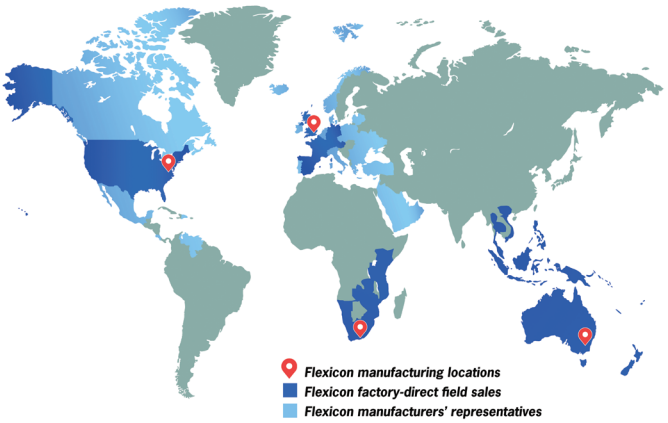
TWIN-CENTERPOST™ design strengthens bulk bag filler frame as material is filled directly from the mixer above. Fill time has been cut by two thirds by automation and a densification deck that deaerates and densifies the bulk hydrated alumina material.

Bulk Bag Filler Triples Capacity at Netherlands Mineral Supplier

AA-1050



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Bulk Bag Filler Triples Capacity at Netherlands Mineral Supplier

HATTEM, THE NETHERLANDS — One of the world's major producers of hydrated alumina (AL[OH]3) is TOR Processing & Trade B.V., a branch of TOR Minerals International (www.torminerals.com). From its specialty mineral processing plant in Hattem, TP&T refines and ships hydrated alumina in bulk bags for applications such as flame retardants and fillers for laminates, solid surface, ceramics, plastics and composites.

"Our special processes produce hydrated aluminas in particle sizes ranging from 1 to 110 µm (0.00004 – 0.004 in.)," says Jack Baars, Manager, Maintenance & Technology. "We ship them worldwide in 850, 1000 and 1250 kg (1870, 2200 and 2750 lb) bulk bags."

He says filling a bulk bag previously spanned one hour due primarily to the time required for the fine alumina particles to settle.

To overcome dust, air entrainment and filling delays, TP&T installed a TWIN-CENTREPOST™ bulk bag filler from Flexicon Europe Ltd. that deaerates and densifies the bulk hydrated alumina. Fill time has been cut to 20 minutes, tripling capacity, while filling bags with a greater amount of material and containing dust. The process is automated and safe, and the unit readily fits into the existing plant layout.

Fill more material, faster

Prior to installing the filler, blended material flowed from the mixer through a funnel hopper into a bulk bag suspended on ropes above a scale. The hopper's outlet was manually opened and closed with a slide gate valve. The process was labour intensive and slow, and bags could fall when the ropes were detached.

Manual effort is now minimised, and filling (directly from the mixer) is fast, precise and automated. The operator hangs the bulk bag loops from the filler's retractable bag hooks, and then slides the bag inlet spout over an inflatable collar. He pushes a button to inflate the collar, creating a positive seal which prevents dust from escaping during the filling cycle. The operator then activates the filler's bag inflator to pre-expand the bulk bag and liner to eliminate folds and creases which results in a more stable bag once filled.

At the PLC control panel, the operator programs the weight to be filled, and initiates the filling cycle. During filling, the densification deck raises and vibrates to deaerate and densify the finely powdered material. An air vent connected to a filter sock captures airborne dust displaced by material entering the bag.

Load cells supporting the filler frame transmit weight gain information to the PLC, which closes the pneumatic slide gate valve at the mixer's discharge port when the bag achieves its target weight.

The operator slides the bag spout onto the inflatable collar and attaches bag straps to retractable hooks that support the bag during filling.

Operator activates the inflatable collar to form a secure, dust-tight connection, and then actuates the bag inflation blower to remove creases in the bag prior to filling.

At the control panel, the operator programs the weight to be filled, and initiates the filling cycle. Load cells supporting the filler frame transmit weight gain information to the PLC, which closes a pneumatic slide gate valve when the bag achieves its target weight.

The operator then deflates the collar, ties the bag spout, and removes the palletised bag with a forklift.

Mr. Baars adds that suspending the bag securely from hooks instead of ropes has also improved the safety of TP&T's bulk bag filling operations.

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Forklift truck removes palletised filled bag.

View from below shows the fill head, forklift sleeves for adjusting the fill head height, retractable bag hooks for supporting the bag, and vent for capturing displaced air and dust.

TOR Processing & Trade ships hydrated alumina in bulk bags for applications such as flame retardants and fillers for laminates, solid surfacing, ceramics, plastics, and composites.

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