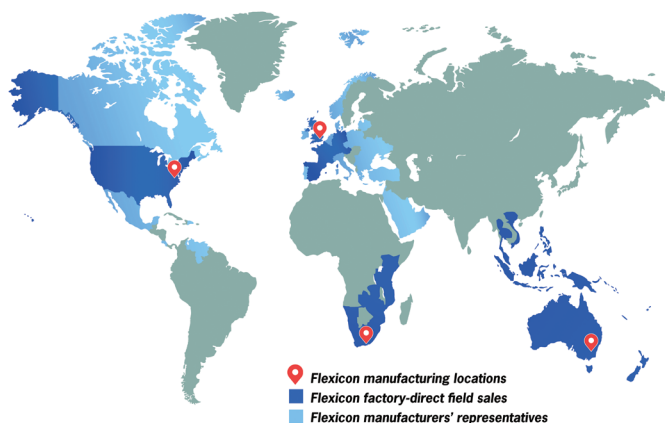




Norwegian Confectionery Maker Improves Safety, Stops Dust, Discharges Bulk Bags Automatically

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TRONDHEIM, NORWAY — Nidar AS, Norway's leading supplier of candy/confectionery, manufactures 150 products under 35 brands on 10 production lines. The company's plant was built in 1950 and has been updated regularly with modern bulk handling equipment to improve productivity and the working environment.

In fact, the five-level plant (four storeys plus basement) has been extended six times to accommodate growth in production, explains Tor Ove Kvingedal, one of three maintenance engineers. "But as with most old buildings," he says, "the original layout was not always optimal for modern production."

Where gravity feeding of materials is not possible, the plant transfers bulk materials using bulk bag dischargers, flexible screw conveyors, rigid augers and pneumatic conveyors — equipment that reduces manual labour, contains dust, and fits in very tight spaces, as recently demonstrated with the addition of a twin half-frame bulk bag discharger.

Twin half-frame discharger overcomes horizontal and vertical space constraints

Starch powder originally flowed by gravity from the two large vessels on the fourth floor, through a pair of knife gate valves and 150 mm (6 in.) diameter steel chutes leading to the third floor.

The large vessels could not simply be replaced with two separate bulk bag dischargers because the distance between the discharger outlets would have exceeded the distance between the existing chutes, requiring new holes through the fourth floor and relocation of the chutes.

The ceiling height of only 4.5 m (14 ft 9 in.) also posed a problem, since insufficient headroom above the units would prevent loading and removing of bulk bags using a forklift.

To surmount both problems, a 1.2 m (4 ft) high, twin half-frame bulk bag discharger which holds two bulk bags side-by-side was installed. The two-in-one unit discharges through two outlets spaced closely enough to obviate relocation of the knife gate valves and chutes, while the low profile design allows suspension of bulk bags from a hoist, saving an extra 10 cm (4 in.) of headroom. "It was very tight," recounts Mr. Kvingedal.

Removing the original tanks and installing the twin half-frame discharger above the chutes was straightforward. Nidar simply needed to provide a compressed air supply to power the unit. Mr. Kvingedal says, "We installed the discharger in two days in November 2011. A local company provided the hoist. It was critical to have the equipment installed quickly, because the starch is a key ingredient on this production line."



Ingredients such as milk, powder, sugar, starch, and sour coating powder arrive in 1.1 tonne bulk bags, and are gravity fed into the processing lines where feasible.



Labour saved and dust levels reduced

Once a bag is hoisted into position, an operator pulls the bag spout over a SPOUT-LOCK® clamp ring, which creates a secure, dust-tight connection between the clean side of the bag spout and the clean side of a TELE-TUBE® telescoping tube. As the bag empties and elongates, the telescoping tube maintains constant downward tension, promoting complete discharge.

FLOW-FLEXER® bag activators additionally promote flow through the spout by raising opposite bottom sides of the bag into a steep “V” shape.

Nidar considered installing extraction fans but decided they were unnecessary, since dust was contained by the discharger’s bag spout interface.

After descending through the telescoping tube, the starch passes through the knife gate valve and then through one of the two vertical chutes to a weighing station on the second floor. A horizontally-oriented 170 mm (6.7 in.) diameter auger on the third floor can run in either direction, so each discharger can supply either of the two weighing stations, which sends signals to open or close the knife gate valves to regulate flow from the bulk bags.

“The twin half-frame bulk bag discharger is easy to keep clean using compressed air or a damp rag, and maintenance needs are very low,” says Mr. Kvingedal. “I don’t have any issues at all with the twin discharger.”



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Norwegian tastes in candy

“Any nation with self-respect has its own chocolate factory and traditional chocolate products,” notes Nidar’s website. Having flown the Norwegian flag since its foundation in 1912, Nidar is certainly a national institution.

The firm develops and manufactures its products in the city of Trondheim (formerly known as Nidaros) on a 40,000 sq m (430,000 sq ft) site that includes production machinery, offices and warehousing. The factory employs 350 people, of whom 250 are operators. Annual production exceeds 15,400 mt (14,000 tons).

The company produces chocolate bars, boxed chocolates, marzipan, gummi candies, caramels, licorice products, and pastilles under a range of historic brand names. Although most of Nidar’s products would be recognized anywhere, Norwegians have some historic preferences in confectionery. One is marzipan, an essential part of Christmas and Easter celebrations. Another speciality which the firm also exports to Finland is salmiak — licorice flavored with ammonium chloride, which gives it a tongue-numbing salty taste.

“We are always innovating with different kinds of packaging,” says Mr. Kvingedal. “But launching new brands is harder. Norwegian people like their good old familiar chocolate bars, and many of our most successful brands date back to before the Second World War.”

One fairly recent, and very popular, introduction is a candy bar called Smash. A modern take on the salty-sweet theme, Smash combines milk chocolate with a salty corn-based snack.





Nidar AS added twin bulk bag dischargers from Flexicon to handle two types of starch in a tight space on the plant's fourth floor.



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Norway's leading supplier of candy/confectionary makes 140 products under 35 brands including its new salty-sweet candy Smash.

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