

GrainDrain from GrainPlastics is produced from PE and/or PP in diameters Ø 25mm, 50mm, 60mm, 65mm, 80mm, 100mm, 125mm, 160mm and 200mm.

Usage of PE- and PP pipesystems has many advantages;

- PE- and PP pipes are sustainable with a long lifespan;
- PE- and PP pipe can be processed and used at both high and low temperatures;
- PE- and PP pipes have a high chemical resistance;
- PE- and PP pipes have a high ring stiffness;
- PE- and PP pipes are environment friendly.
- all materials have been produced from recycled material and/or are totally recycable;

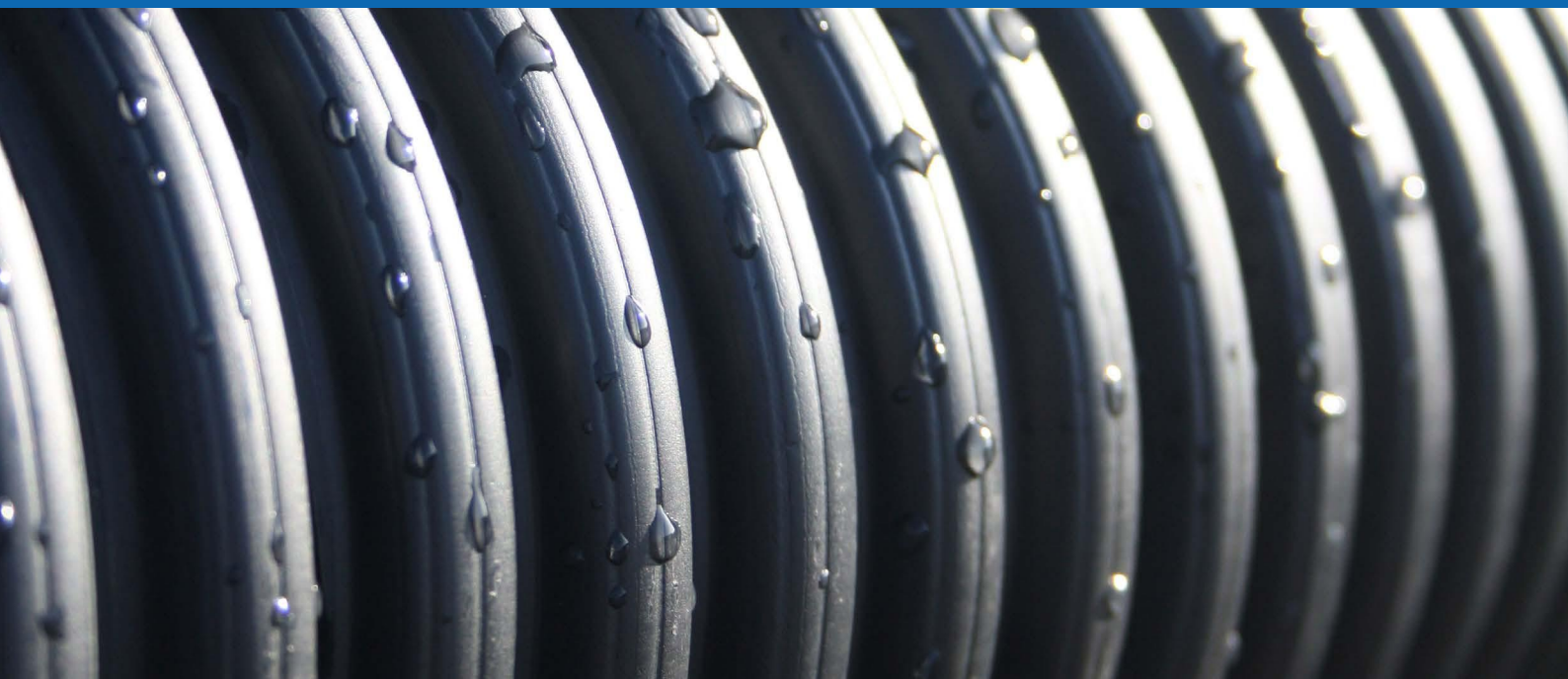
The standard color is black.

Diameters Ø 50mm, 60mm, 65mm, 80mm, 100mm en 125mm have a KOMO certification.

The perforated pipes can be wrapped with several wrappings. The function of such a wrapping is filtering out sand-particles and increasing the wet perimeter of the system (pipe plus wrapping) which increases the influx of groundwater. The density of the filter is specified with an O90-number, meaning that 90% of all particles larger than the named O90-value will be filtered out by the wrapping.

(More info about wrappings can be found at the product-info-pages).

OD	ID	Coil	Certificate	Ring stiffness
25mm	20mm	250/500m	-	SN8
50mm	42mm	50/200m	KOMO	SN8
60mm	50,5mm	50/150m	KOMO	SN8
65mm	55,5mm	50/150m	KOMO	SN8
80mm	68,5mm	50/100m	KOMO	SN8
100mm	87mm	50m	KOMO	SN6
125mm	107,5mm	50m	KOMO	SN4
160mm	136mm	25/50m	-	SN4
200mm	176mm	20m	-	SN4



Product description:

GrainDrain flexible drainage in PE and/or PP is KOMO certified for diameters* Ø 50mm, 60mm, 65mm, 80mm, 100mm and 125mm. Sizes Ø 160mm and Ø 200mm meet general requirements. GrainPlastics produces both a perforated and an unperforated version.

Material:

- PE-drainage - HDPE-regranulate (recycled raw material)
- PP-drainage - PP-regranulate (recycled raw material)

Application:

- Horizontal drainage
- Infiltration

Prescribers:

- PE- or PP- flexible drainage "GrainDrain" Ømm
- Color black, incl. click-socket
- Perforated or unperforated
- KOMO-certified.
- Producer GrainPlastics BV

Outer diameter (mm)	25	50	60	65	80	100	125	160	200
Inner diameter (mm)	20	42	50.5	55.5	68.5	87	107.5	136	176
Perforation rows (pc)	4	6	6	6	6	8	8	6	6
Perforation width (mm)	0.8	1.1	1.1	1.1	1.3	1.5	1.5	1.5	1.5
Perforation length (mm)	6	8	10	11	12	16	16	20	20
Perforations per m	430	210	405	381	321	308	244	348	330
Perf. surface per m (mm²)	2064	1848	4455	4610	5008	7392	5856	10440	9900
Weight (gr/m) ±	75	160	200	220	325	415	590	900	1440
Ring stiffness	SN8	SN8	SN8	SN8	SN8	SN6	SN4	SN4	SN4
Min. bending radius (mm)	100	100	120	130	160	200	250	320	400

**Product description:**

This wrapping is KOMO certified and is a popular wrapping in road construction, agricultural and horticultural markets and can be delivered in a PP450, PP700 or PP1000* version.

Application of this type of fiber in combination with an iron-rich soil is not recommended because iron-residue can be formed in the wrapping.

Material

- PE-drainage - HDPE-regranulate (recycled raw material)
- PP-drainage - PP-regranulate (recycled raw material)
- Wrapping PP-fiber coming from the textile-industry (recycled raw material)

Filter properties

- PP450 - Ø 450µ - Dense structure
- PP700 - Ø 700µ - Open structure
- PP1000* - Ø 1000µ - Very open structure

Application

- Agri- and horticultural markets
- Welling
- Sport and recreational fields
- Road construction

Prescribers

- PE- or PP- flexible drainage "GrainDrain" Ømm
- Color black, incl. click-socket
- PP450 (or PP700) wrapped
- KOMO-certified
- Producer GrainPlastics BV

*More info on PP1000 see 1.3

**PP450****PP700**



Product description:

GrainDrain flexible drainage with wrapping GrainFlex1000 (artificial grass-fiber, KOMO certified).

This wrapping is available for diameters Ø 60mm, 65mm, 80mm and 100mm.

In situations where coco-fiber is less applicable, for example in calcareous soil, GrainFlex1000 can be the right replacement. GrainFlex1000 has the same density (090 1000µ) and can be applied in sandy soils.



Material

- PE-drainage - HDPE-regranulate (recycled raw material)
- PP-drainage - PP-regranulate (recycled raw material)
- Wrapping PP-fiber coming from the artificial grass-fields (recycled raw material)

Filter properties

- GrainFlex1000 - 090 1000µ - Very open structure

Application

- Agri- and horticultural markets
- Welling
- Sport and recreational fields
- Road construction

Prescribers

- PE- or PP- flexible drainage "GrainDrain" Ømm
- Color black, incl. click-socket
- GrainFlex1000 (or PP1000) wrapped
- KOMO-certified
- Producer GrainPlastics BV

**Product description:**

GrainDrain flexible drainage wrapped with coconut fiber.

In cases where artificial fibers can not be applied, for example in iron-rich soil, coco can be used.

The open structure of the coco-wrapping (O90 1000 μ) makes it suitable for usage in sandy soils.

Coco is an organic fiber and therefore susceptible to natural decomposition-processes. After degeneration of the fiber, a cavity will remain around the pipe, which supports the drainage of water for a long time afterward.

In order to maintain this function, preventive flushing of the system is not recommended.

Material

- PE-drainage - HDPE-regranulate (recycled raw material)
- PP-drainage - PP-regranulate (recycled raw material)
- Wrapping coconut fiber coming from the coconut-production (recycled raw material)

Filter properties

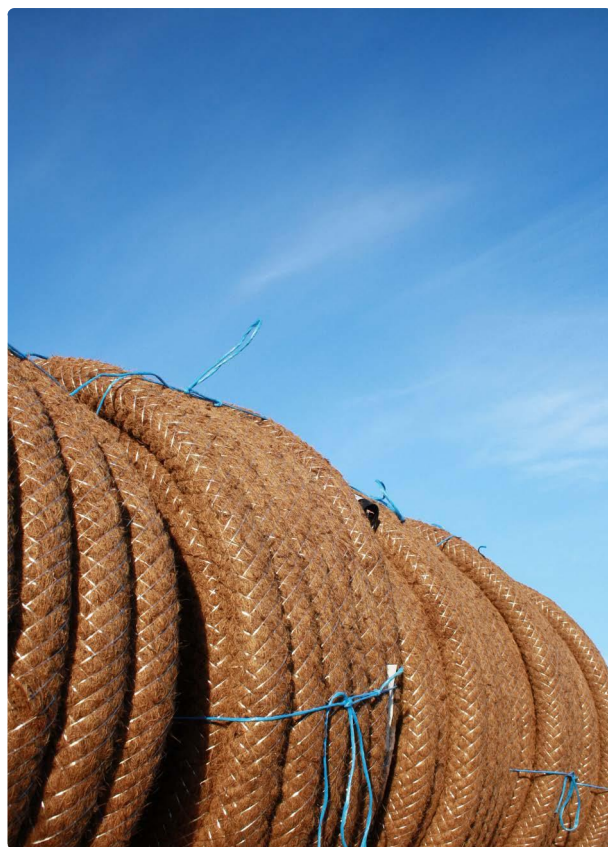
- Coco normal - O90 1000 μ - Very open structure
- Coco heavy - O90 700 μ - Open structure

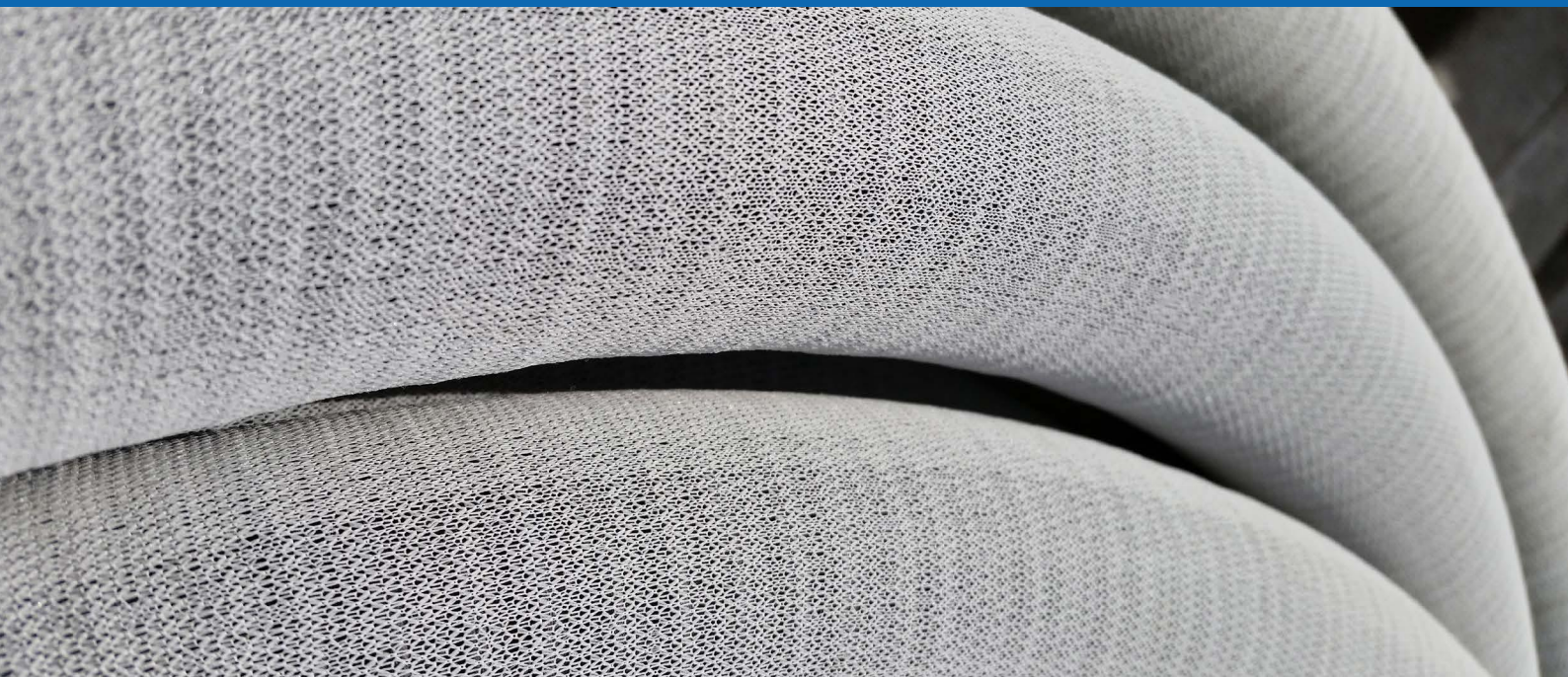
Application

- Agri- and horticultural markets
- Welling
- Sport and recreational fields
- Road construction

Prescribers

- PE- or PP- flexible drainage "GrainDrain" Ømm
- Color black, incl. click-socket
- Coco-fiber wrapped
- Producer GrainPlastics BV



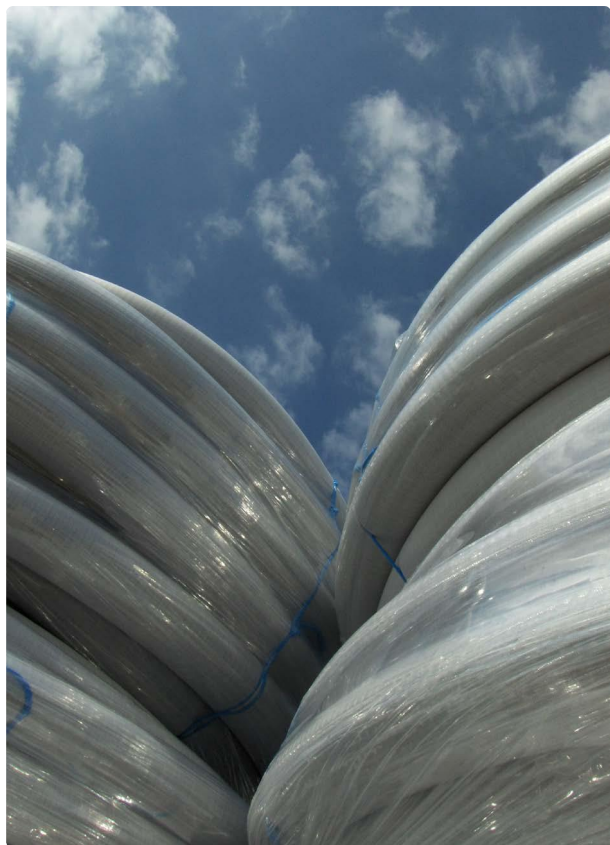


Product description:

GrainDrain flexible drainage with a Nylon wrapping.

Nylon is mainly being applied as a filter in tree-aeration-systems and temporary drainage.

Nylon is a fragile wrapping and therefore not a stock-item, the coils are being packed in foil to protect the wrapping.



Material

- PE-drainage - HDPE-regranulate (recycled raw material)
- PP-drainage - PP-regranulate (recycled raw material)
- Wrapping nylon stocking

Filter properties

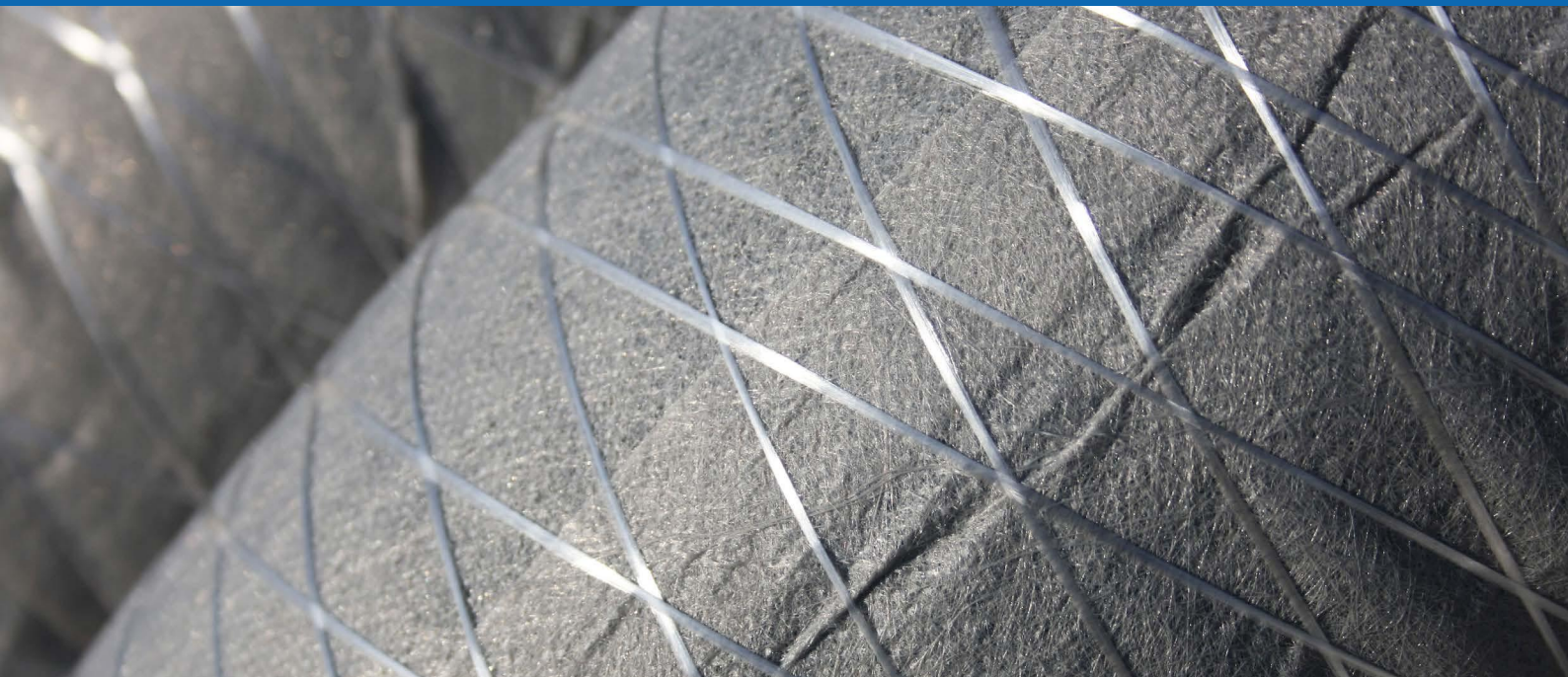
- Nylon stocking has variable filter-properties
- Non voluminous

Application

- Temporary drainage
- Welling
- Tree aeration pipesystems

Prescribers

- PE- or PP- flexible drainage "GrainDrain" Ømm
- Color black, incl. click-socket
- Nylon stocking wrapped
- Producer GrainPlastics BV

**Product description:**

GrainDrain flexible drainage wrapped with a non-woven Polyester textile.

Fleece-wrapping has a dense structure and can be used on soils with a fine structure. The wrapping is mainly applied on sand- and clayground and mostly used in Belgium and Germany.

Material

- PE-drainage - HDPE-regranulate (recycled raw material)
- PP-drainage - PP-regranulate (recycled raw material)
- Wrapping polyester textile

Filter properties

- O90 180-240 μ - Non voluminous

Application

- Agri- and horticultural markets
- Welling
- Sport and recreational fields
- Road construction

Prescribers

- PE- or PP- flexible drainage "GrainDrain" Ømm
- Color black, incl. click-socket
- Polyester fleece wrapped
- Producer GrainPlastics BV





Product description:

PP suction-tube (Blue), Ø 80 and 100mm, has been developed to withstand forces that are released during usage in combination with pumps. With a ring stiffness of nominal SN10 (ascertained SN14 to SN19) PP blue suction-tube is highly suitable for this heavy job.

When a vacuum-pump is connected to a regular blind drainage-tube (PE or PVC), constriction of the pipe may occur. PP suction-tube can withstand this pressure; the pipe is produced from a high quality raw material and has a higher vacuum-resistance than a regular drainage-tube. Usage of PP as raw material also means that the pipe has a high chemical resistance (see info-page 4, chemical resistance) making the pipe suitable for draining contaminated groundwater.



Material

- PP-drainage - PP-granulate (new material)

Connection

- Every coil is fitted with a PP/PE click-socket

Application

- Wellings
- Remediation polluted soil

Prescribers

- PP blue suction-tube Ømm
- Unperforated,
- Color blue, incl. click-socket
- Producer GrainPlastics BV

**Product description:**

GrainDrain TwinTube flexible double wall drainage in PE is available in diameters Ø 90mm, 100mm, 110mm, 125mm, 160mm en 200mm. TwinTube consists of an outside corrugated pipe with an innerwall on coils or lengths. The advantage in comparison to single wall drainage is a higher ringstiffness and improved waterflow because of the extra innerwall.

The standard color of this item is black and the system can be wrapped with different types of wrapping.

Standard fittings are available for diameters Ø 100mm, 125mm, 160mm and 200mm (T-pieces, sockets, stops and reduction-pieces). Bends seldom have to be used thanks to the flexibility of our product.

Material

- HDPE outerwall, PE-granulate (new material)
- LDPE innerwall, PE-regranulate (recycled material)

Connection

- Every coil or length is fitted with a click-socket.

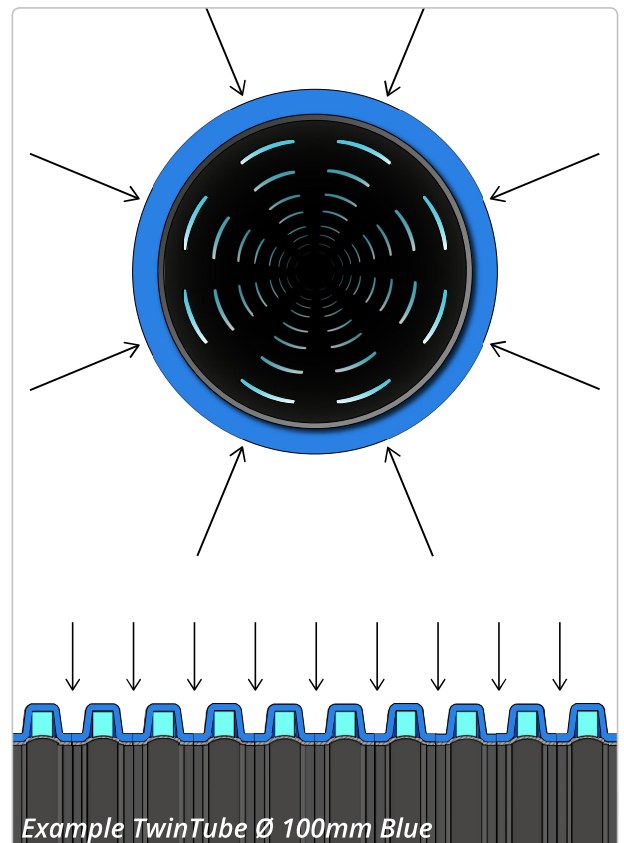
Application

Suitable for applications with increased requirements such as:

- Deep-drainage
- Infiltration
- Vacuum extraction systems (unslotted)

Prescribers

- PE Double wall flexible drainage
- "GrainDrain TwinTube" Ømm
- Perforated, Color black, incl. click-socket
- Producer GrainPlastics BV



Drainage: Sizes, coilsizes, certification and ring stiffness

OD	ID	Coil	Certification	Ring stiffness
25mm	20mm	250/500m	None	SN8
50mm	42mm	50/200m	KOMO	SN8
60mm	50,5mm	50/150m	KOMO	SN8
65mm	55,5mm	50/150m	KOMO	SN8
80mm	68,5mm	50/100m	KOMO	SN8
100mm	85mm	50m	KOMO	SN6
125mm	107,5mm	50m	KOMO	SN4
160mm	140mm	25/50m	None	SN4
200mm	176mm	20m	None	SN4

Drainage: Perforations, weight en bend-radius

Outer diameter (mm)	25	50	60	65	80	100	125	160	200
Perforation rows (pc)	4	6	6	6	6	8	8	6	6
Perforation width (mm)	0.8	1.1	1.1	1.1	1.3	1.5	1.5	1.5	1.5
Perforation length (mm)	6	8	10	11	12	16	16	20	20
Perforations per m	430	210	405	381	321	308	244	348	330
Perforated surface per m (mm ²)	2064	1848	4455	4610	5008	7392	5856	10440	9900
Weight (gr/m) ±	75	160	200	220	325	415	590	900	1440
Min. bend-radius (mm)	100	100	120	130	160	200	250	320	400

Drainage: Waterdrainage in liters per minute at a hydraulic slope in cm over 100m of:

DN.	5	8	10	15	20	25	30	40	50
50	9	12	14	17	20	23	26	30	36
60	15	20	23	27	32	36	41	48	55
65	19	25	29	35	42	48	55	63	72
80	36	46	54	65	76	85	100	112	127
100	65	85	98	118	140	160	180	210	240
125	115	153	173	211	258	287	316	380	420
160	220	280	325	385	485	535	600	700	800
200	400	540	600	720	870	950	1090	1300	1500

Drainage: Wrappings en characteristics

Wrapping	Density	Details	Soil-type
PP450	O90 450μ	Artificial, KOMO	non-ferrous soil, grain size > 450 micron
PP700	O90 700μ	Artificial, KOMO	non-ferrous soil, grain size > 700 micron
PP1000 (GrainFlex1000)	O90 1000μ	Artificial, KOMO	non-ferrous soil, grain size > 1000 micron
Coco	O90 1000μ	Organic	non-calcareous, grain size > 1000 micron
Coco heavy	O90 700μ	Organic	non-calcareous, grain size > 700 micron
Nylon	O90 variable	Artificial, furnerable	no data available
Geotextile	O90 180-240μ	Artificial, non woven	no data available