



## *DANGEROUS GOODS TESTING DETAILS*

### **Top lift testing**

*The FIBC shall be filled with a representative material. Then it shall be loaded to six times the maximum permissible gross mass, the load evenly distributed.*

*Criteria: No damage to the FIBC or its lifting devices which renders the FIBC unsafe for transport or handling and no loss of contents.*

### **Drop test**

*The FIBC shall be filled with a representative material up to the maximum permissible gross mass and not less than 95% of its capacity, the contents being evenly distributed. Drop heights depending on the packaging group.*

*Criteria: No loss of contents. A slight discharge, e.g. from closure or stitch holes, upon impact shall not be considered to be a failure of the FIBC provided that no further leakage occurs after the FIBC has been raised clear on the ground.*

### **Topple test**

*The FIBC shall be filled with a representative material up to the maximum permissible gross mass, and not less than 95% of its capacity, the contents being evenly distributed. The FIBC shall be caused to topple on to any part of its top on to a rigid, non-resilient, smooth, flat and horizontal surface. Topple heights depending on the packaging group.*

*Criteria: No loss of contents. A slight discharge, e.g. from closure or stitch holes, upon impact shall not be considered to be a failure of the FIBC provided that no further leakage occurs.*

### **RIGHTING TEST**

*The FIBC shall be filled with a representative material up to the maximum permissible gross mass and not less than 95% of its capacity, the contents being evenly distributed. The FIBC lying on its side, shall be lifted at a speed of at least 0,1 m/s to upright position, clear of the floor, by one lifting device or by two lifting devices, when four are provided.*

*Criteria: No damage to the FIBC or its lifting devices which renders the FIBC unsafe for transport or handling.*



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## **Tear test**

*The FIBC shall be filled to not less than 95% of its capacity and to its maximum permissible gross mass, the contents being evenly distributed. Once the FIBC is placed on the ground, a 100 mm knife score, completely penetrating the wall of a wide face, is made at a 45° angle to the principal axis of the FIBC, halfway between the bottom surface and the top level of the contents. The FIBC shall then be subjected to a uniformly distributed superimposed load equivalent to twice the maximum permissible gross mass. The load shall be applied for at least 5 minutes. An FIBC which is designed to be lifted from the top or the side shall then, after removal of the superimposed load, be lifted clear of the floor and maintained in that position for a period of five minutes.*

*Criteria: The cut shall not propagate more than 25% of its original length.*

## **Stacking test**

*The FIBC shall be filled with a representative material up to the maximum permissible gross mass, the contents being evenly distributed. The FIBC shall be placed on its base on a level hard ground and subjected to a uniformly distributed superimposed test load during 24 hours. The load to be placed on the FIBC shall be 1.8 times the combined maximum permissible gross mass of the number of similar FIBC's that may be stacked on top of the FIBC during transport.*

*Criteria: No deterioration of the body which renders the FIBC unsafe for transport and no loss of contents.*

## **Definition of dangerous goods FIBCs**

### Types of UN bags

*There are four types of FIBCs for dangerous goods made from woven plastics:*

*13 H 1 - woven plastics without coating and without liner*

*13 H 2 - woven plastics, coated and without liner*

*13 H 3 - woven plastics, uncoated and with liner*

*13 H 4 - woven plastics, coated and with liner*

*The Inner bag (liner) comes in different qualities, and glued to the outer bag or sewn into the corners. You can also get it as a liner that is loose and can be removed.*

*If the certificate shall cover more than one of these types (differing only in the presence or absence of coating or liner) please ask for special requirements.*



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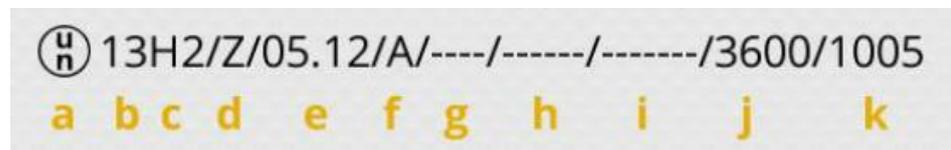
## Categories of UN bags

Degree of danger	Packing Group	Drop height	UN Symbol	Max. Volume.
High	I	1.8 m.	X	1.5 cu.m.
Medium	II	1.2 m.	Y	3.0 cu.m.
Low	III	0.8 m.	Z	3.0 cu.m.

## UN MARK

The UN marking on FIBCs must be durable, legible and readily visible. Letters, symbols and numbers printed onto the bag should be a minimum of 12 mm high.

Example of UN Markings for FIBCs



- a) SYMBOL** the United Nations packaging symbol
- b) 13** Flexible IBC for solids, filled or discharged by gravity
- c) H2** Woven PP fabric with inner liner
- d) Z** Approved for packaging group III
- e) 05.12** Month and year of manufacture
- f) Country** Authorizing the allocation of the mark
- g) Code of Certifying Body**
- h) Identification of IBC as specified by competent authority**
- i) Name of the manufacturer and number of identification**
- j) 3600** Stacking test load in kilograms (1.8 times of the maximum permissible gross mass that may be stacked on top)
- k) 1005** Maximum permissible gross mass in kilograms