

# PP MASTER<sup>®</sup>



RING STIFFNESS SN12

THE NEW POLYPROPYLENE  
SEWER PIPE SYSTEM



# The future today.

## The new standard in sewer construction.

A powerful piece of the future: PP MASTER, a 3-layer sewer pipe system for public domestic water engineering made of polypropylene from Pipelife.

The combination of proven materials and innovative production technology sets the new standard in sewer construction.

Polypropylene (PP) fulfils the strictest requirements with regard to the environment and technology. Pipelife processes the 3-layered material into an exceptional product with the high stiffness class SN 12 ( $\geq 12 \text{ kN/m}^2$ ).

## The application.

The Pipelife PP MASTER sewer pipe is used anywhere where the advantages of thermoplastics are desirable and high rigidity is also required.

## The system.

As with all plastic pipe systems from Pipelife, a complete range of pipes and fittings in the dimensions of DN 150 to DN 500 are available for PP MASTER.

Naturally, the PP MASTER system can also be combined with typical standardized plastic pipe systems due to the standard outside diameter.

## The material: polypropylene - PP.

Polypropylene has proven itself for decades and is currently being applied increasingly often.

The large demand led to the development of new types of PP with excellent characteristics.

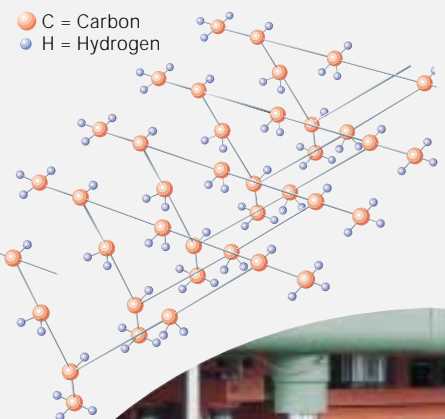
Polypropylene is often employed in modern medical technology, automotive construction, mechanical engineering and many other areas of daily life.

In pipeline construction, this material is primarily found in industrial pipe-lines, in house drainage technology and in the chemical industry. Its resistant to chemicals and high temperatures is a particular advantage.

Polypropylene has excellent characteristics:

- high surface strength
- high stiffness
- excellent recovery
- high resistance to stress cracks
- high temperature resistance
- high chemical resistance
- no physiological hazards

Molecular structure of polypropylene:



PP MASTER®





Light Inside Layer

Environment

Flexibility



Stiffness

Abrasion Resistance

# PP MASTER<sup>®</sup> SN12

## Stiffness.

Pipelife PP MASTER has a nominal ring stiffness of at least SN 12 ( $\geq 12 \text{ kN/m}^2$ ). This provides large safety tolerances during installation. Difficult ground conditions, influences from ground water and insufficient compression can be overcome due to the high stiffness of the PP MASTER system. A reassuring feeling for customers and users.

## Flexibility.

All thermoplastic sewer pipes possess the advantage of flexibility. Pipelife PP MASTER is elastic and adapts to its environment. As soon as the ground has settled, the pipe is in a stable condition, free of tension.

## Environment.

The environmental concerns so prevalent today were addressed by the use of polypropylene. Both the raw material production and the processing of PP result in no ecological burden. Polypropylene is free of halogens and heavy metals.

## Light inside layer.

A light inside layer makes it easier to inspect the pipe with a camera.

## Abrasion resistance.

The careful selection of a high-tech polypropylene type in the inside layer makes PP MASTER particularly abrasion resistant. The required longterm strength of sewer pipes is therefore also guaranteed for the use of sand and gravel filler as well as high flow rates.





# The Advantages of PP MASTER.

**Long Lifetime**

**Excellent Seal**



**Impact Resistance**

**Recycling**

**Complete System**

## Recycling.

The polypropylene raw materials used by Pipelife are completely recyclable.



## Impact resistance.

The impact resistance is of great importance both during handling as well as during installation. This characteristic is particularly important for

- large grain ground and the resulting uneven compression
- temperatures below freezing

The "snowflake" ❄ on the Pipelife PP MASTER signifies that this system is also tested and suitable for being laid at under -10°C.

## Excellent seal.

The most important criterion in sewer pipeline systems is a long-term seal.

The flexibility, the high stiffness of at least SN 12 and a modified coupler guarantee the seal of the entire system even in the event of serious deformations of the pipe cross section.

## Complete system.

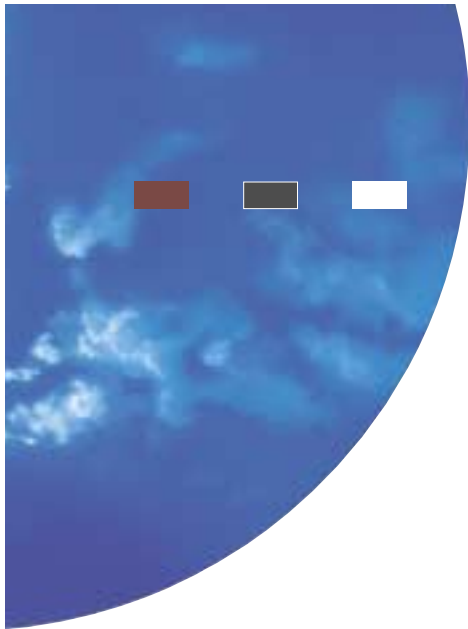
In addition to the pipes themselves, numerous fittings are also required for the planning and construction of a functional sewer system.

The Pipelife PP MASTER system includes a number of various PP fittings, guaranteeing a complete system which leaves nothing to be desired.

## Long lifetime.

The combination of its positive product characteristics results in an expected service life of over 100 years for PP MASTER (compare LAWA guidelines, cost comparison).

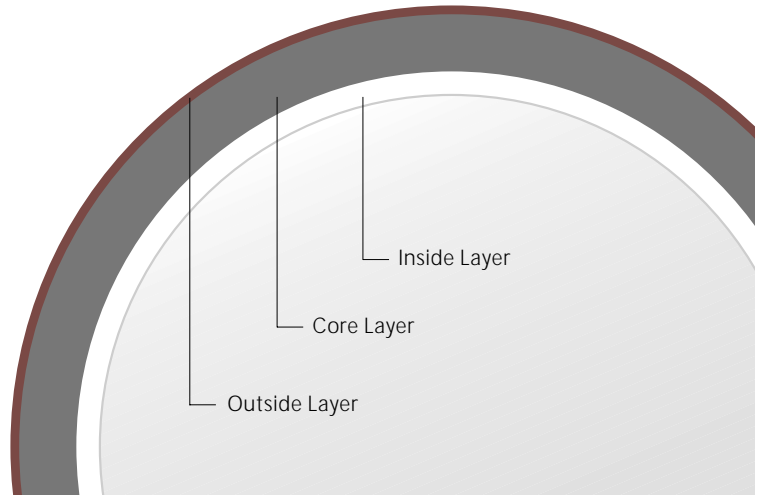
# PP MASTER.



## The 3 layers.

Pipelife PP MASTER is produced using a multi-layer extrusion process and consists of three layers.

## The Three Layers.



### The outside layer

made of high-quality PP filled with mineral aggregate has a high modulus of elasticity, resulting in high stiffness. This ensures that it is very resistant to the introduction of foreign objects, such as stones, which are pressed against the pipe wall.

### The core layer

is designed as an "absorbing layer" and has high impact resistance, even at low temperatures.

### The inside layer

also consists of a highly-developed PP type. It guarantees high abrasion resistance and perfect chemical resistance.

## The production.

The 3-layer structure of the PP MASTER demands high-tech production equipment. 3 individual layers are combined to make a sewer pipe with exceptional characteristics using a multi-layer extrusion system and new production technology in the Wiener Neudorf plant near Vienna.



## The standards.

The complete system is tested and manufactured according to ÖNORM rule ONR 20513. The high quality standard for the pipe production and the PP MASTER is guaranteed according to ÖNORM EN ISO 9001. Pipelife PP MASTER thereby satisfies all required testing criteria. This is also confirmed by multiple testing analyses by an authorized Austrian testing institute.

Naturally, PP MASTER also meets the special requirements of GRIS (Residential Water Engineering Pipe Quality Association).





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