

CSO/STORMWATER MANAGEMENT



StormGuard® Overflow Screen

Removal of floatables from overflow weirs



JOHN MEUNIER

STORMGUARD® OVERFLOW SCREEN

The StormGuard® is an upward flow horizontal fine filter band screen for single or double-sided weir overflows. The perforated elements have 1/4 in. (6mm) diameter holes as standard. The StormGuard® is manufactured to suit any weir length up to 26 ft. (8.0 m) and can readily handle flows up to 115 mgd (5,000 l/s). Screenings are retained in the foul flow, while any storm flows pass through the 1/4 in. (6mm) perforations, guaranteeing compliance with current environmental regulations. The StormGuard® fits directly to the weir to eliminate the possibility of unscreened spillage. It is robust, simple and is manufactured throughout in stainless steel. Standard unit construction is fully assembled and ready to install. The unit is also available in bolted construction to simplify installation where access is restricted.

This product is patent pending.

FEATURES

- Designed to current screening equipment standards;
- Perforated openings of 1/4 in. (6mm) diameter;
- Optimized hydraulic design;
- Low headloss;
- Maximum hydraulic footprint ratio;
- Efficient polypropylene rotating cleaning brush;
- All stainless steel construction;
- Replaceable perforated plate sections;
- Screenings remain in the main channel;
- Low power consumption;
- Applicable on existing weir structure retrofits;
- Easy maintenance.



Wilmslow, UK 14, mgd (600 l/s)



Gullane, UK, 6 mgd (252 l/s)

ADVANCED FEATURES

- Perforated openings of 1/4 in. (6mm) diameter, granting better removal than the 3/16 in. (4mm) diameter bar spacing;
- Strong, compact, all stainless steel single-piece frame;
- Simple and efficient rotating cleaning brush, guarantying a clean screening surface entering the flow;
- Screenings remain in the main channel;
- Low headloss provided by the screening surface, that is much larger than overflow weir section;
- Emergency overflow incorporated to the unit.

OPERATING PRINCIPLES

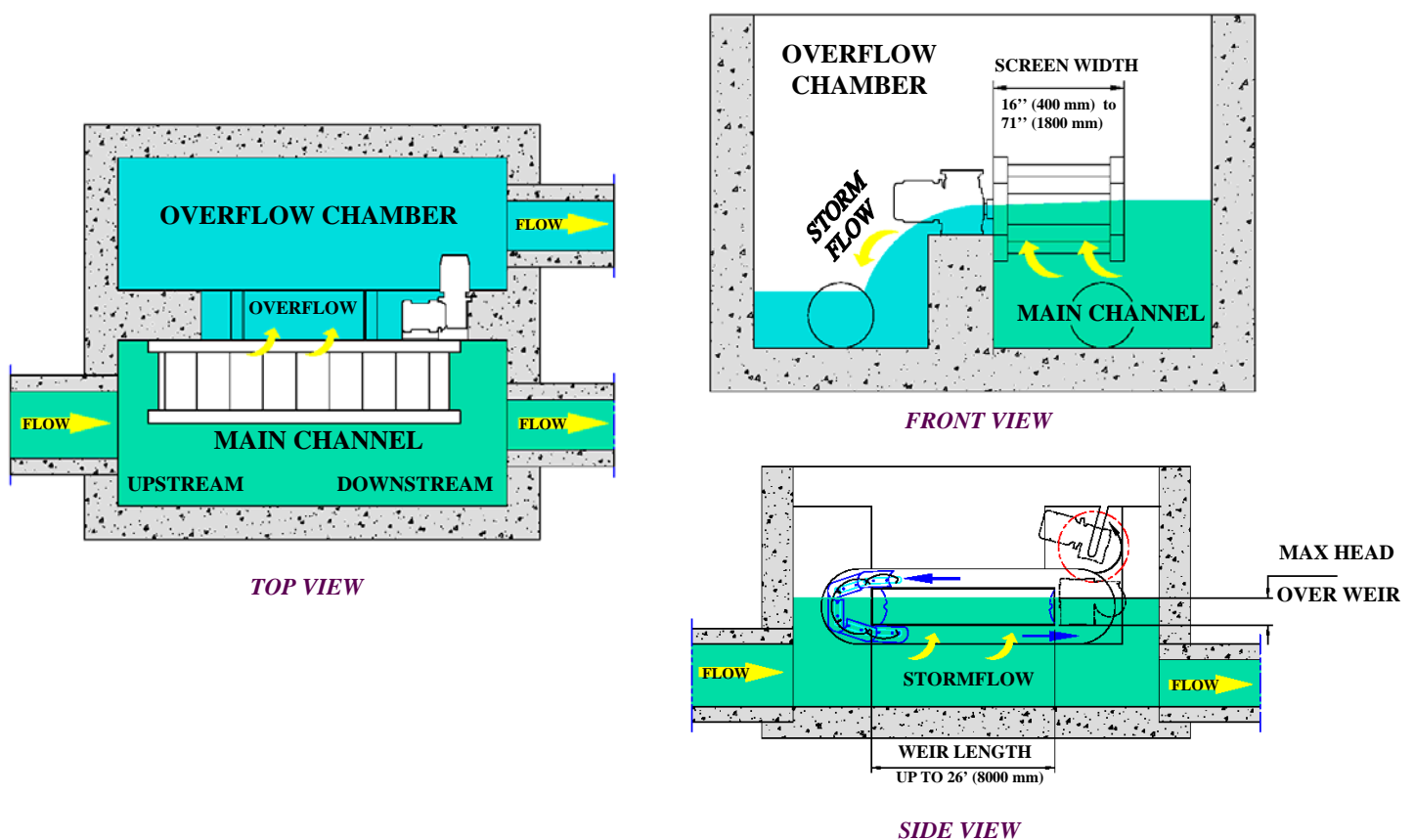
As water reaches the unit, a level detector activates the screening removal mechanism. The water enters the unit from the bottom through the 1/4 in. (6mm) diameter perforated elements.

Retained material is conveyed downstream in the main channel section, by the traveling motion of the filtering elements. There, a rotating brush cleans the dirty filtering elements. The clean plates travel back to the upstream channel section.

Should the maximum water level exceed the screen capacity, the top of the screen frame serves as an emergency overflow.

The screen and the brush operate continuously while the event lasts.

The **StormGuard[®] Overflow Screen** is designed for the conditions dictated by the dimensions of the overflow chamber and the elevation of the overflow weir. **John Meunier Inc.** uses computer software to design and calculate the appropriate screen for each application.



HYDRAULIC CHARACTERISTICS

The surface area of the **StormGuard[®] Overflow Screen** is much larger than the overflow section of the weir. This induces slowly through flow velocities, that limit the screen headloss to a mere 3 in. (75 mm) at peak flow under normal conditions.

Also, the inner water circulation generates secondary flow effects that help to clean the perforated elements at peak flow.

INSTALLATION

The **StormGuard® Overflow Screen** can be installed on any straight-edged weir structures. To prevent submergence, the overflow evacuation pipe's capacity should be greater than the overflow weir capacity. The two drive units are located on the overflow side of the weir. The electrical motors are explosion-proof and submersible. Front and rear access ports are provided for easy maintenance.



Inchcape (Pump Station), UK, 69 mgd (3,000 l/s)

Required data to design a StormGuard® Overflow Screen

- Maximum design flow;
- Maximum upstream water level;
- Elevation of overflow weir;
- Maximum hydraulic capacity of the outlet pipe.



Gleneagles, UK, 3 mgd (100 l/s)

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ISO 9001 : 2000

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