

Modular inspection chamber system for sewage networks







Sistema Colector

- O1 System advantages
- O2 Combination between system components
- 03 Predefined sets
- 04 Standalone sets
- 05 Special accessories





01. System advantages

| Final costs reduction



Reduction in time of installation due to easiness and quickness of assembly.



Low specific weight which enables an easier handling, transport and installation.



Traditional conflicts when tiled inspection chambers had to be build by different professionals (workmen, plumbers) are now prevented.

Its simple installation removes the necessity of skilled manpower. Maintenance requirements are now lower than those required by tiled inspection chambers.

Perfect water tightness



Excellent water tightness on all its connections, since pipes are installed onto the inspection chamber inlets/outlets using solvent cement (chemical cold welding) or NBR joints highly resistant to chemical elements.

It perfectly adapts to all land movements absorbing them, reducing all kind of cracks produced by seismic movements, expansive clays, plaster o differential terrain settlements



Root penetration into the networks is avoided, reducing problems produced by the reduction of the effective pipe sections and breakage of pipe networks.

Infiltration of underground waters or high ground water levels, inside the collector network.

Pollution of underground waters and aquifers is avoided, in many cases, it is produced by leakages from sewage networks to the subsoil, causing filtration of polluting residues.

Long term operation reliability



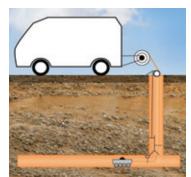
External body of components fully injection moulded, without solvent unions of manipulated parts. The same resistance is maintained through the piece.

PVC has a great resistance to chemicals in the black and storm water networks, as well as to most salts and acids; most of its chemical and physical properties are maintained through time and its aging is reduced.

It possesses great resistance to the action of rodents and microorganisms.

It possesses an excellent tensile resistance and a low elasticity module, absorbing important deformations without producing breakage.

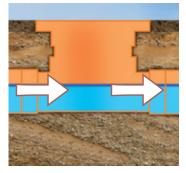
Unalterable to underground telluric currents due to its low electrical conductivity.



It allows easily maintenance from the surface, using mechanical cleaning equipments with pressure water, as well as its inspection using mobile cameras. Access of workers is prevented as a security measure, since they are normally reduced spaces with unhealthy gases.

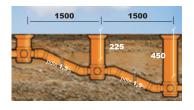
01. System advantages

Optimal hydraulic behavior



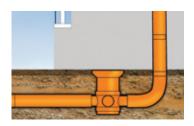
The smooth internal surfaces produce a reduced loss of charge, the incrustation in the internal walls is consequently reduced, therefore effective sections are reduced.

Continuous drainage system using interior channeled inspection chambers which direct fluid, prevent water high changes, deposits of waste, which in many cases reduce effective areas, are prevented.



Real drainage slopes. The designed slopes can be effectively installed, since a traditional pipe can be used to install a raiser to be cut at the desired height. Modular height fixed raisers can be avoided.

Installation tips



"Sistema Colector" Jimten inspection chambers should be installed close to downpipe ending, branches to collector pipes, and in general, on points in the sewage network where obstructions must not occur.



Pipes joining "Sistema Colector" inspection chambers which follow straight paths should never overpass 15 m in length between registers.

When "Sistema Colector" is buried in garden areas at depths less than 0.75 meters or less than 1.20 meters for areas with traffic. Horizontal pipes should be protected with concrete reinforcement overtopping the horizontal pipes by 5 cm.



"Sistema Colector" system must be installed under the fresh water network and should be reinforced in heavy traffic areas.

It is recommended that a minimum slope between 0.5% - 3% is installed with the "Sistema Colector" inspection chamber system. CTE (Spanish Building Regulation Code) recommends a 2% slope for buried sewage networks.

Installation procedures.



· Check that pipes and fittings comply with local regulations and do not present signs of impacts or cuts.



- Certified welding elements (solvent cement) according to local regulations and in perfect conditions (expiration date, viscosity, presence of strange bodies). It is recommended the use of Jimten universal adhesive.
- \cdot PVC pipe cuts, must be done perpendicularly to the pipe using saws or pipe cutters.



- · Interior pipe deburring, as well as its chamfering, must be done using a reamer or a lime
- · Any shallow dirtiness should be removed by degreasing the external part of the pipes.



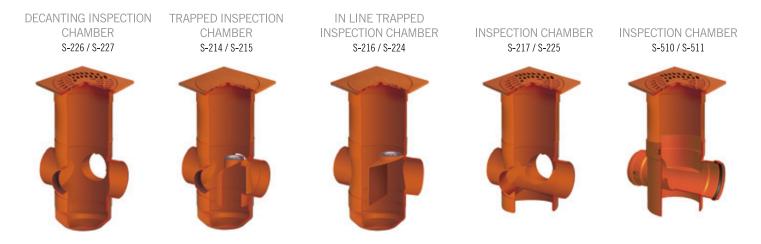
• Temperature during the installation of pipes should be between +5°C and +35°C. Elements to be solvent cemented must be perfectly dry.



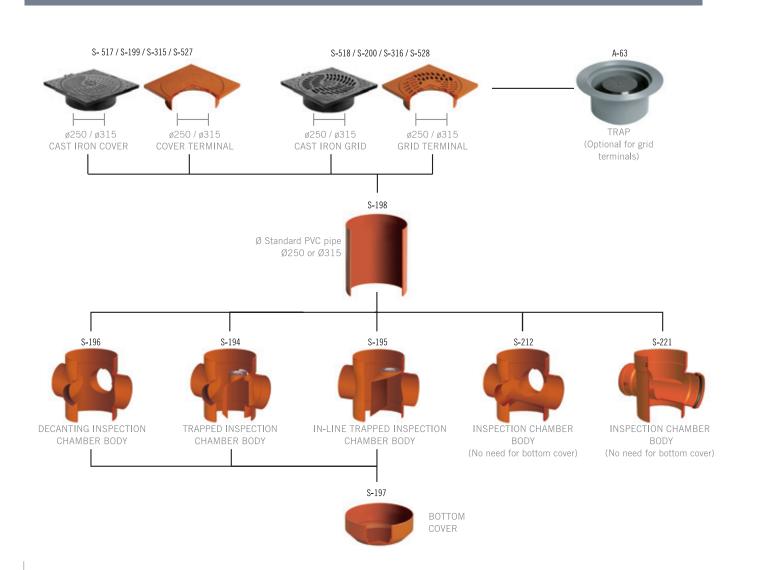
- · When installing the products at low temperatures, pieces, once assembled, must be kept together at least for 20 to 30 seconds.
- · Other manufacturer products (pipes and/or fittings) installation procedures must be also followed.

02. Combination between system components

Basic assemblies



Previous figures can be obtained by combining the following elements from the Sistema Colector system

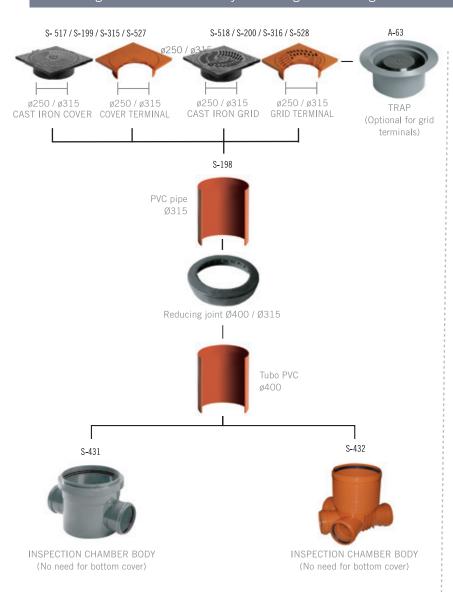


Basic assemblies.





Previous figures can be obtained by combining the following elements from the Sistema Colector system



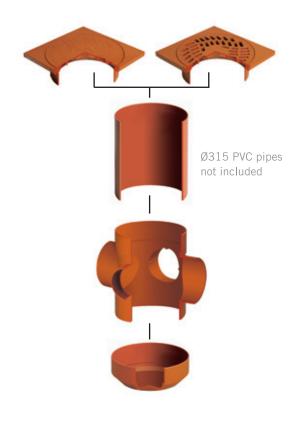


03. Predefined sets

Decanting inspection chamber. With sandbox.

Inspection chambers with an internal deposit, this allows that water comming in through the inlets come down to the inspection chamber base. This fall produces deposit of elements in suspension onto the base (such as sand and mud)





S-226

With cover

27016	665m.	ø 250	Tile
Ref.	Height	Body size	Colour
27031	665m.	ø 315	Tile
27015	665m.	ø 250	Tile

S-227

With grid

Characteristics ø 250:

- 2 Inlets Ø110, female.
- 2 Inlets Ø160, female.

Characteristics ø 315:

665m.

27032

27080

- 2 Inlets Ø160, female.

ø 315

Tile

Tile

Body size

- 2 Inlets Ø200, female.

S-226

With cover

Rei.		neigni	Body Size	Colour
	27077	665m.	ø 250	Tile
	27078	665m.	ø 315	Tile
	Ref.	Height	Body size	Colour
27070		665m	ø 250	Tile

With grid

Characteristics ø 250:

S-227

- 4 Inlets Ø160, female.

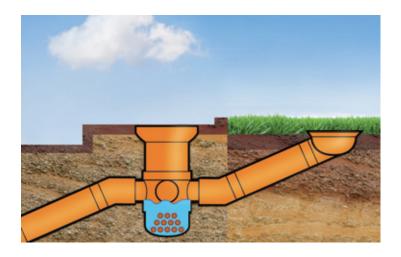
Characteristics ø 315:

665m.

- 4 Inlets Ø200, female.

ø 315

Specially adapted to be installed in areas where sands in suspension should be removed before waters enter into the sewage networks, reducing risks of clogging. This inspection chambers will require a periodical maintenance to clean and extract the residues which may enter into its base.



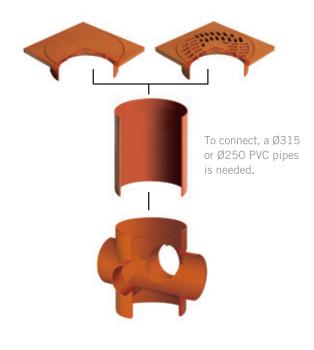


Inspection chamber

Inspection chambers which have a continuous base, free of prominence, this allows that the incoming water through its inlets passes directly to its outlets, avoiding the accumulation of mud inside the inspection chamber.

Building regulations recommend the installation of inspection chambers at the base of each down pipe before its connection to the horizontal pipes.





S-217

S-225

With cover

27012	500m.	ø 250	Tile
27033	500m.	ø 315	Tile
Ref.	Height	Body size	Coloui
27014	500m.	ø 250	Tile
27034	500m.	ø 315	Tile

Height

With grid

Characteristics ø 250:

- 2 Inlets Ø110, female

- 2 Inlets Ø160, female.

Characteristics ø 315:

- 2 Inlets Ø160, female.
- 2 Inlets Ø200, female.

Body size

Colour

S-217

S-225

With cover

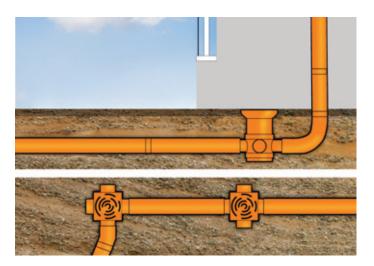
	27073	500m.	ø 250	Tile
	27074	500m.	ø 315	Tile
ı	Ref.	Height	Body size	Colour
	27075	500m.	ø 250	Tile
27076		500m.	ø 315	Tile

With grid

Characteristics ø 250: - 4 Inlets Ø160, female. Characteristics ø 315:

- 4 Inlets Ø200, female.

It is recommended that Inspection chambers should be installed before every change of direction and/or change of diameters of the horizontal networks, there should not exist straight sections over 15 m in length without registers using this type of inspection chambers.





03. Predefined sets

Inspection chamber

- · Inspection chambers which have a continuous base, free of prominence, this allows that the incoming water through its inlets passes directly to its outlets, avoiding the accumulation of mud inside the inspection chamber.
- · Building regulations recommend the installation of inspection chambers at the base of each down pipe before its connection to the horizontal pipes.
- · Inlets and outlets use an NBR joint system which offer a proved reliability and provide an improved installation easiness.



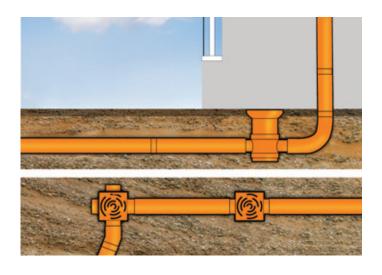
It is recommended that Inspection chambers are installed before every change of direction and/or change of diameters of the horizontal networks, there should not exist straight sections over 15 m in length without registers using this type of inspection chambers.

S-510	Ref.	Height	Body size	Colour	
	27069	500m.	ø 250	Teja	
With cover	27070	500m.	ø 315	Teja	
S-511	Ref.	Height	Body size	Colour	
S-511	Ref. 27071	Height 500m.	Body size Ø 250	Colour Teja	
S-511 With grid			-		
	27071	500m.	ø 250	Teja	

- 1 Inlet Ø160, female.
- 1 Outlet Ø160, female..

Characteristics ø 315:

- 1 Inlet Ø200, female.
- 1 Outlet Ø200, female.



Inspection chamber (big diameter)

Building regulations recommend the installation of inspection chambers at the base of each down pipe before its connection to the horizontal pipes.

Inlets and outlets use NBR joint system which offer a proved reliability and provide an improved installation easiness.



It is recommended that Inspection chambers are installed before every change of direction and/or change of diameters of the horizontal networks, there should not exist straight sections over 15 m in length without registers using this type of inspection chambers.

Characteristics ø 500:

- 2 Inlets Ø315, female.
- 2 Inlets Ø250, female.
- PE manufactured by roto-molding.
- Connections using NBR joints.
- · Inspection chambers with register equal or over Ø400 mm.
- · Its internal design with channeled shape, creates a continuous line free of prominences which enable an easier water flow without accumulation of waste inside the inspection chamber, diminishing the maintenance requirements.
- · Cast iron covers and grids allow its installation in areas with vehicle transit.

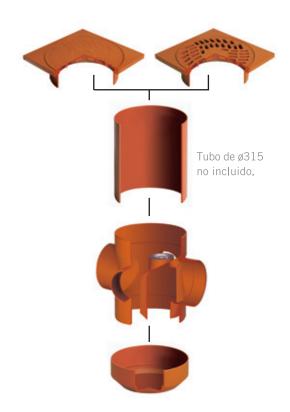


03. Predefined sets

Trapped inspection chamber

This inspection chambers incorporate an interior trap onto the outlet, it can be registered. It is recommended that trapped inspection chambers are installed before the connection to the public sewage networks, between the last private owned inspection chamber and the public network. This inspection chambers prevent bad odors coming from the general line entering inside the building.





Regular maintenance is recommended to this type of inspection chambers to assure no waste accumulated inside occasion a bad product operation. This inspection chambers are not recommended to be installed closed to down pipes.

S-214

With cover

Ref.	Height	Body size	Colour
27009	665m.	ø 250	Teja
27029	665m.	ø 315	Teja

S-215

With grid

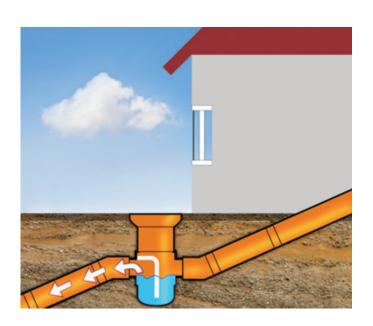
Ref.	Height	Body size	Colour
27010	665m.	ø 250	Teja
27030	665m.	ø 315	Teja

Characteristics ø 250:

- 2 Inlets Ø110, female.
- 1 Inlets Ø160, female.
- 1 outlet Ø160, female.
- Trap with register.

Characteristics ø 315:

- 2 Inlets Ø160, female.
- 1 Inlets Ø200, female.
- 1 outlet Ø200, female.
- Trap with register.



In line trapped inspection chamber.

This inspection chambers incorporate an interior trap onto the outlet, this trap can be registered. It is recommended that trapped inspection chambers are installed before the connection to the public sewage networks, between the last private owned inspection chamber and the public network. This inspection chambers prevent bad odors coming from the general line entering inside the building.



With cover

Characteristics:

- 1 Inlets Ø160, female.
- 1 outlet Ø160, female.
- Trap with register.

Regular maintenance is recommended to this type of inspection chambers to assure no waste accumulated inside occasion a bad product operation. This inspection chambers are not recommended to be installed closed to down pipes.

Inspection chambers with floor gully (grid and floor gully kit)



It should be installed when sewage network uses mixed (dark and storm water) flows, when its necessary to collect rainwater in areas such as parking lots, end of slopes and open terraces so as to avoid odors from the sewage network coming out from the grids.

A-63

Ref.	Body size
27023	ø 250
27036	ø 315



03. Predefined sets

Assembly instructions for "Sistema Colector" inspection chambers.



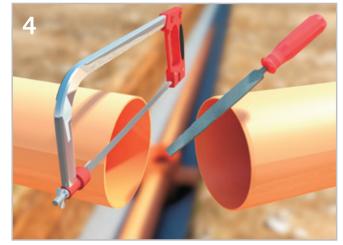
Plan a cut off trench deep enough so the "Sistema Colector" inspection chamber and a concrete base of approximately 10 cm high can be fit in.



Pre-define the installation pre-installing the product and checking the correct assembly of all its elements.



Prepare a concrete base of, at least, $10\ \mathrm{cm}$ high, which is extended $5\ \mathrm{cm}$ aside the inspection chamber body.



Cut the PVC pipe with a saw or pipe cutter perpendicularly to its axis. Trim the internal part of the pipe and chamfer the external part of the pipe (with a lime or reamer).



Check that pipes and fittings comply with norms and that they do not present external signs is impacts or cracks.



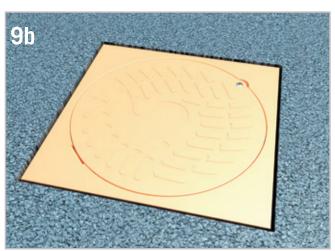
Use certified adhesives according to their specific norms and in perfect condition (expire date, viscosity, absence of foreign components).



Cut the vertical connecting pipe ($\emptyset 250$ or $\emptyset 315$ mm) considering the general installation slope and gluing it to the top inspection chamber inlet.



Prepare a concrete base of 12 cm which will be used as the cover or grid terminal support.



When installing with asphalt, it must have a height surpassing 3 to 5 mm over the terminal.



Fill in the trench and compact it over the pipe considering the pipe manufacturer instructions. Compact the area surrounding the vertical pipe (raiser). Consider a 12 cm area which will later be filled with concrete to support the grid or cover terminal.



When installing with concrete floor finishing, a minimum distance of 1 to 3 mm surrounding the cover top terminal must be left to allow dilatation.

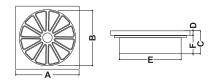
04. Standalone sets

PVC grids or covers

S-199

Ø250 Cover terminal



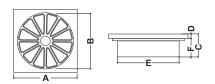


Ref.		C	olour		Re	ef.		Cold	our
27006		Т	ile		27039			Light grey	
2701	27017		rey		27052			Black	
				_					
Α	В		С		D	Е		F	
320	29)2	95		20	250		70	
						femal	е		

S-200

Ø250 Grid terminal



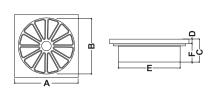


Ref.		C	olour		Re	ef.		Cold	our
27007		Т	ile		270)43		Light (grey
2701	27018		rey						
				_					
Α	E	3	С		D	Е		F	
320	292		95		20	250		70	
	1					femal	ρ		

S-315

Ø315 Cover terminal



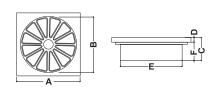


	Ref. 27019		C	olour		Re	ef.	Cold	our
			Т	Tile		27037		Light grey	
	27020		G	rey		27051		Black	
					_			_	
	Α	E	3	С	L	D	Е	F	
	400	36	65	114,5		25	315	82	
					L		female	9	

S-316

Ø315 Grid terminal





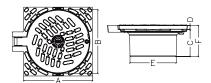
	Ref.	Ref. Colour		Ref.		Colour				
	27021		Т	ile		270)41		Light (grey
	2702	2	G	rey						
							_			
	Α	E	3	С		D	Е		F	
ĺ	400	36	65	114,5		25	315 femal		82	

Cast iron grids or covers

S-517

Ø250 Cover terminal



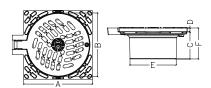


Α	ØB	С	D	E	F				
350	291	116	28	215	144				
Ref.		Colour			Class				
27088	27088 Black Cast Iron		ø250	B125					
	1			I	1				

S-518

Ø250 Grid terminal



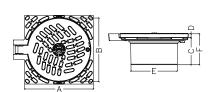


	Α	ØB	С	D	E	F					
	350	291	116	28	215	144					
	Ref.		Colour			Class					
27090 Bla		Blac	ck Cas	t Iron	ø250	B125					
		1									

S-527

Ø315 Cover terminal



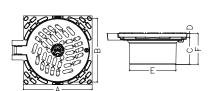


400	365	116	28	275	144
Ref.		Colour			Class
27089	Blac	Black Cast Iron			B125

S-528

Ø315 Grid terminal





Α	ØB	ØB C		Е	F				
400	365	116	28	275	144				
Ref.		Coloui		Size	Class				
27091	Blac	Black Cast Iron			B125				

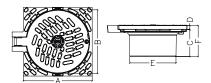
04. Standalone sets

Terminales tapa o rejilla de fundición

S-514

Ø500 Cover terminal





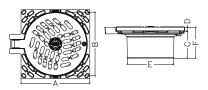
Α	ØB	С	D	Е	F
590	520	120	30	440	160
590	520	120	30	440	160

Ref.	Colour	Size	Class
27085	Black Cast Iron	ø500	B125
27084	Black Cast Iron	ø500	C250

S-515

Ø500 Grid terminal





Α	ØB	С	D	Е	F
590	520	120	30	440	160
590	520	120	30	440	160

Ref.	Colour	Size	Class
27087	Black Cast Iron	ø500	B125
27086	Black Cast Iron	ø500	C250

Class

B-125 Sidewalks, footpaths, pedestrian areas and similar surfaces, parking areas and several stories' parking for cars (control charge load 125 kn)

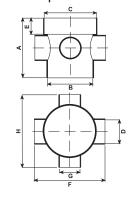
C-250 For covers, grids installed over waysides and ditches areas on streets, this area, when measured from sidewalk kerb is extended for a maximum 0.5 m inside the road pavement and 0.2 m onto the sidewalk (control charge load 250 kn)

Inspection chamber bodies.

S-194

Trapped inspection chamber





Ref.	Medida cuerpo	Coloui
27001	ø 250	Tile
27025	ø 315	Tile

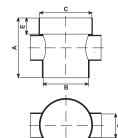
Α	В	С	D	Е	F	G	Н
308	250	250	160	70	365	110	345
	male	female	female			female	
393	315	315	200	82	460	160	430
	male	female	female			female	

Inspection chamber bodies

S-195

In-line inspection chamber





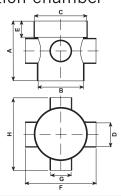
Ref.	Body size	Colour
27002	ø 250	Tile

Α	В	С	D	Е	F
316	250	250	160	70	370
	male	female	female		

S-196

Inspection chamber





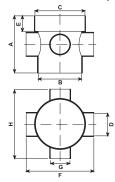
Ref.	Body size	Colour
27003	ø 250	Tile
27047	ø 250	Tile
27026	ø 315	Tile
27048	ø 315	Tile

Α	В	С	D	Е	F	G	Н
308	250	250	160	70	366	110	350
	male	female	female			female	
328	250	250	160	70	370	160	373
	macho	female	female			female	
393	315	315	200	82	460	160	430
	male	female	female			female	
393	315	315	200	82	460	200	450
	male	female	female			female	

S-212

Inspection chamber (with channeled base)





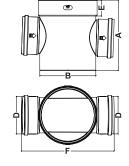
Ref.	Body size	Colour
27008	ø 250	Tile
27049	ø 250	Tile
27027	ø 315	Tile
27050	ø 315	Tile

Α	В	С	D	Е	F	G	Н
308	250 male	250 female	160 female	70	366	110 female	350
328	250 male	250 female	160 female	70	375	160 female	370
401	315 male	315 female	200 female	82	460	160 female	430
401	315 male	315 female	200 female	82	460	200 female	450

S-221

Inspection chamber with joint horizontal inlets





Ref.	Body size	Colour
27067	ø 250	Tile
27068	ø 315	Tile

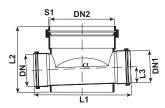
Α	ØВ	øс	ØD	Е	F
330	250 male	250 female	160 female	70	415
395	315 male	315 female	200 female	83	518

04. Standalone sets

Inspection chamber bodies.

S-431 Inspection chamber with 2 inlets.



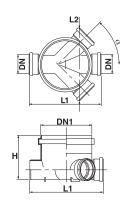


Ref.	Body size	Colour
32201	ø 400	Grey

DN	DN1	DN2	S1	L1	L2	L3	α
200	200	400	7	610	412	148	2°

S-432 Inspection chamber with 4 inlets.



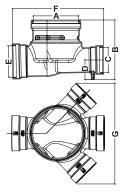


Ref.	Body size	Colour
32236	ø 400	Tile

DN	DN1	Н	L1	L2	α
200	400	620	670	600	45°

S-513 PE Inspection chamber with 4 inlets.





Ref.	Body size	Colour
27083	ø 500	Black

ØA	В	ØС	D	ØE	F	G
500	590	315	250	315	930	990
female		female		female		

Rubber ring



Ref.	Size
32111	ø 160
32112	ø 200
32113	ø 250
32114	ø 315
32286	ø 500

Spare part joints for inspection chambers.

Material: NBR

Reduced rubber ring



Ref.	Size	DN	DN1
32202	ø 400 - 315	315	400
02202	D 100 010	010	- 1

It allows to reduce the top register access of a $\emptyset 400$ inspection chamber to use a $\emptyset 315$ mm grid or cover.

Material: NBR

Cast iron covers rubber ring



Ref.	Ref. Size		DN	DN1
32287	ø 500		440	500

To be used with cast iron covers to connect to $\emptyset 500 \text{ mm}$ male PVC pipes.

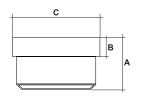
Material: NBR

05. Special accessories

S-197

Base cover



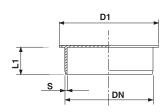


Ref.	Size	Colour
27004	ø 250	Tile
27028	ø 315	Tile

Α	В	С
165	70	250 female
120	80	315
		female

Male cover cap





Ref.	Size	Colour	
32228	ø 110	Tile	
32050	ø 160	Tile	
32051	ø 200	Tile	

DN	D1	S	L1
110	126	3.2	38
160	180	4.0	49
200	223	4.9	59

S-372

Adapter



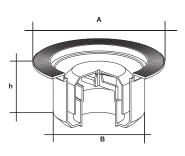
Ref.	Body size	Colour
27035	ø 315 M - ø 400 F	Tile

It allows to use a Ø315 terminal with a Ø400 vertical register pipe

A-63

Floor gully kit (terminal grid not included)





Ref.	Size	Colour	Н	ØA	ØB
27023	ø 250	Grey	121	250	173
27036	ø 315	Grey	185	318	187

Use: It allows to install a floor gully using a grid terminal S-200 or S-316.

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Modular system, it enhances the installation of sewage grey and storm water networks



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ER-0084/1996



