility of the above materials can improve the stability of the package.

[0057] In an exemplary embodiment, the first film 30 and the second film 40 are provided with vent holes. Specifically, the vent holes may be formed by laser minimally invasive perforation, and the vent holes can improve freshness preservation performance.

[0058] In an exemplary embodiment, as shown in FIG. 7, which is a schematic structural diagram of a packaging box for a fragile article according to an embodiment of the present

application, the packaging box includes a box body 60, and a packaging structure as described in the above embodiments arranged inside the box body.

[0059] Specifically, dimensions of the box body 60 correspond to dimensions of the packaging structure, i.e., the dimensions of the box body 60 are in a multiple relationship with the dimensions of the packaging structure, such that at least one packaging structure can fit exactly into the box body 60 without leaving any extra space that would cause the packaging structure to slide within the box body during transportation. The packaging box can accommodate the packaging structure, thereby improving transportation safety.

[0060] In one example, the box body 60 may be a carton, and the carton may have a double-wall structure. The box body 60 may be an insulation shipping box for reducing temperature fluctuation inside the box.

[0061] In an exemplary embodiment, specific implementations of the packaging structure for a fragile article are as follows:

[0062] To address the following issues with traditional grape packaging: 1. grape clusters vary in shape and size; 2. most current packaging uses a bag-in-bag configuration, which is lightweight and bulky after packing; 3. the existing bag-in-bag packaging requires inflating equipment, and the inflation intensity and pressure are difficult to control; 4. current packaging requires additional materials such as foam boxes and ice packs; in view of the above issues, a packaging structure for a fragile article is proposed. The specific packaging structure is as follows:

[0063] 1. Paper pulp molded base tray:

[0064] 1.1 Structural design: by collecting data on shapes and weights of different grape clusters, a structural design of the paper pulp molded tray is performed according to a three-dimensional structure of the clusters. In addition, the structural design can be modeled using three-dimensional drawings. The paper pulp molded base tray is mostly hollow in the middle, and the paper pulp molded base tray can be used in combination with a film; a plurality of reinforcing ribs may be provided on the side surfaces of the paper pulp molded base tray to provide supporting force.

[0065] 1.2 Material and process: based on a detection of grape respiration intensity and multiple tests, the paper pulp molding may use corrugated pulp and a semi-wet pressing process. The

corrugated pulp has low cost, and the semi-wet pressing process provides appearance precision close to that of the wet press process, with less fiber damage, high density, and relatively high toughness and strength of a finished product.

[0066] 2. Film:

[0067] 2.1 Material: thermoplastic resin film, and the material may be selected from TPU, PE, PVC, etc.

[0068] 2.2 Technical parameters: based on the detection of grape respiration intensity and the weight of a single grape cluster, the resilience and strength of the film are tested. The tensile strength shall not be less than 18 MPa in the longitudinal direction and 14 MPa in the transverse direction.

[0069] 2.3 All of the above film materials have low tackiness, and laser minimally invasive perforation can be used to provide vent holes in the film, and the freshness preservation performance can be adjusted through the vent holes.

[0070] 3. Combination of paper pulp molding and film:

[0071] The film is laminated onto the periphery of the paper pulp molding by hot melting. The height between a lowest point of the film after bearing the pressure of the grapes and an inner bottom of the paper pulp molded base tray may be 3 to 4 centimeters.

[0072] 4. An outer carton of appropriate size is configured according to actual requirements. The outer carton has a double-wall structure, with an edge crush resistance of not less than 4.3 KN/m and a burst resistance of not less than 800 KPa. When the ambient temperature is high and temperature control is required, an insulated carton may be used to reduce temperature fluctuations inside the box.

[0073] The embodiments of the present application can fully enclose and fix grape clusters of different shapes and sizes, preventing them from shaking or contacting each other within the packaging box. This can solve the problem of cargo damage caused by grape clusters squeezing and colliding with each other and grape berries falling off due to being turned upside down during logistics transportation. The packaging structure does not require ice packs or foam boxes, effectively reducing packaging material costs. The packaging structure does not require a bag-in-

bag configuration, effectively reducing the bulkiness of the materials and eliminating the need to carry inflating equipment, which facilitates packing operations at the place of origin. The packaging structure has high packing efficiency, and the packaging materials involved have a small physical volume before use, low storage and transportation costs, and good portability.

[0074] The technical features of the above-described embodiments may be combined in any manner. For the sake of brevity, not all possible combinations of the technical features of the above-described embodiments have been described. However, as long as there is no contradiction in the combination of these technical features, all such combinations should be considered as falling within the scope of the present specification.

[0075] The above-described embodiments are merely illustrative of several implementations of the present application, and the descriptions thereof are relatively specific and detailed. However, this should not be construed as limiting the scope of the patent application. It should be noted that for those skilled in the art, various modifications and improvements may be made without departing from the concept of the present application, and these all fall within the protection scope of the present application. Therefore, the protection scope of the patent of the present application shall be governed by the appended claims.

WHAT IS CLAIMED IS:

1. A packaging structure for a fragile article, comprising a first base tray and a first film, wherein:

the first base tray comprises a first base body and a first opening surface, the first film is fixedly arranged on the first opening surface, and a cavity is formed between the first film and the first base body; and

the first film is extensible, and the first film extends toward a bottom direction of the first base body when subjected to pressure from a target fragile article, and a gap exists between an extended first film and a bottom as well as a side surface of the first base body.

2. The packaging structure of claim 1, further comprising a second base tray and a second film, wherein:

the second base tray comprises a second base body and a second opening surface, and the second film is arranged on the second opening surface; the second film is extensible, and a gap exists between an extended second film and a bottom as well as a side surface of the second base body; and

the first base tray and the first film form a first structure, and the second base tray and the second film form a second structure; in case that the first structure and the second structure are combined, an elastic space for wrapping a target fragile article is formed between the first film and the second film.

3. The packaging structure of claim 2, wherein each of the first base tray and the second base tray is provided with a plurality of reinforcing structures, and extended first film and extended second film are not in contact with any of the plurality of reinforcing structures.

4. The packaging structure of claim 2, wherein the first opening surface is provided with an opening hole, and the second opening surface is provided with a snap-fit member; and

wherein when the first structure and the second structure are combined, the snap-fit member is snapped into the opening hole to fix the first structure and the second structure.

5. The packaging structure of claim 2, wherein the first film is bonded to the first opening surface by hot melting, and the second film is bonded to the second opening surface by hot melting.

6. The packaging structure of claim 2, wherein the first base tray and the second base tray are paper pulp molded base trays.

7. The packaging structure of claim 6, wherein the paper pulp molded base trays are manufactured by a semi-wet pressing process.

8. The packaging structure of claim 2, wherein the first film and the second film are made from a material selected from one of thermoplastic polyurethane (TPU), polyethylene (PE), and polyvinyl chloride (PVC).

9. The packaging structure of claim 2, wherein the first film and the second film are provided with vent holes.

10. A packaging box for a fragile article, comprising a box body and the packaging structure of claim 1 arranged inside the box body.