



ACO Combipoint SSA

Effective sediment removal from surface water

Product Catalogue



ACO Combipoint SSA

ACO's range of SuDS products, from collection channels, silt collecting sumps to dedicated treatment units like the V-Septor or Combipoint SSA all help to improve the efficiency and maintenance requirements for SuDS designs.

ACO's IKT tested Combipoint SSA will remove high levels of fine and coarse content, which not only helps with long term maintenance of SuDS features, it may also help achieve higher site mitigation indices. Using the SuDS management train method recommended in the Ciria SuDS manual, allows for two or more SuDS features to combine and therefore increase the treatment level achieved. For example combining the Combipoint SSA and a swale allows the combined train to treat medium, rather than just low pollution hazard level areas.

The ACO Combipoint SSA features unique installation benefits and easily accessible maintenance, which does not disturb the wildlife and habitats within your SuDS feature. Connecting pipe work can also be combined with ACO's Swale inlet and overflow gullies for effective ingress/egress of water in your SuDS feature.

Surface water management system design can often be a complex task. Success in combining products and processes requires a thorough understanding of how these different elements work together including knowing how to incorporate and enhance green SuDS features. ACO has embraced the concept of value engineering as an approach to on-site construction that saves both time and money. ACO will review any design to minimise the total scheme and life cost of a proposal. The team can suggest the most appropriate range depending on your requirements.





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ACO. creating the future of drainage

Throughout the world ACO branded drainage and surface water management systems are recognised for their innovative design, high quality manufacture, environmental excellence and industry leading performance.

Today the ACO Group has a research and production base that spans four continents. This unmatched resource pioneers the development of solutions that are tailored to individual applications, meeting the need for high performance, sustainable products that deliver optimum value throughout their operational life.

ACO Technologies plc

ACO operates as ACO Technologies plc in the United Kingdom and Ireland. Founded over 30 years ago, the company has grown quickly on a reputation for design, innovation and customer service.

There are now two core divisions, ACO Water Management and ACO Building Drainage, that serve every sector of the construction industry, providing solutions for applications as diverse as rail, highways, airports, landscaping, retail, distribution centres and environmentally sensitive projects.

To help architects, designers and contractors meet the stringent legal requirements which control the way surface water is managed, ACO has created its unique 'Surface Water Management Cycle' – Collect, Clean, Hold, Release – the four core processes now required for the complete and sustainable management of surface water drainage.

ACO Water Management

ACO is a world leader in the design, development and implementation of sustainable drainage systems. For over 50 years, this expertise has pioneered unique solutions in award-winning surface water management, high performance stormwater control and hygienic and corrosion resistant building drainage systems. For more information visit www.aco.co.uk



ACO Technologies plc
in Shefford



5,000

5,000 employees in
more than 40 countries
(Europe, USA, Asia,
Australia, Africa)

900

Sales 2019:
€900 million

30

30 production sites in
15 countries



Iver Ahlmann and Hans-Julius Ahlmann



ACO Combipoint SSA

Surface water sediment treatment

The Combipoint SSA is a sediment removal system which can be used in conjunction with SuDS components. This point gully system is an upstream pre-treatment component which can be used instead of sediment forebays. When used with SuDS features serving large developments it will improve the water quality, performance of a vegetated detention basin and reduce longterm maintenance requirements (CIRIA SuDS manual 22.8.1). This prevents open water features from becoming unsightly and odorous and reduces the risk of rapid silt accumulation, which is generally expensive and difficult to extract and dispose of (CIRIA SuDS manual 23.1). The SSA Combipoint design was developed together with Prof. Dr.-Ing. Stone & Partner GmbH.

The Combipoint SSA enables a three-stage separation of solids contained in surface water, minimising the solids entering the system. This system is tested and IKT certified, and its mitigation indices can be combined with secondary SuDS components as part of the SuDS Management Train.

Capacity 10 l/s

Treatment: Approx 98% coarse grained content, 76% fine-grained content and 10% suspended solids are removed

Mitigation indices (TSS)	0.500
Mitigation indices (Metal)	0.375
Mitigation indices (Hydrocarbons)	0.450

Minimising maintenance, improving quality

Sediment can be quickly and easily removed from this point source, and the large silt chamber allows at least 71% higher capacity compared to conventional road drains, and at least 32% higher than conventional road drains with silt chamber

- 1 Grate
- 2 Silt bucket
- 3 Turbulence reducer
- 4 Silt chamber



The solution

Load dispersal – Dissipate loads before damage occurs

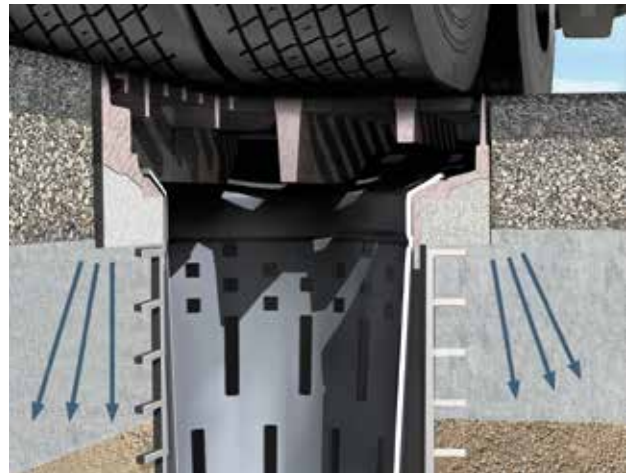
Installation without mortar joint

Recent studies have shown that the mortar joint is the decisive weakness in conventional gully solutions, which entails costly remedial measures.

ACO Combipoint SSA is designed to disperse loads, due to the elimination of balancing rings and mortar joints into the adjacent support layers.

Main installation design features

- No mortar joint
- Settlement is avoided
- Liquid-tight draining body



Double-sided hinged grate









The multifunctional, dirt resilient and robust double hinge enables easy, quick opening by opening the grate on both sides by approx. 110 degrees. The installation can therefore be carried out independently of the direction of travel and gradients, thus avoiding installation errors. In addition, the cover is completely removable as it can be vertically lifted.

Surface water sediment treatment

- Made from Polyethylene (PE)
- Load dispersed due to elimination of the mortar joint
- Pipe connection suitable for heating coil welding sleeves
- Monolithic gully body

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Product	Description		Height overall [mm]	Weight [kg]
89117	Grate 500 x 500 Gully cover and frame for Combipoint SSA D 400		180	76
89008	Gully body Combipoint SSA PE body and silt chamber		1780	22
89052	Double outlet Outlet and overflow connector 160mm		685	1
89053	SSA turbulence reducer Stainless steel turbulence reducer for Combipoint SSA		473	3.5
27281	Silt bucket Silt bucket for Combipoint SSA		600	7.5
89064	Extension element Extention element 120mm		135	1.4
67308	Sealing plates Sealing plates for use during construction phase, set of 2		60	0.5
600643	Lifting tool		600	1.5

ACO Combipoint SSA

Installation



Video animation
visit www.aco.co.uk

Remove the end of the upper overflow outlet to allow connection to the double outlet.

Connect the underground pipework to the double outlet of the Combipoint SSA.

Foundation concrete C12 / 15 according to EN 206-1 d / b = 200 mm up to the first rib.

Lateral filling according to BS EN 1610 in layers using C12/15 concrete up to 200mm below the top edge of the gully body.

Concrete support C12 / 15 according to BS EN 206-1 for the top is approx. 200mm wide all around and extend the height of concrete 20mm higher than the gully body, using appropriate form work.

Remove the formwork aid, press the ductile iron frame into the fresh concrete foundation approx. 20 mm until it is completely on the drain body or taking into account the final road height. The internal drip edge of the frame is pushed into the drain body, stiffening it. Temporary covers can be placed in the bucket support of the attachment frame to prevent dirt from entering during the construction phase.

When the construction phase is complete, install the turbulence reducer in the gully body. This will sit approximately half way down the unit, with the seal resting on an internal rib.

Insert the silt bucket and ensure the grate is secure in the frame. Please refer to full installation for more details.

Easy to use



The cover is completely removable with a vertical lift



Robust double hinge



Noise reduction due to damping inserts in the frame



Pre-formed knock-out for draining the road surface during construction phase. This can be opened if necessary providing large inlet crosssection not constricted by the grate. Closing tabs available



The large contact area at the bottom of the frame reduces the surface pressure in the mortar bed and ensures a continuous load dispersal



Easy to access and quick to clean silt buckets for no hassle maintenance

**Screw free,
maintenance free
locking**



The screwless, traffic-safe locking ensures the grate is secure, but at the same time allows easy handling and maintenance. The use of commercially available lifting keys is possible. To optimise handling we recommend universal lifting tools with hook and release lever.



Cleaning instructions

The grate cover acts like a rake and avoids the penetration of coarse debris into the drain. The debris can be removed from the surface by cleaning or sweeping vehicles. This ensures that the drain still functions and is not blocked by coarse objects such as branches or plastic bags (Fig. 1). Due to the multifunctional double hinge, the cover can be opened according to the positioning of the cleaning vehicle (Fig. 2).

Firstly remove the silt bucket and empty in accordance local authority guidelines.

Secondly, remove the turbulence filter using a suitably long hook (Fig. 4).

The now accessible silt collection area can be emptied by means of a suction hose. Impurities on the side walls can be removed by means of a water jet.

During suction, care must be taken to ensure that the suction trunk does not damage the drain body (Fig. 5)

After emptying and cleaning the unit, check all components for damage and replace defective parts. All parts should be reinstalled and checked to ensure correct assembly/function.

Maintenance

Due to the Combipoint SSA being a purely mechanical cleaning unit, it can be regarded as a conventional road drain with wet silt collection in view of its maintenance intervals.

The cleaning intervals of the ACO Combipoint SSA depend on the respective environment and catchment areas. For example, heavy tree growth, vegetation adjacent to the gully, winter service or adjacent construction sites can influence the maintenance requirements. The interval can also fluctuate due to seasonal factors.

Sediment can be quickly and easily removed from this point source, and the large silt chamber allows at least 71% higher capacity compared to conventional road drains, and at least 32% higher than conventional road drains with silt chamber



Typical Specification Clause

The sediment removal system shall be ACO's Combipoint SSA, with 500x500mm gully top capable of treating 10l/s, removing 98% coarse grain content, 76% fine grained content and 10% suspended solids.



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