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for safety's sake – bin lift evolution

Binlifts | Weighing | RFID | Telematics

A brief history of grime

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A brief history of grime

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Advent of the wheelie bin

- Invented 70’s
- Large scale use late 80’s
- Larger Capacity
- Heavier
- Easier movement of load
- Required mechanical lifting device to empty

The first bin lifts

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Main influences on bin lift design

1989
TC 183

CEN Technical Committee 183 formed to focus on Waste Management

WG1 - Waste Containers

WG2 - Waste Collections Vehicles and lifting devices

Specifies dimension & design requirements for mobile waste containers

1997
EN840.1-5
from WG1

1998
EN1501.1
from WG2

Documents significant hazards relating to waste container lifting equipment

Describes the design requirements for the lifting equipment

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Other influences on bin lift design

EN ISO 12100 series — Safety of Machinery General Principles

EN ISO 13849 series — Safety of Machinery Control Systems

- **EN 294** — Danger Zones for upper limbs
- **EN 349** — Minimum gaps to avoid crushing
- **EN 457** — Auditory danger signals
- **EN 574** — Two handed control devices

- **EN 894 series** — Ergonomic requirements
- **EN 1037** — Preventing unexpected start-up
- **EN 1088** — Safety interlock devices
- **EN ISO 13850** — E-stop equipment

and many more.....

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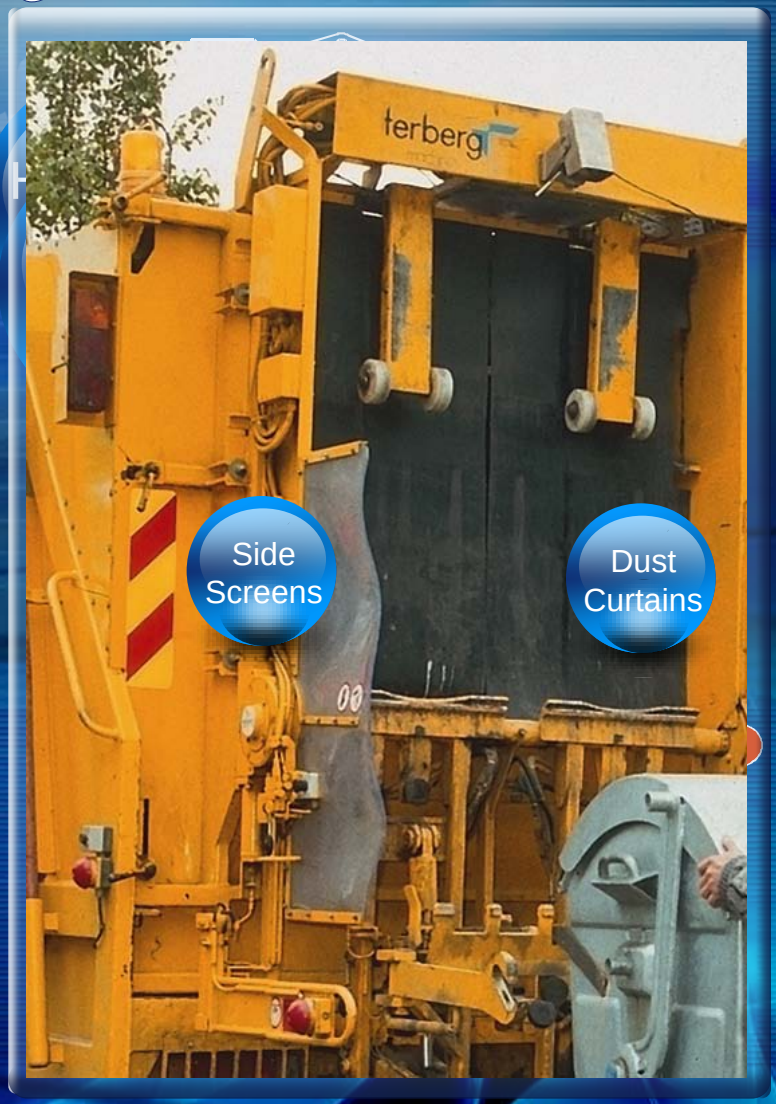
Safety from the start

- **Gravity down return** — Reduces risk of injury
- **Side Screens** — Reduces risk of injury
- **Dust curtains** — Reduces risk of dust exposure
- **Overload protection** — Reduces risk of lifting overweight bin
- **Bin Sensor** — Controls lifting process



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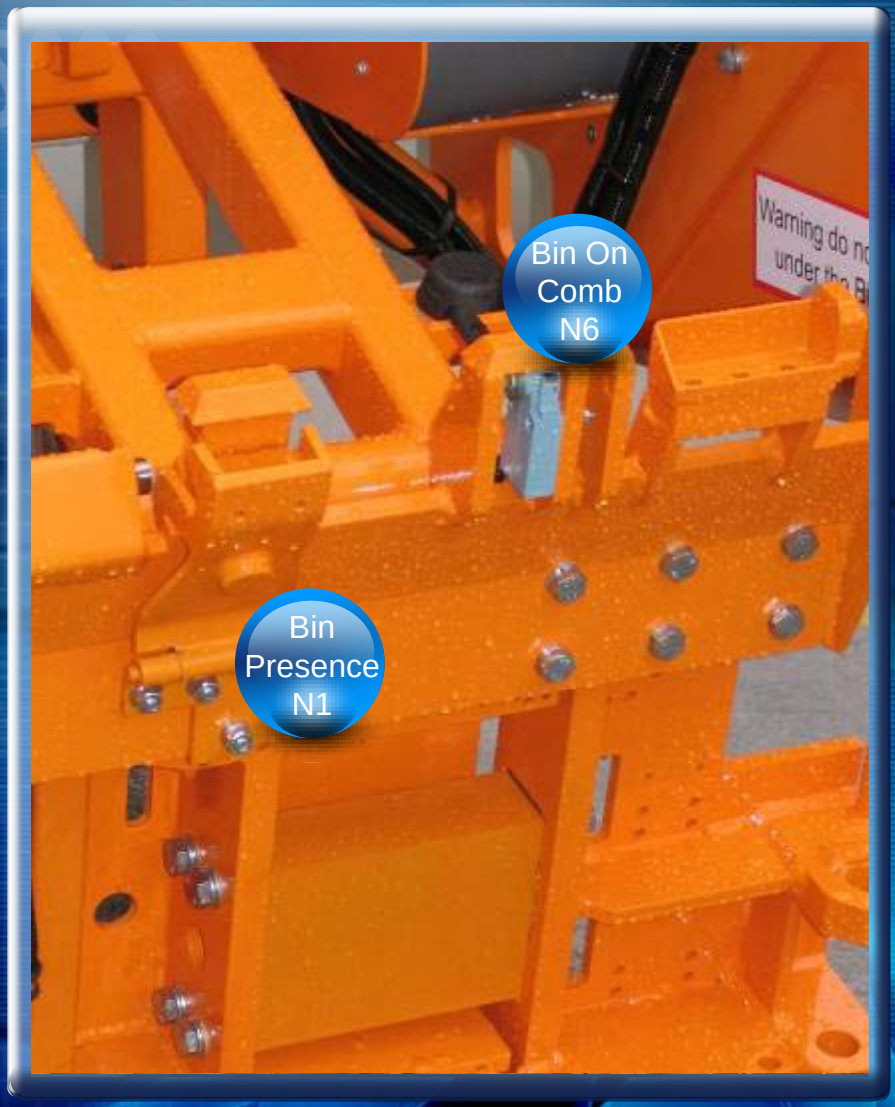
Bin lift safety 1990 to 2003

Hold to run — Ensures binlift operation stops on button release

Rear view camera — Gives drivers unobstructed view of rear

Dual bin sensors — Safeguards against accidental operation of binlift



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2004 - OmniDEL

- **Soft Start** — Reduces fatigue on bins and binlift
- **Auto-Mode Changeover** — Eliminates risk of lifting trade bin in auto mode
- **Single Man Trade** — Allow safe one-man operation for loading of trade bins
- **Keyed Interlocks** — Prevents hopper plate interlock being defeated by debris or operators
- **No 'kick-out'** — Reduces likliehood of shin/knee injuries during lifting cycle
- **Sonar Sensors** — "No contact" operation, reduces risk of injury by the bin lift

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2010 - prEN 1501-5

Draft standard

Developed to focus purely on bin lifts and their physical interface with waste containers

Seeks to further standardise design & safety of lifting devices.

Already adopted in the design of new binlifts by Terberg

Dual channel E-Stops

Reduces risk of system failure or tampering

Dual channel Footboards

Reduces risk of system failure and controls engine speed

Underwalk protection

Reduces risk of lowering lift or hopper onto personnel underneath

Comb design

Provides best possible fit between lift and bin

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Summary

- Bin lift design and safety is constantly changing
- Ratification of EN1501-5 will drive further safety improvements
- Manufacturers including Terberg continue to work with TC183
- Ensures new products adhere to EN1501-5 once released

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