Reducing Conveyor Dust Without Collection or Suppression

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Suppression  Collection
Containment - Isolating air that carries dust inside a transfer point until the velocity is slowed to a speed that cannot carry dust.
5 Requirements of Containment

1. Proper support to eliminate belt sag
2. Wear liner to protect skirting
3. Multiple lip dust seal or skirting
4. Sealing at tail pulley
5. Slow exit air velocity
Traditional idler spacing can cause belt sag
Sag is incorrectly remedied with over adjustments of skirting.
Entrapment Damage
Proper Idler Spacing
Belt Support Cradles
Directing the flow of material
Biggest error is not supporting to B
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3. **Multiple lip dust seal or skirting**
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CEMA Skirtboard width

CEMA: 2/3 (Belt Width)

.67 (BW)

.67(30)= 20.1”

A belt that is 30” wide troughed 35° leaves 3” of belt edge

A belt that is 60” wide troughed to 35° leaves 6.3”

Most double lipped skirting requires 2½ - 3½
## Table 11.2
### Recommended Loading-Zone Design

<table>
<thead>
<tr>
<th>Belt Width</th>
<th>Trough Angle</th>
<th>Effective Belt Width (See Figure 11.7 (V))</th>
<th>Recommended Chute Width (See Figure 11.8 (W))</th>
</tr>
</thead>
<tbody>
<tr>
<td>3000</td>
<td>0°, 20°, 30°, 45°</td>
<td>0°, 2600, 2170, 2019, 1920</td>
<td>30°, 2600, 2208, 2067</td>
</tr>
<tr>
<td>3000</td>
<td>5°, 10°, 15°, 20°</td>
<td>30°, 2800, 2570, 2410, 2240</td>
<td>30°, 2750, 2365, 2189</td>
</tr>
<tr>
<td>3000</td>
<td>25°, 30°, 35°, 40°</td>
<td>30°, 2800, 2570, 2410, 2240</td>
<td>30°, 2750, 2365, 2189</td>
</tr>
<tr>
<td>3000</td>
<td>45°, 50°, 55°, 60°</td>
<td>30°, 2800, 2570, 2410, 2240</td>
<td>30°, 2750, 2365, 2189</td>
</tr>
</tbody>
</table>

### Notes:
- Dimensions were determined by calculation rather than field measurements.
- Measurements are rounded to the nearest millimeter.
- Imperial measurements are rounded to the nearest tenth.
- Thickness of sheet in chute or skirtboard is not considered.
- Three-piece troughing idlers of equal length are assumed.
- Belt edge distances in imperial consider 0.010 in. for the side sealing + 0.005 in. for margin for belt misalignment.
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- Particles of the bulk material is not considered.
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Time
Weighted Average
4.68 mµ
Time Weighted Average $0.2\mu\text{g}$
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