

# HANDLING RECOMMENDATIONS FOR PAPER SACKS

## Part 1: Best practice instructions for filling sites



# INTRODUCTION

Paper sacks are an efficient, effective and sustainable packaging solution for powdered and loose materials. These characteristics can be further enhanced by the application of best practices when storing, filling and handling sacks.

This guide is intended to help fillers identify aspects of their operations where they may be able to improve practices and thereby reduce, or even eliminate, damage to paper sack materials and filled paper sacks. It provides information about **risks** at the filling site and their **consequences**, and it offers **solutions**, best practices and instructions for handling industrial paper sacks properly in order to prevent forklift damage and incorrect palletisation.



## Produced by

These handling recommendations are produced by the European Sack Group (ESG), a collaboration between the organisations CEPI Eurokraft and EUROSAC.

## From filling to distribution and retail

The guidelines are divided into two parts in order to address all actors in the paper sack supply chain who handle filled sacks:

1. Filling site
2. Distribution site and retailer

For advice on handling during distribution and at retail sites, please turn to Part 2 of the handling recommendations: [www.eurosac.org](http://www.eurosac.org) or [www.cepi-eurokraft.org](http://www.cepi-eurokraft.org).

## About the organisations

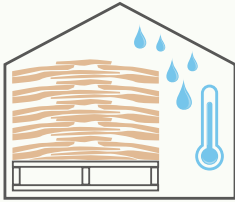
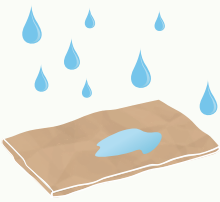

**CEPI Eurokraft** is the European Association for Producers of Sack Kraft Paper for the Paper Sack Industry and Kraft Paper for the Packaging Industry. It has eleven member companies representing a volume of 2.5 million tonnes of paper produced in twelve countries. [www.cepi-eurokraft.org](http://www.cepi-eurokraft.org)

**EUROSAC** is the European Federation of Multiwall Paper Sack Manufacturers. The federation represents over 75% of European paper sack manufacturers operating in 20 countries. They produce more than 5 billion paper sacks every year, converting 650,000 tonnes of paper in 60 plants. [www.eurosac.org](http://www.eurosac.org)

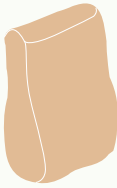
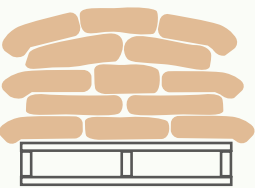
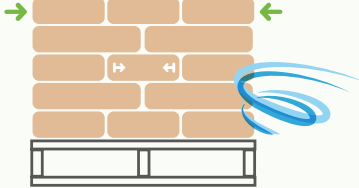
# BEST PRACTICE INSTRUCTIONS FOR FILLING SITES



## Storage of paper sacks prior to filling

RISKS	CONSEQUENCES	SOLUTIONS
 <ul style="list-style-type: none"> <li>• Very low or very high atmospheric moisture and/or temperatures inside the storage area</li> </ul>	 <ul style="list-style-type: none"> <li>• Sack paper properties are compromised</li> </ul>	 <ul style="list-style-type: none"> <li>• Check with the paper sack producer about the storage conditions required for the particular paper sack (ESG Food Contact Guideline, pages 15–16)</li> </ul>

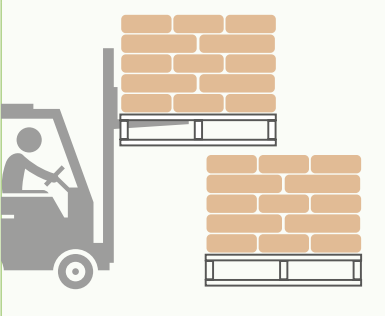
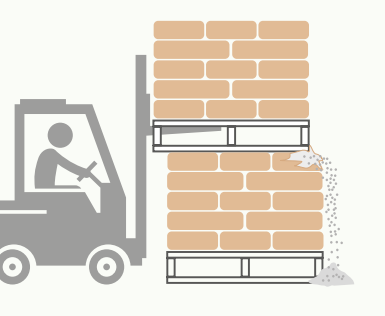
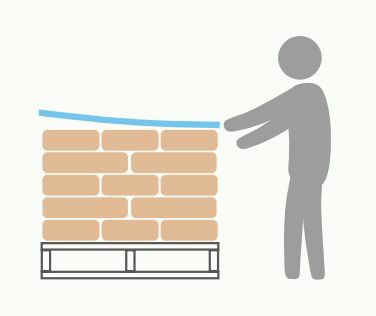
## Filling of paper sacks

RISKS	CONSEQUENCES	SOLUTIONS
 <ul style="list-style-type: none"> <li>• Sacks are packed too loosely</li> </ul>	 <ul style="list-style-type: none"> <li>• Can cause sacks to sag and extend past the edges of the pallet</li> <li>• Can also cause pallets to lean over</li> </ul>	 <ul style="list-style-type: none"> <li>• Smaller sack size</li> <li>• Better deaeration on packer</li> <li>• Better sack pressing on palletiser</li> </ul>
<ul style="list-style-type: none"> <li>• Powder spillage and loss during filling operations</li> </ul>	<ul style="list-style-type: none"> <li>• Product loss and process inefficiency</li> <li>• Dusty sacks that are not good for customer handling down the value chain</li> </ul>	<ul style="list-style-type: none"> <li>• Use the industry guidelines "Dust-free paper sacks" from <a href="http://www.eurosac.org">www.eurosac.org</a> or <a href="http://www.cepi-eurokraft.org">www.cepi-eurokraft.org</a></li> </ul>

## Palletisation of filled paper sacks

 <p><b>RISKS</b></p>	 <p><b>CONSEQUENCES</b></p>	 <p><b>SOLUTIONS</b></p>
<ul style="list-style-type: none"> <li>• Overhang of sacks on the pallet</li> </ul>	<ul style="list-style-type: none"> <li>• Problems during transport and handling can include pallet instability, sack tears and sack burst</li> </ul>	<ul style="list-style-type: none"> <li>• Use a pallet with appropriate dimensions to avoid overhang</li> <li>• If possible, use a pallet with the standard dimensions of 1,200 × 800 mm</li> <li>• If overhang of sacks is unavoidable, this should never be more than 2.5 cm</li> </ul>
<ul style="list-style-type: none"> <li>• Splintered or damaged pallet boards</li> <li>• Nails sticking up from the pallet</li> </ul>	<ul style="list-style-type: none"> <li>• Sacks can be torn</li> </ul>	<ul style="list-style-type: none"> <li>• Place a sheet on the pallet before loading the sacks</li> </ul>
<ul style="list-style-type: none"> <li>• Sacks sagging between the boards of the pallet surface</li> </ul>	<ul style="list-style-type: none"> <li>• Sacks can be damaged by the forklift tines</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent significant sagging, use only close-boarded pallets with just a narrow gap between the boards of the pallet surface</li> </ul>
<ul style="list-style-type: none"> <li>• Missing, inadequate or poorly spaced stringers (parallel supporting runners under the pallet)</li> </ul>	<ul style="list-style-type: none"> <li>• Instability when loading pallets on top of one another</li> </ul>	<ul style="list-style-type: none"> <li>• Do not use pallets with damaged or missing stringers</li> <li>• If unit loads are likely to be stacked after filling or in the downstream supply chain, consider using block (four-way) pallets, which have both parallel and perpendicular stringers</li> </ul>
<ul style="list-style-type: none"> <li>• Inappropriate orientation of sacks during palletisation</li> </ul>	<ul style="list-style-type: none"> <li>• Pallet instability (the pallet may lean) makes it difficult to handle the pallet load with sacks</li> </ul>	<ul style="list-style-type: none"> <li>• Use interlocked sack stacking, with sack edges flush with pallet edges, without overhang</li> </ul>
<ul style="list-style-type: none"> <li>• Filled sacks slide across one another</li> </ul>	<ul style="list-style-type: none"> <li>• Instability of the load: <ul style="list-style-type: none"> <li>» The sacks on the pallet may start sliding</li> <li>» Sacks can be damaged during handling and distribution</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Stabilise the pallet by: <ul style="list-style-type: none"> <li>» selecting sacks with anti-slip finishes and/or</li> <li>» placing slip sheets (paper sheets with anti-slip agent) between the sack layers and/or</li> <li>» using spot-glue or adhesive strips when stacking sacks on the pallet and/or</li> <li>» spraying water when stacking the sacks on the pallet – this can also improve the stability of the pallet and/or</li> <li>» applying plastic wrap around the palletised load when needed</li> </ul> </li> </ul>

## Handling of palletised loads

RISKS	CONSEQUENCES	SOLUTIONS
		
<ul style="list-style-type: none"> <li>• Snagging the top layer of the bottommost pallet when loading or unloading the uppermost pallet (most likely to occur if the sack surface is sticky)</li> </ul>	<ul style="list-style-type: none"> <li>• Tearing of the upper surface of the sacks on the top layer of the bottommost pallet</li> </ul>	<ul style="list-style-type: none"> <li>• If the surface is sticky, apply a protective paper sheet to the top of the bottom pallet before stacking another pallet on top of it</li> </ul>
<ul style="list-style-type: none"> <li>• Stacking a pallet on top of a leaning pallet</li> </ul>	<ul style="list-style-type: none"> <li>• This compounds problems of instability and can lead to damage and handling difficulties in the warehouse and for downstream operators</li> </ul>	<ul style="list-style-type: none"> <li>• If a pallet is leaning, do not stack another pallet on top of it</li> <li>• If it is necessary to stack pallets (e.g. for efficient utilisation of truck space), ensure that any leaning pallets are placed in the upper layer</li> <li>• Whenever leaning pallets are encountered, these should be stabilised by applying plastic wrap around the unit load</li> </ul>
<ul style="list-style-type: none"> <li>• Top surface of a pallet is slippery</li> </ul>	<ul style="list-style-type: none"> <li>• Unstable stacks when pallets are stacked on top of one another</li> </ul>	<ul style="list-style-type: none"> <li>• Place a slip sheet on top of the loaded pallet before another pallet is stacked on top of it</li> </ul>
<ul style="list-style-type: none"> <li>• Poor operator practices when moving or lifting pallets</li> </ul>	<ul style="list-style-type: none"> <li>• The most likely forms of damage from poor operator practices are the puncture of sacks by forklift tines and the snagging of the uppermost sacks, resulting in tearing</li> </ul>	<ul style="list-style-type: none"> <li>• Driver training – as in all forklift operations, the tines should be inserted into the pallet at the correct points and at the correct height and angle</li> </ul>
<ul style="list-style-type: none"> <li>• Narrow aisles between the pallets where sacks are stored</li> </ul>	<ul style="list-style-type: none"> <li>• Sacks can be hit by forklifts or pallet trolleys during operations, leading to puncture and tearing of sacks</li> </ul>	<ul style="list-style-type: none"> <li>• Make sure aisles have appropriate widths for the types of forklifts or pallet trolleys in operation at the site</li> </ul>

## MORE INFORMATION

For more information on paper sacks or handling of paper sacks, contact your sack producer or either of the two organisations below.



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Publication date: June 2017