

DELBROUCK



Atmobox
SYSTEM

A New Storage and Transport Box System

A Development by DELBROUCK & Ribbeck

14.08.07

Atmobox

- Atmobox - A system for storage and transport of food and non-food articles
- The Atmobox is sealed with a plastic film
- The seal is gastight and can be pulled off without leaving a residue. The box can be returned.
- The Atmobox is stackable and compatible with all common European box systems.
- Standard measure: 600 x 400 mm

Atmobox

- Clean
- Save
- Modified atmosphere
- Cost reduction



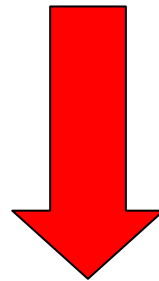
The Atmobox offers you...

- A stable environment without the susceptibility to humidity in the box
- **Hygiene during box handling:** no infiltration of dirt into the boxes during handling and storage
- **Theft protection** through vacuum sealing
- Air tight seal - transport of different types of food and empty boxes allowed in one freezer lorry -----> **Reduce transport routes and costs, variable usage of cold storage rooms**
- **Content stays cool** during load and unload, transport, temporary storage, and handling of cooled goods through the foil sealing

On Demand with modified Atmosphere

The Atmobox can be sealed with a modified gas atmosphere:

The gas mixture is specified by the requirements of the goods (O₂ 70%, CO₂ 30% for meat e.g.)



Food lasts three times longer (meat, fish, milk products, and fruits/ vegetables)

Less ice needed for keeping fish cool during transport - weight reduction

Possible Usage



food -
refrigerated or not



Transport of
mixed food goods



Prepared food
for kitchens



Small tools and
electronic goods



Luxury and
B- and C- articles

The Status of the System Implementation

- The Atmobox System follows the quality standards of the GKL (Gütergemeinschaft für Kühl Logistik)
- The Atmobox system has been tested by Prof. Dr. A. Stiebing, FH Lippe & Höxter in Lemgo, special fields Food Technology/ Meat Technology
- Practical implementations and tests have been carried out for all food industries

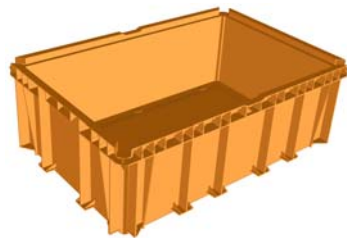


Example: Feta cheese
with or without brine
in film sealed boxes

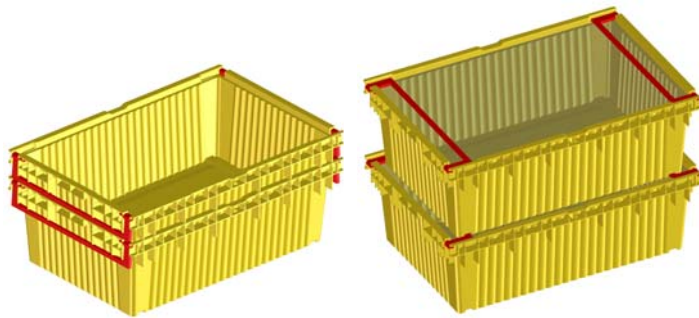
The Components of the System

1. The boxes with a patented rim design

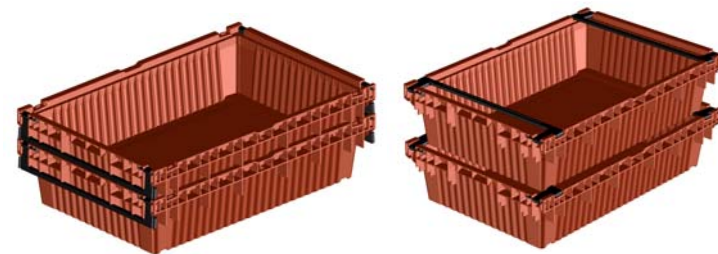
Today there are three types of Atmoboxes in usage.



Stiff Atmobox 200 mm high



Volume Reduced Atmobox 200 mm high



Volume Reduced Atmobox 140 mm high

Atmobox in 600 x 400 mm	Atmobox stiff	Volume reduced	Volume reduced
Height	200 mm	200 mm	140 mm
Weight	2000 g	2000 g	1600 g
Ultimate Load	200 kg	150 kg	120 kg
Maximum Filling Weight	20 kg	15 kg	15 kg

The Components of the System

1. The boxes with a patented rim design (cont')



Volume Reduction of empty Atmoboxes

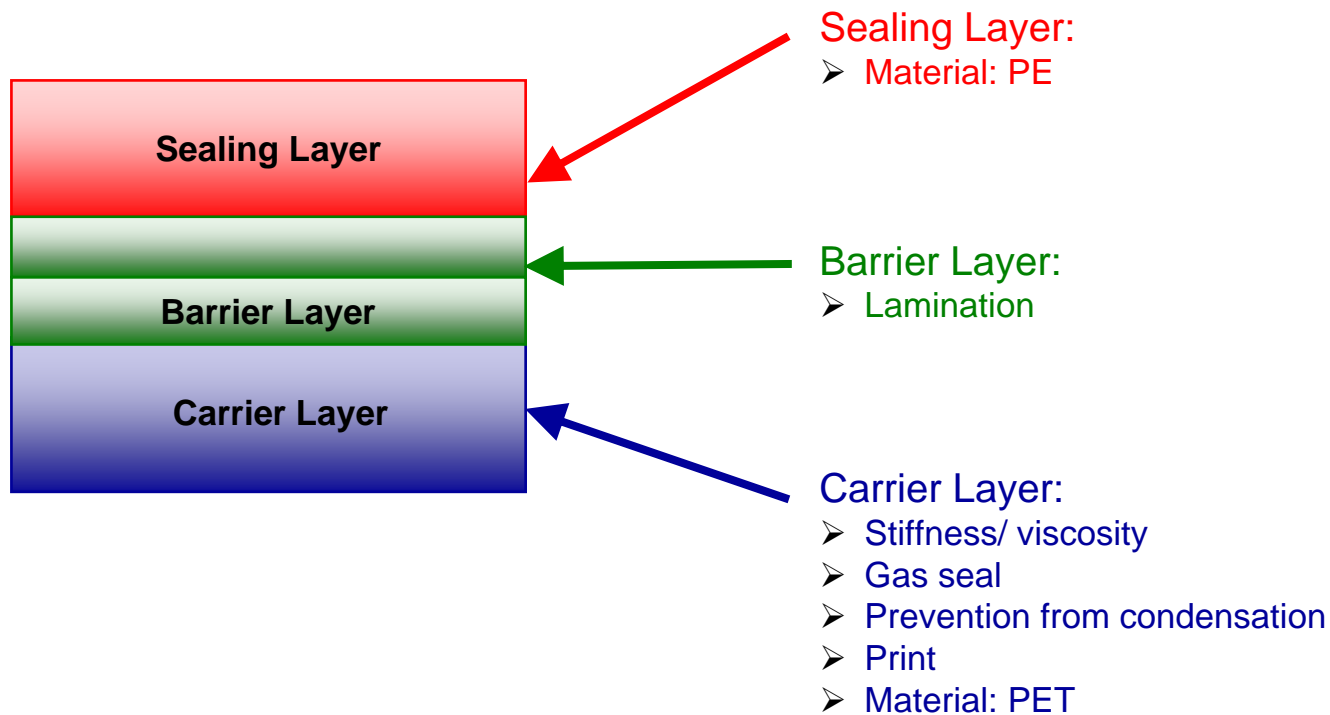
The volume reduction of the empty Atmoboxes is about 60%.

All boxes can be printed on or used with tags or shelves.

The Components of the System

2. The Film

Composition and materials of the film



The Components of the System

3. The Machine

- Simple design
- Semiautomatic machine with a modified gas atmosphere
- Automatic machine with a modified gas atmosphere

Capacity: Cycle time 10 sec for the automatic machine, 30 sec for the semiautomatic machine (with modified atmosphere), 10 sec without modified atmosphere

The following pictures show the semiautomatic machine



The Sealing Process



Semiautomatic machine in the cheese industry

The Sealing Process - 1st Step



- The film is wound off the roll and stretched.
- The box is placed onto the lower part of the tool.

The Sealing Process - 2nd Step



- The box is placed into the lower part of the tool
- which moves into the machine.

The Sealing Process - 3rd Step



- The machine closes
- If requested the gas atmosphere is modified

The Sealing Process - 4th Step



- The film is cut into the appropriate shape (Outside-Cut)

The Sealing Process - 5th Step

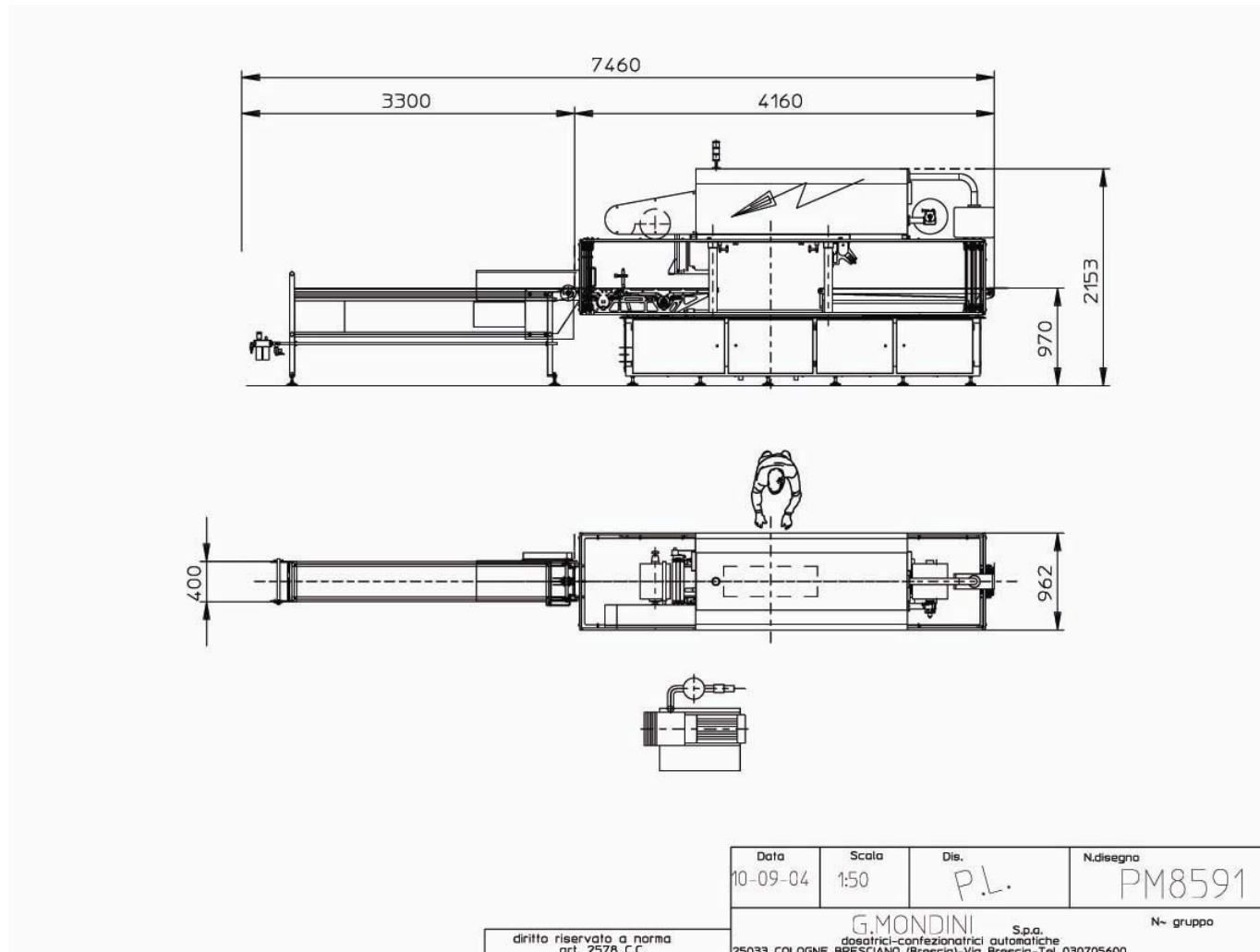


- Immediately after cutting, the tool seals the film onto the rim of the box
- The film can be recycled, any leftovers are put on a roll.

The Sealing Process - 6th Step



Automatic Machine





The right atmosphere for your goods