

RING CUSHION PROTECTOR AIR BAG

Description

The present invention of the Ring Cushion Protector Air Bag by Concept 7 Solutions Pte Ltd is to assist industrial container cargo protection from damages during the voyage.

The Ring Cushion Protector Air Bag function as a cushion protector around a cargo content and prevent cargo contents from any movement inside a container due to rough sea voyages and hence prevent cargo content damages from knocking or move out of pallet resting position.

The present invention relates to provide an air cushion bag around a cargo content rested on a pallet and to hold the cargo contents in a piled manner loaded into a cargo container from knocking and to secure an air tight piled manner within the container during the cargo voyage.

In the case of conventional rectangular air bag, a higher number of bags will be needed to provide the same air cushion result and might not be suitable to protect the cargo contents from moving inside a container during the voyage.

In accordance with the present invention of the Ring Cushion Protector Air Bag assembly consists of an outer layer of kraft paper material (1), an inner plastic layer of nylon/ PE plastic material (2) and an air valve cum with a cap (3) fixed on the outer layer.

Both ends of the outer and inner layer materials are bonded/sewed together and covered with a tape (4) over the jointing to form the Ring Cushion Air Bag (Fig 1).

Fig 2 . The formation of the outer layer of the Ring Cushion Protector Air Bag (1) is combined from a single rectangular sheet of kraft paper with folding at centre of material (6).

Fig 3. After fold, the opening length section of the kraft paper is seal (5) to form a bag formation. A small round cut opening (Fig 2) on the kraft paper (1) position near one end will allow the valve nozzle fixed to the inner plastic bag (2) to be fixed through to allow air passage flowing into the inner plastic bag (2). Valve (3) come with a cap for locking the air-flow passage.

Fig 4. The formation of the inner layer of the Ring Cushion Protector Air Bag (2) is combined from a single rectangular plastic material sheet with folding at centre of material.

Fig 5. After fold (6), the opening length section of the plastic sheet is seal (5) to form a plastic bag formation. Fig 5. A Valve (3) is fixed to allow air passage into the plastic bag (2) for bag expanding and to form an air cushion wrapped round a cargo content inside a container.

Fig 6. The inner plastic bag (2) is inserted inside the outer kraft paper bag (1) with the valve (3) fixed onto the plastic bag be protruded out of the cut section of the outer kraft paper (1) surface and locked in position via the valve cap (3). Both ends of the outer Kraft paper (1) will be jointed (4) with a bonding seal/sewed/tape to complete the Ring Cushion Protector Air bag.

The Ring Cushion Protector Air Bag (Fig 1) is made of an outer thick layer kraft paper (1) material ($\geq 70 \text{ g/m}^2$) and of purest knitting bag compound ($\geq 150 \text{ g/m}^2$) . Air pocket assurance for powerful compression resistance with peel strength at longitudinal ($\geq 600 \text{ N/15mm}$) and crosswise ($\geq 600 \text{ N/15mm}$). Puncture Intensity set at 26 N(test method ASTM D 4833-00)

The Ring Cushion Protector Air Bag (Fig 1) is made of an inner layer nylon and PE plastic (2) material with thickness ($70\text{-}90 \text{ }\mu\text{m}$). The inner plastic layer (2) folded with heat-seal intensity ($\geq 18 \text{ N/15mm}$) and has a longitudinal strength ($\geq 20 \text{ Mpa}$), crosswise ($\geq 20 \text{ Mpa}$) and peel strength at longitudinal ($\geq 80 \text{ KN/m}$) and crosswise ($\geq 80 \text{ KN/m}$). Puncture Intensity set at 36.1 (test method ASTM D 4833-00). Inner Bag (2) ductility at longitudinal (250%) and crosswise (250%). Steam transmissibility ($\leq 10 \text{ (38}^\circ\text{C/RH 100\%)} \text{ g/m}^2 \text{ 24 Hr.}$ Oxygen transmissibility ($\leq 100 \text{ (23}^\circ\text{C/O}_2\text{100\%/Dry)} \text{ cc/m}^2 \text{ 24 Hr.}$

The Ring Cushion Protector Air Bag (Fig 1) has a working pressure (Un-demolish $\square 0.2 \text{ bar}$) and bursting pressure (0.6 bar) with push pressure at 7000 KN. Adaptation temperature -20 to 70 $^\circ\text{C}$.

Claims:

1. A wide rectangular Kraft paper and plastic bag material , both folded at centre in forming the outer Ring cushion air bag (1) and inner layer of the plastic bag with the valve come with a cap (3) for air passage to expand the inner plastic bag (2) upon place round a cargo content to protect cargo damage/movement inside a container.
2. An article of manufacture in accordance with claim 1 wherein said article comprises a folded kraft paper in outer layer (1) and inner plastic bag layer (2) via a valve come with a cap (3) fixed for air passage, joint /sewed/tape as shown in Fig 1