

ULTRA KYMA®

PP SN8 structured wall piping system for large diameter drainage



ULTRA KYMA PP SN8 structured piping system for (water) drainage

ULTRA KYMA for the drainage of surface and rainwater

ULTRA KYMA consists of double-layered polypropylene, manufactured by simultaneous extrusion of the inside and outside. Both layers are adhered to each other during a continuous process by heating.

This corrugated pipe is used for the drainage of surface and rainwater, while thanks to the innovative corrugated profile it is lighter and stronger and offers firmer grip in the soil.

ULTRA KYMA is therefore an affordable and efficient piping system.

Complete system

ULTRA KYMA is available from stock in the diameters DN 300, 400, 500, 600 and 800 millimetres in effective length of 6 metres. A complete range of ready-to-use fittings is available for the various diameters. This includes gullies and inspection chambers. All parts in the ULTRA KYMA range are made of polypropylene. The ULTRA KYMA pipes and fittings are produced in conformity with EN 13746-3.

Optimal drainage qualities

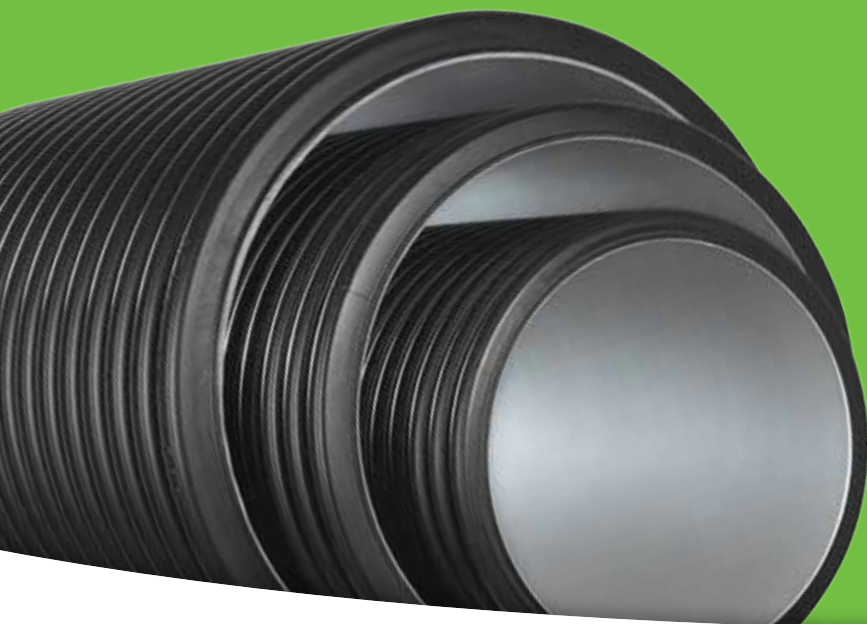
The ULTRA KYMA is black on the outside and grey on the inside (RAL 7037), whereby the exterior is corrugated and the inside is completely smooth to ensure optimum water drainage. The corrugated wall ensures the necessary flexibility and prevents damage during laying activities.

Long life

ULTRA KYMA is classified as flexible piping and designed to adapt external pressure. It has been calculated that this piping material will remain dimensionally stable for at least 50 years. This means ULTRA KYMA amply complies with all conditions and requirements from the authorities. The corrugated piping system is therefore resistant to compressive loads caused by traffic with minimal ground cover.

Areas of application:

- Road, rail and airport infrastructures
- Agriculture, playing fields and leisure parks
- Shop and office areas and industrial construction projects
- Ventilation and geothermal energy collectors
- Pits and prefab constructions



ULTRA KYMA polypropylene pipes:
corrugated on the outside,
smooth on the inside
EN 13476

Advantages

- ✓ **Damage resistant at low temperature (till -10°C).** The unique, corrugated design with the application of twin wall polypropylene ensures extra stability and prevents damage during installation, even at low temperature.
- ✓ **Ease of installation.** ULTRA KYMA is quick and simple to install. This means that the trench can be closed-up faster, and less inconvenience originates for people living in the vicinity and traffic.
- ✓ **Seal connections.** The sealing properties of the connecting parts were tested at a water pressure of 0.5 bars and an air pressure of -0.3 bars.
- ✓ **Ring flexibility 30%.** The pipe can deform up to 30% of its diameter without being damaged.
- ✓ **Stiffness SN8.** Thanks to the high dimensional stability and stiffness of the material, ULTRA KYMA undergoes practically no deformation, even at heavy traffic areas.
- ✓ **High-quality material.** The use of only polypropylene and colour pigments without further additives contributes to the high quality of the ULTRA KYMA: the excellent chemical resistance creates a long lifetime expectancy.
- ✓ **The light weight** of ULTRA KYMA results in simple transport and ease of installation.
- ✓ **The smooth inner surface** is synonyme for high flow capacity
- ✓ With **lengths** of 6 metres, work can be done more easily and quickly than with usually shorter concrete elements.
- ✓ ULTRA KYMA can be **simply sawed to size**, and the piping end does not have to be chamfered.
- ✓ The corrugated outside ensures **better bedding in the earth-work** and prevents the piping from shifting during installation activities on hilly terrain.
- ✓ Sustainable and fully (100%) recyclable.

| DN/ID mm | Outside Ø mm | Standard length* in m | Packed per |
|----------|--------------|-----------------------|------------|
| 300/297 | 340 | 6.0 | 8 pcs |
| 400/396 | 453 | 6.0 | 4 pcs |
| 500/495 | 567 | 6.0 | 4 pcs |
| 600/594 | 680 | 6.0 | 2 pcs |
| 800/792 | 906 | 6.0 | 2 pcs |

* effective length



Smooth inside, corrugated on the outside



- **Excellent flow rate.** The smooth inner surface and the round shape of the pipes and fittings ensure a high drainage capacity (hydraulic capacity). This prevents dirt accumulation in the piping.
- **Better grip.** The corrugated profile on the outside not only guarantees the necessary flexibility, it also prevents the ULTRA KYMA from shifting during installation on hilly terrain.
- **Calculated for heavy loads.** The innovative profile ensures an SN8 material stiffness.

Simple laying

- **Light weight.** The significantly lower weight of ULTRA KYMA compared to concrete and cast-iron pipes represents an important advantage during the laying and installation of the pipes.
- **Ease of installation.** Thanks to the easy to handle standard lengths of 6 metres, ULTRA KYMA is quick and simple to lay.



Hydraulic capacity

ULTRA KYMA has a completely smooth and non-porous interior, with a surface roughness of no more than 0.005 to 0.05 mm. A calculated wall roughness of approx. 0.25 mm can be assumed for a complete ULTRA KYMA system including pits.

This summary shows the hydraulic capacity of the different diameters:

Inclination in per thousands:

| | 300 | 400 | 500 | 600 | 800 |
|-----|-----|-----|------|------|------|
| ‰ | l/s | l/s | l/s | l/s | l/s |
| 1 | 37 | 80 | 144 | 232 | 495 |
| 2 | 53 | 114 | 206 | 332 | 707 |
| 3 | 66 | 141 | 253 | 409 | 870 |
| 4 | 77 | 163 | 294 | 474 | 1007 |
| 5 | 86 | 183 | 329 | 531 | 1128 |
| 6 | 94 | 201 | 361 | 583 | 1237 |
| 7 | 102 | 217 | 391 | 630 | 1338 |
| 8 | 109 | 233 | 418 | 674 | 1432 |
| 9 | 116 | 247 | 444 | 716 | 1517 |
| 10 | 122 | 261 | 468 | 755 | 1603 |
| 15 | 150 | 320 | 575 | 927 | 1967 |
| 20 | 174 | 371 | 665 | 1072 | 2275 |
| 25 | 195 | 415 | 745 | 1200 | 2545 |
| 30 | 214 | 455 | 817 | 1316 | 2790 |
| 35 | 231 | 492 | 883 | 1422 | 3015 |
| 40 | 247 | 526 | 944 | 1521 | 3225 |
| 45 | 263 | 558 | 1002 | 1614 | 3413 |
| 50 | 277 | 589 | 1056 | 1702 | 3608 |
| 55 | 291 | 618 | 1108 | 1786 | 3785 |
| 60 | 304 | 646 | 1158 | 1865 | 3954 |
| 65 | 315 | 672 | 1206 | 1942 | 4117 |
| 70 | 328 | 698 | 1251 | 2016 | 4273 |
| 75 | 340 | 722 | 1296 | 2087 | 4423 |
| 80 | 351 | 746 | 1338 | 2156 | 4569 |
| 85 | 362 | 769 | 1380 | 2222 | 4710 |
| 90 | 373 | 792 | 1420 | 2287 | 4848 |
| 95 | 383 | 814 | 1459 | 2350 | 4981 |
| 100 | 393 | 835 | 1497 | 2412 | 5111 |



Sealing ring



1. Sealing ring

- Fit the sealing ring with the wedge-shaped side downwards in the first groove of the pipe
- Fit the sealing ring with the wedge-shape downwards and the upright edge of the ring facing outwards

2. Piping profile

3. Groove



Soil compaction 'GOOD'

With application in a grainy soil, the ULTRA KYMA is laid in a trench, with the soil material applied in layers of at most 30 cm and with each layer being carefully compacted. The pipes must always be covered with a soil layer of at least 15 cm before the foundation layer is placed. For the rate of compaction of the foundation and the laying bed, a standard Proctor value of over 94% applies.

Soil compaction 'MEDIUM'

Here the grainy soil is applied in layers of at most 50 cm, with each layer being carefully compacted. The pipes must also always be covered with a soil layer of at least 15 cm before the foundation layer is placed. For the rate of compaction of the foundation and the laying bed here, a standard Proctor value of 87 to 94% applies.

Specifications

Material strength at 0 °C

Within the context of EN 13476-3, strength tests were carried out at 0 °C. The outcome is, that tested components are resistant to the impact of a weight of 0.5 kg to 3.2 kg (depending on the diameter) hitting the pipes after falling from a height of 2 m. In this test, the pipes are turned after each impact so the complete surface is tested. The test is conducted according to the EN 744 standard.

SN8 ring stiffness

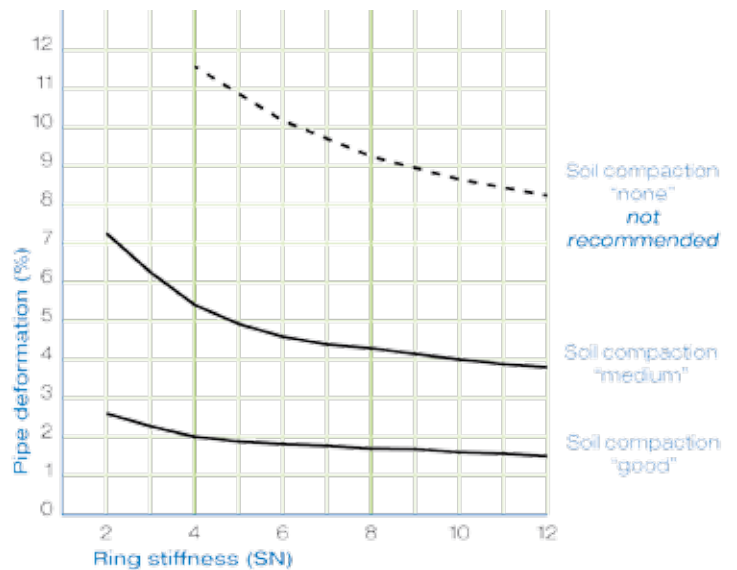
The ring stiffness indicates the weight per m² piping surface, whereby the pipe deforms to exactly 3% (of the diameter). The test was conducted according to the EN ISO 9969 standard. The result for ULTRA KYMA is SN8, meaning: 8kNm = 816 kg/m².

Installation depth

The following deformation values apply when installing the piping:

Installation depth: 0.8 - 6.0 m

Load: also counted



Ring flexibility 30%

In accordance with the requirements of EN13476-3, the ring flexibility amounts to 30%. This means that no damage originates when the piping is pressed in to 30% of the diameter. The ULTRA KYMA can be applied in slightly inclined trenches because the flexible thermoplastic material can be slightly bent. The test is conducted according to EN 1446.

Watertightness

The connecting piece with sealing ring was tested at a water pressure of 0.5 bar and an air pressure of -0.3 bar according to the requirements of EN 13476-3.

Range summary

| | |
|---|---|
| PP twin wall pipe SN8 black/grey DN | 300, 400, 500, 600 and 800 mm |
| Bend 15° SN8 black DN | 300, 400, 500, 600 and 800 mm |
| Bend 30° SN8 black DN | 300, 400, 500, 600 and 800 mm |
| Bend 45° SN8 black DN | 300, 400, 500, 600 and 800 mm |
| Bend 90° SN8 black DN | 300, 400, 500, 600 and 800 mm |
| T-piece 45° SN8 DN | 300, 400, 500, 600 and 800 mm |
| T-piece 90° SN8 DN | 300, 400, 500, 600 and 800 mm |
| Socket SN8 black DN | 300, 400, 500, 600 and 800 mm |
| Eccentric reducer SN8 black DN | 400-300, 500-400, 600-500 and 800-600 mm |
| Transition | |
| PVC 160 mm -PP DN 300 mm, PVC 200 mm -PP DN 300 mm, PVC 200 mm -PP DN 400 mm, PVC 250 mm -PP DN 300 mm, PVC 250 mm- PP DN 400 mm, PVC 315 mm -PP DN 300 mm, PVC 315 mm -PP DN 400 mm, PVC 315 mm -PP DN 500 mm, PVC 400 mm -PP DN 500 mm, PVC 400 mm -PP DN 600 mm, PVC 500 mm -PP DN 600 mm, PVC 630 mm -PP DN 600 mm PVC 630 mm- PP DN 800 mm | |
| End cap SN8 black DN | 300, 400, 500, 600 and 800 mm |
| Cast in socket SN8 DN | 300, 400, 500, 600 and 800 mm |

Making connections

- Check the pipes and sealing ring before installation activities for any damage due to transport or storage. The sealing ring is supplied separately packaged to avoid damage. Do not use damaged parts!
- Start the installation activities at the lowest point of the drainage system, so the pipe end with the sealing ring can be fitted in the direction of flow.
- Fit the sealing ring in the first groove of the pipe and check that the ring is fitted correctly.
- Carefully clean the parts to be connected and apply a lubricant to the connecting piece.
- Push the pipe parts into each other with a turning movement up to the mark. Do not apply excessive force to the parts.
- Pipes in smaller diameters can be simply installed manually. Tools are needed for the larger dimensions. The end of the pipes must be protected during the installation activities.





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