

# Rainwater treatment: IKT can now also test systems according to a US regulation



For the first time, IKT has tested a decentralised rainwater treatment facility according to the NJDEP protocol.

For the first time, **IKT's Test Centre for Rainwater Treatment** has tested a decentralised stormwater treatment system according to the US **NJDEP standard**. The treatment process of the Hydroshark system from 3P Technik Filtersysteme was evaluated in laboratory tests and its performance determined. Prior to this, the product had already been tested by the IKT test centre in accordance with the **Trennerlass NRW** (the surface water separation decree of the State of North Rhine-Westphalia, Germany).

The "New Jersey Department of Environmental Protection (NJDEP) Laboratory Protocol to Assess Total Suspended Solids Removal by a Hydrodynamic Sedimentation Manufactured Treatment Device (MTD)" is a common test procedure in the US for determining the **degree of retention** of water in decentralised stormwater treatment systems. It is a prerequisite for the **approval of treatment facilities** in the State of New Jersey.

# Testing in accordance with NJDEP protocol



What comes out the other side?  
The NJDEP test procedure determines the retention capacity of the system.

The system was tested for **sediment removal efficiency** in accordance with Section 5 of the NJDEP protocol, using a test sediment mixed according to the requirements of the protocol. The following **parameters and performance data** were obtained for the Hydroshark during the seven test runs that are required:

- Maximum Treatment Flow Rate (MTFR): 1.60 cfs (45 L/s)
- Total Suspended Solids (TSS) removal efficiency: > 50 % at MTFR
- Effective treatment area (ETA): 18.94 ft<sup>2</sup> (equivalent to 1.76 m<sup>2</sup>)
- Volume: 924 gal (equivalent to 3,498 litres)
- Effective Sedimentation Area (ESA): 8.45 ft<sup>2</sup> (equivalent to 0.79 m<sup>2</sup>)
- Volume of sludge chamber: 233 gal (equivalent to 882 litres)

## Testing according to Trennerlass NRW



The Hydroshark system has already been tested at the IKT in accordance with the Trennerlass NRW.

A few months before the NJDEP test, the IKT Test Centre for Rainwater Treatment determined the **hydraulic capacity** and the **material retention capacity** of the Hydroshark DN1500 stormwater treatment plant in accordance with the Trennerlass NRW:

- Hydraulic capacity: > 50 l/s
- Retention of fine-grained, filterable mineral substances: 72.55 % retention
- Retention of coarse-grained, filterable mineral substances: > 99.00 % retention
- Retention of floating polyethylene: 62.24 % retention
- Retention of suspended solids from polystyrene: 75.41 % retention
- Retention of mineral oil hydrocarbons: 66.59 % retention

## Recognised testing laboratory

The IKT Test Centre for Rainwater Treatment is **recognised** by the German Institute for Construction Technology (DIBt) and offers a range of tests for treatment plants and surface coverings.



- Decentralised stormwater treatment plants for discharge into groundwater
- Decentralised stormwater treatment plants for discharge into surface waters
- Infiltration-capable surface coverings

Would you like **more information** or do you have any **questions**? Please do not hesitate to **contact us**!

## Contacts

### **Iain Naismith**

Senior Research Fellow, IKT

T: +44 (0) 1491 712707

M: +44 (0) 7983 605219

E-mail: [naismith@ikt.institute](mailto:naismith@ikt.institute)

### **Marcel Goerke, M.Sc.**

Head of the IKT Test Centre for Rainwater Treatment

T: +49 (0) 209 17806-34

E: [goerke@ikt.de](mailto:goerke@ikt.de)