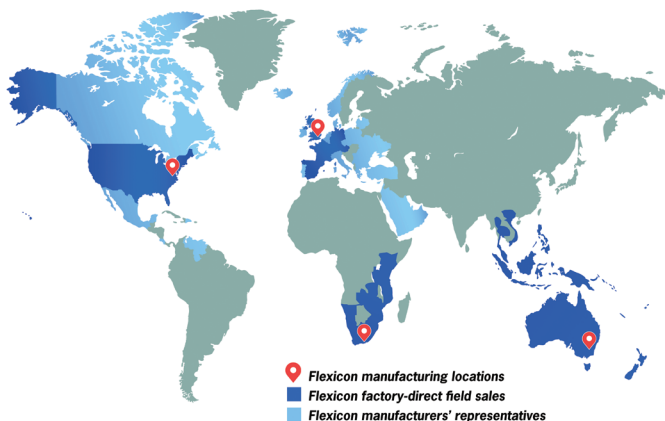




The Flexicon bag dumping station with integral flexible screw conveyor collects dust created during manual dumping of starch at SCA Packaging Co. Durham, UK facility. The unit has reduced material waste and eliminated contamination caused by dust venting inside and outside the facility.

Bulk Handling System Eliminates Dust, Reduces Material Waste, and Streamlines Production of Corrugated Board

T-1098



flexicon®

USA

FLEXICON CORPORATION
Tel: +1 610 814 2400
E-mail: sales@flexicon.com
Web: www.flexicon.com

UK

FLEXICON (EUROPE) LTD
Tel: +44 1227 374710
E-mail: sales@flexicon.co.uk
Web: www.flexicon.co.uk

AUSTRALIA

FLEXICON CORPORATION
(AUSTRALIA) PTY LTD
Tel: +61 7 3879 4180
E-mail: sales@flexicon.com.au
Web: www.flexicon.com.au

SOUTH AFRICA

FLEXICON AFRICA (PTY) LTD
Tel: +27 41 453 1871
E-mail: sales@flexicon.co.za
Web: www.flexicon.co.za

SPAIN

FLEXICON EUROPE SPAIN
Tel: +34 930 020 509
E-mail: ventas@flexicon.es
Web: www.flexicon.es

FRANCE

FLEXICON EUROPE SAS
Tel: +33 7 61 36 56 12
E-mail: ventes@flexicon.fr
Web: www.flexicon.fr

GERMANY

FLEXICON EUROPE GmbH
Tel: +49 173 900 78 76
E-mail: vertrieb@flexiconeurope.de
Web: www.flexicondeutschland.de

SINGAPORE

FLEXICON SINGAPORE PTE LTD
Tel: +65 6778 9225
E-mail: sales@flexicon.com.sg
Web: www.flexicon.com.sg

INDONESIA

FLEXICON SINGAPORE PTE LTD
Tel: +62 81 1103 2400
E-mail: sales@flexicon.co.id
Web: www.flexicon.co.id

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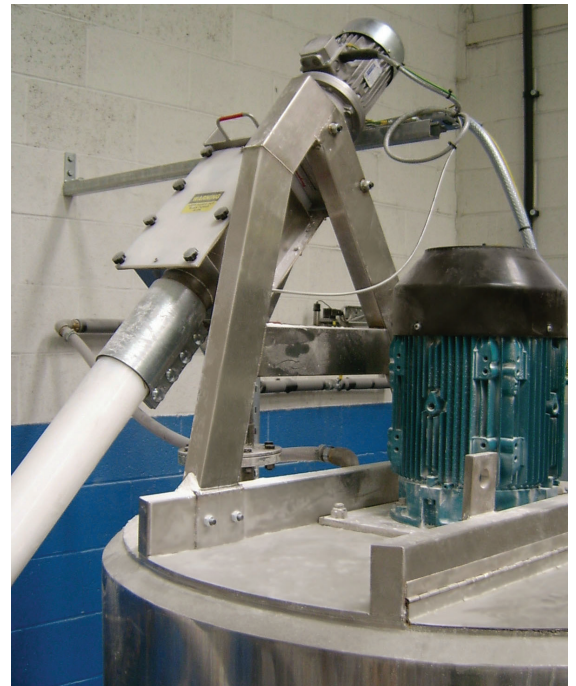
COUNTY DURHAM, UK — The manufacture of corrugated board used in promotional and point-of-sale packaging solutions can be messy and wasteful without an integrated bulk handling and dust collection solution such as that now being employed by SCA Packaging at its Co. Durham, UK, facility. The starch-based glue required in the manufacture of corrugated board, which SCA uses in its production of laminated corrugated cardboard, can produce airborne dust pollution both inside and outside the production facility—a scenario the company previously faced. SCA protected its workers, prevented plant contamination, and reduced material waste by installing a Flexicon bag dump station, filter, and conveyor system. The system has also resulted in improved mix quality and cut mixing times by half.

Currently, seven mixes are required each week to meet production demands at the Co. Durham plant. Prior to installation of the Flexicon system an operator would access a store of 55 lb (25kg) bags of starch via a 5 ft (1525mm) gantry, and manually open and dump 10 bags into a 396 gal (1500l) capacity mixer containing 224 gal (850l) of heated water. To help control dust within its facility, SCA employed an extractor system. However, this system simply vented the dust out to the factory perimeter, as well as allowing low levels of dust to escape within the plant. In addition, the manual mixing process required the operator to monitor the mixer from above for a minimum of 20 minutes to ensure proper blending.

While still requiring an operator to manually handle ten bags of starch per batch, the bulk handling solution greatly minimizes operator involvement and streamlines material flow. Operators lift bags at ground level and split and dump contents via a bag support tray into a 9 cubic foot (250l) T-36 receiving hopper. Material first passes through a 2 in (50 mm) mesh screen to prevent foreign particles, such as paper fragments, from entering the process stream.

The flow characteristics of this particular starch, which is dense and only semi-free-flowing, make it particularly challenging to process as it is prone to bridging, packing, smearing and caking. An electric vibrator on the hopper wall and a rotary agitator in its base assist in the smooth and consistent, gravity-fed transfer of starch from the hopper to the flexible screw conveyor.

The conveyor then transfers material at a 45° incline directly into the central flow column of the mixer. This steady, uninterrupted flow of starch assures a consistent mix for each batch without the need for operator monitoring, allowing operator time to be used more efficiently during mixing. Overall processing time has been cut in half.



The transition discharge adapter gravity feeds starch directly into the central flow column of the mixer, allowing for a steady, uninterrupted flow of starch and ensuring a consistent mix for each batch.

During the process an integral dust collection system, mounted above the hopper, utilizes a high-velocity vacuum fan to draw airborne dust away from the operator through two spun bond polyester filter cartridges. An automatic reverse-pulse filter cleaning system employs timer-activated solenoid valves to release short blasts of compressed air inside the cartridge filters, causing the starch dust build-up on the outer filter surface to fall back into the hopper, greatly reducing material waste and eliminating the need to expel dust into an open atmosphere.



USA

FLEXICON CORPORATION
Tel: +1 610 814 2400
E-mail: sales@flexicon.com
Web: www.flexicon.com