BULK BAG LINERS FOR RECEIVING, TRANSPORTING, AND DISCHARGING MEAT AND MEAT PRODUCTS

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ABSTRACT
A bulk bag liner is provided with a plurality of elongate strips and/or tabs secured to the bottom wall of the bulk bag liner at the intersection thereof with the side walls of the bulk bag liner and secured in place by lengths of heavy duty adhesive tape. The strips and/or tabs are sewn into the seam joining the bottom wall to the side walls of a bulk bag to prevent movement of the bulk bag liner relative to the bulk bag during the discharge of the contents of the bulk bag liner.
BULK BAG LINERS FOR RECEIVING, TRANSPORTING, AND DISCHARGING MEAT AND MEAT PRODUCTS

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation-in-part of application Ser. No. 11/048,517 filed Feb. 1, 2005, currently pending, the entire contents of which are incorporated herein by reference; which is a continuation of application Ser. No. 10/770,488 filed Feb. 4, 2004, now U.S. Pat. No. 7,018,098, the entire contents of which are incorporated herein by reference; which is a continuation of application Ser. No. 10/253,086 filed Sep. 24, 2002, now U.S. Pat. No. 6,739,753, the entire contents of which are incorporated herein by reference; which claims priority of provisional application Ser. No. 60/389,865, filed Jun. 20, 2002, the entire contents of which are incorporated herein by reference.

TECHNICAL FIELD

[0002] This invention relates generally to liners for bulk bags, and more particularly to liners for bulk bags of the type adapted to receive, transport, and discharge meat and meat products.

BACKGROUND AND SUMMARY OF THE INVENTION

[0003] U.S. Pat. Nos. 6,739,753; 6,921,201; and 7,018,098; and pending U.S. patent application 60/389,865; 10/689,278; 10/769,168; 11/048,517; 11/098,113; and 11/325,745 disclose and claim bulk bags specifically designed to receive, transport, and discharge meat and meat products. The present invention comprises a bulk bag liner configured for use in conjunction with the bulk bags disclosed and claimed in the foregoing U.S. patents and U.S. patent applications.

[0004] The liner of the present invention comprises an elongate tube formed from a thermoplastic polymer. Typically, the liner of the present invention comprises an elongate tube formed from polyethylene. One end of the tube is sealed to form the bottom of the liner. The seal may be formed by heat sealing or welding. Alternatively, the seal may be formed utilizing one or more suitable adhesives.

[0005] In accordance with the first embodiment of the invention strips of thermoplastic material are adhesively secured to the liner at the bottom thereof. The strips are sewn into the seam which connects the bottom wall of a bulk bag to the side walls thereof thereby preventing movement of the liner relative to the bulk bag during the discharge of meat and meat products from the liner.

[0006] In accordance with a second embodiment of the invention the strips comprising the first embodiment thereof are supplemented by tabs adhesively secured to the bottom of the liner at points intermediate the locations of the strips of the first embodiment. The tabs supplement the strips in preventing movement of the liner relative to the bulk bag during the discharge of meat and meat products from the liner.

[0007] In accordance with a third embodiment of the invention four tabs are secured to the bottom of the liner at points aligned with or adjacent to the midpoints of the four side walls of the bulk bag in which the liner is installed. The tabs are sewn into the seam which secures the bottom wall of the bulk bag to the side walls thereof and function to prevent movement of the liner relative to the bulk bag during the discharge of meat and meat products from the liner.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] A more complete understanding of the present invention may be had by reference to the following Detailed Description when taken in connection with the accompanying Drawings, wherein:

[0009] FIG. 1 is a perspective view illustrating a prior art bulk bag liner intended for use in receiving, transporting, and discharging meat and meat products;

[0010] FIG. 2 is a perspective view illustrating a bulk bag liner comprising a first embodiment of the present invention and showing the liner in its folded configuration;

[0011] FIG. 3 is a perspective view illustrating the bulk bag liner of FIG. 2 showing the liner in its open configuration;

[0012] FIG. 4 is a sectional view taking along the line 4-4 in FIG. 3 in the direction of the arrows;

[0013] FIG. 5 is a perspective view similar to FIG. 3 illustrating a bulk bag liner comprising a second embodiment of the invention; and

[0014] FIG. 6 is a perspective view similar to FIG. 3 illustrating a bulk bag liner comprising a third embodiment of the invention.

DETAILED DESCRIPTION

[0015] Referring now to the Drawings, and particularly to FIG. 1 thereof, there is shown a prior art bulk bag liner 10 and a bulk bag 12. The bulk bag liner 10 comprises a side wall 14 and a bottom wall 16 which is secured to the side wall 14 by heat sealing, welding, or by means of one or more suitable adhesives. The joiner of the bottom wall 16 to the side wall 14 forms a flange 18.

[0016] The flange 18 is positioned between the lower ends 20 of the side walls 22 of the bulk bag 12 and the outside edges 24 of the bottom wall of the bulk bag 22. The three components are then joined together by a sew line 26 which extends around the entire periphery of the bulk bag 22 thereby securing the bulk bag liner 10 against relative movement relative to the bulk bag 12 when meat and meat products are discharged from the liner 10.

[0017] A bulk bag liner 30 comprising the present invention is illustrated in FIGS. 2, 3, and 4. The bulk bag liner 30 comprises an elongate tube 32 formed from a thermoplastic polymer, typically polyethylene. The tube 32 is cut to length and one end thereof is sealed as illustrated at 34 to form the bottom of the liner 30. The seal 34 is conventional and may be formed from heat sealing, welding, or the use of one or more suitable adhesives.

[0018] In accordance with the present invention the bulk bag 30 is provided with elongate strips 36 secured to the opposite sides thereof. The strips 36 comprise lengths of a suitable material, typically a thermoplastic polymer such as polyethylene. As is best shown in FIG. 4, the strips 36 are secured to the bulk bag 30 by means of lengths of heavy duty
adhesive tape 38 of the type utilized in packaging and wrapping applications and having strands of reinforcing material embedded therein.

[0019] In the utilization thereof the liner 30 is first opened from the configuration illustrated in FIG. 2 to the configuration in FIG. 3. Thereafter the strips 36 are sewn into the seam between the side walls and the bottom wall of the bulk bag in the manner illustrated in FIG. 1 and described hereinafore in conjunction therewith. The strips 36 function to prevent relative movement between the liner 30 and the bulk bag in which the liner 30 is installed during the discharge of the meat and meat products from the liner 30.

[0020] The bulk bag liner 30 is further provided with conventional tabs 40 secured at predetermined points between the strips 36 and the upper end 42 of the bulk bag liner 30. As will be appreciated by those skilled in the art, the tabs 40 are sewn into a seam extending around the top of a bulk bag thereby preventing the liner from moving downwardly into the interior of the bulk bag during the filling of the liner with meat and meat products.

[0021] FIG. 5 illustrates a bulk bag liner 44 comprising a second embodiment of the invention. The bulk bag liner 44 is identical to the bulk bag liner 30 illustrated in FIGS. 2, 3, and 4 and described hereinafore in conjunction therewith except that in addition to the strips 36 the bulk bag liner 44 is provided with tabs 46. The tabs 46 are secured at the bottom edges of the side walls of the bags 44 extending between the side walls thereof having the strips 36 secured thereto. The tabs 46 are preferably formed from a thermoplastic polymer such as polyethylene and are secured in place by lengths of heavy duty adhesive tape of the type utilized in packaging and wrapping applications and having lengths of reinforcing material embedded therein.

[0022] FIG. 6 illustrates a bulk bag liner 48 comprising a third embodiment of the invention. The bulk bag liner 48 is identical to the bulk bag liner 30 illustrated in FIGS. 2, 3, and 4 and described hereinafore in conjunction therewith and to the bulk bag liner 44 illustrated in FIG. 5 and described hereinafore in conjunction therewith except that in lieu of the strips 36 the bulk bag liner 48 is provided with four tabs 46. The tabs 46 are located at or closely adjacent to the midpoints of each of the side walls comprising the bulk bag liner 48. The tabs 46 are preferably formed from a suitable thermoplastic polymer such as polyethylene and are secured in place by heavy duty adhesive tape of the type utilized in packaging and wrapping applications and having strips of reinforcing material embedded therein.

[0023] Although preferred embodiments of the invention have been illustrated in the accompanying Drawings and described in the foregoing Detailed Description, it will be understood that the invention is not limited to the embodiments disclosed, but is capable of numerous rearrangements, modifications, and substitutions of parts and elements without departing from the spirit of the invention.

1. In combination with a bulk bag liner of the type comprising a continuous length of polymeric film sealed at one end to define a bulk bag liner comprising four continuous side walls and a bottom wall, the improvement comprising means secured to the bottom wall of the bulk bag liner at the intersection thereof with the side walls thereof for securing the bulk bag liner to a seam formed at the intersection between the side walls and the bottom wall of a bulk bag and thereby preventing movement of the bulk bag liner relative to the bulk bag during the discharge of the contents of the bulk bag from the bulk bag liner.

2. The improvement according to claim 1 wherein the means for securing the bulk bag to the seam joining the bottom wall and the side walls of the bulk bag comprises elongate strips extending substantially the entire width of the bulk bag liner and located at opposite sides thereof and lengths of adhesive tape for securing the elongate strips to the bottom wall of the bulk bag liner of the intersection thereof with the side walls thereof.

3. The improvement according to claim 2 further including tabs secured to the bulk bag at locations between the locations of the strips secured thereto and secured to the bottom wall of the bulk bag at the intersection thereof with the side walls of the bulk bag, and lengths of adhesive tape for securing the tabs to the bottom wall of the bulk bag liner.

4. The improvement according to claim 1 wherein the means for preventing movement of the bulk bag liner relative to the bulk bag during the discharge of the contents of the bulk bag liner comprises a plurality of tabs positioned adjacent the midpoints of each of the side walls thereof and secured to the bottom wall of the bulk bag at points adjacent the intersection thereof with the side walls of the bulk bag liner, and a plurality of lengths of adhesive tape equal in number to the number of strips for securing the strips to the bottom wall of the bulk bag.