

Installation guide



1. Level the bottom of the trench and remove large and sharp stones. Prepare a non-compacted sand bedding 10 cm high.



2. Place the chamber base on the sand bedding. Connect sewer piping and adjust the angle of pipe connection precisely (adjustment range: +/- 7.5°). Level out the top of the chamber base.



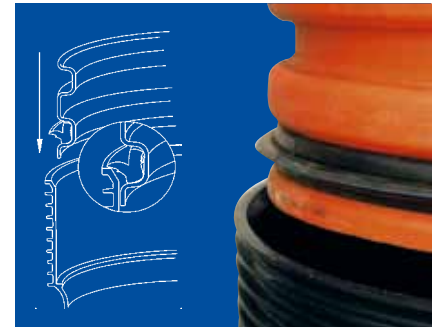
3. It is recommended to backfill the trench at least 30 cm above the top surface of the sewer pipe. Cover with backfill and compact, layer by layer.



4. Cut the DN600 corrugated shaft pipe either manually or mechanically to fit the required height of the chamber.



5. Fix the sealing ring delivered with the base in the lowest groove (hollow part) between the outer ribs of the corrugated shaft pipe.



6. As the sealing ring fixed on the corrugated pipe is profiled, its position must be in line with a drawing on the label.



7. Base socket must be cleaned and lubricated to make the installation of corrugated pipe easier.



8. Backfill the trench layer by layer. Compact layers of backfill uniformly along the entire circumference of the inspection chamber. Soil must be compacted adequately to the current ground and water conditions as well as the future external load. It is recommended to compact the soil at the minimum SPD level (Standard Proctor Density) of:

- SPD 90% in green areas,
- SPD 95% in roads with limited traffic load,
- SPD 98% in roads with heavy traffic load.

In the case of high ground water level, it is recommended to increase the degree of soil compaction to the minimum level of 95% Proctor (SPD) for the first case, and 98% Proctor (SPD) for the second case.

Note! Compact the ground around the chamber gradually and in accordance with technical design observing guidelines included in PN-ENV 1046. Be careful and do not cause the ovalization of the chamber. During the assembly process pay particular attention to maintain density during the works (e.g. while removing shoring) and after completing the chamber (securing the backfill against loosening e.g. by washing out fine fractions). The method of carrying earthworks must be in accordance with regulations included in PN EN 16 10:2002.

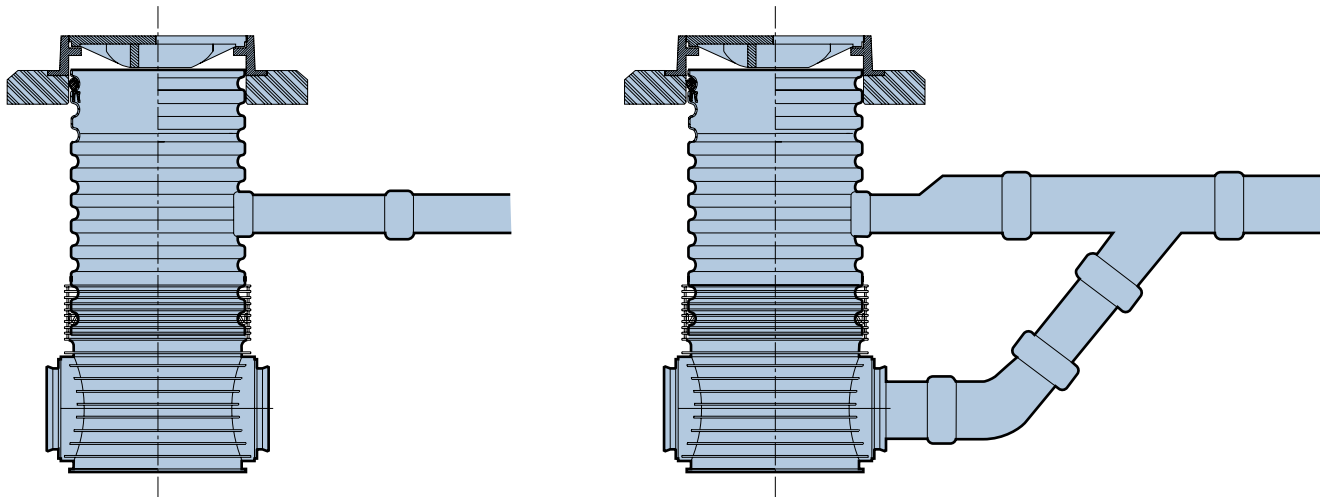
Backdrop chambers

When sewer piping is installed above the level of the chamber bottom, then such a solution is called a "backdrop chamber". Backdrop chambers with the sewer pipes diameter up to 0.40 m and the pitch between 0.5 m and 4.0 m may be installed with the downpipe either inside or outside of the chamber. For non-entry chambers installations, in this Tegra 600 chamber, it is not necessary to install the downpipe. Instead the sewer pipe is connected directly to the shaft

pipe above the chamber bottom by using in-situ connectors (diameter; 200, 160 or 110mm).

When the diameter of the sewer channel is larger than 200 mm the connection to Tegra 600 is made according to the way shown in the picture below. The downpipe may be installed as the standard backdrop connection as the vertical pipe or at the angle of 45°.

Exemplary solution of backdrop chamber



Road gratings

Components of Tegra 600 may be also used to construct gratings (with or without sediment chambers). They are an alternative for standard concrete gratings DN 500.

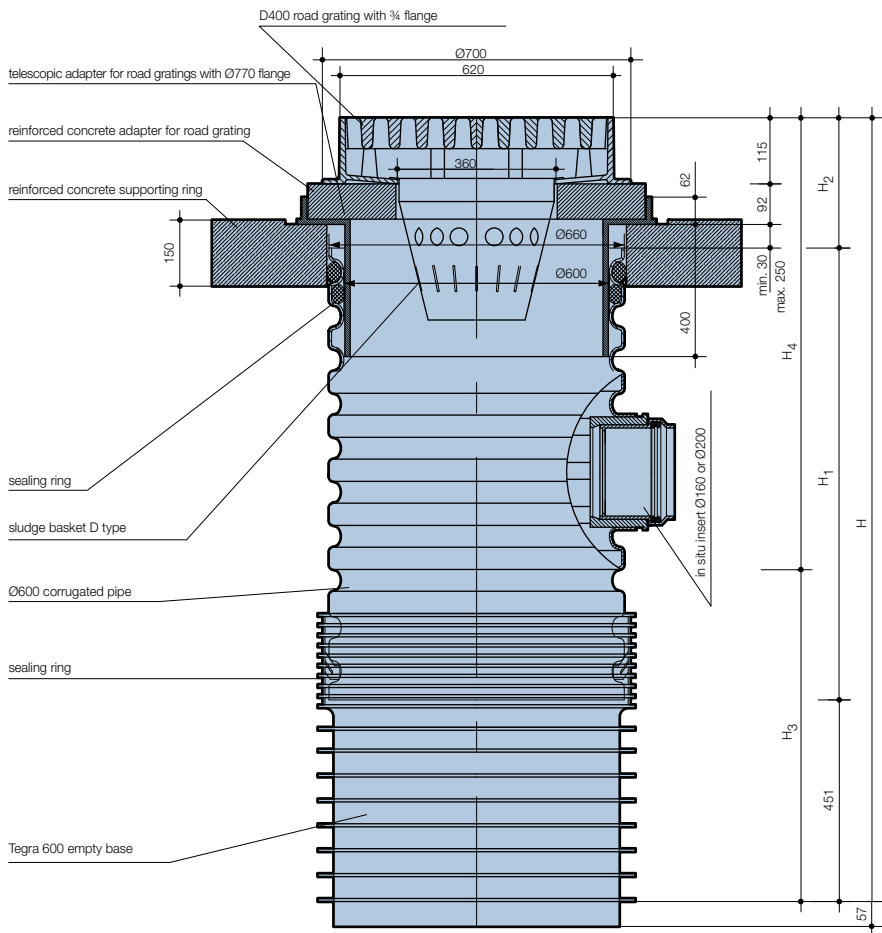
In order to construct such gratings use so called "empty" base instead a chamber with a pre-formed base and a grating (class C250 or D400) presented in this catalogue.

The outlet may be installed at any height of the corrugated pipe on the construction site, using special "in situ" connectors.

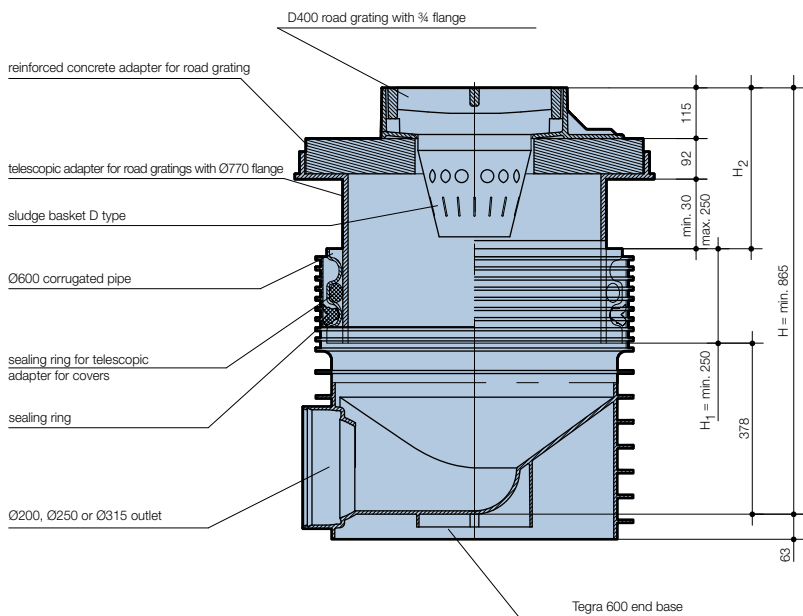
In order to properly connect a standard road grating (or pavement grating) with a corrugated pipe use telescopic adapter for covers with $\varnothing 770$ mm flange together with reinforced concrete adapter for road grating (or respectively for the pavement grating) – see figures on pages 60 and 61.

Road gratings

Tegra 600 sewer chamber with telescopic adapter for covers and reinforced concrete supporting ring and D400 class road grating

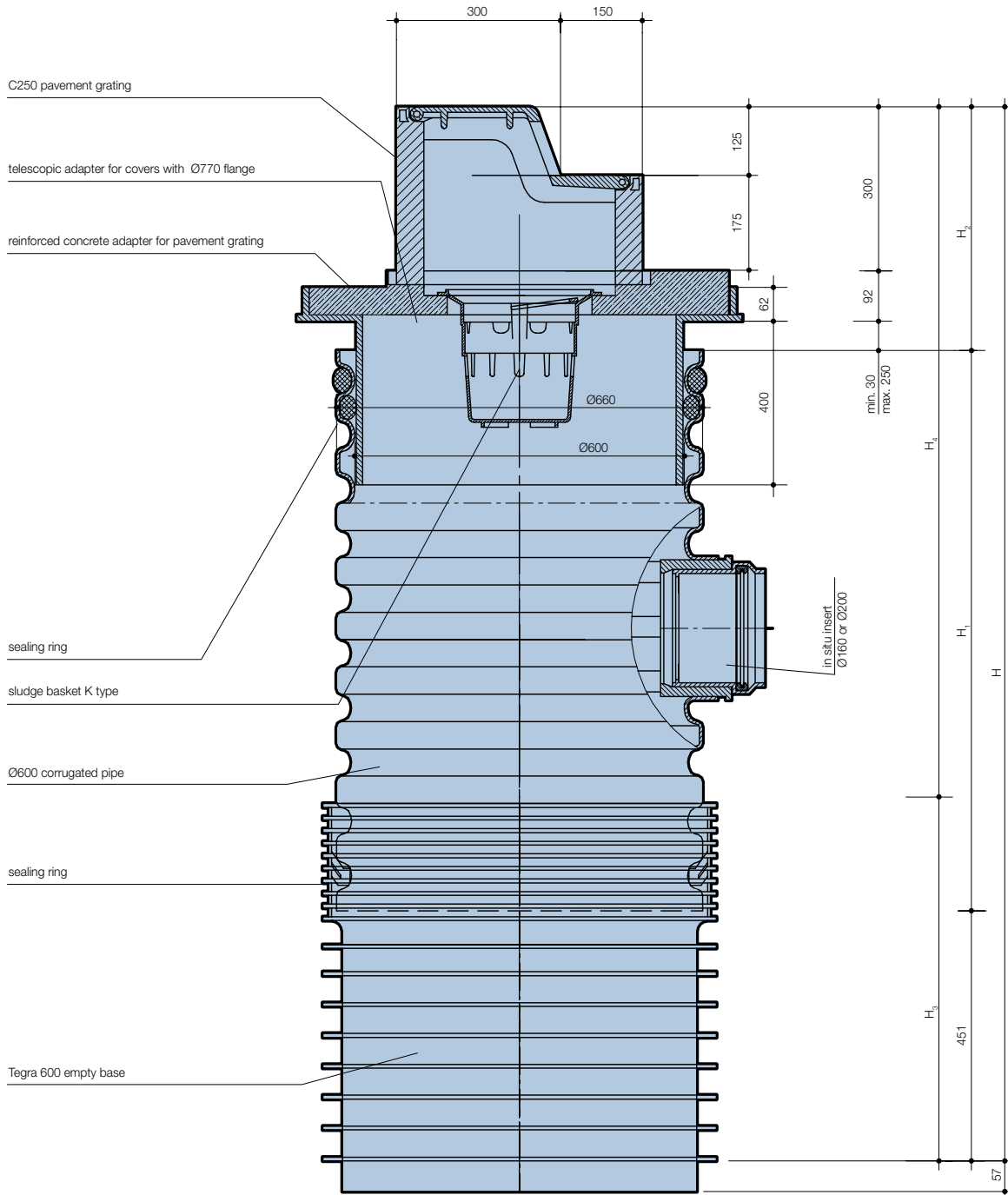


Tegra 600 sewer chamber without sludge basket, with D400 road grating and 3/4 flange



Road gratings

Tegra 600 sewer chamber (sediment) with the C250 class pavement grating



NOTE! Check the current figures in Wavin e-library.

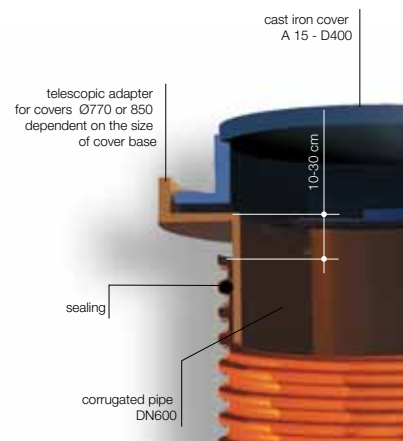
Cover solutions

Chamber and grating covers should be in line with the current standard PN-EN 124:2000. This standard also presents the classification of covers by location.

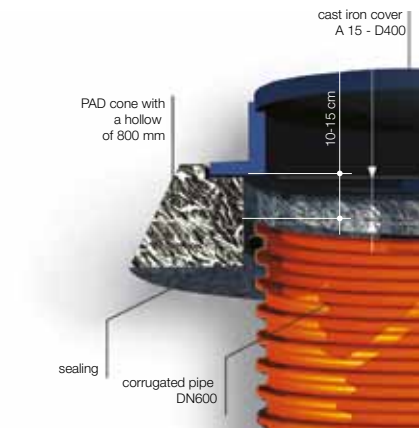
Presented below are typical cover solutions for Tegra 600.

Different types of cast iron covers are used depending on ground conditions, road foundations, and traffic load. Cover types:

- with a telescopic adapter for covers,
- with 615 plastic cone,
- with reinforced-concrete supporting ring,
- with reinforced-concrete supporting ring and a telescopic adapter for covers.

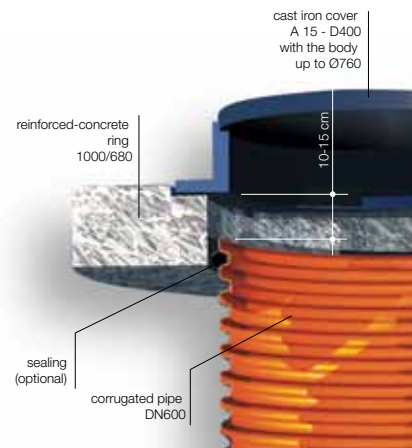


COVER WITH TELESCOPIC ADAPTER FOR COVERS

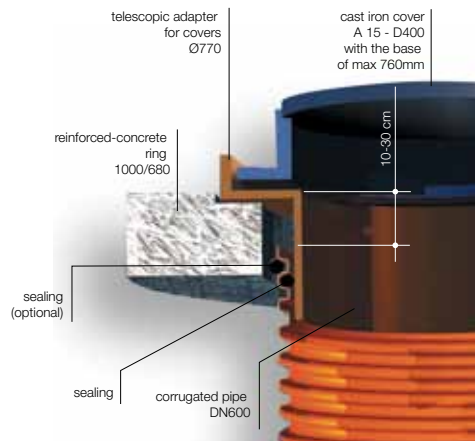


COVER WITH PLASTIC CONE

Connection with telescopic adapter for covers with 770 flange and covers with base max. 760 mm also possible



COVER WITH REINFORCED CONCRETE



COVER WITH REINFORCED CONCRETE RING AND TELESCOPIC ADAPTER FOR COVERS

Note! Telescope adapters may be screwed to cast-iron covers or gratings with 4 screws.

Class A15 – (cover, cast iron or PE cover) used only in footways, bicycle tracks and areas not loaded by traffic

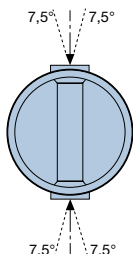
Class B125 – (cover) used in footpaths and areas for pedestrians, equivalent areas, parking lots or any areas for parking cars.

Class C250 – (grating) used only for gratings located near pavement curbs.

Class D400 – (cover or grating) used in motorways, paved road shoulders, and parking areas for all types of road vehicles.

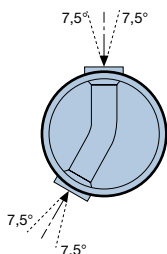
Non-Entry Chamber Tegra 425

The solution



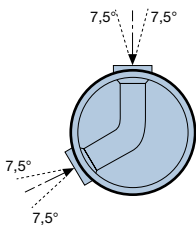
Straight flow base 0°

Smooth angle adjustment within the range of 0° – 15°



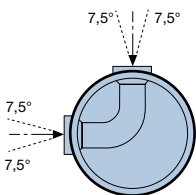
Straight flow base 30°

Smooth angle adjustment within the range of 15° – 45°



Straight flow base 60°

Smooth angle adjustment within the range of 45° – 75°



Straight flow base 90°

Smooth angle adjustment within the range of 75° – 90°

According to the standards PN-B-10729: 1999 and PN-EN 476: 2000, Tegra 425 inspection chamber is a non-entry chamber with the inside diameter of 42.5 cm. Non-entry chambers are also referred to as inspection chambers (ICs).

The chamber is composed of three basic elements:

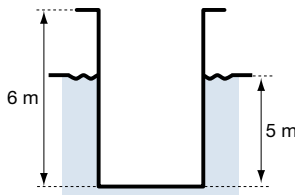
- profiled chamber bases,
- corrugated shaft pipes,
- covers.

Offered cast-iron covers and gratings are in line with the standard PN-EN 124: 2000.

Supporting elements are approved by The Road and Bridge Research Institute.

Application area:

- installation depth up to 5m,
- for areas loaded with heavy traffic SLW60 (loading class D400),
- acceptable ground water level 5 m.



Technical date:

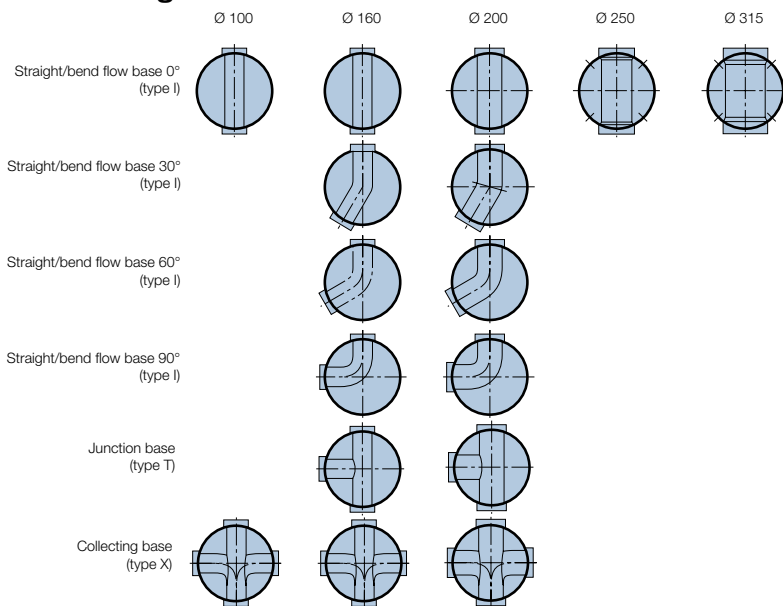
- (non-entry) inspection chambers,
- inside sewer pipes diameter: 425 mm,
- flat bottom of the base, facilitating location on the trench bottom,
- ribs on the side surface of the base which increases its resistance to groundwater uplift pressure,
- option to connect with pipes of various systems,
- diameters of connected PVC piping 100 - 325 mm,
- diameters of connected Wavin X-stream piping 100 - 300 mm,
- additional connections above the base possible: "in situ" connectors Ø110, Ø160,
- straight- or bend- flow bases, wastewater flow angle: 0°, 30°, 60°, 90°,
- adjustable connection angle in pipes with faucets: +/- 7.5° in each plane,

- using small number of standard bases it is possible to change direction flow in every angle both leftward and rightward ,
- connection bases with one side inlet 90°,
- collecting bases with both right and left side inlets,
- side inlets are adjusted at the angle of 90°,
- bottom of side inlet is located higher than the main flow bottom (3.0 cm higher),
- PP shaft pipes of ring stiffness SN4 (for heavy traffic areas),
- verified, ideal hydraulics (compliant with DS 2379),
- corrugated shaft pipe provides ideal co-operation with ground – adjustable to changing weather conditions (freezing/thawing, shifting groundwater levels),
- height adjustment: cutting the corrugated shaft pipe every 8.0 cm,
- adjustment of the chamber cover location: depending on the cover type,
- may be used with very high groundwater level (5m of column of water),
- type of backfill, degree of soil compaction: cf. "Tegra 425 installation guide",
- guaranteed tightness of joined system components: 0.5 bar (test condition D),
- compatible with all cover classes A15-D400,
- covers ended with telescopic pipes provide smooth adjustment of chamber's height and ideal levelling of the cover with hard surface,
- "Floating" covers transferring loads onto surrounding ground,
- option to use cast iron covers and gratings,
- chemical resistance of PP components: in line with ISO/TR 10358,
- chemical resistance of sealing rings in line with ISO/TR 7620, conformity with PN-EN 13598-2 standard,

- conformity with PN-EN 13598-2 standard,
- approval for use in the right of way: technical approval of IBDiM (The Road and Bridge Research Institute) -Warsaw no. AT/2006-03-1049, Issue II,
- approval for use in sewer systems: technical approval of COBRTI "Instal" Warsaw, no. AT/2000-02-1025-01,
- Quality assurance system used on all stages: designing, constructing, manufacturing, selling and distributing and testing the tightness of all produced bases (100%).

Chamber bases are made of polypropylene as monolithic elements with an additional outer bottom and additional flexible sockets for the connection of PVC-u sewer piping and Wavin X-Stream system.

Base configurations



Corrugated pipe is made of polypropylene in dimensions Ø425/476 and is offered in sections 1.0, 2.0, 3.0 and 6.0 m. If the pipe must be extended, a corrugated pipe with double socket should be used.

Cast iron covers and gratings class A15-D400 should be used and installed with a telescopic pipe.



Adjustment of height of Tegra 425 components:

- H₁ – base effective height depending on the base type and diameter:
 - for Ø100 base – H₁ = 296 mm
 - for Ø160 base – H₁ = 320 mm
 - for Ø200 base – H₁ = 340 mm
 - for Ø250 base – H₁ = 326 mm
 - for Ø315 base – H₁ = 383 mm
- H₂ – effective height of the corrugated pipe
- H₃ – effective height of the cover

