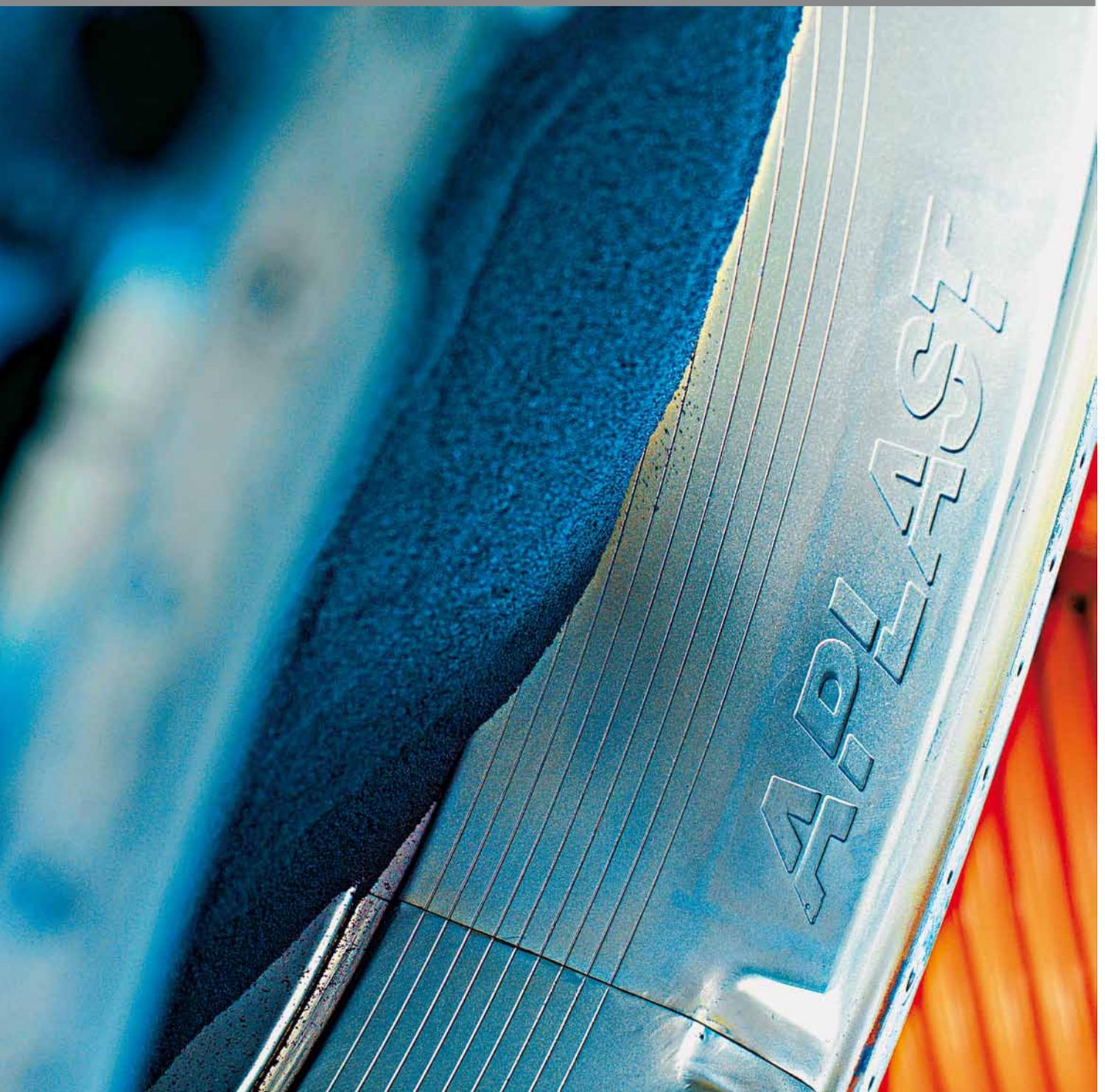




APLAST
ROTOMOULDING

Sewer inspection chambers



Content

About the company	4
Why choose the "Zagožen" type chambers from plastic masses?	5
Inspection chamber technical information	6
Standard inspection chambers	7
DN 625 Inspection chamber	7
DN 800 Inspection chamber	8
DN 1000 Inspection chamber	9
Inspection chambers for high flow rates (Chambers XL, 2XL, 3XL)	10
L DN800 inspection chambers for 500 and 600 pipes	11
DN800 and DN1000 collection chambers	12
Connection chambers (domestic connection chambers, sand traps, settlers)	13
Modular elements of inspection chambers	14
Preparation of inspection chamber for installation	16
Examples of inspection chamber and sand trap installation	22
Testing and certification	24
Order form for "Zagožen" inspection chambers	25
Order form for sand traps	26

About the company

One of the leaders

We are one of the leading companies for **processing of plastic masses (rotomoulding)** in Slovenia. We are actively entering western markets and are at the same time **sustaining our competitive advantage on the existing markets**. We are successfully meeting our strategic targets and following our mission and vision.

Mission

The company Aplast d.o.o. develops and manufactures **products from plastic masses**. In our own production facility we are manufacturing with the rotomoulding process:

- PE and PP chambers for sewerage and water distribution
- PE and PP chambers for telecommunication cables
- PE and PP chambers for electric power cables
- Sand traps
- Oil traps
- Biological waste water treatment plants
- Water tanks
- Septic tanks
- Waste containers
- Urn burial containers

The mission of the company APLAST and the main generator of our progress is to be a step ahead of the desires of our customers, employees, owners, and environmental requirements.

Vision

Our vision is to become and remain a company, which is always ahead of its competitors with its excellence on all levels of its endeavours, and which brings benefits to all its interested customers, employees and the people in the area, where we work.

Development

We are focused on the development of high quality and aesthetically pleasing products, which meet the basic requirements of quality, safety and efficiency. Therefore, we provide the products under our own brand the market advantage and recognisability in an ever more demanding circumstances.



Why choose the Zagožen type plastic chambers?

The inspection chamber of the "Zagožen" type is a multi-purpose chamber, designed for a wide range of applications.

The chamber is manufactured in accordance with the guidelines of the draft of the standard **SIST EN 13598-2:2009**: Plastics piping systems for non-pressure underground drainage and sewage. The nominal diameter of the chamber is defined by its internal diameter, the chamber base is manufactured in accordance with the standard **SIST EN ISO 3126**.

Structural design of the chamber guarantees environmental suitability and also:

- Long life span (the life span of material is 50 years, according to the manufacturer),
- Water tight,
- Resistance to waste water,
- Resistance to ageing,
- Resistance to wear and tear,
- Simple and quick height adjustment,
- Simple and quick installation of additional connections,
- Installation of various combinations of inlets and outlets,
- Savings in manufacture of the AB plate (cone),
- Appropriate for all types of sewage systems,
- Appropriate for all types of pipes,
- The height of the drain is equal to the max. diameter of a connecting pipe,
- Time savings due to quick and easy installation.

and low weight:

- Easy transport,
- Simple handling (manual handling),
- Quick, simple assembly of chambers at the construction site



The inspection chamber, manufactured in accordance with the guidelines of the draft of the **SIST-EN 13598-2:2009** standard, **has to** be declared according to the **inner diameter** of the chamber body! The inspection (control) chamber can be made with the chamber with inner chamber body diameter smaller than 800 mm (DN/ID < 800 mm). The minimal inner diameter for a chamber for occasional access should be DN/ID \geq 800 mm. For unlimited and unhindered access the chamber has to be in accordance with the draft of the standard SIST EN 13598-2:2009 with the minimum inner diameter of DN/ID \geq 1000mm.

Gradient of thread surface IS 1:20 according to DIN 4034 Part 1.

Gradient of the chamber base is 1.5 %.

The height of chamber base is larger than the max. dimensions of the inlet or outlet pipes according to DIN 4034, Part 1.

Inspection chamber technical information

Standard inlet-outlet connections to the base of 3/1 chamber

		DN 625			DN 800				DN 1000				
Outlet \ Inlet		160	200	250	160	200	250	315	160	200	250	315	400
160		•											
200		•	•		•	•							
250		•	•	•	•	•	•		•	•	•		
315					•	•	•	•	•	•	•	•	
400									•	•	•	•	•



3/1

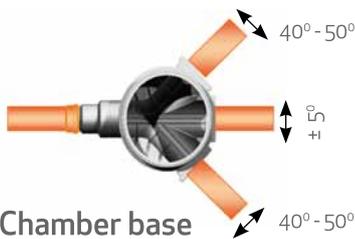
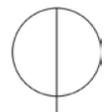


Standard inlet-outlet connections to the base of 1/1 chamber

		DN 625				DN 800					DN 1000				
Outlet \ Inlet		160	200	250	315	160	200	250	315	400	160	200	250	315	400
200		•	•												
250		•	•	•		•	•	•			•	•	•		
315		•	•	•	•	•	•	•	•		•	•	•	•	
400						•	•	•	•	•	•	•	•	•	•



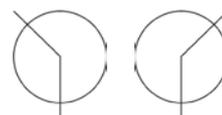
1/1



Inlet connections with inlet gaskets enable $\pm 5^\circ$ adjustment.

Standard inlet-outlet connections to the base of 4g chamber - 1/1 and 1/1 45°

		DN 800				DN 1000			
Outlet \ Inlet		200	250	315	400	200	250	315	400
200		•				•			
250		•	•			•	•		
315		•	•	•		•	•	•	
400		•	•	•	•	•	•	•	•



Standard inspection chambers

DN 625 inspection chamber

Technical information

Material: polyethylene or polypropylene.

Chamber inner diameter: 625 mm.

Examples of sewage pipe connections:

> 1/1 chamber

- Standard outlet connections:
PVC $\phi 200$, $\phi 250$ in $\phi 315$.
- Standard inlet connections:
 $\phi 160$, $\phi 200$, $\phi 250$ and $\phi 315$ or blank connection for the 1/1 chamber.

> 3/1 chamber

- Standard outlet connections:
PVC $\phi 160$, $\phi 200$ and $\phi 250$.
- Standard inlet connections:
 $\phi 160$, $\phi 200$ and $\phi 250$ or blank connection for chamber.

Option of additional connections on the body of the chamber:

- $\phi 63$ to $\phi 200$ with inlet gasket, larger diameters are welded.

Minimum height: 0.5 m.

Maximum height: 4.0 m or as requested.

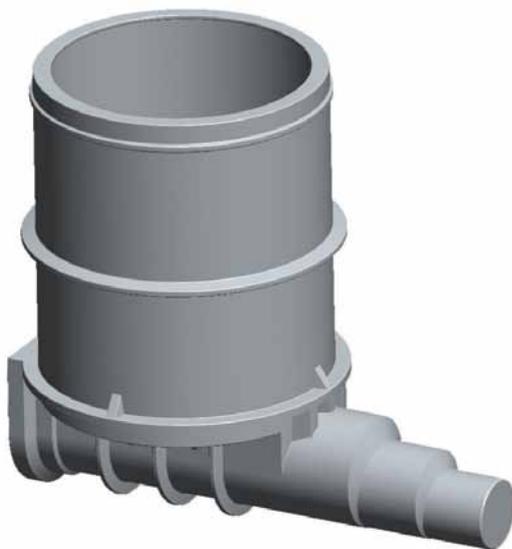
Simple height adjustment.

Guaranteed watertight joints of chamber elements.

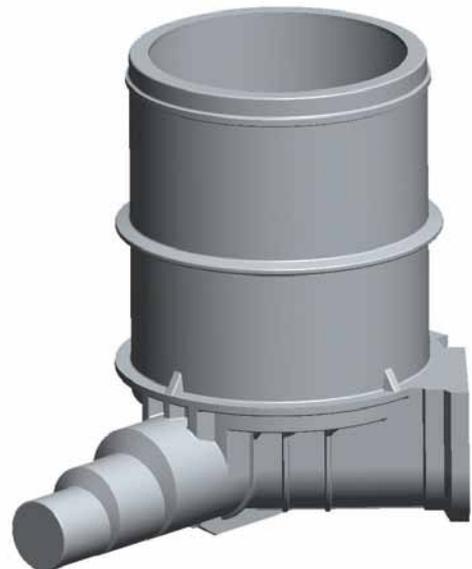
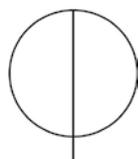
Connecting pipes:

- PVC smooth and corrugated pipes,
- PE smooth and corrugated pipes,
- PP smooth and corrugated pipes,
- All other sewage pipes
(ductile, polyester, AC and AB pipes, etc.).

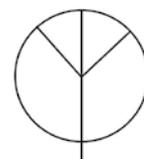
Other connections also available upon request.



1/1



3/1



DN 800 inspection chamber

Technical information

Material: polyethylene or polypropylene.

Chamber inner diameter: 800 mm.

Examples of sewage pipe connections:

> 1/1 chamber

• Standard outlet connections:

PVC: $\phi 250$, $\phi 315$ in $\phi 400$ for chamber.

• Standard inlet connections:

160, $\phi 200$, $\phi 250$, $\phi 315$ and $\phi 400$ or blank connection.

> 3/1 chamber

• Standard outlet connections:

PVC: $\phi 200$, $\phi 250$ and $\phi 315$ for chamber.

• Standard inlet connections:

160, $\phi 200$, $\phi 250$ and 315 or blank connection.

> 4G chamber (1/1 and 1/1 45°)

• Standard outlet and inlet connections for corrugated pipe

PVC: $\phi 200$, $\phi 250$, $\phi 315$ and $\phi 400$,

PE: $\phi 200$, $\phi 250$, $\phi 315$ and $\phi 400$,

PP: $\phi 200$, $\phi 250$ and $\phi 315$.

Other connections also available upon request.

Option of additional connections on the body of the chamber:

- $\phi 63$ to $\phi 200$ with inlet gasket, larger diameters are welded.

Minimum height: 0.5 m.

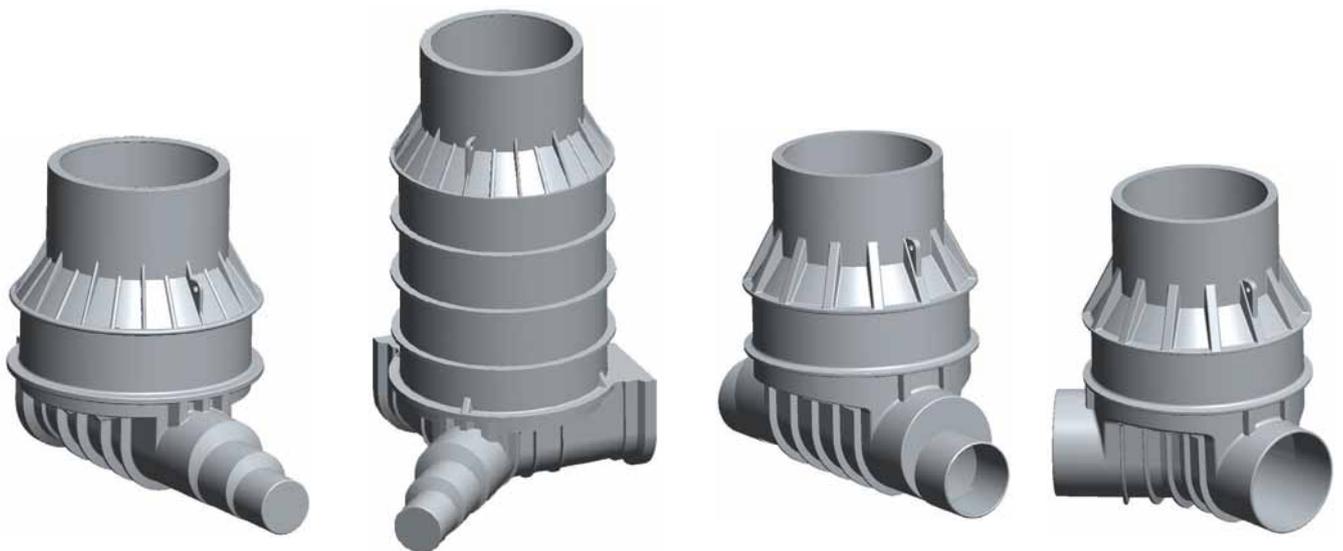
Maximum height: 4.0 m or as requested.

Simple height adjustment.

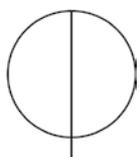
Guaranteed watertight joints of chamber elements.

Connecting pipes:

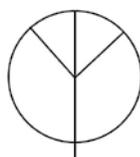
- PVC smooth and corrugated pipes,
- PE smooth and corrugated pipes,
- PP smooth and corrugated pipes,
- All other sewage pipes (ductile, polyester, AC and AB pipes, etc.).



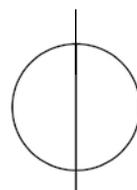
1/1



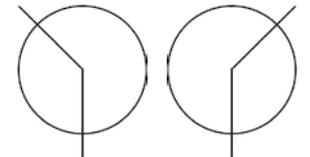
3/1



4G 1/1



4G 1/1 45°



DN 1000 inspection chamber

Technical information

Material: polyethylene or polypropylene.

Chamber inner diameter: 1000 mm.

Examples of sewage pipe connections:

> 1/1 chamber

- Standard outlet connections:
PVC: $\phi 250$, $\phi 315$ and $\phi 400$ for chamber.
- Standard inlet connections:
 160 , $\phi 200$, $\phi 250$ and $\phi 315$ and $\phi 400$ or blank connection.

> 3/1 chamber

- Standard outlet connections:
PVC: $\phi 250$, $\phi 315$ and $\phi 400$ for chamber.
- Standard inlet connections:
 160 , $\phi 200$, $\phi 250$, $\phi 315$ and $\phi 400$ or blank connection.

> 4G chamber (1/1 in 1/1 45°)

- Standard outlet and inlet connections for corrugated pipe
PVC: $\phi 200$, $\phi 250$, $\phi 315$ and $\phi 400$,
PE: $\phi 200$, $\phi 250$, $\phi 315$ and $\phi 400$,
PP: $\phi 200$, $\phi 250$ and $\phi 315$,

Other connections also available upon request.

Option of additional connections on the body of the chamber:

- $\phi 63$ to $\phi 200$ with inlet gasket, larger diameters are welded.

Minimum height: 0.5 m.

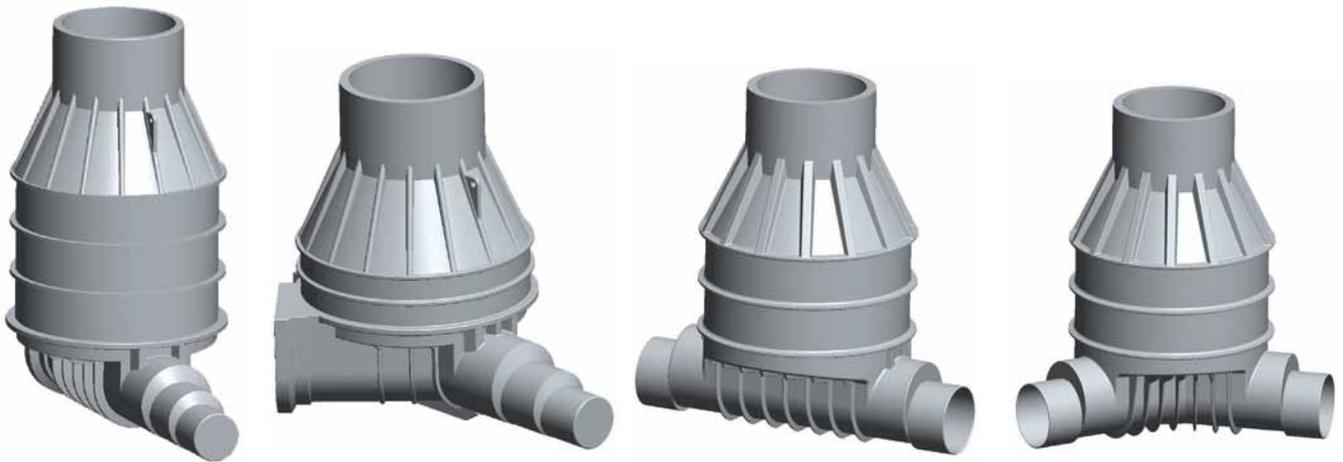
Maximum height: 4.0 m or as requested.

Simple height adjustment.

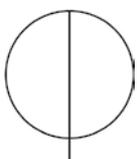
Guaranteed watertight joints of chamber elements.

Connecting pipes:

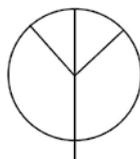
- PVC smooth and corrugated pipes,
- PE smooth and corrugated pipes,
- PP smooth and corrugated pipes,
- All other sewage pipes
(ductile, polyester, AC and AB pipes, etc.).



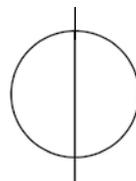
1/1



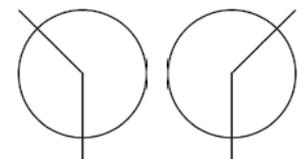
3/1



4G 1/1



4G 1/1 45°



Inspection chambers for high flow rates

Technical information

Material: polyethylene or polypropylene.

Chamber inner diameter: 1000 mm.

Examples of sewage pipe connections:

> XL chamber

- Standard outlet connections:

PVC: $\phi 500$, $\phi 600$,

PE: $\phi 500$, $\phi 600$,

PP: $\phi 500$, $\phi 600$,

- Standard inlet connections:

PVC: $\phi 500$, $\phi 600$,

PE: $\phi 500$, $\phi 600$,

PP: $\phi 500$, $\phi 600$,

> 2XL chamber

- Standard outlet connections:

PVC: $\phi 800$,

PE: $\phi 800$,

PP: $\phi 800$,

- Standard inlet connections:

PVC: $\phi 800$,

PE: $\phi 800$,

PP: $\phi 800$,

> 3XL chamber

- Standard outlet connections:

PVC: $\phi 1000$,

PE: $\phi 1000$,

PP: $\phi 1000$,

- Standard inlet connections:

PVC: $\phi 1000$,

PE: $\phi 1000$,

PP: $\phi 1000$.

Other connections also available upon request.

Option of pipe connections at an angle.

Option of additional connections on the body of the chamber:

- $\phi 63$ to $\phi 200$ with inlet gasket, larger diameters are welded.

Chamber flow base

Minimum height:

- XL chamber – 0.75 m,
- 2XL chamber – 1.25 m,
- 3XL chamber – 1.25 m.

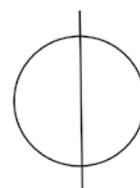
Maximum height: 4.0 m or as requested.

Simple height adjustment.

Guaranteed watertight joints of chamber elements.

Connecting pipes:

- PVC smooth and corrugated pipes,
- PE smooth and corrugated pipes,
- PP smooth and corrugated pipes,
- All other sewage pipes (ductile, polyester, AC and AB pipes, etc.).



L DN 800 inspection chamber

Technical information

Material: polyethylene or polypropylene.

Chamber inner diameter: 800 mm.

Examples of sewage pipe connections:

- Standard outlet connections:

PVC: $\phi 500$ and $\phi 600$,

PE: $\phi 500$ and $\phi 600$,

PP: $\phi 500$ and $\phi 600$.

- Standard inlet connections:

PVC: $\phi 500$ and $\phi 600$ or blank connection,

PE: $\phi 500$ and $\phi 600$ or blank connection,

PP: $\phi 500$ and $\phi 600$ or blank connection.

Other connections also available upon request.

Option of pipe connections at an angle.

Option of additional connections on the body of the chamber:

- $\phi 63$ to $\phi 200$ with inlet gasket, larger diameters are welded.

Chamber flow base

Minimum height: 0,75 m.

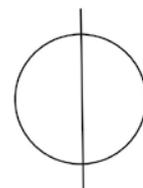
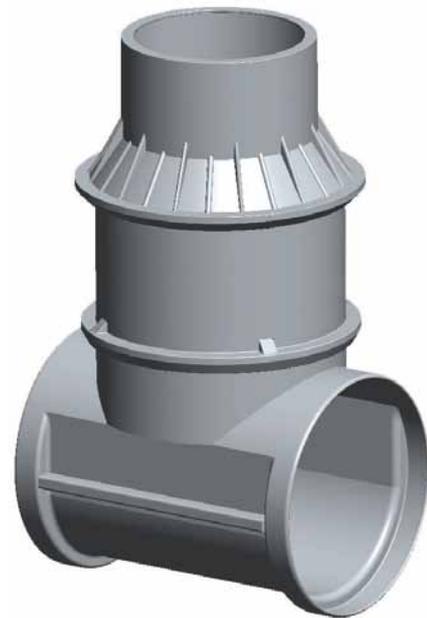
Maximum height: 4,0 m or as requested.

Simple height adjustment.

Guaranteed watertight joints of chamber elements.

Connecting pipes:

- PVC smooth and corrugated pipes,
- PE smooth and corrugated pipes,
- PP smooth and corrugated pipes,
- All other sewage pipes (ductile, polyester, AC and AB pipes, etc.).



DN 800 and DN 1000 collection chambers

Collection chambers are designed for use on steep slopes, for the so called "mountain sewer", where the use of high cascade chambers is not economical. The specifically designed base and tangential inlet neutralise the impact of the water mass and reduce the speed of the flow.

Technical information

Material: polyethylene or polypropylene.

Chamber inner diameter: 800 or 1000 mm.

Standard gradient of inlet and outlet connections 10°.

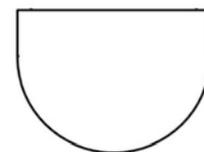
Simple height adjustment.

Guaranteed watertight joints of chamber elements.

Connecting pipes:

- PVC smooth and corrugated pipes,
- PE smooth and corrugated pipes,
- PP smooth and corrugated pipes,
- All other sewage pipes (ductile, polyester, AC and AB pipes, etc.).

	DN 800			DN 1000		
Inlet \ Outlet	160	200	250	200	250	315
160	•					
200	•	•		•		
250	•	•	•	•	•	
315				•	•	•



Connection chambers

Domestic connection chamber

Material: polyethylene or polypropylene.

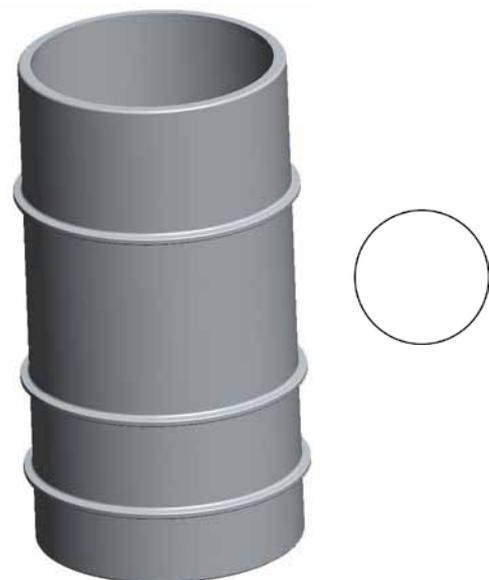
DN	Height (mm)	Outlet (DN)
400	1000	160
400	1500	200
500	1000	160
500	1500	160
500	1000	200
500	1500	200



Sand trap / Settler

Material: polyethylene or polypropylene.

DN	Height (mm)
400	1000
400	1500
400	1750
500	1000
500	1500
500	1750
625	500
625	1000
625	1500
800	750
1000	1000
1600	1500



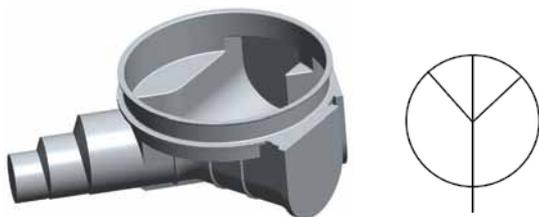
We manufacture various connecting pipes with an inlet gasket or a welded connection for all types of sewage pipes.

Modular elements of an inspection chamber

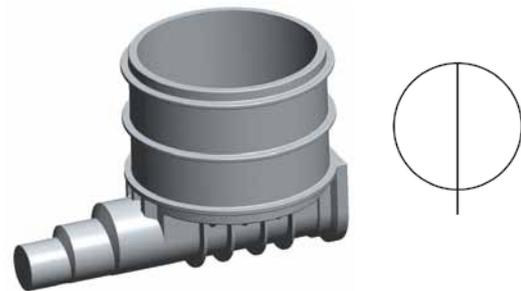
Option of assembly of an inspection chamber on site from individual elements.

Material: polyethylene or polypropylene

Chamber base



Base (DN)	Height (mm)
625	1000
800	500
800	1750
1000	500
1000	750



Base (DN)	Height (mm)
625	1000
800	500
800	1750
1000	500
1000	1500

Chamber ring

Riser (DN)	Height (mm)
625	250
625	500
800	500
800	750
1000	500
1000	1000



Chamber cone

Cone (DN)	Height (mm)
800	500
800	750
1000	750
1000	1000



Cover gasket

DN 400
DN 500



Chamber gasket

DN 625
DN 800
DN 1000



PE cover

Material: polyethylene or polypropylene.

- DN 400
- DN 500
- DN 625



PE cupola

Material: polyethylene or polypropylene.

- DN 800
- DN 1000



Inlet gaskets

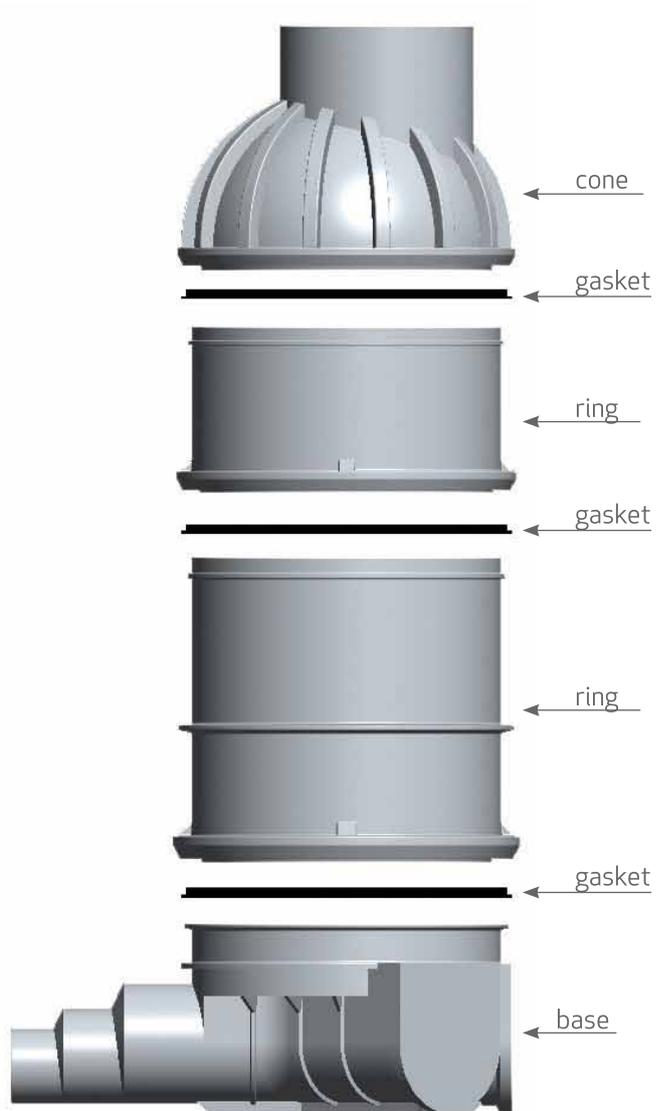
Dimensions: $\phi 63$ mm, $\phi 75$ mm, $\phi 90$ mm, $\phi 110$ mm, $\phi 160$ mm, $\phi 200$ mm, $\phi 250$ mm, $\phi 315$ mm, $\phi 400$ mm.



Hole saw cups

Dimensions: $\phi 63$ mm, $\phi 75$ mm, $\phi 90$ mm, $\phi 110$ mm, $\phi 160$ mm, $\phi 200$ mm, $\phi 250$ mm, $\phi 315$ mm, $\phi 400$ mm.

Adapter



Preparation of inspection chamber for installation

Chamber assembly



Skim and clean the rim



Attach and lubricate the gasket



Attach the riser and cut off the rim



Attach the plate and apply pressure



Before (above) and after applying pressure (below)

With the PE modular elements and suitable gaskets assembly on site is simple and easy. The chamber height is easily adjusted to the actual requirements. To assemble the chamber you also need a hand held scroll jigsaw, suitable lubricant and a tool for pressing the elements together. In the field you can use a smaller excavator to press the elements together. Before applying the pressure insert a wooden plate to equally distribute the pressure along the chamber riser rim.

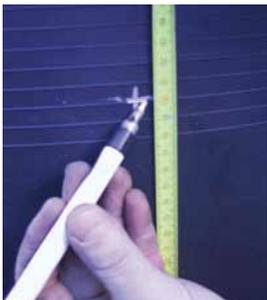


Attach and lubricate the gasket



Chamber is ready for installation

Installation of an additional inlet



Mark the centre point of additional inlet



Drill a hole for inlet gasket



Clean and lubricate the rim



Attach the gasket



Connect the PVC pipe

You can make additional inlets on a riser of the chamber with the help of a hole cup saw and an inlet gasket.

You can adjust the height and angle of the connection to your requirements.



Extra connection for PVC corrugated pipe is made with a male PVC coupling

Installation of an inlet-outlet connection

Guaranteed watertight chamber connection are easily and quickly made on the site.

You can adjust the height and angle of the inlet.

Procedure for installation of an inlet for smooth PVC pipes:



Drill the inlet with suitable saw, adapter and handheld drilling machine



Clean the outer and inner rim of the hole



Install the inlet gasket



Lubricate the inlet gasket and PVC pipe



Attach the pipe to the chamber

Connection, made with an inlet gasket, can be adjusted for $\pm 5^\circ$.

Procedure for installation of an outlet for smooth PVC pipes:



Cut of the extension



Cut off the rim for 15 mm/30°



Lubricate the rim ...



... and the PVC pipe and gasket



Attach the PVC pipe

Procedure for inlet and outlet connection with corrugated pipes on 4G chambers



Place gasket on pipe (according to instructions by the pipe manufacturer)



Properly lubricate the interior of the connection and the gasket, push the pipe into the chamber

Other sewerage pipes can be connected with couplings



Male coupling for corrugated PVC pipe inlet



Female coupling for corrugated PVC pipe outlet

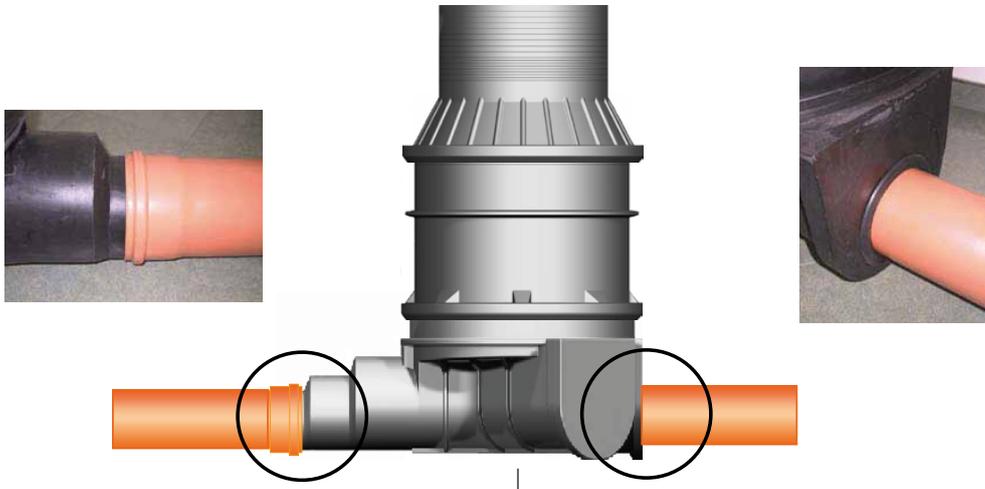


Male coupling for corrugated PVC pipe inlet



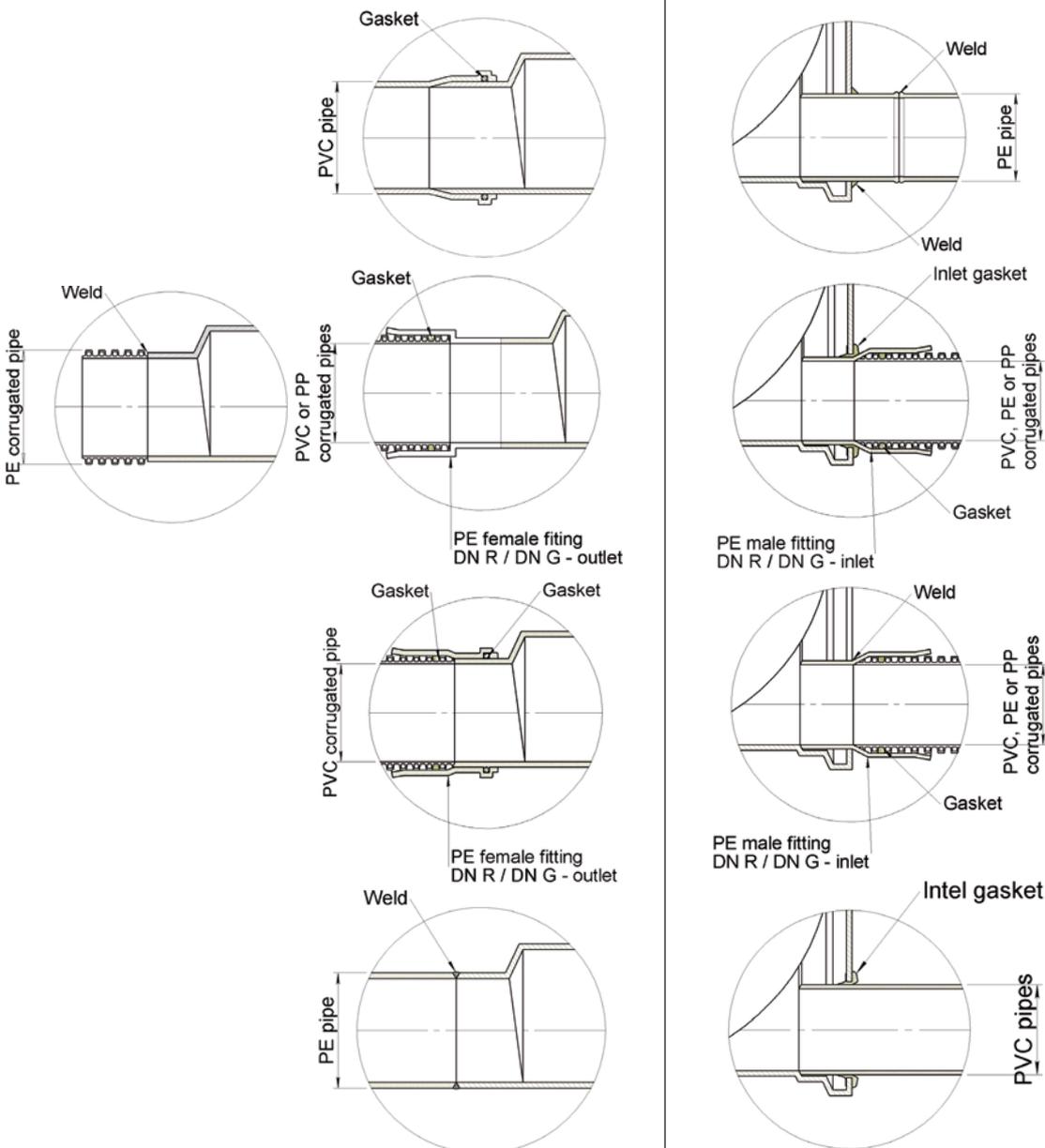
Female coupling for corrugated PVC pipe outlet

Installation details for PVC, PE, PP pipes



OUTLET

INLET



Preparation of foundation

The PE modular "Zagožen" type chamber must be installed on a suitable foundation. It has to be hard and compacted. Use suitable filling material.

Grained material may be of size from 0 to 32 mm, crushed material of size from 0 to 16 mm. Do not use frozen material.

Foundation has to be prepared in a layer of 15-20 cm and compressed up to 97 % by Proctor.

In the case of presence of groundwater the foundation has to be made from the MB15 concrete.

Installation of the chamber

Due to low weight the manual installation is possible. In case of machine handling bands may be tied around the chamber base.

Before placing the chamber in the pithole, check if the inlet gasket is clean and properly oriented. If there is any dirt on the inlet gasket and outlet coupling, they should be cleaned thoroughly beforehand.

Use suitable lubricant (potassium soap) for pipes and gaskets for easier assembly.

Chamber backfill

Backfilling of the PE modular "Zagožen" type chamber requires the use of appropriate material (the same as for the foundation) and the correct implementation. The backfilling material must be carefully compacted up to the 97 % of Proctor in layers (up to 30 cm thick) in the area in the radius of least 50 cm from the wall of the chamber. Special attention should be given to the area below the base of the chamber. All of the empty space must be filled and compacted with hand tools in order to prevent subsequent deformations to the chamber base.

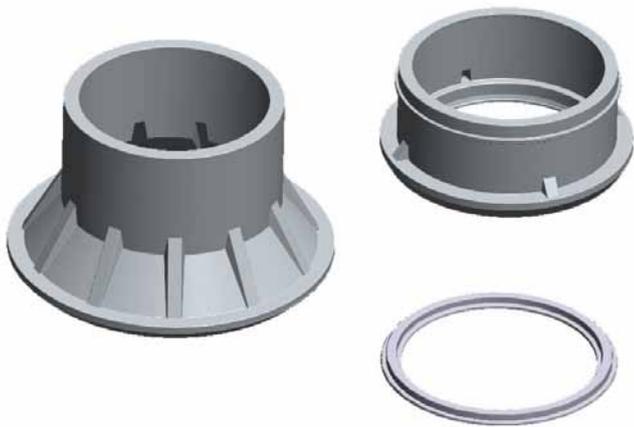
In case of groundwater the space around the chamber has to be backfilled with 30 cm concrete layer to the maximum level of groundwater, or to the minimum of 70 cm.

During backfilling the modular PE "Zagožen" type chamber heavy machinery should not be driven over the chamber or over the immediate area of the backfill.



Height adjustment

The height of the chamber is adjusted to the terrain with simple cutting of the chamber cone. Factory made markings on the cone provide for level cut.



The chamber can be extended. The rim of the cone is cut off, a gasket is attached, lubricated and a cone extension of max. height of 250 mm is installed. Another method is to remove the cone from the body, which can then be extended with a suitable riser.

The DN 800 h=750 and DN 1000 h=1000 cones, which are already extended, should not be extended any further.



Installation of PE or cast iron cover

The chamber can be covered with covers for direct installation:

- PE cover



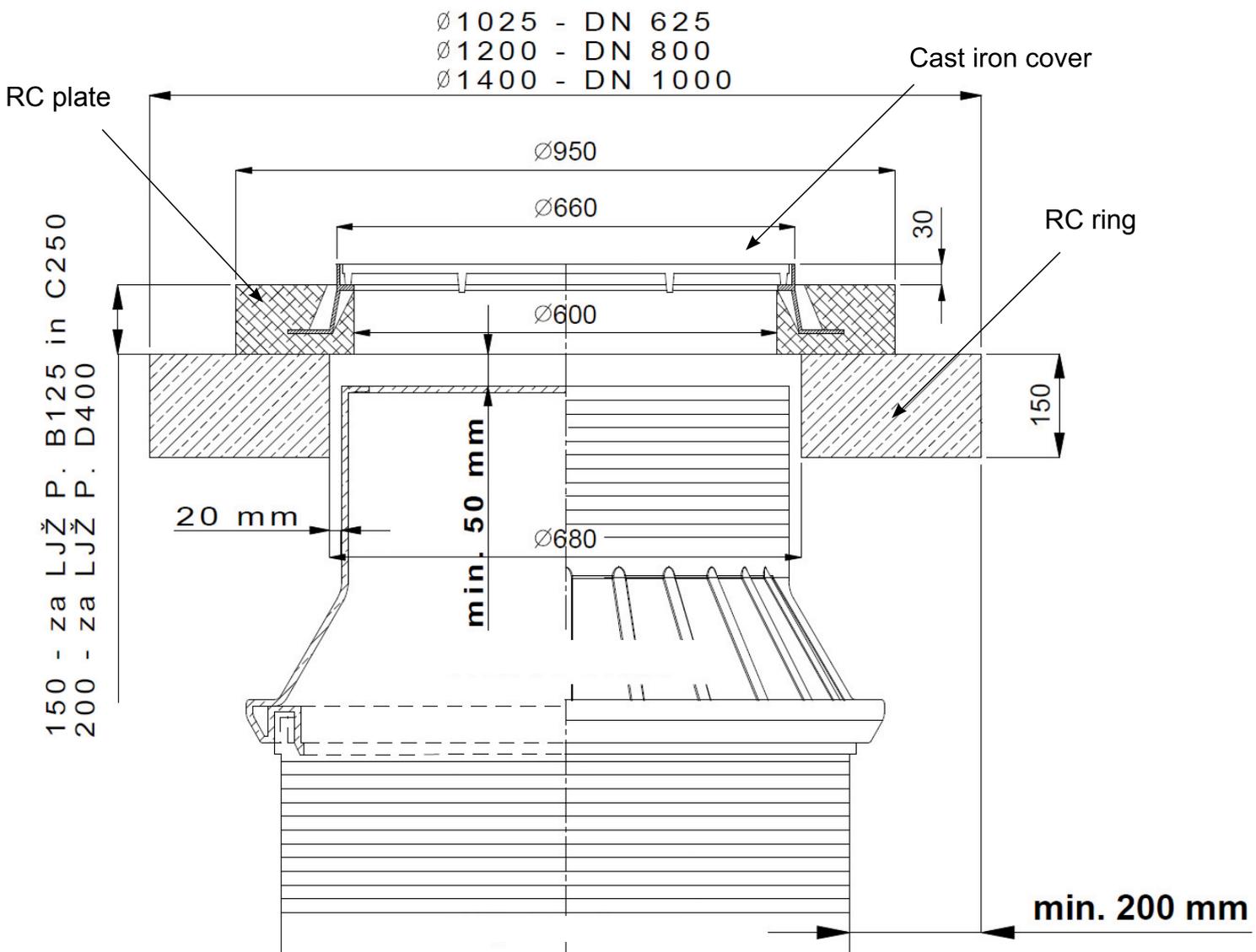
- Cast iron cover of the B 125 type, no additional AB ring required.



Before installing of the chamber in a heavy traffic area it must be taken into account that the RC ring and the plate they do not rest on top of the chamber. The distance between the top of the chamber and finished RC ring or the lower rim of the cast iron cover has to be min. 50 mm. Thus the static and dynamic loads do not transfer directly to the body of the chamber, but rather on the backfilling material around the chamber.

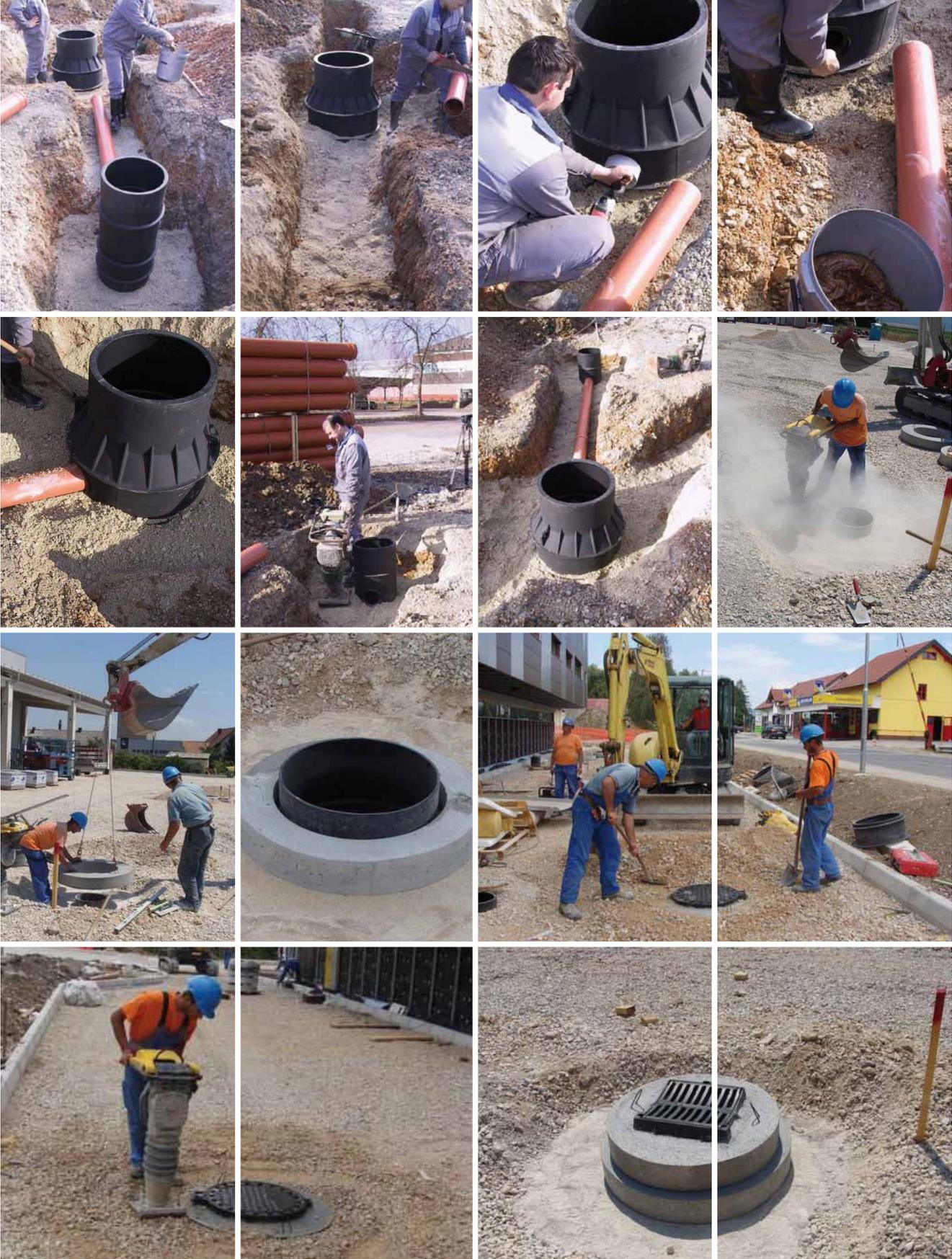
Minimum recommended dimensions of the RC ring and installation

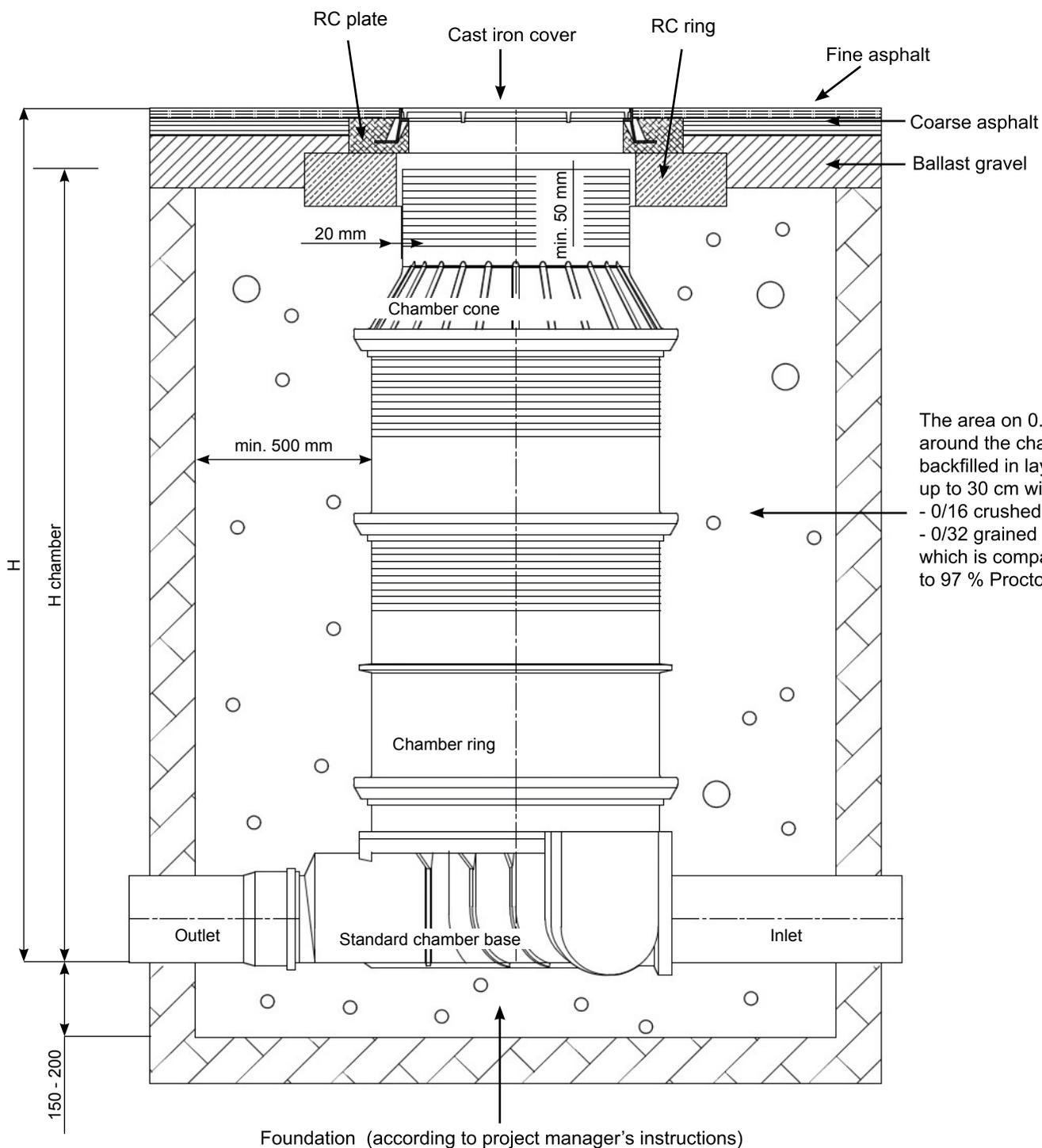
Chamber diameter DN	625	800	1000
RC ring diameter (mm)*	1025	1200	1400



***The correct dimensions of the RC ring and RC plate are specified by the project manager with respect to the load bearing capacity of the cast iron cover and the surface loads!!!**

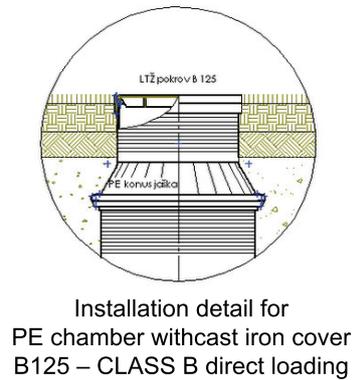
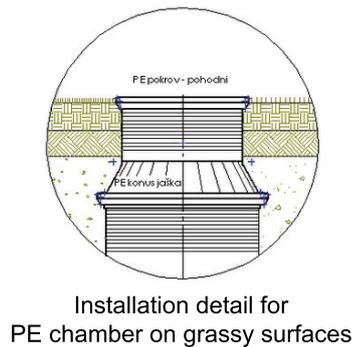
Examples of inspection chamber and sand separator installation





The area on 0.5 m around the chamber is backfilled in layers of up to 30 cm with:

- 0/16 crushed or
- 0/32 graded material, which is compacted to 97 % Proctor.



Testing and certification

We monitor the quality of products at every step of our manufacturing process. All shipments of raw materials, as well as the products at each production phase are monitored and inspected in detail.

The PE "Zagožen" type chambers have the SLOVENIAN TECHNICAL APPROVAL STS-07/114, report P 1450/09-650-2.

The PE "Zagožen" type sand traps have the SLOVENIAN TECHNICAL APPROVAL STS-07/115, report V 803/08-250-2

The "ZAGOŽEN" type inspection chamber has a suitable report on conformity issued by the authorised institutions of ZAG Ljubljana.

The company APLAST d.o.o. operates under the regulations set forth in the ISO 9001/2008 quality standard.



Order form for Zagožen type inspection chambers

The form is available on our web site www.aplast.si, under the "useful advice" – order forms section

CHAMBER ORDER FORM



Project: _____ Date of delivery: _____ NDN _____

No.	Name of the chamber	DN of the chamber DN (mm)	Height H (mm)	Inlets			Outlet D4 (mm)	No. of psc
				D1 (mm)	D2 (mm)	D3 (mm)		
1								
2								
3								
4								
5								
6								
7								

→ for inlets and outlets is **OBLIGATORY** to mark for which type of the pipe is needed - from the legend
 → pipes which are connected to the chamber can be adjusted for $\pm 5^{\circ}$

No. NOTE:

1
2
3
4
5
6
7

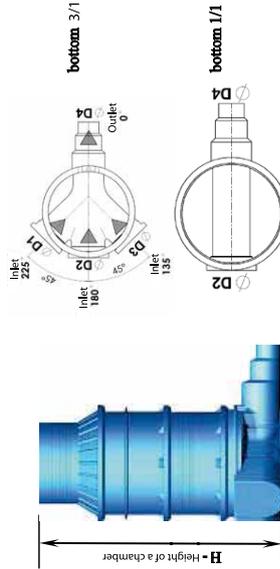
Legend:

GA – PVC Alvehol **PG** – PE smooth pipe
G – PVC smooth pipe **PR** – PE corrugated pipe
R – PVC corrugated pipe **PP** – PP corrugated pipe

Obr. 72/12

Decline* (%)	H (m) of underground water		
		inlet	outlet

Note:
 * Bottom of chamber has a decline of 1,5 %!
 - other declines a charged extra!



Date: _____ Customer: _____ Signature: _____

Order form for sand separators

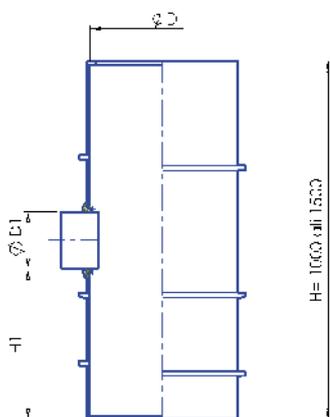
The form is available on our web site www.aplast.si, under the "useful advice" – order forms section



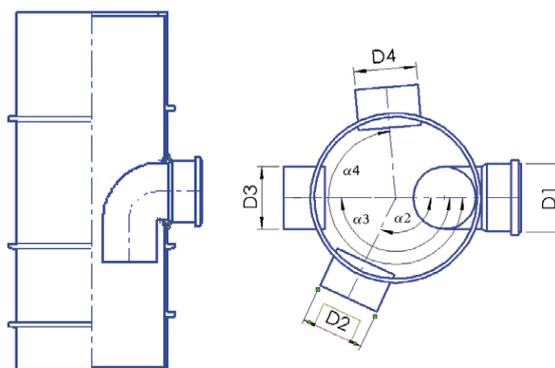
Obr. 72/10

SAND SEPARATOR ORDER FORM

a) REGULAR



b) ODOURLESS



Sand separator no.:

Diameter of sand separator **D:** (mm)

Height of sand separator **H:** (mm)

Diameter of outlet **D1:** (mm)

Height of outlet **H1:** (mm)

Additional outlets:

Outlet	Diameter (mm)	Height (mm)	Angle α°
D2	ϕ	H2=	$\alpha_2 = 0$
D3	ϕ	H3=	$\alpha_3 = 0$
D4	ϕ	H4=	$\alpha_4 = 0$

NOTE:
Angle of additional outlet is measured from D1 in clockwise.

NUMBER OF THE SAME SAND SEPARATORS: _____ pcs

Date:

Customer:

Signature:



APLAST proizvodnja in trgovina d.o.o.
Petrovče 115a, 3301 Petrovče, Slovenija

t | +386 (0) 3 713 24 50
f | +386 (0) 3 713 24 54
e | info@aplast.si
w | www.aplast.si

Certified ISO 9001 : 2008 by



YOUR RETAILER: