



TECHNICAL SHEET FOR SEWER CORRUGATED DOUBLE LAYER PIPES MAGNUM

Our product MAGNUM is realized in compliance with the rule ISO SANS 21138-3. Our company is concessionary for the mark **SATAS** for the MAGNUM pipes.

- TECHNICAL SPECIFICATION FOR ENGINEERS -

Supply and laying of polyethylene high density (HDPE) double layer pipelines for underground buried non-pressure sewer, of nominal external diameter DN/ID ___mm, internally smooth of blue light colour to allow a better visual inspection or when using cameras, externally corrugated of black colour.

Class of ring stiffness SN__ (equal to __ KN/m²) measured according to EN ISO 9969, produced for continuous co extrusion of both layers in conformity with international standards ISO SANS 21138-2008.

The pipes must be composed of a coupler and elastomeric seals that guarantees tightness made in EPDM conforms to European standard EN 681-1, to be singly positioned on the second groove of corrugation of each pipe head where the coupler would be inserted.

The pipe has to bare on its surface the marking foreseen by and has to have the following:

- Test certification of ring stiffness flexibility provided by ISO SANS 21138-2008 using testing method described in UNI EN 1446.
- Extruded by (UNI EN ISO9001:2000) certified producer.
- Test certification of hydraulic tightness of joints provided by ISO SANS 21138-2008 using test method described by EN1277.
- Test certification of abrasion resistance verified according to DIN EN 295-3.
- IIP certification for jointing system.

The corrugated pipes in HDPE for sewerage are made of co extruded two layers, externally corrugated to guarantee a high level of ring stiffness, internally smooth capable of high flow rate.

- GENERAL CHARACTERISTICS -

CONSTRUCTION: Double layer corrugated pipe of black colour externally and blue internally.

APPLICATION: Underground non-pressure sewerage

STIFFNESS RESISTANCE: 4 – 8-12-16 KN/m² measured according to EN ISO 9969

STRUCTURE: stable to UV rays with one year guarantee for date of production shown on the pipe.

LIMITS OF APPLICATION: -40 °C / +40 °C

LENGTHS: 6 – 12mt long pipes

ACCESSORIES: Welded socket / coupler and seals

INSTALLATION: Underground in trench.

- TEST TYPE AND CONFORMITY -

1. TEST TYPE

Physical tests:

- **Melt flow rate** – Ref. Standard ISO 1133: 1987 Condition 1T test parameters: 190°C / 5 Kg. / 10 min) on extrusion and on raw material of both layers.

- **Density** – Ref. Standard ISO 1183 : 1987 – (Test temperature: 23° C) on extrusion and on raw material of both layers.

Mechanical tests

- **Impact test** – Ref. Standard: EN 744 on finished product
- **Ring flexibility** – Ref. Standard: UNI EN 1446
- **Ring stiffness** - Ref. Standard EN ISO 9969
- **("creep") test** – Ref. Standard: EN ISO 9967
- **Hydraulic tightness test** – Ref. Standard UNI EN 1277

2. CONFORMITY TEST

- **Visual control** – Ref. Standard UNI ISO 4582 par. 3 e 4
- **Marking** – Longitudinal marking using correct and readable ink every 2 meters interval on the pipe
- **SN calculation** – Ref. Standard EN ISO 9969
- **Dimensions** – Average external diameter (de), minimum internal diameter (dim) – wall thickness e4 min./ wall thickness e5 - Ref. Standard UNI EN 13476 (2008)

| | | | | | | | |
|--|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Nominal Diameter DN/OD (mm) | 125 | 160 | 230 | 291 | 353 | 417 | 473 |
| Minimum Internal Diameter (mm) | 105 | 137 | 200 | 250 | 300 | 350 | 400 |
| Wall thickness of the sum of both layers at point of connection e4_{min} (mm) | 1.1 | 1.2 | 1.4 | 1.7 | 1.9 | 2.1 | 2.3 |
| Wall thickness of internal layer e5_{min} (mm) | 1.0 | 1.0 | 1.1 | 1.4 | 1.7 | 1.8 | 2.0 |
| Average Stiffness (SN) | >16 | >16 | >16 | >16 | >16 | >16 | >16 |
| State of surface & finishing | Conf. UNI ISO 4582 | Conf. UNI ISO 4582 | Conf. UNI ISO 4582 | Conf. UNI ISO 4582 | Conf. UNI ISO 4582 | Conf. UNI ISO 4582 | Conf. UNI ISO 4582 |
| N°of pipes per pallet | 94 | 52 | 30 | 20 | 12 | 8 | 5 |
| Length of pipes | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| External layer Material | PE HD | PE HD | PE HD | PE HD | PE HD | PE HD | PE HD |
| Internal layer Material | PE HD | PE HD | PE HD | PE HD | PE HD | PE HD | PE HD |

Our products have been subjected to the abrasion test effected in compliance with the rule DIN 19566 part 2. Such method corresponds to the tests requested by national specifications (German) for different kind of plastic pipes, for example polyester, PVC, plastic pipes strengthened with glass fibres.

SPC – TECHNICAL DIVISION