

# FOOD MANUFACTURER



## Random media no longer meets effluent standards

When existing wastewater treatment equipment is no longer meeting effluent standards, there is now a solution which does not require the replacement of the existing roughing filter system.

This was the problem faced in a wastewater treatment plant at a key factory of a major food manufacturer. The water treatment company were reluctant to replace the existing roughing filter system as it had proved to be low maintenance and an efficient wastewater treatment method. However, the random media trickling filter were no longer able to meet the effluent standards required of the high load demands.

So an alternative solution was needed that was not only cost effective to install but also delivered a sustainable long term solution.

The project was run by ACWA Services who asked 2H Water Technologies Design Specialists to help analyse the underlying treatment requirements in order to develop a design proposal which included key details such as specifying the correct weights of media to ensure it would be mechanically safe for the arduous conditions found in a roughing filter.

2H designed an innovative solution based on the crossflow capabilities of the BIOdek structured plastic media. This unique crossflow pattern delivers better levels of treatment than random media plus it prevents the build up of solids within the media pack which often occur in random media, particularly with high loads associated with roughing filters. Once the solution was agreed 2H supplied and installed 1090m<sup>3</sup> of BIOdek 300/60 and 100m<sup>2</sup>/m<sup>3</sup> media to fill a glass coated steel tank 17mtr diameter with 4800mm deep media.

Richard Manning MD, 2H stated *"Due to our significant experience in delivering custom designed wastewater treatment installations in industrial processing operations we were able to design a specific solution for the Wrexham plant that delivered the higher levels of treatment required. This was achieved using the BIOdek™ structured plastic media [link wastewater-treatment] with its crossflow pattern which delivers these higher levels of treatment plus prevents the build up of solids within the media pack which often occurs in random media, particularly with the high loads associated with roughing filters."*

ACWA Services were happy with the solution: *"2H Water Technologies' industrial manufacturing experience combined with their in-depth knowledge of water treatment processes were key to assisting us assess compliance issues and performing basic treatability studies in order to develop a robust design proposal right down to detailing the correct weights of media to ensure the media supplied was mechanically safe for the arduous conditions found in a roughing filter."*

Support did not stop there – 2H also provided detailed technical advice on the media support system that would be needed to give the balance between hydraulic run off and media support at the base of the filter. In addition assistance was also provided to confirming the continuous wetting requirements for the media, delivered via a rotating distributor at the top of the filter.

Finally ongoing support was ensured with the delivery of The Operation and Maintenance Manual supplied by 2H giving details on wetting rates and flushing facilities required to keep the bed healthy along with advice on the process control requirements for Plastic Media Filters.

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