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Screening of up to 10 m³/s combined water with 6 mm perforated plate

It is no secret that the most sophisticated testing of storm screens in the country, if not the world, is conducted at North West Water's Wigan WWTW, as part of the research program of UKWIR CSO Research Group. The ROTAMAT RoK1 Storm Screen, which is now operational extensively throughout the UK, took to the CSO test facility for its own trial evaluation.

Briefly, the set up at Wigan is as follows: Raw sewage, having been elevated by the works inlet screw pumps, is intercepted upstream of the works inlet screens and routed through large bore pipework, incorporating regulating valves and an induction flowmeter, to test facility. The RoK1 Storm Screen was installed on a side weir within a channel fabricated from GRP panels. From the channel, the spill from the screen and the continuation flow were directed to separate chambers containing frameworks for the installation of 6 mm mesh sacks. The continuation/spill flow split was regulated by means of a slide valve in the continuation flow outlet pipework. Flowmeters are also installed in both the spill and continuation flow returns to the inlet works.

The construction of the screen is extremely simple and robust, consisting of a half cylinder of 6 mm perforated stainless steel, in which a transport auger with a continuous brush fixed to the trailing edge of the flight is located. The auger is driven by an explosion proof submersible motor/gearbox, and the flights transport screenings captured on the perforated plate to the downstream end of the screen, where the perforations give way to a solid plate. Screenings were returned, by means of the screenings discharge mechanism, back to the continuation flow.

For the duration of the trial, the RoK 1 Storm Screen was operated in automatic mode, i.e. running intermittently from the commencement of a spill, with the ability of switching automatically to continuous operation under maximum hydraulic/screenings loading conditions.

Tests were undertaken with incoming flows set at 30, 45, 60 and 100 l/s, each with continuation/spill flow splits of 0.1, 0.2, 0.4 and 0.6.

A final conclusion, wholly based on the results from the trial, was quickly reached. In terms of total solids, the RoK 1 improved the solids retention of a CSO with a high sided weir by approximately 10-20% over that achievable without a screen. However, more importantly when related to the NRA AMP2 (1993) requirement, "in terms of gross solids (greater than 6 mm in two dimensions) the RoK1 allowed none to pass to spill".

Related Products:

- [HUBER Storm Screen ROTAMAT® RoK1 for stormwater discharges](#)

Related Solutions:

- [HUBER Solutions for Sewer Systems](#)
- [HUBER Solutions for Stormwater Tanks](#)

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