Contents:
1) Applications
2) Equipment
3) Types of Valve Bags
4) Conversion Process
5) Success Stories
6) Size Capabilities
1 – APPLICATIONS

- **Successful applications**
  - Aggregates: sand, limestone
  - Horticulture: fertilizer
  - Chemicals: rubber compound, pigments, cupric sulfate, refractory material

- **Applications in development**
  - Powders: cement, gypsum, clay
  - Ready mixes: concrete, mortar
  - Food: batter mixes, flour, sugar
# Applications

Applications can be classified according to the particle size of the product.

<table>
<thead>
<tr>
<th>150 μm</th>
<th>1/8&quot;</th>
<th>1/2&quot;</th>
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</thead>
<tbody>
<tr>
<td>&gt; 100 Mesh</td>
<td>100 mesh to 1/8&quot;</td>
<td>1/8&quot; to 1/2&quot;</td>
</tr>
<tr>
<td>Very Fine</td>
<td>Fine</td>
<td>Granular</td>
</tr>
<tr>
<td>Portland cement</td>
<td>Sand, sugar</td>
<td>Granulated limestone</td>
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<td></td>
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<td>Stones</td>
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</table>
Equipment – 3 filling systems
(1) Air-driven filling systems
(2) Impeller filling systems
(3) Auger filling systems
(4) Gravity
2 – FILLING EQUIPMENT

- **Equipment**
  - **Manual**
    - 1 operator – 1 spout
    - 10–15 bags/minute
    - Manual placing and filling
    - Fill time = 4–10 seconds/bag
  - **Semiautomatic**
    - 1 operator – 2 or 3 spouts
    - 20–30 bags/minute
    - Manual placing but automatic filling
    - Fill time = 4–10 seconds/bag

2 – FILLING EQUIPMENT

- Equipment
  - Automatic
    - No operator
    - Everything automatic
    - 50 bags/minute, depending on number of spouts
    - Fill time = 4–10 seconds/bag
3 – TYPES OF VALVE BAGS

- 3 DESIGNS OF VALVE BAGS
  - T-VALVE BAG: PAPER OR PLASTIC
  - R-VALVE BAG: PLASTIC
  - B-VALVE BAG: PLASTIC

T-Valve Bag  R-Valve Bag  B-Valve Bag

3 – TYPES OF VALVE BAGS

- ONLY BALCAN OFFERS VALVE BAGS WITH HANDLES
  ➔ ONE-PUNCH HANDLE
  ➔ TWO-PUNCH HANDLE

Vertically handheld bag

Horizontally handheld bag

Note: the valve opening could also be positioned at the top – near the handle

3 – TYPES OF VALVE BAGS

- STANDARD (filling up to 165°F)
- HIGH STRENGTH (hazardous goods)
- HOT FILLING (filling up to 185°F)
- LOW MELT (100°C) BATCH INCLUSION
3 – TYPES OF VALVE BAGS

TYPE OF VENTING PATTERN

- STANDARD – ½" x ½" OFFSET FACE & BACK
- SLOW to QUICK VENTING (SAND, LIMESTONE, RUBBER)
3 – TYPES OF VALVE BAGS

TYPE OF VENTING PATTERN

→ FERTILIZER STANDARD – 2" x 2" OFFSET
→ SLOW VENTING, GOOD MOISTURE BARRIER

FACE

BACK

3 – TYPES OF VALVE BAGS

TYPE OF VENTING PATTERN

→ POWDERS – SPECIAL VENTING FACE ONLY
→ QUICK & CLEAN VENTING
4 – CONVERSION PROCESS

- CONVERSION TIME < 1 MONTHS
  - VARIABLES
    - Sizing, air evacuation, ARTWORK

- ADVANTAGES/BENEFITS OF BALCAN BAGS
  - More efficient valve → cleaner filling and bag
  - Better air evacuation → better palletization

CONVERSION PROCESS

- CONVERSION TIME < 3 MONTHS
  - VARIABLES
    - Valve geometry, operator training, sizing, artwork
  - ADVANTAGES/BENEFITS OF BALCAN BAGS
    - More efficient valve → cleaner filling and bag
    - Thinner film → better value

plastic

plastic
4 – CONVERSION PROCESS

CONVERSION TIME < 3–6 MONTHS

Type of paper bags

- 1 – Basic, 2-ply, $0.15/bag
- 2 – High performance, 2-ply or 3-ply
- 3 – Paper with liner
- 4 – Highly printed, white top

4 – CONVERSION PROCESS

- CONVERSION TIME < 3–6 MONTHS
  - High performance, 2-ply or 3-ply bag
  - Variables: sizing, venting, operator training, conveying and palletization
  - ADVANTAGES/BENEFITS OF BALCAN BAGS
    - More efficient valve ➔ cleaner filling and bag
    - Paper vs. plastic advantages and benefits

PAPER ➔ PLASTIC

CONVERSION TIME < 3–6 MONTHS

- Paper with liner
- **Variables**: sizing, venting, operator training, conveying and palletization

ADVANTAGES/BENEFITS OF BALCAN BAGS

- More efficient valve → cleaner filling and bag
- Paper vs. plastic advantages and benefits
- Better moisture barrier
4 – CONVERSION PROCESS

- **CONVERSION TIME < 3 - 6 MONTHS**
  - Highly printed, white top paper bag
  - **Variables:** sizing, venting, operator training, conveying and palletization
  - **ADVANTAGES / BENEFITS OF BALCAN BAGS**
    - more efficient valve → cleaner filling and bag
    - Paper vs. Plastic advantages and benefits
    - better printing and better value
4 – CONVERSION PROCESS

- EASIEST CONVERSION FROM PAPER TO PLASTIC
  - 1-2 filling spout unit, filling temp. < 165ºF
  - particles bigger than 75 microns (mesh size < 200)
  - prefer bag with liner or highly printed

5 – SUCCESS STORIES

- VEREEN’S FERTILIZER
  - One spout, manual bag filling
  - Manual palletizing
5 – SUCCESS STORIES

- KRONOS: TiO2 Pigments
  - One spout, manual bag filling
  - Plastic-bag-friendly conveying
  - Manual palletizing

5 – SUCCESS STORIES

- MATERIALUX KING: Sakrete sand, 30 kg
  - One spout, manual bag filling
  - Plastic-bag-friendly conveying

![Image of Sakrete sand bag](screenshot)
6 – SIZE CAPABILITIES

- VALVE BAG SIZE CAPABILITIES
  - ONE OR TWO PLY
  - WIDTH: 8"–20"
  - SIDE GUSSET: 4"–6.5" (in ½" increments)
  - LENGTH: 12"–35"
  - GAUGE: typical 4–6 mil
  - VALVE SIZE: typical 4.5"–6.0"
  - HANDLE: single or double punch
  - Perforation: ½" offset; 2" offset, special for powder
  - TEMPERATURE RESISTANCE: up to 165°F
  - BATCH INCLUSION: 110°C