



Infiltration,

Retention and Reuse

The ACO Stormbrixx family





Sustainable Rainwater management is our responsibility for the future

Heavy rainfall events caused by climate change: a challenge for all of humanity. Climate change sets us a challenge to react effectively with innovative solutions to new environmental conditions. With its integrated approach, ACO provides systems for professional surface water drainage, efficient cleaning, and the controlled discharge or reuse of water.

Back into the natural water cycle

The Hydrological Cycle is the natural cycle of water from rainfall to evaporation. The ACO System Chain provides products that collect water from impervious surfaces,

which is transmitted to products which help clean solids and liquids from this collected surface water. "Hold" and "Release" require systems that can hold and return this water back to nature in a controlled manner, which can be used in conjunction with water reuse programs.

Combined with ACO surface drainage systems, ACO treatment products and ACO flow control systems the ACO Stormbrixx product family offers a flexible, reliable and sustainable system for the detention, retention, reuse and infiltration of stormwater.

Commitment to quality and sustainability

International ISO management system standards and their certification support the continuous sustainability activities at all key ACO sites in operation, service and culture.

Currently the certified management systems are:

- ISO 9001:2015, Quality Management System
- ISO 14001:2015, Environmental Management System
- ISO 50001:2018, Energy Management System

The certifications are maintained by the process of continuous improvement through real sustainability projects and the promotion of the ecological awareness and activities of all employees.

Key areas of action in this context are product quality, continuous reduction of ACO's environmental footprint as well as continual process resource reduction by digitization and integration.

2

Where surface water management and water protection begins

Achieving the right water quality

Reducing surface runoff to a natural level

Control discharge rate to the required level



ACO surface drainage

- Drainage channels
- Road gullies and yard gullies
- Gully tops
- Manhole covers

ACO cleaning systems

- Separators
- Sedimentation and filter systems

ACO retention and storage systems

- Emergency systems
- Infiltration and attenuation systems
- Surface water retention basin

ACO control systems

- Flow control systems
- Pump stations

3



The **ACO system chain** is the drainage solution for the challenges of the current and future environmental conditions.

ACO geocellular stormwater management system

For infiltration, retention and reuse of rain water

50 YEARS
OF ACO RELIABILITY

ACO Stormbrixx

Groundwater infiltration, retention and controlled release of rainwater are central issues of rainwater management. The ACO Stormbrixx is a unique and patented plastic geocellular stormwater management system.

Equipped with smart components ACO Stormbrixx offers a wide range of possibilities for a controlled rainwater management system.

The Stormbrixx system consists of Stormbrixx SD (Standard Duty) and Stormbrixx HD (Heavy Duty) modular in different sizes.

- Extraordinary stability incl. brick bonding
- Over 10 years experience in projects worldwide
- Certified performance with beyond the standards high frequency series production testing
- High void ratios which minimizes excavation volume
- Low carbon footprint due to recyclable material and logistical benefits
- Remote and man access for ease of maintenance



Standard Duty:

ACO Stormbrixx SD 900

Application category

- frost-free installation depth, at least 80 cm deep (DIN 1054), without groundwater influence:
- Landscaped areas, no vehicles
- Landscaped areas, driven by mowers
- Pedestrian areas, protected by obstacles (bord, bollards) from driving
- Driveways to carparks, crossing of emergency vehicles possible
- Carparks, crossing of emergency vehicles possible
- Access roads for residential property with scheduled crossings by special vehicles (refuse or tank vehicles) as well as operating service vehicles

	Cover depth		Installation depth
	minimal [mm]	maximum [mm]	maximum [mm]
0,5	800	2000	2480
1	800	2000	2914
1,5	800	2000	3390
2	800	2000	3828

Performance data SD 900

Void ratio:	97%
Short term vertical compressive strength:	360 kN/m ²
Short term lateral compressive strength:	60 kN/m ²
Mainbodies per m ³	3





Heavy Duty:

Stormbrixx HD 600

Application category
frost-free installation depth, without groundwater influence:

- Inclusive all SD applications
- Storage areas and secondary facilities of traffic routes which are not constantly used by heavy traffic (mainly stationary traffic, no traffic lane. Connection between storage areas)
- Traffic routes with heavy traffic: only in consultation with ACO Application engineering

Layers	Window of Application		
	Cover depth		Installation depth
	minimal [mm]	maximum [mm]	maximum [mm]
0,5	800*	3400	3730
1	800*	3400	4010
1,5	800*	3400	4340
2	800*	3400	4620
2,5	800*	3400	4950
3	800*	3400	5230

Performance data HD 600

Void ratio:	95%
Short term vertical compressive strength:	455 kN/m ² *
Short term lateral compressive strength:	95 kN/m ² *
Mainbodies per m ³	4,5

* may vary for different article numbers or due to local standards. Product might be available with different certifications in countries. Ask ACO application engineers for more information.



Heavy Duty:

ACO Stormbrixx HD 900

Designed for heavy duty application and deep installations.

Application category
frost-free installation depth, without groundwater influence:

- Inclusive all SD applications
- Storage areas and secondary facilities of traffic routes which are not constantly used by heavy traffic (mainly stationary traffic, no traffic lane. Connection between storage areas)
- Traffic routes with heavy traffic: only in consultation with ACO Application engineering

Layers	Window of Application		
	Cover depth		Installation depth
	minimal [mm]	maximum [mm]	maximum [mm]
0,5	800	4200	4676
1	800	4200	5224
1,5	800	4200	5590
2	800	4200	6028
2,5	800	3724	6028
3	800	3286	6028
3,5*	800	2810	6028
4*	800	2372	6028

Performance data HD 900

Void ratio:	97%
Short term vertical compressive strength:	520 kN/m ²
Short term lateral compressive strength:	110 kN/m ²
Mainbodies per m ³	3



*with support by ACO Application Engineers

50 YEARS
OF ACO RELIABILITY

Tested and certified

ACO Stormbrixx series production testing for each production and material batch including third party control with full traceability.

According to and beyond highest standards

Long term performance is the most important factor.

In order to give our customers confidence for every project, it is essential for ACO to maintain quality control throughout the complete manufacturing process.

ACO is performing testing of Stormbrixx on a different level to secure the high ACO quality standard:

- Full scale testing of the final manufactured product
- Component testing of individual parts
- Coupon testing of materials

Full scale quality testing of the final Stormbrixx is validated in both directions -vertical and horizontal planes.

Stormbrixx is tested for every production day, for every material production batch and for all production sites globally with full traceability to every project.

Product quality beyond international standards

Stormbrixx is tested for creep with more than 10,000 h, as well as for creep rupture according to EN17151 campaigns, resulting in certification to the highest international standards*, such as DIBt, BBA and CSTB.

Additional Stormbrixx is tested as a modular system beyond standards or guidelines like EN17152 or Ciria737.

ACO quality control is supervised by a certified external third party*

* may vary for different article numbers



ACO Stormbrixx is also tested with modular stacking beyond requirements from standards.

Certification for structural integrity

National certification bodies certify products for the needs of the local markets. Based on practical experience and technical demands local standards are exceeded for various applications across national borders.



- The Deutsches Institut für Bautechnik (DIBt) plays a pivotal role in the construction industry: with its approvals and assessments, it ensures the safety of construction works while fostering the development of innovative construction products and techniques. DIBt is a technical authority and a service provider for the construction sector.
- DIBt issued a general building approval for ACO Stormbrixx HD and SD.

- The British Board of Agrément (BBA) provides services that help us to create accountability and mitigate risk. Through extensive research, auditing, inspection, testing and certification, BBA supports ACO's commitment for high quality and safety in the construction sector.
- BBA issued a technical approval for ACO Stormbrixx HD.

The ACO Stormbrixx system consists of a single recyclable polypropylene body that can be assembled in a variety of ways to form an open bonded structure. **The stackable design reduces transportation costs and improves the carbon footprint of the product**

Material testing before processing

A contribution to durability

50 YEARS
OF ACO RELIABILITY

To ensure the high ACO standard in serial production internal checks are carried out during production in addition to the standard tests by our ISO 9001-certified suppliers.

For this purpose, the material parameters are checked and documented for each batch of material processed in production.

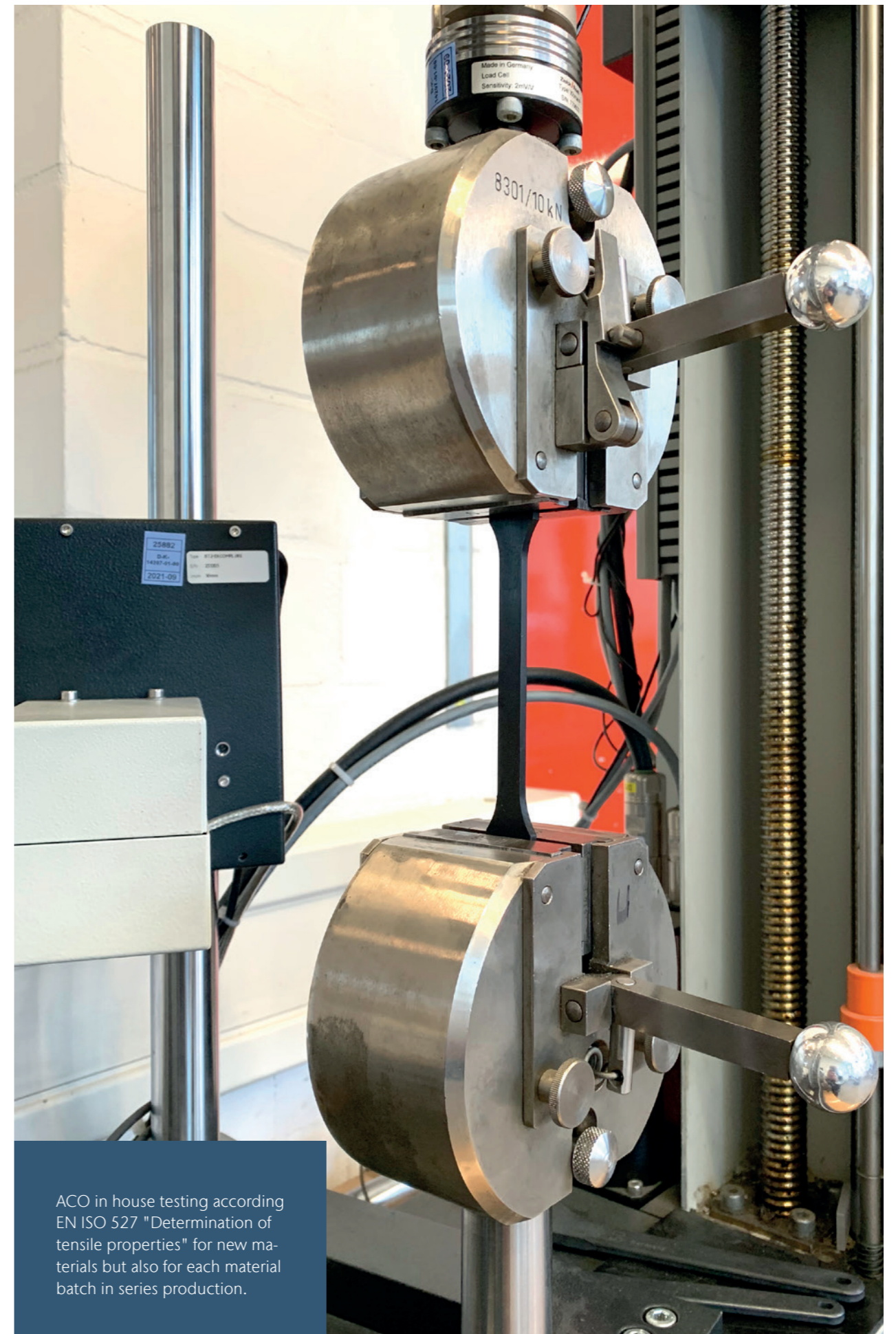
Mechanical properties, creep properties and the long-term resistance to environmental influences are examined in a variety of tests.

These investigations are carried out according to the standards of DIN norms, for example :

- EN ISO 899-2
Determination of creep behaviour
- EN ISO 178
Determination of flexural properties
- EN ISO 179-1
Determination of Charpy impact properties
- EN ISO 527
Determination of tensile properties
- EN ISO 11357-6
Determination of oxidation induction time (isothermal OIT) and oxidation induction temperature (dynamic OIT)



ACO in house testing according EN ISO 899-2 "Determination of creep behavior" to ensure also series production quality.



ACO in house testing according EN ISO 527 "Determination of tensile properties" for new materials but also for each material batch in series production.

Every ACO product supports
the ACO system chain



-
- Drainage channels
 - Road and yard drains
 - Gully tops
 - Manhole covers
 - Rainwater treatment
 - Infiltration and attenuation
 - Pump shafts
 - Flow control systems
 - Tree protection
 - Amphibian protection
-

ACO Ahlmann SE & Co. KG

P.O. Box 320
24755 Rendsburg
Am Ahlmannkai
24782 Büdelsdorf
Germany

info@aco-international.com
www.aco.com

**ACO. creating
the future of drainage**

