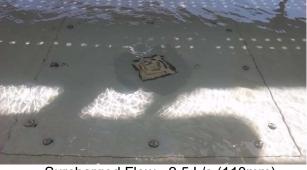


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Flow Characteristic Curve – Q130S4/C90 140 120 100 Water Head Level (mm) 80 60 TRANSITION FLOW REGION Please note that the water depth levels in this shaded area of the chart were observed to fluctuate 40 continuously between maximum and minimum levels due to the transition between weir and orifice flow conditions occurring at the outlet. Only 20 the maximum observed water levels are plotted on this chart 0 0.5 1.5 2 2.5 3 Flow Rate (L/s)





Weir flow - 1 L/s (50mm)

Surcharged Flow - 2.5 L/s (110mm)

Observation Comments:

- A concentric swirl pattern was observed which indicated weir flow conditions, with the water head level stabilising at each flow rate setpoint from 0-2.0 L/s.
- At 2.5 L/s a transition from swirl motion to vortex flow was observed, as the air core decreased to approximately 10mm Diameter and moved to the side of the grate. At 3.0 L/s the vortex surcharged and transitioned to orifice conditions were characterised by the water level surging between 30-90mm.
- The maximum flow limit to maintain weir flow conditions is 2.0 L/s.

I hereby certify that the test results presented on this outlet performance certificate are true and correct and were obtained using recognised AHSCA Gutter Outlet Testing procedures.

Dr Terry Lucke,

Chief Researcher:

Mark Alexander,

AHSCA Foundation Chairman:

Date: 16th November 2016

Date: 16th November 2016