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REFRIGERATOR

Abstract

A refrigerator includes: an inner case forming a storage compartment; an outer case coupled to an outer side of the inner case to form an exterior; and an insulation between the inner case and the outer case, and configured to have an insulation thickness corresponding to a distance between the inner case and the outer case, where the inner case includes: a first inner case portion spaced apart from the outer case by a distance corresponding to a first insulation thickness, a second inner case portion spaced apart from the outer case by a distance corresponding to a second insulation thickness different from the first insulation thickness, and a boundary portion between the second inner case portion and the first inner case portion, and connected to a corner portion of the second inner case portion.

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Background/Summary

CROSS-REFERENCE TO RELATED APPLICATION(S) [0001] This application is a continuation of International Application No. PCT/KR2023/013625, filed on Sep. 12, 2023, in the Korean Intellectual Property Receiving Office, which is based on and claims priority to Korean Patent Application No. 10-2022-0155763, filed on Nov. 18, 2022, in the Korean Intellectual Property Office, the disclosures of which are incorporated by reference herein in their entireties.

BACKGROUND

1. Field

[0002] The disclosure relates to a refrigerator capable of compensating for the strength of a portion where the insulation thickness of a side wall abruptly changes.

2. Description of Related Art

[0003] In general, a refrigerator, an appliance for keeping food fresh, may include a main body having a storage compartment and a cold air supply system for supplying cold air to the storage compartment. The storage compartment may include a refrigerating compartment in which the food is kept refrigerated at a temperature of about 0° C. to 5° C., and a freezing compartment in which the food is kept frozen at a temperature of about 0° C. to −30° C.

[0004] The storage compartment may be provided with a plurality of shelves for ease of storage, and may be provided with a storage box to allow the food products stored therein to be stored in a state containing moisture.

[0005] Guide rails that guide the insertion and/or withdrawal of the storage box may be formed on both side walls of the storage compartment. To form the guide rails, a portion of each of both side walls of the storage compartment may be formed with a portion protruding inwardly of the storage compartment. The portion protruding inwardly of the storage compartment and changing rapidly in insulation thickness to have a different insulation thickness from other portions may be deformed and/or cracked by stresses generated when the insulation material shrinks and/or expands.

SUMMARY

[0006] Provided is a refrigerator capable of compensating for the strength of a portion where the insulation thickness of a side wall changes abruptly.

[0007] Further, provided is a refrigerator in which a bead is formed on a corner portion of a portion where the insulation thickness of a side wall changes abruptly to compensate for the strength.

[0008] Further still, provided is a refrigerator in which a bead is formed on a boundary portion of a portion where the insulation thickness of a side wall changes abruptly to compensate for the strength.

[0009] Additional aspects will be set forth in part in the description which follows and, in part, will be apparent from the description, or may be learned by practice of the presented embodiments.

[0010] According to an aspect of the disclosure, a refrigerator may include: an inner case forming a storage compartment; an outer case coupled to an outer side of the inner case to form an exterior; and an insulation between the inner case and the outer case, and configured to have an insulation thickness corresponding to a distance between the inner case and the outer case, where the inner case includes: a first inner case portion spaced apart from the outer case by a distance corresponding to a first insulation thickness, a second inner case portion spaced apart from the

outer case by a distance corresponding to a second insulation thickness different from the first insulation thickness, a boundary portion between the second inner case portion and the first inner case portion, and connected to a corner portion of the second inner case portion, a plurality of first beads along the boundary portion on the corner portion of the second inner case portion or on a portion that is adjacent to the corner portion of the second inner case portion, and a second bead along a direction corresponding to the plurality of first beads and on a portion of the first inner case portion that is adjacent to the plurality of first beads.

[0011] Each of the plurality of first beads may be on a portion of the corner portion of the second inner case portion that is adjacent to the boundary portion.

[0012] Each of the plurality of first beads may extend to a portion of the first inner case portion that is adjacent to the boundary portion.

[0013] Each of the plurality of first beads may extend from the portion of the corner portion of the second inner case portion that is adjacent to the boundary portion to a portion that is adjacent to the boundary portion of the first inner case portion.

[0014] The plurality of first beads may be arranged in a direction perpendicular to a direction of stress capable of being generated by the insulation, the plurality of first beads being configured to disperse the stress.

[0015] Each of the plurality of first beads may protrude outwardly from the inner case.

[0016] The refrigerator of claim **1**, wherein each of the plurality of first beads protrudes inwardly from the inner case.

[0017] The second bead may be in an arc shape.

[0018] The second bead may be spaced apart from an end of the plurality of first beads and correspond to a portion of the plurality of first beads.

[0019] The second bead may protrude outwardly from the inner case.

[0020] The second bead may protrude inwardly from the inner case.

[0021] The second inner case portion may protrude inwardly from the inner case by the distance corresponding to the second insulation thickness, the second insulation thickness being greater than the first insulation thickness.

[0022] The first inner case portion and the second inner case portion may be on a side wall of the inner case, and the second inner case portion may protrude further inwardly from the inner case than the first inner case portion.

Description

BRIEF DESCRIPTION OF THE DRAWINGS

[0023] The above and other aspects, features, and advantages of certain embodiments of the present disclosure will be more apparent from the following description taken in conjunction with the accompanying drawings, in which:

[0024] FIG. **1** is a perspective view illustrating a refrigerator according to an embodiment;

[0025] FIG. **2** is a side cross-sectional view illustrating the refrigerator according to an embodiment;

[0026] FIG. **3** is a perspective view illustrating an inner case, according to an embodiment;

[0027] FIG. **4** is an enlarged cross-sectional view of portion A shown in FIG. **3** according to an embodiment;

[0028] FIG. **5** is an enlarged view of portion A shown in FIG. **3** according to an embodiment;

[0029] FIG. **6** is a view illustrating a plurality of first beads and a second bead formed to protrude inwardly from the inner case, according to an embodiment;

[0030] FIG. **7** is a view illustrating the inner case in which only the plurality of first beads are formed to protrude outwardly from the inner case according to an embodiment; and

[0031] FIG. **8** is a view illustrating an inner case in which only the plurality of first beads are formed to protrude inwardly from the inner case, according to an embodiment.

DETAILED DESCRIPTION

[0032] Various embodiments of the present document and terms used therein are not intended to limit the technical features described in this document to specific embodiments, and should be understood to include various modifications, equivalents, or substitutes of the corresponding embodiments.

[0033] In addition, the same reference numerals or signs shown in the drawings of the disclosure indicate elements or components performing substantially the same function.

[0034] Also, the terms used herein are used to describe the embodiments and are not intended to limit and/or restrict the disclosure. The singular forms “a,” “an” and “the” are intended to include the plural forms as well, unless the context clearly indicates otherwise. In this disclosure, the terms “including”, “having”, “comprising”, and the like are used to specify features, figures, steps, operations, elements, components, or combinations thereof, but do not preclude the presence or addition of one or more of the features, figures, steps, operations, elements, components, or combinations thereof.

[0035] It will be understood that, although the terms “first”, “second”, “primary”, “secondary”, etc., may be used herein to describe various elements, but elements are not limited by these terms. These terms are only used to distinguish one element from another element. For example, without departing from the scope of the disclosure, a first element may be termed as a second element, and a second element may be termed as a first element. The term of “and/or” includes a plurality of combinations of any one or more of the plurality of listed items.

[0036] Further, as used in the disclosure, the terms “front”, “rear”, “top”, “bottom”, “side”, “left”, “right”, “upper”, “lower”, and the like are defined with reference to the drawings, and are not intended to limit the shape and position of any element.

[0037] Hereinafter, various embodiments according to the disclosure will be described in detail with reference to the accompanying drawings.

[0038] FIG. **1** is a perspective view illustrating a refrigerator according to an embodiment. FIG. **2** is a side cross-sectional view illustrating the refrigerator according to an embodiment.

[0039] As shown in FIGS. **1** and **2**, a refrigerator may include a main body **10**, a storage compartment **20** formed on an interior of the main body **10**, a door **30** configured to open and close the storage compartment **20**, and a cold air supply device configured to supply cold air to the storage compartment **20**.

[0040] The main body **10** may include an inner case **100** in which the storage compartment **20** is formed, an outer case **13** coupled to an outer side of the inner case **100** to form an exterior thereof, and an insulation **15** foamed between the inner case **100** and the outer case **13** to thermally insulate the storage compartment **20** and prevent cold air from escaping.

[0041] The storage compartment **20** may be formed inside the main body **10**. In other words, the storage compartment **20** may be formed by the inner case **100**. The storage compartment **20** may be configured as a refrigerating compartment or a freezing compartment. Although the drawings show the storage compartment **20** as being formed as a single compartment, which may be either a refrigerating or freezing compartment, it is not limited thereto. For example, the storage compartment **20** may be divided by a partition wall into a refrigerating compartment, which is an upper storage compartment arranged in an upper portion of the main body **10**, and a freezing compartment, which is a lower storage compartment arranged in a lower portion of the main body **10**. In other words, a refrigerating compartment may be arranged at the upper portion inside the main body **10**, and a freezing compartment may be arranged at the lower portion of the refrigerating compartment. Alternatively, a freezing compartment may be arranged at the upper portion inside the main body **10** and a refrigerating compartment may be arranged at the lower portion of the refrigerating compartment.

[0042] For convenience of storage, the interior of the storage compartment **20** may be provided with a plurality of shelves **27** on which food and the like may be placed thereon. In addition, a storage box **29** may be provided inside the storage compartment **20** in which food and the like may be stored in a moisture-containing state.

[0043] The storage box **29** may be configured to be insertable into and/or withdrawable from the storage compartment **20**. To allow the storage box **29** to be inserted and/or withdrawn inside the storage compartment **20**, the storage compartment **20** may be provided with a guide rail. The guide rail may be formed on an upper surface of a second inner case portion **120**, which will be described below (see FIGS. **3** and **4**).

[0044] The storage compartment **20** may be opened and closed by the door **30** rotatably coupled to the main body **10**. A plurality of door guards **35** may be installed on a rear surface of the door **30** to store food or the like. Although the storage compartment **20** is shown in the drawings as being formed as a refrigerating compartment or a freezing compartment, that is, as a single storage compartment, and the door **30** is shown as being arranged as a single door, it is not limited thereto. In other words, in cases where the storage compartment **20** is divided by a partition into an upper refrigerating compartment arranged in an upper portion of the main body **10** and a lower freezing compartment arranged in a lower portion of the main body **10**, the refrigerating compartment and the freezing compartment may each be opened and closed by a separate refrigerating compartment door and a separate freezing compartment door, respectively, which are rotatably coupled to the main body **10**.

[0045] The refrigerator may include a cold air supply device configured to supply cold air to the storage compartment **20**. The cold air supply device may include a compressor **41** installed in a machine compartment **25** to compress a refrigerant, a condenser installed in the machine compartment **25** to condense the compressed refrigerant, an expansion valve to expand the refrigerant condensed by the condenser, an evaporator **42** installed at a rear of the storage compartment **20** to generate cold air, and a fan **44** to direct the cold air generated by the evaporator **42** to be supplied to the storage compartment **20**. Although the drawings show the storage compartment **20** as being formed as a refrigerating compartment or a freezing compartment, i.e., a single compartment, and one evaporator **42** and one fan **44** are shown as being arranged at the rear of the storage compartment **20**, such a configuration is not limited thereto. In other words, in cases where the storage compartment **20** is divided by a partition into a refrigerating compartment, which is an upper storage compartment arranged in an upper portion of the main body **10**, and a freezing compartment, which is a lower storage compartment arranged in a lower portion of the main body **10**, a first evaporator and a second evaporator may be arranged at the rear of the refrigerating compartment and the rear of the freezing compartment, respectively. In addition, a first fan and a second fan may be arranged at the rear of the refrigerating compartment and the freezing compartment, respectively.

[0046] In addition, the cold air supply device may include a cold air duct **46** that guides the cold air induced by the fan **44** into the storage compartment **20** and discharges the guided air into the storage compartment **20**. The cold air duct **46** may be provided with a plurality of cold air discharge holes **47** that discharge cold air into the storage compartment **20**. Although the storage compartment **20** is shown in the drawings as being formed as a refrigerating compartment or a freezing compartment, i.e., a single storage compartment, with one cold air duct **46** disposed at the rear of the storage compartment **20**, it is not limited thereto. In other words, when the storage compartment **20** is divided by a partition into a refrigerating compartment, which is an upper storage compartment arranged in an upper portion of the main body **10**, and a freezing compartment, which is a lower storage compartment arranged in a lower portion of the main body **10**, a refrigerating compartment cold air duct and a freezing compartment cold air duct may be arranged at the rear of the refrigerating compartment and the rear of the freezing compartment, respectively.

[0047] FIG. **3** is a view illustrating the inner case according to an embodiment. FIG. **4** is an enlarged cross-sectional view of portion A shown in FIG. **3**. FIG. **5** is an enlarged view of portion A shown in FIG. **3**.
[0048] As shown in FIGS. **3** to **5**, the insulation **15** arranged between the inner case **100** and the outer case **13** may have an insulation thickness T. The insulation thickness T may be a distance between the inner case **100** and the outer case **13**.
[0049] The inner case **100** may include a first inner case portion **110** spaced apart from the outer case **13** such that the insulation thickness T of the insulation **15** has a first insulation thickness T**1**. The first inner case portion **110** may form both side walls of the storage compartment **20**.
[0050] The inner case **100** may include a second inner case portion **120** spaced apart from the outer case **13** such that the insulation thickness T of the insulation **15** has a second insulation thickness T**2**. The second insulation thickness T**2** of the second inner case portion **120** may be different from the first insulation thickness T**1** of the first inner case portion **110**. The second inner case portion **120** may be formed to protrude further inwardly from the inner case **100** than the first inner case portion **110**. In other words, the second insulation thickness T**2** may be thicker than the first insulation thickness T**1**. In other words, the second inner case portion **120** may be formed to protrude further toward the storage compartment **20** than the first inner case portion **110**, which forms the side wall of the inner case **100**. The second inner case portion **120** may support the storage box **29** (see FIGS. **1** and **2**). The guide rail may be provided on an upper portion of the second inner case portion **120** to allow the storage box **29** to be inserted and/or withdrawn.
[0051] Although the drawings show the second inner case portion **120** as being formed to protrude further inwardly from the inner case **100** than the first inner case portion **110**, it is not limited thereto. In other words, when the insulation thickness T of the insulation **15** is a rapidly changing portion, the second inner case portion **120** may be formed to protrude outwardly from the inner case **100** than the first inner case portion **110**. Accordingly, the second insulation thickness T**2**, which is the insulation thickness T of the second inner case portion **120**, may be formed thinner than the first insulation thickness T**1**, which is the insulation thickness T of the first inner case portion **110**.
[0052] A boundary portion **130** may be formed between the first inner case portion **110** and the second inner case portion **120**. A portion protruding from the first inner case portion **110**, such as the second inner case portion **120**, where the insulation thickness T changes abruptly from the first insulation thickness T**1** to the second insulation thickness T**2**, may be deformed and/or cracked by stresses generated when the insulation **15** shrinks and/or expands. In other words, because the portion where the insulation thickness T changes abruptly has weak strength, it may be deformed and/or cracked by stresses generated when the insulation **15** shrinks and/or expands.
[0053] Among the portions where the insulation thickness T changes abruptly, the boundary portion **130** formed between the first inner case portion **110** and the second inner case portion **120** and a corner portion of the second inner case portion **120** connected to the boundary portion **130** may have a weaker strength, and therefore, deformation and/or cracking may occur more easily due to stresses generated during shrinkage and/or expansion of material of the insulation **15**. Accordingly, the boundary portion **130** and the corner portion of the second inner case portion **120** connected to the boundary portion **130** may be formed to have a greater curvature compared to the other portions to prevent deformation and/or cracking caused by stresses.
[0054] Although the strength of the boundary portion **130** and the corner portion of the second inner case portion **120** connecting with the boundary portion **130** may be compensated for to some extent by being formed to have a greater curvature compared to the other portions, it may be difficult to compensate for the weak strength by being formed to have a greater curvature alone.
[0055] Accordingly, the boundary portion **130** formed between the first inner case portion **110** and the second inner case portion **120** and the corner portion of the second inner case portion **120** connecting with the boundary portion **130** may further be formed with a plurality of first beads **141**.

[0056] The plurality of first beads **141** may be formed on a corner portion of the second inner case portion **120** connected to the boundary portion **130**. The plurality of first beads **141** may be formed on the boundary portion **130** adjacent to the corner portion of the second inner case portion **120** connecting with the boundary portion **130**. The plurality of first beads **141** may be formed on a part of the first inner case portion **110** adjacent to the corner portion of the second inner case portion **120** connected to the boundary portion **130**. In other words, each of the plurality of first beads **141** may be formed on a portion of the corner portions of the second inner case portion **120** adjacent to the boundary portion **130**. In addition, each of the plurality of first beads **141** may be formed to extend to a portion of the first inner case portion **110** adjacent to the boundary portion **130**. Each of the plurality of first beads **141** may be formed on a portion of the portions of the first inner case portion **110** adjacent to the boundary portion **130** that is adjacent to the corner portion of the second inner case portion **120** connected to the boundary portion **130**. In other words, each of the plurality of first beads **141** may be formed to extend from a portion adjacent to the boundary portion **130** among the corner portions of the second inner case portion **120** connected to the boundary portion **130** to a portion adjacent to the boundary portion **130** of the first inner case portion **110**. Stated differently, each of the plurality of first beads **141** may be formed to extend from the boundary portion **130** adjacent to the corner portion of the second inner case portion **120** connected to the boundary portion **130** at one end into the first inner case portion **110** and at the other end into the second inner case portion **120**.

[0057] The plurality of first beads **141** may be formed to be arranged along the boundary portion **130**. The plurality of first beads **141** arranged along the boundary portion **130** may be positioned perpendicular to a direction of stress generated by the shrinkage and/or expansion of the insulation **15**.

[0058] As described above, because the plurality of first beads **141** are arranged in a direction perpendicular to the direction of stress generated during the shrinkage and/or expansion of the insulation **15**, the plurality of first beads **141** may compensate for strength by increasing the increase an reaction force against stress. In addition, because the plurality of first beads **141** are arranged in a direction perpendicular to the direction of stress generated by the shrinkage and/or expansion of the insulation, the plurality of first beads **141** may compensate for strength by distributing stresses.

[0059] Each of the plurality of first beads **141** may be formed to protrude outwardly from the inner case **100**. In other words, when viewed from the interior of the inner case **100**, each of the plurality of first beads **141** may be formed as a recessed groove.

[0060] Together with the plurality of first beads **141**, a second bead **151** may be formed in a direction along which the plurality of first beads **141** are arranged, in a portion of the first inner case portion **110** adjacent to the plurality of first beads **141**. The second bead **151** may be formed to have an arc shape. In other words, the second bead **151** may be formed to have an arc shape along the boundary portion **130**.

[0061] The second bead **151** may be formed to be spaced apart from an end of the plurality of first beads **141**, which is an end portion of the plurality of first beads **141**, to correspond to a portion of the plurality of first beads **141**. In other words, the second bead **151** may be formed on the first inner case portion **110** such that the second bead **151** is adjacent to one end of the plurality of first beads **141**.

[0062] The second bead **151** may be formed to protrude outwardly from the inner case **100**. In other words, the second bead **151** may be formed in a grooved shape when viewed relative to the interior of the inner case **100**.

[0063] FIG. **6** is a view illustrating the plurality of first beads and the second bead formed to protrude inwardly from the inner case according to an embodiment.

[0064] As shown in FIG. **6**, each of the plurality of first beads **143** may be formed to protrude toward an inner side of the inner case **100**. In other words, when viewed from the interior of the

inner case **100**, each of the plurality of first beads **143** may be formed as a protruding rib.
[0065] The second bead **153** may be formed to protrude inwardly from the inner case **100**. In other words, the second bead **153** may be formed as a protruding rib when viewed from the interior of the inner case **100**.
[0066] However, both the plurality of first beads **141** and the second bead **151** may be formed to protrude outwardly from the inner case **100**, as shown in FIG. **5**, and both the plurality of first beads **143** and the second bead **153** may be formed to protrude inwardly from the inner case **100**, as shown in FIG. **6**, but are not limited thereto. In other words, although not shown in the drawings, the plurality of first beads **141** may be formed to protrude outwardly from the inner case **100**, and the second bead **153** may be formed to protrude inwardly from the inner case **100**. In addition, the plurality of first beads **143** may be formed to protrude inwardly from the inner case **100**, and the second bead **151** may be formed to protrude outwardly from the inner case **100**.
[0067] FIG. **7** is a view illustrating the inner case, according to an embodiment, wherein only the plurality of first beads are formed to protrude outwardly from the inner case. FIG. **8** is a view illustrating the inner case, according to an embodiment, wherein only the plurality of first beads are formed to protrude inwardly from the inner case.
[0068] As shown in FIG. **7**, the plurality of first beads **141** may be formed on the corner portion of the second inner case portion **120** connected to the boundary portion **130** and on a portion adjacent to the second inner case portion **120** connected to the boundary portion **130**. The plurality of first beads **141** may be formed on the boundary portion **130** adjacent to the corner portion of the second inner case portion **120**. In addition, the plurality of first beads **141** may be formed on a portion of the first inner case portion **110** adjacent to the corner portion of the second inner case portion **120** connected to the boundary portion **130**. The plurality of first beads **141** may be formed to protrude toward an outer side of the inner case **100**. In this case, the second bead **151** shown in FIG. **5** may not be formed. In other words, the second bead **151** may not be formed, and only the plurality of first beads **141** may be formed on the inner case **100** to compensate for the strength of the corner portion of the second inner case portion **120** connected to the boundary portion **130** and the portion adjacent to the corner portion of the second inner case portion **120** connected to the boundary portion **130**.
[0069] As shown in FIG. **8**, the plurality of first beads **143** may be formed on the corner portion of the second inner case portion **120** connected to the boundary portion **130** and the portion adjacent to the corner portion of the second inner case portion **120** connected to the boundary portion **130**. The plurality of first beads **143** may be formed on the boundary portion **130** adjacent to the corner portion of the second inner case portion **120** connected to the boundary portion **130**. In addition, the plurality of first beads **143** may be formed on a portion of the first inner case portion **110** adjacent to the corner portion of the second inner case portion **120** connected to the boundary portion **130**. The plurality of first beads **143** may be formed to protrude toward an inner side of the inner case **100**. In this case, the second bead **153** shown in FIG. **6** may not be formed. In other words, the second bead **153** may not be formed, and only the plurality of first beads **143** may be formed on the inner case **100** to compensate for strength of the corner portion of the second inner case portion **120** connected to the boundary portion **130** and a portion adjacent to the corner portion of the second inner case portion **120** connected to the boundary portion **130**.
[0070] According to various embodiments of the present disclosure, the bead may be formed on the corner portion of the portion where the insulation thickness of the refrigerator side wall changes abruptly, thereby compensating for the strength by increasing an reaction force against stresses generated when the insulation shrinks and/or expands.
[0071] According to various embodiments of the present disclosure, the bead may be formed on the corner portion of the portion where the insulation thickness of the refrigerator side wall changes abruptly, thereby compensating for the strength by dispersing the stresses generated when the insulation shrinks and/or expands.

[0072] According to various embodiments of the present disclosure, the bead may be formed on the boundary portion of the portion where the insulation thickness of the refrigerator side wall changes abruptly, thereby enhancing structural strength by increasing an reaction force against stresses generated when the insulation shrinks and/or expands.
[0073] According to various embodiments of the present disclosure, a bead may be formed on a boundary portion of a portion where the insulation thickness of the refrigerator side wall changes abruptly, thereby enhancing structural strength by dispersing the stress generated when the insulation shrinks and/or expands.
[0074] The above-described embodiments are merely specific examples to describe technical content according to the embodiments of the disclosure and help the understanding of the embodiments of the disclosure, not intended to limit the scope of the embodiments of the disclosure. Accordingly, the scope of various embodiments of the disclosure should be interpreted as encompassing all modifications or variations derived based on the technical spirit of various embodiments of the disclosure in addition to the embodiments disclosed herein.

Claims

1. A refrigerator, comprising: an inner case forming a storage compartment; an outer case coupled to an outer side of the inner case to form an exterior; and an insulation between the inner case and the outer case, and configured to have an insulation thickness corresponding to a distance between the inner case and the outer case, wherein the inner case comprises: a first inner case portion spaced apart from the outer case by a distance corresponding to a first insulation thickness, a second inner case portion spaced apart from the outer case by a distance corresponding to a second insulation thickness different from the first insulation thickness, a boundary portion between the second inner case portion and the first inner case portion, and connected to a corner portion of the second inner case portion, a plurality of first beads along the boundary portion on the corner portion of the second inner case portion or on a portion that is adjacent to the corner portion of the second inner case portion, and a second bead along a direction corresponding to the plurality of first beads and on a portion of the first inner case portion that is adjacent to the plurality of first beads.
2. The refrigerator of claim 1, wherein each of the plurality of first beads is on a portion of the corner portion of the second inner case portion that is adjacent to the boundary portion.
3. The refrigerator of claim 2, wherein each of the plurality of first beads extends to a portion of the first inner case portion that is adjacent to the boundary portion.
4. The refrigerator of claim 3, wherein each of the plurality of first beads extends from the portion of the corner portion of the second inner case portion that is adjacent to the boundary portion to a portion that is adjacent to the boundary portion of the first inner case portion.
5. The refrigerator of claim 1, wherein the plurality of first beads are arranged in a direction perpendicular to a direction of stress capable of being generated by the insulation, the plurality of first beads being configured to disperse the stress.
6. The refrigerator of claim 1, wherein each of the plurality of first beads protrudes outwardly from the inner case.
7. The refrigerator of claim 1, wherein each of the plurality of first beads protrudes inwardly from the inner case.
8. The refrigerator of claim 1, wherein the second bead is in an arc shape.
9. The refrigerator of claim 1, wherein the second bead is spaced apart from an end of the plurality of first beads and corresponding to a portion of the plurality of first beads.
10. The refrigerator of claim 1, wherein the second bead protrudes outwardly from the inner case.
11. The refrigerator of claim 1, wherein the second bead protrudes inwardly from the inner case.
12. The refrigerator of claim 1, wherein the second inner case portion protrudes inwardly from the inner case by the distance corresponding to the second insulation thickness, the second insulation

thickness being greater than the first insulation thickness.

13. The refrigerator of claim 1, wherein the first inner case portion and the second inner case portion are on a side wall of the inner case, and the second inner case portion protrudes further inwardly from the inner case than the first inner case portion.