FEDERATION EUROPEENNE DE LA MANUTENTION
SECTION II
CONTINUOUS HANDLING

FEM
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Description of unit loads
PAPER, CANVAS AND PLASTIC BAGS

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PRELIMINARY REMARK

For each installation of continuous handling equipment for unit loads, the characteristics of the goods to be conveyed are important for its proper functioning, being part of the system. It is therefore important to provide a precise description of the product to be conveyed as early as the planning phase. The necessary indications and properties to be mentioned are contained in the International Standard ISO 3569.

Section II "Continuous handling equipment" of FEM (Fédération européenne de la manutention) presents hereunder one of a series of documents giving complementary information concerning a group of products to be conveyed and helps the user of continuous handling equipment to understand why it is necessary to supply such detailed information and what consequences can be expected in using this equipment for a unit load not well defined, especially since he may be facing this type of problem for the first time.

1 - GENERAL

Filled bags are generally fairly easy to convey with continuous conveyors (standard type). However, occasional problems can arise, mostly due to special characteristics of the bulk product in the bag, an insufficient degree of filling of the bags or the special nature of the contact surface between bag and conveyor. Therefore, with regard to their suitability for handling, for example, canvas bags are especially sensitive to inadequate filling and plastic bags to moisture and dust on the contact surface. Simple conveyors, i.e. those of relatively low capital cost, are not always suitable for trouble-free operation when the product handled deviates from the design characteristics. In this respect, the surface directly in contact with the conveyor is of particular importance. There are solutions to reduce or even eliminate problems, but the capital costs involved are far higher. The best compromise in a particular case takes into account :

- the nature and frequency of the variations expected,
- the nature of the resulting problems and their consequences,
- the expense necessary to correct the malfunction,
- the capital cost of the installation,
- the running costs,

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and can only be obtained with the fullest possible exchange of information between the manufacturer and the user.

The characteristics are discussed in the sequence indicated in the ISO 3569 standard.

2 - SHAPE

In general, a filled bag is defined by the parallelepiped which it encloses, i.e. by its length (L), its width (l) and its thickness (B). In practice, however, considerable variations are encountered when compared with the ideal form.

The resulting bag shape is influenced by four decisive criteria :

- geometric form of the bag :

  bags without bottoms (flat bags) : fig. 2.1,
  bags with bottoms (crossbottom bags) : fig. 2.2/fig. 2.3,

- filling process :

  via the open top of the bag (open bag),
  by means of a valve (valve bag) : fig. 2.4,

- bag closure :

  by a valve (valve bag) : fig. 2.4,
  by sewing, stapling, welding : fig. 2.1/fig. 2.2,
  by tying : fig. 2.3,

- degree of filling of the bag :

  tightly filled,
  loosely filled,
  partly filled,
  almost empty.

Dependant on the conditions prevailing in a particular case, bags of very varied shapes can be produced, of which only an incomplete selection of examples can be indicated below :

fig. 2.1

Bag without bottom,
. filling via the open top of the bag,
. sealing by means of welding,
. loosely to tightly filled :
flat bag

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