

PE-HD drainage system with modular inspection and flushing chamber for drainage in gardening, landscaping and sports field construction



GALABAU-*inspect*:

Drainage system in accordance with DIN 18035-3 for gardening, landscaping and sports field construction; harmonized pipes and chambers of PE-HD/PP for professional drainage and inspection of drainage systems in sports fields, gardening and landscaping

Application:

- Drainage of sports fields with
 - grass
 - paved surface
 - artificial turf
- Drainage in gardening and landscaping



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Corrugated and Twin
Wall Pipes of Plastics



GALABAU-*inspect* - the drainage system to DIN 18035-3

Drainage of sports fields

Professional drainage of the underground is a basic prerequisite for the long-time use of sports fields.

Besides the collection and discharge of water drained from the sports field body via drainage pipes, it is necessary to allow the drainage system to be inspected and flushed through access chambers. This is the only way to ensure the system's performance and a long service life; simultaneously, costly follow-up repairs of the sports field can be avoided.

DIN 18035-3 – requirements

DIN 18035-3 specifies the structural design of professional drainage systems in sports field construction. There are different laying arrangements, depending on underground and design. For full-size playing fields, the preferred standard design comes up to a

gabled roof pitch (hip roof), in which the transverse lateral drains are aligned with the gradient of the subgrade. The complete drainage facility is surrounded by a collecting main with incorporated GALABAU-*inspect* inspection chambers. By gravity, the collected drainage water is led into the respective recipients.

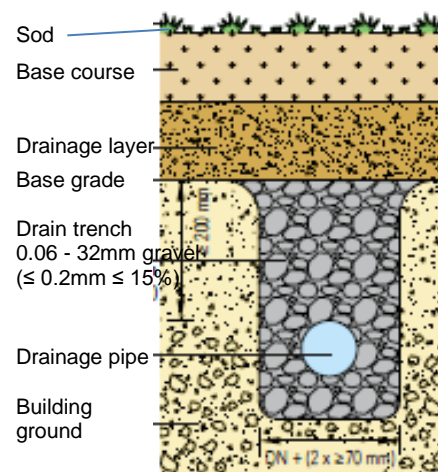
Drainage of playing field

The subbase of a playing field has to be provided with an adequate number of drain runs, depending on the local building ground. Subject to permeability of the subsoil and finish of the field surface, the intervals between the laterals range between 5m and 8m. The minimum distance between upper edge of laterals and base grade shall be 200mm, with the gradient ranging between 0.3% and 0.5%.

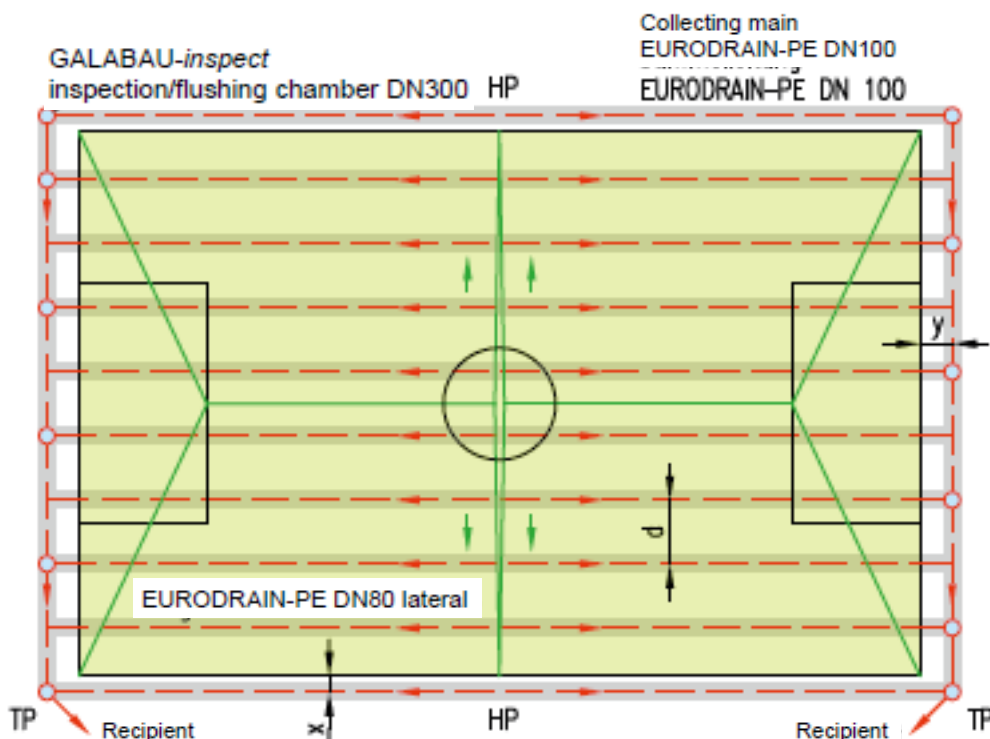
DIN 18035-3 shall be observed.

GALABAU-*inspect* Sports field drainage

- Drainage pipes and inspection/flushing chambers complying with DIN 18035-3
- Suitable for all kinds of sports fields
- Optimum water absorption for long-time performance
- Variable design to meet the requirements
- Practical access for inspection
- Excellent (monitored) quality



Example: Setup with grass and drainage pipe (lateral)



- Legend:
- d: Interval laterals, normally between 5.0m and 8.0m
 - x: Clearance long side $\geq 2.0\text{m}$
 - y: Clearance narrow side $\geq 4.0\text{m}$

Example:
Playing field with gabled roof pitch of 0.8% for a norm ground size of 105m x 68m (DFB)

GALABAU-*inspect* - the inspection and flushing chamber

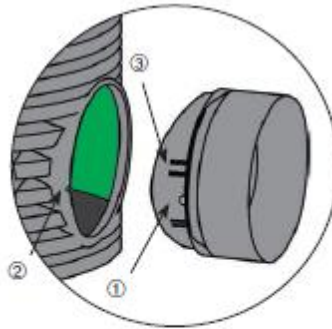
The inspection and flushing chamber GALABAU-*inspect* (equivalent to the successful SIROBAU S 300 chamber system for drainage systems to DIN 4095) stands out by its robust and practical design. The chamber's excellent impact resistance, which eliminates damages during installation and operation, is mainly due to the twin wall design and PE-HD, the raw material it is made from.

The chamber is offered in two variants: with and without sand trap. Up to four drainage pipes of different nominal sizes can be connected to a basic module. This allows an optimum of flexibility regarding the laying arrangement in the planning phase and for implementation of the project. Product- and size-specific outlet adaptors allow corner, straight or branch connections in the size range from DN80 to DN200.

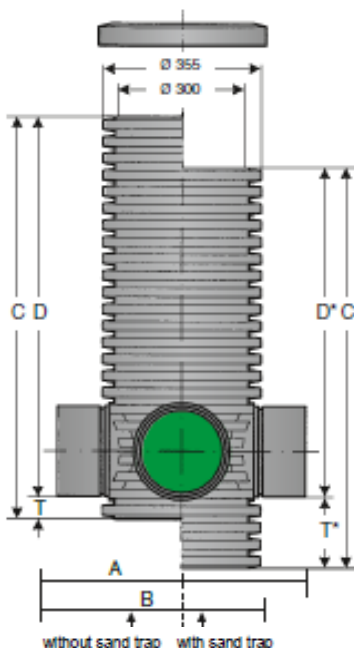
The GALABAU-*inspect* modular chamber and all appropriate drainage pipes are subject to continuous quality control by an independent testing institute (Süd-deutsches Kunststoffzentrum, Würzburg). This ensures a consistently high quality of the system.

Concept of the PE-HD modular chamber GALABAU-*inspect* Setup and assembly of chamber outlets

Outlet adaptor with click system



- ① Detent (protection against twisting)
- ② Recess (protection against twisting)
- ③ Locking elements (spring catches)



Technical details/dimensions

Nominal size of chamber DN300 (ID)		with sand trap	without sand trap
Width A	mm	500	500
Width B	mm	430	430
Overall height C	mm	900	900
Effective height D/D*	mm	700	820
Sand trap/section T/T*	mm	200	80

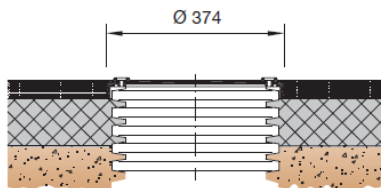
GALABAU-*inspect* - the chamber accessory

Chamber covers

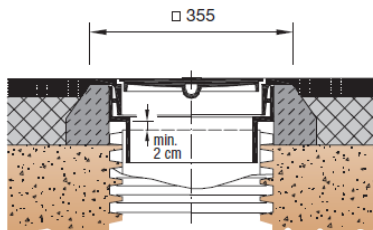
Each modular chamber is supplied with a child-proof PP chamber cover (suitable for pedestrian traffic).

In addition, cast-iron covers of Classes A 15, B 125 and D 400 are available for different loads. The Class B and D covers are obtainable with and without vent openings, and for Class B loads there is also an inlet grating.

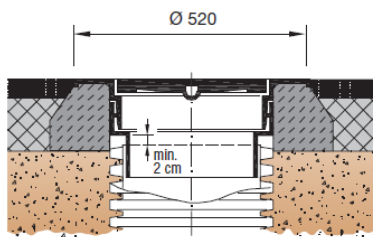
With the covers of Classes B and D loads distribute via the frame to the surrounding bearing layer.



Class A 15, suitable for pedestrian traffic



Class B 125, suitable for automobile traffic



Class D 400, suitable for automobile traffic

Cast-iron covers

(Here: available options)

Special chamber covers for sports fields

Chamber covers are to be avoided inside a playing field.

In the border area of a playing field, special requirements have to be met to ensure a safe and unobstructed zone between the sidelines of the field and any chamber covers.

If such requirements cannot be met, there is the option of fitting the chamber covers, on site, with the respective field finish. Corresponding measures have to be agreed beforehand, with the design being adapted to the local conditions.



Example: Plastic finish hard court, thickness abt. 4.0cm



Example: Felt finish, thickness abt. 1.5cm, suitable adhesive



Example: Artificial turf, tailored to the size of cover



Example of the arrangement of a playing field drainage (full-size pitch 105m x 68m) with GALABAU-*inspect* chambers at the narrow sides and EURODRAIN-PE/SIROPLAST-K drainage pipes

GALABAU-*inspect* - drainage pipes

EURODRAIN PE-HD drainage pipes for stricter requirements in sports field construction as well as gardening and landscaping



EURODRAIN-PE drainage pipe

- Flexible special drainage pipe made from PE-HD
- Environmentally friendly raw material
- Low risk of fracture/cracking
- Optimum water influx thanks to an inlet area > 50cm²/m

EURODRAIN-PE drainage pipes on the basis of DIN 4262-1 have the following properties: type: **R1**; raw material: **PE-HD**; slotting pattern: **TP**.

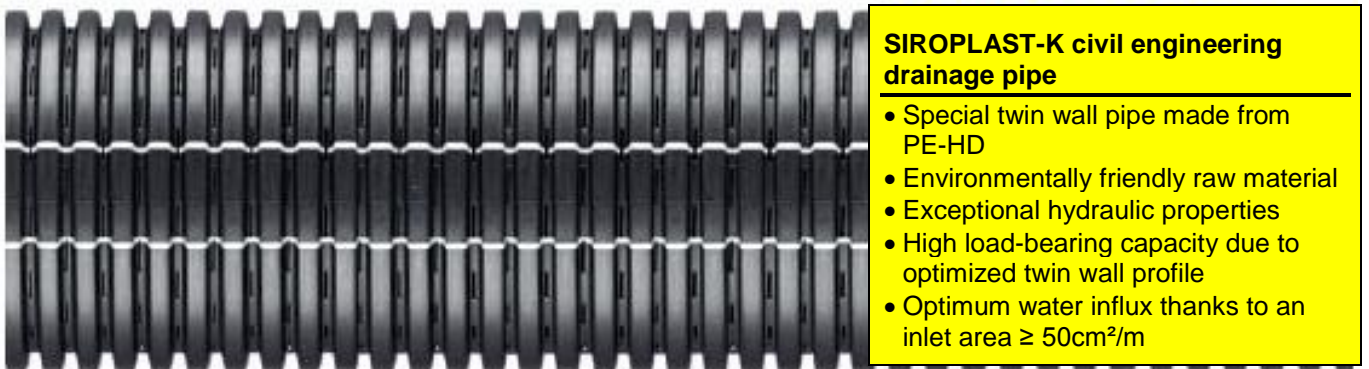
The minimum requirements of DIN 18035-3 specifying a water inlet area $\geq 25\text{cm}^2/\text{m}$ are complied with.

Technical data

Nominal size	DN	80	100	160
Outside diameter	mm	80.0	100.0	159.5
Inside diameter	mm	67.5	86.5	138.0
Width of slots	mm	following DIN 4262-1		
Water inlet area	cm ² /m	≥ 50		
Ring stiffness	kNm ²	≥ 8	≥ 8	≥ 5
Coil length	m	50		

As an alternative to the EURODRAIN-PE drainage pipes there is the standard EURODRAIN drainage pipe to DIN 1187 with the following properties: type: **R1**; raw material: **PVC-U**; slotting pattern: **TP**.

SIROPLAST-K PE-HD civil engineering drainage pipes, especially suited for circular and collecting mains



SIROPLAST-K civil engineering drainage pipe

- Special twin wall pipe made from PE-HD
- Environmentally friendly raw material
- Exceptional hydraulic properties
- High load-bearing capacity due to optimized twin wall profile
- Optimum water influx thanks to an inlet area $\geq 50\text{cm}^2/\text{m}$

SIROPLAST-K civil engineering drainage pipes complying with DIN 4262-1 have the following properties: type: **R2**; raw material: **PE-HD**; slotting pattern: **LP/TP**.

SIROPLAST-K drainage pipes are recommended for applications where increased load-bearing capacity is required.

Technical data

Nominal size	DN	100	150	200
Outside diameter	mm	118.5	174.9	234.9
Inside diameter	mm	102.0	155.0	198.0
Width of slots	mm	to DIN 4262-1		
Water inlet area	cm ² /m	≥ 50		
Ring stiffness	kN/m ²	≥ 8	≥ 4	≥ 4
Standard length	m	6.00		

For the conveyance of drainage water, SIROPLAST-K drainage pipes are available without water inlets.

GALABAU-*inspect* - the system accessory

Important:

- In sports field construction, the general requirements of DIN 18035-3 have to be observed.
- According to DIN 18035-3, a minimum distance of $\geq 200\text{mm}$ has to be ensured between the base grade and the pipe soffit. The width of the trench for a particular pipe size is specified with $\text{DN} + (2 \times \geq 70\text{mm})$.
- The filter layer around the pipe should be compacted by hand or with lightweight equipment. The minimum gradient must not fall short of 0.3% nor exceed 0.5%.
- For proper access to the drainage pipes it is recommended that an inspection and flushing chamber S 300 be provided at each change in direction or change in gradient. The distance between two inspection chambers must not exceed 110m.
- Chamber covers have to be adapted to the planned surface level in compliance with the installation instructions, with allowance being made for the thickness of any covering that is to be installed.

GALABAU-*inspect* drainage system and accessories

GALABAU- <i>inspect</i> chamber system				
Modular chamber without outlet adaptors Packing unit	pc.	with sand trap 12	without sand trap 12	
Chamber riser pipe (effective length) Packing unit	pct.	l = 63cm 12	l = 123cm 6	
Outlet adaptors for modular chamber for the connection of				
EURODRAIN-PE drainage pipe Packing unit	pc.	DN80 24	DN100 24	DN160 12
SIROPLAST-K civil engineering drainage pipe Packing unit	pc.	DN100 24	DN150 12	DN200 1
End cap for modular chamber Packing unit	pc.	24		
Chamber cover with plastic safety lock Packing unit	pc.	12		
Chamber cover to DIN EN 124 (for pedestrian or traffic loads, cast iron, without vent openings) Packing unit	pc.	Class A 15 1	Class B 125 1	Class D 400 1
Coupling Packing unit	pc.	1		
Profiled seal Packing unit	pc.	5		

GALABAU- <i>inspect</i> accessories							
Nominal size	DN	EURODRAIN-PE			SIROPLAST-K		
		80	100	160	100	150	200
Coupling		o	o	o	o	o	o
End cap		o	o	o	o	o	o
Bend 90°		o	o	o	o	o	o
Branch 90° same nominal size with reducer		o	o	o	o	o	o

Further accessories on request.

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