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corrugated pipes





MAGNUM

CORRUGATED HDPE PIPES FOR SEWER AND STORMWATER

TECHNICAL SPECIFICATIONS

SANS 21138-3
ISO 9001/2008

- The pipe is black outside and blue on the inside
- Supplied in lengths of 6 meters.
- Pipes connected by socket connectors and exterior sleeves.
- Test certification on hydraulic seal of the gaskets is according to EN 1277:2003
- Test certification on abrasion resistance is verified according to DIN EN 295-3.

GENERAL FEATURES

DESIGN: Double-wall pipe, black outside, blue inside.
 APPLICATION: Refer to section below.
 CRUSH RESISTANCE: 8KN/m² measured according to SANS 21138-3.
 PRESENTATION: 6 meter lengths.
 ACCESSORIES: Couplings and gaskets.
 INSTALLATION: Underground.

APPLICATION

Corrugated HDPE pipes for sewers and stormwater

ADVANTAGES OF CORRUGATED HDPE PIPING FOR SEWERS AND STORMWATER

- Lightweight and easy to handle
- Easy to lay
- Durable, versatile and safe
- Low cost

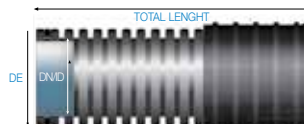
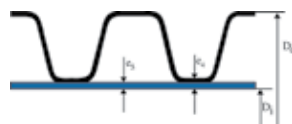
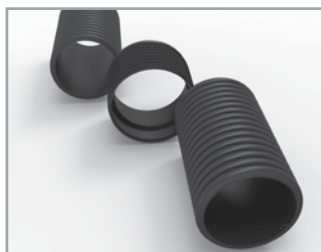
MAGNUM PIPES - SIZE AND TRANSPORTABLE QUANTITIES - HEAVY DUTY

6 m LENGTHS - SN 8 KN/m² (Ring Stiffness)

External Diameter DN / OD	160	230	291	353	417	473	500	630
Internal Diameter (mm)	138	200	250	300	350	400	433	546
Lengths per pallet	59	27	18	10	8	5	5	bulk
Total meters per truck **	2832	1296	864	480	384	240	on request	on request

* Both layers - External and Internal, manufactured from High Density Polyethylene. ** 12 m deck

CONNECTION SYSTEM WITH SOCKET



RESISTANCE OF ABRASION AND CLEANING WITH CANAL-JET

The resistance to abrasion is the resistance to friction with particles such as gravel, sand, stones, etc., which are elements that may be contained in the fluid transported through the pipes. The scarce roughness of the PE reduces said coefficient and as a consequence, the abrasion of its surface. The MAGNUM pipe boasts of a resistance to abrasion up to 5 times greater than that of cement pipes and makes it particularly suitable for sewer networks. In the case of pipes produced with low resistance to abrasion, the shrinking of the layers' thickness due to erosion increases the tension and therefore, it decreases the useful life.



Left: On-Site Testing Left and middle: Abrasion tests using probes. Right: Simulation of Abrasion Test

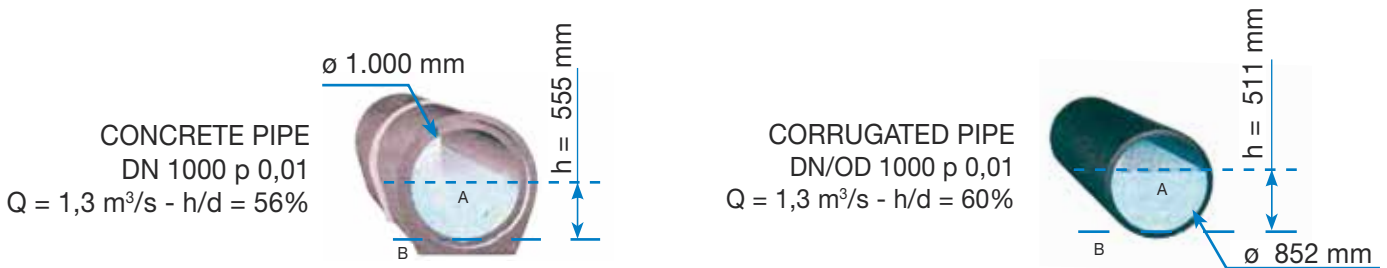
Cement	PRFV	STEEL	PVC	SANDSTONE	HDPE
= 20 h	= 25 h	= 34 h	= 50 h	= 60 h	= 100 h

Tests carried out by mixing sand and water and rotating the mix inside the pipe at high speed. The abrasion resistance time of HDPE is higher than that of all the other materials tested.

HYDRAULIC COMPARISON

Comparison between the filling degree of a concrete pipe DN 1000 and a corrugated pipe DN 1000

- The corrugated pipes, despite having a smaller internal diameter, boast of the same hydraulic performance of concrete pipes, with equal capacity, even if the value of the filling degree of the former increases, it still remains within acceptable values.
- The DN of HDPE spiral wound pipes has the same net internal diameter of concrete pipes.
- Because of the reduced roughness of PE layers, it is able to retain the filling degrees of concrete pipes which is lower than those obtained in spiral wound pipes, with equal diameter and capacity.



HYDRAULIC CALCULATION: SLOPE 1% ACCORDING TO STRICKLER-BAIN METHOD

ID	Filling Pipe			
	25%		60%	
	Concrete (litres/sec)	HDPE (litres/sec)	Concrete (litres/sec)	HDPE (litres/sec)
200	0,36	0,54	2	2,8
250	0,7	1,1	3,72	4,96
300	1,26	1,68	5,72	7,92
350	1,9	2,47	9	12
400	2,75	3,75	13,43	17,38
450	3,41	4,62	18	24



DOUBLE WALL CORRUGATED HDPE DRAINAGE PIPE

BIG-DREN is a flexible, double-wall, corrugated HDPE pipe manufactured with the continuous co-extrusion of both walls, with slots arranged at 60° intervals around the circumference.

TECHNICAL SPECIFICATIONS

ISO 9001:2008

- The pipe is black outside and inside.
- Supplied in 6 meter lengths, complete with couplings.
- The manufacturer's Quality Management System is certified to UNI EN ISO 9001:2008.
- Standard production conforms to BIG-DREN technical specifications.

GENERAL FEATURES

DESIGN:	Double-wall pipe, green outside, black inside.
APPLICATION:	Refer to section below.
CRUSH RESISTANCE:	8KN/m ² with 5% deformation of the internal diameter (measured according to SANS 21138-3).
PRESENTATION:	6 meter lengths.
ACCESSORIES:	Couplings.
INSTALLATION:	Underground.

APPLICATION: CORRUGATED HDPE PIPING FOR DRAINAGE

Slotted piping represents the most effective and economical solution to the increasing problems of:

- Hydrogeological instability
- Waterlogging of farm land and sports grounds
- Foundation drainage on construction sites
- Fluid capture (e.g. in landfills)
- Water dispersion

Furthermore:

- Slotted piping eliminates the need to construct and maintain large drainage basins.
- Its light weight and versatility makes it ideal for use in emergency and safety work.

ADVANTAGES OF CORRUGATED HDPE PIPING FOR DRAINAGE

- Lightweight and easy to handle
- Easy to lay
- Durable, versatile and safe
- Low cost
- Ideal for use in areas of serious hydrogeological instability.

DISPERSION PIPING FOR FLOW CONTROL

Existing sewer and drainage systems are encountering growing difficulties in coping with the collection and dispersion of rainwater run-off.

This problem is particularly serious in towns and cities. The rapid expansion of built-up areas has dramatically altered the ratio between rainfall volume and drain capacity, partly as a result of higher flow rates entering the drains, but often as a result of the inadequacy of drainage systems originally designed and built to cater for urban expansion on a far smaller scale.

BIG-DREN slotted dispersion pipes:

- Reduce the flow of run-off into existing sewers and drains, when over-saturation is a problem.

- Ensures gradual and uniform dispersion of rainwater into the soil, and discharges into existing sewers and drains only the water that the soil cannot absorb.
- Avoids the need to lay larger drainage systems (with higher laying and maintenance costs) while also preventing the build-up of large volumes of water that could exceed the capacity of the main urban drainage network.

PIPING FOR SOIL DRAINAGE

In high rainfall areas, degradation (i.e. loss of the soil's natural physical, mechanical, chemical and biological properties) can lead to soil becoming unable to absorb rain water, with the risk of hydrogeological instability. One of the ways to prevent the phenomena that eventually leads to subsidence and landslides, is to limit the amount of excess water in the soil.

BIG-DREN piping with water capture slots:

- Absorbs the water that the surrounding soil is no longer able to hold, and carries it away to designated receiver points.
- Drainage is facilitated by the water-proof nature of HDPE and by the low roughness of the internal surface.
- The smooth bottom of the piping (if not slotted) prevents the formation of deposits and speeds up the flow of water.

TYPE TESTING (PHYSICAL TESTS)

MELT FLOW RATE: According to ISO 1133: Condition 1T (test parameter: 190°C / 5 Kg / 10 mins) on raw materials of both walls.

DENSITY: according to ISO 1183: (test temperature: 23°C) on the pipe and on raw materials of both walls.

CONFORMITY TESTS

VISUAL INSPECTION: According to UNI ISO 4582 sections 3-4. The product is marked with a clearly visible product code printed longitudinally every 3 meters along the pipe.

DIMENSIONS: Mean external diameter (de), minimum internal diameter (dim).

CRUSH RESISTANCE: according to Sans 21138-3.

OPERATING LIMITS: -50°C to +60°C.

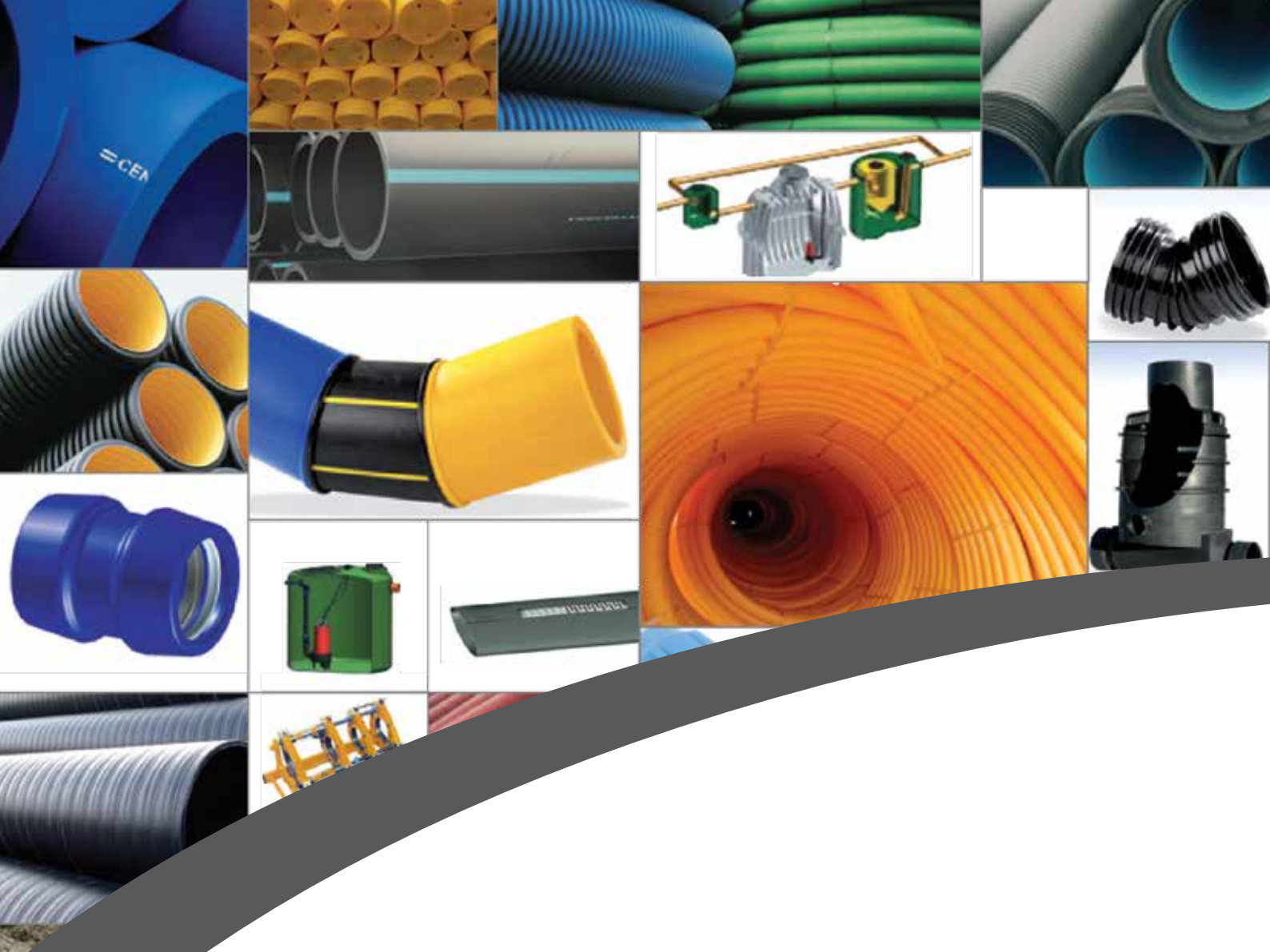
Exterior diameter (mm)	230	291	417
Interior diameter (mm)	200	250	350
Infiltration area (mm ² /m)	17000	24000	28000
Nominal slot width (mm)	2	2	2
Number of slots per corrugation	8	8	8
Length (m)	6	6	6
Ring stiffness SN	8kn/m ²	8kn/m ²	8kn/m ²

360° slots standard. Slots can also be configured to customer specifications.

Our Technical Department is at your disposal for further information, documentation and design support.

STORM WATER & SEWERAGE REFERENCES MAGNUM SN8

Fully compliant with SANS 21138-3			
Month/Year	Region	Diameter	Total QTY (m)
November 2015	Gauteng	300	300
March 2016	Gauteng	250/300/400	420
April 2016	Gauteng	250/300/400	624
May 2016	Gauteng	250/300	544
June 2016	Gauteng	400	744
July 2016	Gauteng	250/300	882
August 2016	Gauteng	300/400	1530
September 2016	Gauteng	300	444
October 2016	Gauteng	110/160/300/400	612
February 2016	Free State	300	288
June 2016	KwaZulu-Natal	200/400	294
August 2016	North West	400	366
November 2016	Mpumalanga	400	488



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GPS CO-ORDINATES:
S26°12.31' E028°16.52'



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