

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	1,3	1,3	1,3	1,3	1,5	1,5	1,5	1,8
Perforation length (mm)	6	8	10	11	12	16	16	20	20
Perforations per m	430	210	210	210	321	308	244	348	330
Perforated surface per m (mm ²)	2064	2184	2730	3003	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

Cableduct; Diameters, coils, bend radius, length, ring stiffness

OD	ID	Coil	Bend radius	Length	Ring stiffness
40mm	32mm	25/50m	350mm	--	SN8
50mm	41mm	25/50m	350mm	--	SN8
63mm	52mm	25/50m	400mm	6m	SN8
75mm	61mm	25/50m	400mm	6m	SN8
90mm	75mm	25/50m	450mm	6m	SN8
110mm	94mm	25/50m	450mm	6m	SN6
125mm	106mm	25/50m	500mm	6m	SN4
160mm	135mm	25/50m	650mm	6m	SN4
200mm	175mm	25m	750mm	6m	SN4

	PROLAN sewage	AGRILAN agricultural pipe	AGRILAN dam-pipe
Diameter	Ø 200, 250, 315, 400mm	Ø 200, 250, 315, 400mm	Ø 315mm
Material	PP	PP	PE
Ring stiffness	SN8	SN4	SN4
Certification	KOMO	None	None
Standard length	6m, incl. socket	6m, incl. socket	8m, excl. socket

Sewage: Sizes and packing-size		
OD	ID	Pallet
200mm	175mm	23pc
250mm	220mm	12pc
315mm	276mm	8pc
400mm	350mm	6pc

Sewage: Waterdrainage in liters per minute at a hydraulic slope in cm over 100m of:									
DN.	5	8	10	15	20	25	30	40	50
200	420	540	660	780	900	1020	1080	1380	1500
250	960	1020	1080	1380	1680	1800	1980	2400	2820
315	1260	1620	1920	2640	2940	3480	3840	4080	5100
400	2700	3420	4020	4860	5400	6600	7500	8400	9000

Infiltration: Perforations properties				
	200	250	315	400
Number of perforations	6	6	6	6
Perforation width (mm)	2	2	2	2
Perforation length (mm, +/- 10mm)	50	60	60	60
Number of perforations per m1	135	114	93	72
Perforated surface (mm ² /m1)	13500	13680	11160	8640

Infiltration: Wrapping properties		
Wrapping type	Description	Properties
PP450	PP fibre, non-woven	Density O90 450µ
PP700	PP fibre, non-woven	Density O90 700µ
HF180	Slip-over Geotextile, woven	Density O90 180µ, permeability 50 l/m ² s
NW15/NW16	Slip-over Geotextile, non-woven	Density O90 85µ, permeability 85 l/m ² s

GrainPlastics BV tests pipesystems on ring stiffness (pressure from the outside) in accordance to the requirements which apply to the different products (BRL1410 for drainage, European norm CEI-IEC 61386-24 for Cableduct and BRL9208 for PROLAN sewage).

Below you will find the ring stiffness applicable on our products with a substantiation per class.

Description	Class
PP blue suction-piping Ø 80mm	SN10
PP blue suction-piping Ø 100mm	SN10
Drainage Ø 25 t/m 80mm	SN8
Cableduct Ø 40 t/m 90mm	SN8
PROLAN PP Ø 200 t/m 400mm	SN8
Drainage Ø 100mm	SN6
Cableduct Ø 110mm	SN6
Drainage Ø 125 t/m 200mm	SN4
Cableduct Ø 125 t/m 200mm	SN4
AGRILAN PP Ø 200 t/m 315mm	SN4
AGRILAN PE Ø 315mm	SN4

Pressureclass	Kn/m ²	Newton/m ²	Kg/m ²	Gr/cm ²
SN10	10 Kn/m ²	10000 Newton/m ²	1000 Kg/m ²	100 Gr/cm ²
SN8	8 Kn/m ²	8000 Newton/m ²	800 Kg/m ²	80 Gr/cm ²
SN6	6 Kn/m ²	6000 Newton/m ²	600 Kg/m ²	60 Gr/cm ²
SN4	4 Kn/m ²	4000 Newton/m ²	400 Kg/m ²	40 Gr/cm ²

System type	Color-coding	Certificate	European norm
Water pipe LDPE	Black / 4 blue stripes	Kiwa & WRAS PE40	NEN-EN12201
Water pipe HDPE	Black / 4 blue stripes	Kiwa	NEN-EN12201
Pressure pipe	Black	KOMO	NEN-EN13244
Gas pipe	Black / 4 yellow stripes	Gastec	NEN-EN1555
Glass fiber pipe (ridged inside)	Green or blue	n/a	n/a

Overview diameter – pressure-class and wall-thickness							
Type	PE40 Kiwa/WRAS LDPE	PE100 – Kiwa/KOMO HDPE			PE100 – Gastec HDPE		
SDR/Ø	SDR9	SDR17	SDR13,6*	SDR11	SDR17,6	SDR11	
16	1,8	--	--	--	--	--	
20	2,2	--	--	2,0	2,3	3,0	
25	2,7	2,0	2,0	2,3	2,3	3,0	
32	3,5	2,0	2,4	3,0	2,3	3,0	
40	4,3	2,4	3,0	3,7	2,3	3,7	
50	5,4	3,0	3,7	4,6	2,9	4,6	
63	6,8	3,8	4,7	5,8	3,6	5,8	
75	--	4,5	5,6	6,8	4,3	6,8	
90	--	5,4	6,7	8,2	5,2	8,2	
110	--	6,6	8,1	10,0	6,3	10,0	
125	--	7,4	9,2	11,4	7,1	11,4	
160	--	9,5	11,8	14,6	9,1	14,6	
200	--	11,9	14,7	18,2	11,4	18,2	
250	--	14,8	18,4	22,7	14,2	22,7	

*SDR13,6 only available on request, no standard stock-item

Overview length per diameter			
Type	Length	Coil	
Ø/m1	10m	50m	100m
16	--	KIWA ZPE	KIWA ZPE
20	--	KIWA/KOMO/GASTEC	KIWA/KOMO/GASTEC
25	--	KIWA/KOMO/GASTEC	KIWA/KOMO/GASTEC
32	--	KIWA/KOMO/GASTEC	KIWA/KOMO/GASTEC
40	--	KIWA/KOMO/GASTEC	KIWA/KOMO/GASTEC
50	--	KIWA/KOMO/GASTEC	KIWA/KOMO/GASTEC
63	--	KIWA/KOMO/GASTEC	KIWA/KOMO/GASTEC
75	KOMO	KIWA/KOMO/GASTEC	KIWA/KOMO/GASTEC
90	KOMO	KIWA/KOMO/GASTEC	KIWA/KOMO/GASTEC
110	KOMO	KIWA/KOMO/GASTEC	KIWA/KOMO/GASTEC
125	KIWA/KOMO/GASTEC	--	--
160	KIWA/KOMO/GASTEC	--	--
200	KIWA/KOMO/GASTEC	--	--
250	KIWA/KOMO/GASTEC	--	--

Other lengths and reels available on request