

Middleton Engineering supplies turnkey conveyor solutions to Biffa Polymers



Glastonbury: 8th July 2015: Biffa Polymers, the world's first food grade High Density Polyethylene (HDPE) bottle recycling plant, based at the Wilton International Petrochemical Complex in Redcar, has installed a new swan neck conveyor solution, designed and manufactured by recycling engineering specialists Middleton Engineering.

Operating 24/7 as part of Biffa Polymers' milk bottle processing line for post-consumer plastics, the new conveyor is designed to feed material at up to 2 tonnes per hour or 50 tonnes per day, transporting it from a high-speed electronic sorting unit that removes non-compliant material, to leave a clean HDPE waste stream, then up into the granulator. Chopped HDPE is then heated, extruded and cut into pellets and sold on for blow moulding new dairy bottles and other commodities.

The new conveyor was required following modifications to the granulator. It has been designed by Middletons to provide a consistent feed of material, to minimise previous spillage issues between the conveyor and the granulator and overcome overloading and jamming at the foot of the conveyor.

Middletons undertook a series of product trials at their manufacturing centre in Somerset using scrap HDPE bottles to determine the optimal design for the conveyor, including the size of vertical rubber flights to deliver material to the granulator at the right speed and volume to keep the line working at maximum efficiency. Ease of access for scheduled cleaning and maintenance were also important design considerations for Biffa to allow debris to be removed and preventative maintenance to be carried out at required weekly intervals.

Martin Brass, Engineering and Maintenance Manager at Biffa Polymers said: "We visited a number of Middleton customer sites before selecting the company to design and install the new conveyor. It's running well and the team reacted very promptly to initial issues with the rubber belt untracking, making permanent design modifications following our input. The plant is up and running following

an earlier major refit and we continue to lead the market in closing the loop on post-consumer plastics recycling.”

On the back of this, Middleton Engineering has been awarded a further contract to design and supply a second conveyor to form part of a new milk bottle bale breaking system at Biffa Polymers. Bales of plastic bottles arriving at the plant will then be broken open by the machine and transported through an opening into the building on the new belt conveyor, which rises from the floor at an angle of 31 degrees to feed downstream processing. With an overall length of 10.5m the conveyor includes a fully adjustable safety rope pull system, an automatic chain lubricator, soft start to minimise wear and speed controls to optimise flow rates. The exterior section of the conveyor is covered.

Middleton Engineering specialises in bespoke engineering solutions for the recycling industry and has been supplying balers and recycling equipment to Biffa for over 15 years, including sites in Bradford, Cardiff, Grimsby, Hull, Dewsbury and the Isle of Wight.

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