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5 RoDisc® 24 screens in the factory just before delivery with the clearly visible discs consisting of individual plastic segments

The 16th Asia Olympics will take place at Guangzhou (Guangdong province), China, from 12 to 27 November. They are the biggest sport event in Asia and held every four years. All Asians, in a fever of excitement, are waiting for the Games to begin, so the venues will certainly be well attended.

For such a major sporting event as the Asia Olympics the local infrastructure needs to be modernized and expanded. This includes also wastewater disposal and treatment plants, the capacity of which needs to be extended and their technical standard improved to state-of-the-art.

HUBER SE received the order for the supply of 28 RoDisc® Rotary Mesh Screens for the largest WWTP in the city Lie De. The screens will treat the daily produced wastewater of in total more than 2.15 million inhabitants from a connected area of 150 square kilometres. The peak load will be 8,43 cubic metre per second (!). The treated wastewater will be discharged into the river Pearl.

The RoDisc® Rotary Mesh Screen is a micro filter and in this project used to pretreat the wastewater prior to its treatment in a UV disinfection plant. Reliable retention of the activated sludge flocs and fine suspended matter not retained by the secondary clarifier is the precondition for a trouble-free and efficient operation of the UV disinfection plant. The virtually solids-free effluent from the disc filter reduces current consumption and increases the efficiency and life of the UV disinfection plant.

The RoDisc® Micro Screen works on the basis of the well-proven drum filter principle.

The screen consists of 24 horizontally arranged rotating filter discs installed on a central shaft and is submerged by up to 60 % while in operation. The filter discs remain in rest position during the filtration process. The solids settle by gravity on the disc surfaces themselves, which leads to gradual blinding of the mesh with retained solids as the filtration process progresses, resulting in an

increasing pressure differential. When the predefined maximum pressure differential has been reached, the solids are removed from the filter surfaces by the slow rotation of the filter discs combined with a spray nozzle bar. The spray nozzles are pump fed utilising some of the filtered wastewater. The removed solids are washed into a trough situated below the segment openings prior to being discharged to the WWTP inlet and the filtration process runs on continuously whilst the filter discs are being cleaned.

One filter disc consists of 12 individual filter segments made of high-quality polypropylene. The filter mesh is in this project a stainless steel mesh. Thermal embedding has been applied to fix the mesh on the filter plates. The advantages of this sort of mesh are in particular its defined separation size, long life and stability. Thermal embedding achieves the form-locked connection of the mesh with the filter plate so that the mesh is durably protected and safely fixed.

HUBER SE has equipped other large projects in China with RoDisc® Rotary Mesh Screens. Disc filters have been supplied also to the WWTPs Shi Jing (6 RoDisc® 30), Jiang Ning I (2 RoDisc® 20), Jiang Ning II (4 RoDisc® 26) and Wuxi (2 RoDisc® 20). Due to its low pressure loss and space requirement, the disc filter could be integrated without the need to change the WWTP concept but with the result of a significantly improved and reliable effluent quality.

HUBER DO BRASIL SOLUÇÕES EM TRATAMENTO DE ÁGUA E EFLUENTES LTDA

Rua João Alvares Soares, 1447 - Campo Belo - São Paulo - CEP: 04609-003

Tel: 00 55 11- 2614-1610 FAX: 00 55 11 2614-1610 ext: 205 Internet: www.huber-technology.com.br
