

## Close to the customer around the world

National markets have different requirements and needs - despite globalization. In order to meet them and be as close to the customer as possible, the Storopack Group has a decentralized structure - the country offices act independently, quickly and flexibly.

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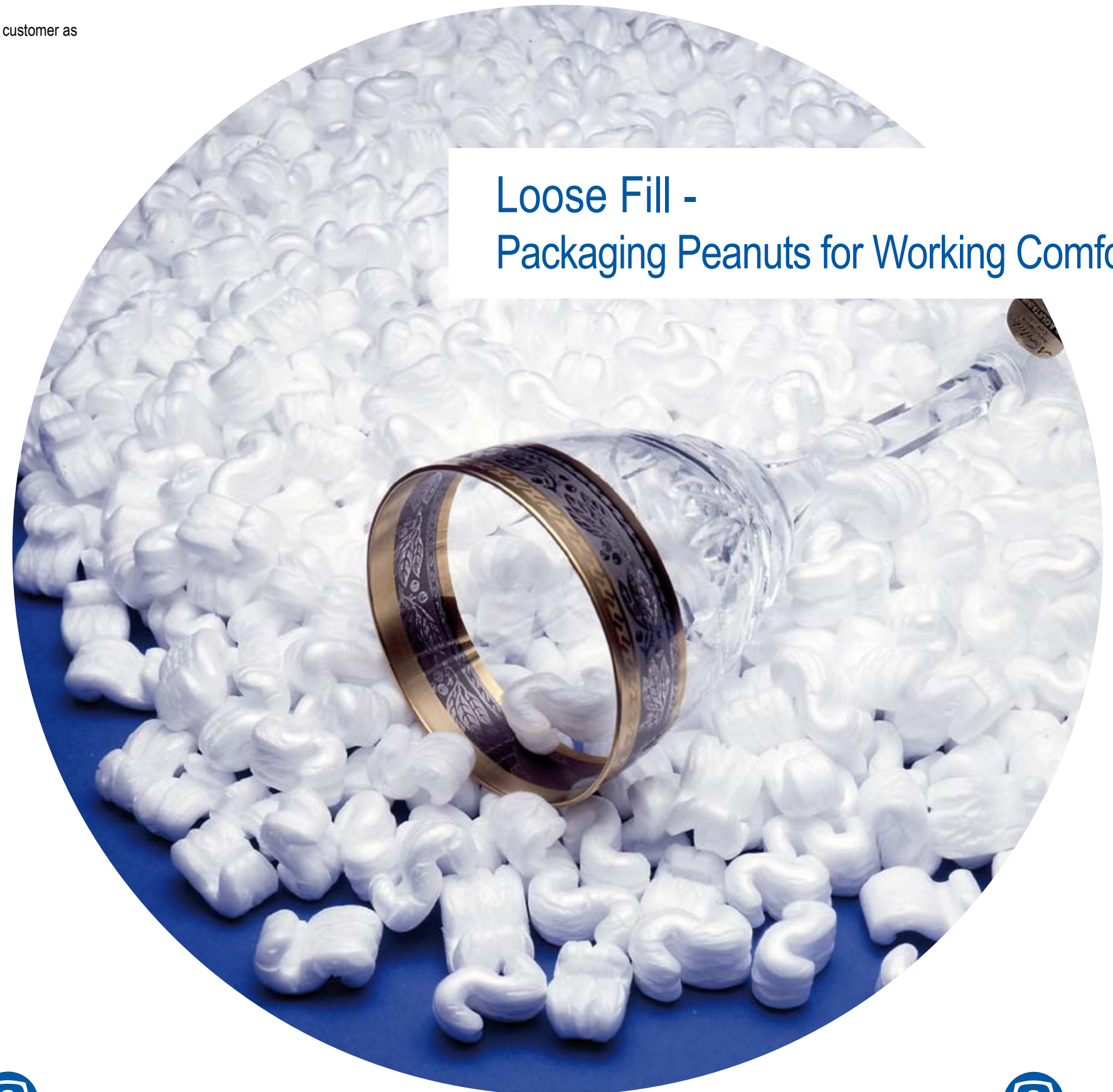
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## Loose Fill - Packaging Peanuts for Working Comfort



  
**STOROpack**

  
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## Storopack – Your International Partner for Protective Packaging

You will find a general overview of customized and flexibly useable protective packaging solutions at [www.storopack.com](http://www.storopack.com).

The Packaging business segment offers flexible protective packaging solutions. Complete consulting optimizes the protective packaging, the protective packaging process and its integration in a company's internal logistics for maximum productivity and sustainability. A fourth dimension includes the customers of the customers: They should experience the protective packaging solution in a positive way during unpacking. The result is perfect protective packaging.

Storopack continuously improves the productivity of our customer's' protective packaging process.

Storopack offers four flexible protective packaging solutions: The air cushions AIRplus®, the paper cushioning mattresses PAPERplus®, the PU foam cushions FOAMplus® and the packaging loose fill PELASPAN® and PELASPAN® BIO. The "Working Comfort" consulting approach ensures ergonomics, efficiency and effectiveness in the packaging area. Upon request, specialized application engineers can provide customized solutions ranging from equipment for the individual packaging station to the design and implementation of entire packaging lines. Storopack integrates manual, partial and fully automatic packaging systems into intralogistics.

## Working Comfort

by **STOROPack**



The globally active corporate group is represented at locations in North and South America, Europe and Asia. The flexible protective packaging of Storopack can be purchased through dealers in over 40 countries.



### The general protective functions: A pathfinder

This overview provides the general functions of the protective packaging. In the following pages, the pathfinder will show the functions that the individual protective packaging application specifically offers.

**Cushioning:** Absorbs impacts and protects breakables.

**Void Filling:** Fills empty spaces and prevents products from banging into each other.

**Block & Bracing:** Stabilizes heavy objects or individual articles in their position.

**Wrapping:** Protects completely against contact damage such as impact and scratches.



Picture 1 PELASPAN® packaging peanuts  
Picture 2 PELASPAN Bio® packaging peanuts

## Loose Fill - Packaging Peanuts for Working Comfort

Loose Fill packaging peanuts have served as a successful and flexible protective packaging system for decades. Storopack is among the pioneers in pourable padding materials. The company started production in 1973, making it one of the first suppliers in Europe. Today, there are two products under the brand name Loose Fill made in the characteristic S-shape: PELASPAN® is the classic product made of EPS, PELASPAN® Bio is made of plant starch.

### The advantages of Loose Fill for protective packaging

- exceptionally fast: packaging completed within seconds
- Intuitive application: no training necessary
- economical: advantageous price-performance ratio, high labor productivity
- peanuts interlock to form a vibration-proof packaging with a superior padding effect
- light: low volume weight
- PELASPAN® are 100% recyclable, PELASPAN® Bio is completely compostable
- Antistatic and non-abrasive

### In-house production

The know-how and practical experience that come from in-house production mean consistent quality and reliable delivery. Our expertise in manufacturing techniques was the basis for the development of PELASPAN® Bio: Storopack was the first supplier to introduce packaging peanuts made of plant starch that retain a resilient S-shape. Loose Fill products are available in various thicknesses.

#### PELASPAN®

PELASPAN® consist of EPS: resistant to temperature fluctuations, water-proof, resistant to bacteria and germs, 100% recyclable.

#### PELASPAN® Bio

PELASPAN® Bio consists of plant starch: 100% renewable resources, 100% compostable, certified according to EN 13432 (Europe) and ASTM D6400 (USA).



**Loose Fill:  
Applications in the box**

During filling, packaging peanuts automatically flow into all gaps and fill every empty space in a box. Individual peanuts interlock so that when properly used they form a vibration-proof cushion around the product being packed and also prevent contents from shifting. Due to their elastic resilience and ability to withstand high pressure loads, the packaging peanuts protect goods from stresses and strains during transportation. The availability of packaging peanuts with greater thickness, makes Loose Fill the perfect choice for shipping heavier items as well.

**Protective Property of Loose Fill**

- Void Filling



Picture 1 Protective packaging with PELASPAN® BIO  
Picture 2 Protective packaging with PELASPAN® BIO

## Economical, Effective and Flexible: Protective Packaging with Loose Fill

Loose Fill packaging peanuts provide fast, economical and secure protective packaging for:

- household goods
- handicraft supplies
- books, stationery, office supplies
- toys
- pharmaceutical products
- drugstore goods, cosmetics

Protective packaging utilizing Loose Fill packaging peanuts is customizable. It adapts to the geometry of the products. So the potential applications are almost unlimited.

**Void Filling with Loose Fill**

The box with the item inside is filled with packaging peanuts, until all hollow spaces next to and above the item are completely filled in.

- Packaging peanuts provide all-round protection
- Hollow spaces are filled in no time
- Example: prepackaged goods in contract logistics





**The Storopack performance process:  
Provides high output up to full automation**

- Thorough: comprehensive requirements analysis
- Competent: application engineers create conceptual designs and an action plan
- Working comfort: ergonomics, efficiency and effectiveness at every packing station
- Everything from a single source: in-house planning offices and workshops
- All output levels: up to full automation

Loose Fill is perfectly suitable for pouring. This opens up many possibilities for its integration into a company's logistics. Storopack can create solutions for a single packing station as well as for highly automated distribution centers. Our experience has shown that productivity can be increased by over ten percent. Overall costs decrease and employee satisfaction improves.

Storopack offers integrations for all output levels. A fully automated packaging line fills peanuts into the boxes automatically. A control system regulates the fill volume, e.g. through a link to the inventory management system. The peanuts are stored in a central silo and are moved through ducts by a blower unit. With partial automation, several packing stations are connected to the central silo. Where the filling process is controlled via a foot pedal, the employees have both hands free to prepare the shipment. Loose Fill is also available as a separate system for individual packing stations. The configuration ensures improved ergonomics and faster operations.

## Loose Fill Reference Projects

### Integration for a contract logistics company Solution level 1

**Products:**

prepackaged consumer goods

**Configuration solution 1:**

three packing stations, automated supply of packaging peanuts, release of packaging peanuts from above the conveyor belt, foot pedal triggers release

**Silo:**

central 790 cubic ft silo; ducts with blower unit

**Packing station performance:**

8 shipments per minute (average)

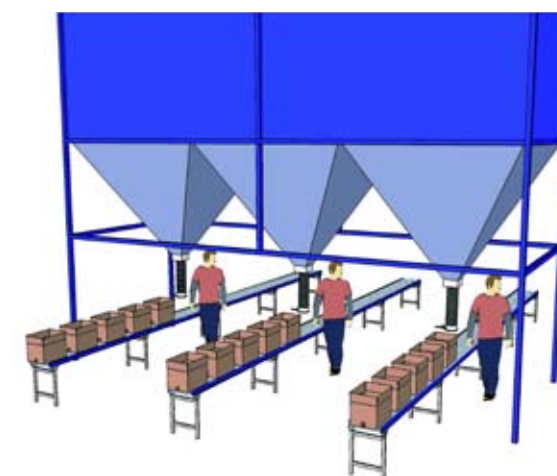
**Overall performance:**

7,000 shipments/day (average)

**Our challenge:** to fill the empty space in the box above the products (top fill). Various protective packaging options could be used. In tests, all fail to meet the processing time requirements set by the contract logistics company. When packers place protective packaging into empty spaces by hand, it takes too long to process each package. Two employees were required at each packing station in order to maintain the required processing rate.

**Our solution:** Loose Fill packaging peanuts flow automatically to fill all empty spaces. One employee per packing station is sufficient to guarantee adherence to the required processing rate. Packaging peanuts that land outside the box are sucked back into the packaging material reservoir. Use of PELASPAN® Bio demonstrates to the recipient the company's commitment to sustainability.

**What the client says:** "Loose Fill is clearly number one in terms of speed. With it we can achieve higher levels of productivity and greater efficiencies with respect to protection during transport. Plus, peanuts made of vegetable starch provide us with a modern, more environmentally friendly packaging material."





**Integration for a contract logistics company  
Solution level 2**

**Products:**

prepackaged consumer goods

**Configuration solution 2:**

fully automated packaging line

**Silo:**

central 790 cubic feet silo; ducts with blower unit

**Packing station performance:**

up to 15 shipments per minute

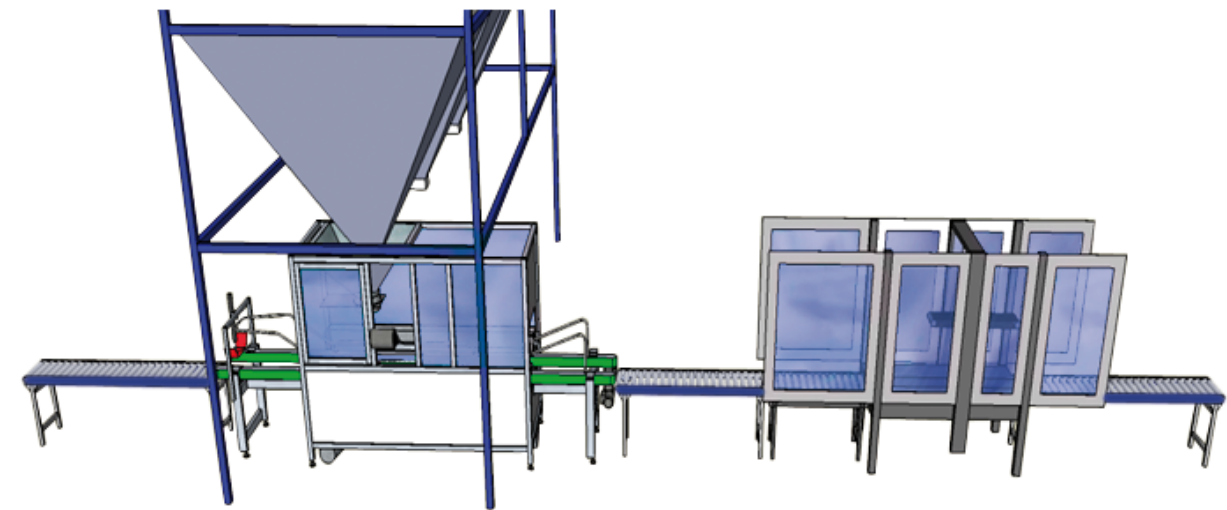
**Overall performance:**

7,000 shipments/day (average)

## Loose Fill Reference Projects: From Partial to Full Automation

**Our challenge:** As requirements for output and productivity rise, Storopack assists the company in achieving the next level of development in protective packaging.

**Solution level 2:** Automation of the fill process. Packaging peanuts flow automatically into the box by means of a control unit. A fan reduces overfilling to the necessary amount. Any peanuts that fall outside the box are re-collected. The conveyer system brings the box to the sealing unit. The packaging process can be completed without personnel.



**Result 2:** Output is more than doubled. Through automation, the client saves on personnel expenses and achieves a manifold increase in productivity.





### Integration for an Online Merchant

#### Products:

prepackaged electric and electronic products

#### Configuration:

fully automated packaging line

#### Silo:

central silo; ducts with blower unit

#### Performance:

up to 20 shipments per minute

#### Overall Performance:

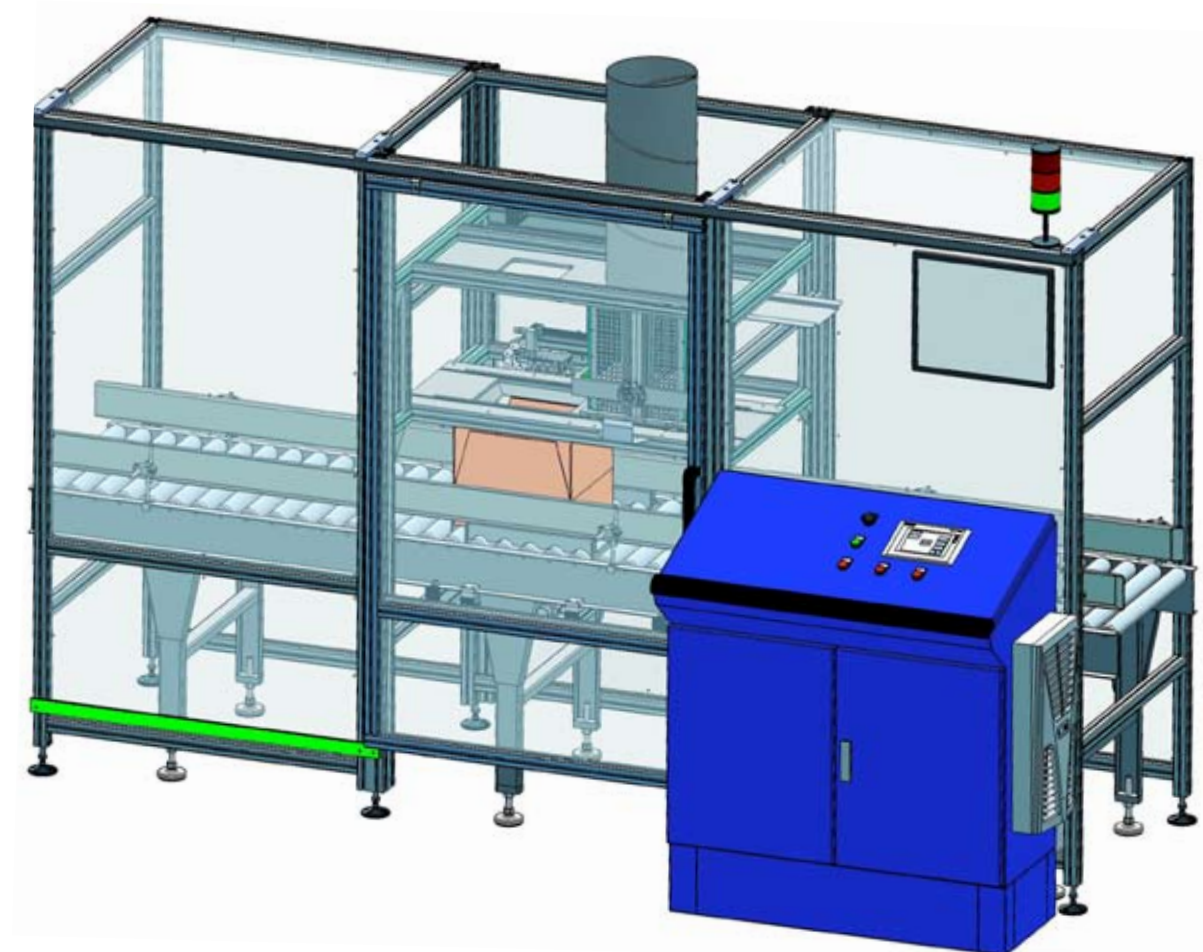
28,000 shipments/day (average)

## Loose Fill Reference Projects: Automation

**Our challenge:** To make the protective packaging system more efficient and productive.

**Our solution:** In cooperation with one of Storopack's distribution partners, an engineering firm develops and implements a fully automated Loose Fill packaging line. Once a box reaches the packing station, the system calculates the left over empty space. At the dispensing and filling station the required volume of packaging peanuts flows in from above. Light vibrations help to compress the peanuts inside the box.

**Result:** Automation increased output to as many as 20 parcels per minute. The online merchant saves considerably on personnel costs and achieves significantly higher productivity from its protective packaging system.



## Sustainability & Environmental Protection

Storopack's own commitment to the responsible handling of our environment and society is derived from the corporate philosophy. "Vision & guidelines" includes formally agreed principles for all Storopack employees. Managers are responsible for the motivation and promotion of the employees so that the awareness of society, culture and the environment continues to develop.

Resources are necessary for the production of protective packaging. Without protective packaging or in the case of too little or improperly used protective packaging, the transported products will be damaged, however. The new production of these goods is a waste of resources. For this reason, Storopack advocates the effective and efficient use of protective packaging.

PELASPAN® consist of expanded polystyrene (EPS). It is produced without CFCs (chlorofluorocarbons) or HCFCs (hydro-chlorofluorocarbons).

PELASPAN® Bio consists of vegetable starch. Its compostability is certified according to the American ASTM D6400 norm ([www.astm.org](http://www.astm.org)) and the European EN 13432 norm ([www.european-bioplastics.org](http://www.european-bioplastics.org)). The packaging peanuts can be discarded with normal household trash or organic waste.

REUSE means that ...

this product may be reused for its original purpose several times.

- Due to the high quality resilience properties of PELASPAN®, the packaging peanuts can be reused several times.

REDUCE means that ...

this product and its production process are conceptualized in a way that reduces the use of natural resources.

- PELASPAN® is usually manufactured from 100% post-consumption and production wastes.
- The low volume weight of protective packaging utilizing Loose Fill PELASPAN® or PELASPAN® Bio brings about reduced fuel use during transportation.

RECYCLE means that ...

post-consumption or production wastes of this product can substitute for primary resources.

- PELASPAN® is fully recyclable. Disposing of them through preexisting recycling systems helps to reduce the use of primary resources.

RENEW means that ...

this product is made of renewable resources, e.g. wood or vegetable materials.

- PELASPAN® Bio consists of vegetable starch.

