



Downstream Defender® Select Separator Performance Declaration

Testing carried out according to British Water Code of Practice

Manufacturer: Hydro International Ltd.

Treatment Device Name/Model: Downstream Defender® Select (1.2m)

General description: Downstream Defender® Select is a chamber-based, advanced hydrodynamic vortex separator that reliably captures and retains sediments, oil, trash and floatables from surface water runoff.

Envisaged application: The Downstream Defender® Select separator can be used as a stand-alone SuDS component, giving equivalent performance to detention basins and filter drains, or it may be used in combination with other components as part of a wider SuDS scheme to provide improved performance levels or additional levels of redundancy. It is particularly beneficial in space or access constrained schemes where other systems such as ponds, detention basins and swales would not be feasible or pose health and safety concerns. It can also be used as a replacement to sediment forebays to reduce maintenance requirements of downstream systems.

Pollutant(s) captured: TSS, metals (sediment bound) & hydrocarbons (sediment bound)

Device size / capacity:	1.2m Manhole
Sediment storage capacity:	450 l
Treatment flow rate:	30 l.s ⁻¹
Connectable area:	4,000m ²
Pollutant retention flow rate:	44.5 l.s ⁻¹
Maximum capacity flow rate:	120 l.s ⁻¹
Device head loss (at Treatment flow rate)	0.15m
Device head loss (at Maximum capacity flow rate)	0.5m
Sediment capture and retention efficiency	57.3 %

Dated: (07/03/2022, See test report pages 21-22)

Witnessing party: (FP Environmental Associates)



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Available Models

Device size / capacity:	1.0m	1.2m	1.5m	1.8m	2.1m	2.4m	3.0m
Sediment storage capacity:	310 l	450 l	710 l	1020 l	1390 l	1810 l	2830 l
Treatment flow rate:	21 l.s ⁻¹	30 l.s ⁻¹	48 l.s ⁻¹	69 l.s ⁻¹	94 l.s ⁻¹	123 l.s ⁻¹	192 l.s ⁻¹
Connectable area:	2,800m ²	4,000m ²	6,400m ²	9,200m ²	12,500m ²	16,400m ²	25,600m ²
Pollutant retention flow rate:	31 l.s ⁻¹	44.5 l.s ⁻¹	70 l.s ⁻¹	100 l.s ⁻¹	136 l.s ⁻¹	178 l.s ⁻¹	278 l.s ⁻¹
Maximum capacity flow rate:	70 l.s ⁻¹	120 l.s ⁻¹	170 l.s ⁻¹	278 l.s ⁻¹	355 l.s ⁻¹	529 l.s ⁻¹	787 l.s ⁻¹
Device head loss (at Treatment flow rate)	0.15m	0.15m	0.22m	0.23m	0.24m	0.25m	0.26m
Device head loss (at Maximum capacity flow rate)	0.5m	0.5m	0.5m	0.5m	0.5m	0.5m	0.5m
TSS Mitigation Index	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Metals Mitigation Index	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Hydrocarbons Mitigation Index	0.5	0.5	0.5	0.5	0.5	0.5	0.5