







DRAINAGE AND SEWERAGE SYSTEM GROUP'S PLANTS









(19) ITALIANA CORRUGATI







ASAB cherish your water















SYSTEM GROUP
can deliver anywhere
from its production
plants of Italy, France
and Spain.





KNOW-HOW

Since 1979 we believe that abilities come from the right combination of education, constant training and (personal) experiences.

The knowledge of thermoplastic materials after more than 40 years of experience, combined with the strong roots settled down in civil and mechanical engineering, the latest production processes and environmental engineering make SG the preferred partner for infrastructure projects and much more.



OUALITY

Quality is our core value, and it starts from a constant investment of time and energy of our people, up to the meticulous supplier and material selection, constant upgrades in the production process, innovative product development, and a high standard customer care for all the clients who decide to trust us.



PRODUCTS RANGE

Our product ranges are made of the following materials: HDPE, MDPE, LDPE, PP and PVC for multiple applications.



INNOVATION

System Group is not just a family-owned company: we are one big family. Therefore, we keep growing, developing, sharing, dreaming, we are passionate about our job, we work hard, but we also find the time to play. We WILL bring you luck!



TECHNICAL SUPPORT

Thanks to its 40 years experience, System Group can also provide engineering and consultancy services. Our modern Technical Department offers solutions for a wide range of applications, also thanks to the creation and installation of new special customized products too, according to the client requirements.



SUSTAINABILITY

Environment and people are themes that really matter to us. Therefore, SG actively works on the continuous improvement of its environmental performances and takes part in different social initiatives.



ETHICS

Ethics makes an important part of our daily business, and our Core values extend to our Suppliers, Employees and Clients equally.







20 SPIRAL PIPES





30 MANHOLES



34 DRAINAGE CHANNELS



36 PACKAGING AND TRANSPORT





OF PRODUCT



PE, PP corrugated + PP triple wall + PVC (UNI) EN 13476 -3 (UNI) EN 13476-2 (UNI) EN 1401

PE MANHOLES UNI EN 13598-1-2

DRAINAGE CHANNELS EN 1433



PIPES

Spiral wound PE DIN 16961



PE, PP corrugated DIN EN 295-3



PIPES

with CorPress junction





PIPES

PE, PP corrugated + PVC (UNI) EN 13476 -3 (UNI) EN 1401



PE corrugated EN 13476 -3



Corrugated PE and PP, triple wall, slotted GOST R54475-2011 TU 2248-001-63648699-2012



CIRCULAR ECONOMY

Pipes made of recycled PE (on demand)



PE, PP corrugated EN 13476 -3



PIPES

PE, PP corrugated EN 13476 -3



Corrugated PE NF EN 13476-3

Triple wall PP SN16 NF EN 13476-2



PIPES

Triple wall PP SN12 Avis Technique n. 17.2/17-333 V1



Corrugated PE UNE EN 13476-1-3

Corrugated PP SN16 UNE EN 13476-1-3 with CorPress junction



Corrugated PP SN16



PIPES

Corrugated PE IS n. 13476-3

Triple wall PP SN16 IS n. 13476-3

CorPress FITTING

for corrugated pipes UNE EN 1053 ISO 13254 UNE EN ISO 13254 (8h - 2 bar)



Corrugated PE EN 13476-1-3

CORPORATE









ISO 9001



FUTURASYSTEMS



(9) ITALIANA CORRUGATI

ISO 9001





ISO 14001 ISO 45001

○Futura

ISO 9001

SYSTEMGROUPPVC

ISO 9001

ISO 9001

ISO 9001

ISO 14001

MAIN STANDARD REFERENCES

DESIGN

EN 1295-1

Structural project of underground pipes + prEN 1295-3 submitted to different load conditions

CONSTRUCTION AND TESTING OF PIPELINES

EN 13476

Non-pressurized plastic pipes systems for underground drainage systems and sewerage. Structured wall pipelines of unplastified polyvinyl chloride (PVC-U), polypropylene (PP) and polyethylene (PE).Part 1: Specific for pipes, fittings and complete system.

INSTALLATION

ENV 1046

Plastic pipes and drainage systems.

External systems for water collection or rehabilitation outside buildings.

Installation practices above and underground.

WORKING SITE TESTS

EN 1610

Plastic pipes and drainage systems. External systems for water collection or rehabilitation outside buildings.

Installation practices above and underground.

EN 13476-3:2018

min. wall thicknes

DN/OD	$d_{_{\mathrm{im}\mathrm{min}}}$	DN/ID	$d_{_{\mathrm{im}\mathrm{min}}}$	e _{4 min}	e _{5 min}
110	90	100	95	1.0	1.0
125	105			1.1	1.0
		125	120	1.2	1.0
160	134			1.2	1.0
		150	145	1.3	1.0
200	167			1.4	1.1
		200	195	1.5	1.1
250	209			1.7	1.4
		225	220	1.7	1.4
245	226	250	245	1.8	1.5
315	236	200	20/	1.9	1.6
	225	300	294	2.0	1.7
400	335	400	392	2.3	2.0
500	418	400	392	2.8	2.8
500	410	500	490	3.0	3.0
630	527	300	490	3.3	3.3
030	321	600	588	3.5	3.5
800	669	000	300	4.1	4.1
	003	800	785	4.5	4.5
1000	834		, 05	5.0	5.0
	05.	1000	985	5.0	5.0
1200	1005		303	5.0	5.0
		1200	115	5.0	5.0
1400	1173			5.0	5.0
		1400	1385	5.0	5.0
1600	1340			5.0	5.0
		1600	1584	5.0	5.0
1800	1508			5.0	5.0
		1800	1782	5.0	5.0
2000	1675			7.0	7.0
		2000	1980	7.0	7.0
2200	1843			7.0	7.0
	2040	2200	2178	7.0	7.0
2400	2010	3/00	2276	7.0	7.0
3500	2007	2400	2376	7.0	7.0
2500	2094	3500	2475	7.0	7.0
2600	2178	2500	2470	7.0 7.0	7.0 7.0
2000	21/0	2600	2574	7.0	7.0
2800	2345	2000	2314	7.0	7.0
2000	2343	2800	2772	7.0	7.0
3000	2513	2000	2112	10.0	10.0
	20.0	3000	2970	10.0	10.0

TYPICAL SECTION OF STRUCTURED PROFILES

TYPE A

Smooth inside and outside





DN/OD nominal measure, referred to the outside diameter.

DN/ID nominal measure, referred to the inside diameter.

 $d_{\text{im,min}}$ inside minimum and medium diameter

d outside diameter

d. inside diameter

inside medium diameter

construction height (profile)

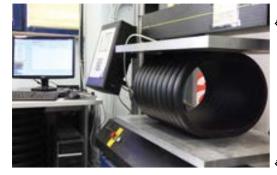
plain inner wall thickness (liquids sliding wall)

wall thickness of the inside diameter under a hollow section

TYPE B Smooth inside, corrugated outisde









SUSTAINABILITY

In order to satisfy the environmental requirements and promote the approach to the energy transition, **CENTRALTUBI S.p.A.** and **ITALIANA CORRUGATI S.p.A.** obtained the **PSV** mark. This mark certify that the used PE material really comes from recycling processes. It also leads to the revaluation of waste and contributes to the reduction of higher waste and the environmental impact.

ENVIRONMENTAL SUSTAINABILITY

The standard range of black corrugated pipes for cable ducts applications has the PSV mark, which means they are made of recycled materials.

This product range has IMQ certification and marking which is in accordance with the CEI EN 61386 standard and the CE marking.



Economic system which has been thought for self-regeneration.

PE standard pipes for drainage and sewerage are made with materials that are committed to the existing technical standards.

The request of these pipes with **PSV** mark (recycled materials) does not validate these existing standards.





PE and PP are 100% recyclable materials



second life

FROM SEPARATE

WASTE COLLECTION

The printed version of this document is made with a paper coming from sustainable managing of trees cultivation.





Both materials belong to the POLYOLEFINS category which can be easily distinguished from the traditional polyvinyl chloride (PVC) because they don't have the chlorine molecule.

Therefore, polyolefins are more sustainable because of the greater ability to recycle and a lower environmental impact, particularly in the case of combustion.



THE MOST WELL KNOWN FEATURES OF POLYOLEFINS ARE:

- > LIGHTNESS (REDUCED SPECIFIC GRAVITY)
- > SMOTHNESS (REDUCED WALL ROUGHNESS)
- > HIGH DUCTILITY (RESISTANCE TO IMPACT AND LOW TEMPERATURES)
- > HIGH RESISTANCE TO ABRASION
- > HIGH CHEMICAL RESISTANCE (ISO/TR 10358)
- > HIGH ELECTRICAL RESISTANCE
- > RECYCLABLE

MATERIALS CHARACTERISTICS

CARATTERISTICHE	PP	PE	unit of measure
Elasticity modulus	≥ 1250	≥ 800	MPa
Average density	≈ 900	≈ 940	kg/m³
Average coefficient of linear thermal expansion	≈ 14 x 10 ⁻⁵	≈ 17 x 10 ⁻⁵	K-1
Thermal conductivity	≈ 0,2	≈ (0,36 a 0,50)	WK ⁻¹ m ⁻¹
Specific heat capacity	≈ 2000	≈ (2300 a 2900)	Jkg ⁻¹ K ⁻¹
Electric resistivity	> 1012	> 10 ¹³	Ω
Coefficient of Poisson	0,42	0,45	(-)

Values depend from the material.

It is recommended to get in contact with the pipes' manufacturer or to take a look at the documents for each value.

TABLE OF PIPE HYDRAULIC ROUGHNESS

ROUGHNESS OF INSIDE WALLS typical values

Absolute roughness [mm]	0,002 - 0,004
Strickler [K _s]	90 – 95
Hazen-Williams [C]	140 – 150
Manning [n]	140 – 150



SEWERAGE SYSTEMS





MADE BY ITALIANA CORRUGATI

TRIPLE WALL PIPES MADE OF POLYPROPYLENE (PP) SN > 16 SUITABLE FOR:

- INSTALLATION IN **GROUNDWATERS**
- INSTALLATION WITH **EXCAVATION MATERIALS**



			Standard connection	Standard length
DN/OD	DN/ID	$d_{_{\mathrm{e}}}$		m
125	-	111	Sleeve	6,0
160	-	142	Sleeve	6,0
200	-	177	Sleeve	6,0
250	-	222	Sleeve	6,0
-	250	-	Socket	6,0
-	300	-	Socket	6,0
-	400	-	Socket	6,0

Millimeters [mm]



MAIN FEATURES

- > TRIPLE WALL (HIGH TOLERANCE TO POINT LOADS)
- > HIGH RING STIFFNESS: SN ≥ 16
- > SOCKET OR COUPLING CONNECTIONS WITH **DOUBLE SEALING GASKET**
- > LIGHTWEIGHT AND EASY TO INSTALL
- > HIGH CHEMICAL AND ABRASION RESISTANCE
- > INERT TO STRAY CURRENTS
- > RECYCLABLE











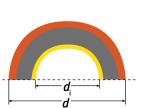


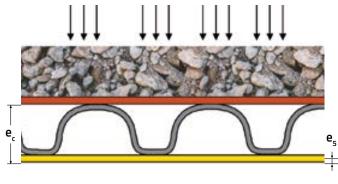






- d Inside diameter
- Outside diameter **d**e
- **e** Profile height
- **e**₅ Inside wall thickness





		DESCRIPTION	ADVANTAGES	,
1	LIGHTNESS	Structured wall, high resistance to deformation with the usage of fewer materials compared to pipes with full wall	Easy to transport, move and install	- <
2	TRIPLE WALL	High moment of inertia the inner walls are isolated from load points	Safety from damages caused by installations Durability It can be covered with excavation material	_
3	RING STIFFNESS >16 (kN/m²)	"Flexible" type (designed for deformation), but with higher ring stiffness compared to other products available on the market for the same application	High safety Resistance to damages caused by wrong installations	
4	RF30	Pipe elastic behaviour with a deflection of >30% de (test EN 13968)	High resistance to structural collapse and buckling - Durability	- { -
5	DOUBLE TIGHTNESS	Two pre-installed gaskets allow to align the "male" inside the socket. High hydraulic tightness concerning both leakage and water entrance (EN 13259 test with a deformation of 8% of the joint.	Safety Tightness tests with >60% of joint deformation Higher safety against parasite water Efficiency and costs savings	
6	ANTI-FLIP	Two pre-installed gaskets allow to align the "male" inside the socket. High hydraulic tightness concerning both leakage and water entrance (EN 13259 test with a deformation of 8% of the joint.	Safety concerning good installation	_
7	TWICE	Manual working site test - joint per joint - EASY FAST ECONOMIC	Safety concerning the joints' tightness On-site tests	
8	SOCKET LENGTH	The socket length has been increased in order to allow a better and correct pipe alignment inside the socket. The latter absorbs the length's variations coming from the thermal differences of 50°C (from -10°C to 40°C) in the outer installations	Higher tightness reliability Absorption linear thermal expansion (ex. installation through bracketing under bridges)	_
9	РР НМ	High modulus polypropylene Structured profile with high absorption of point loads	Shock resistance Lightness High abrasion resistance Higher durability	-



click here

HYDRO16

PP SN 16 kN/m²





PP CORRUGATED PIPES IN BARS, WITH HIGH RING **STIFFNESS**



Standard length

DN/OD	$d_{_{\mathrm{im}}}$	DN/ID	d _e	m
200	172	-	-	6,00
250	218	-	-	6,00
315	272	-	-	6,25
-	-	300	350	6,25
400	347	-	-	6,25
-	-	400	468	6,25
500	433	-	-	6,25
-	-	500	565	6,25
630	535	-	-	6,25
-	-	600	701	6,25
800	678	-	-	6,25
-	-	800	935	6,25
1000	852	-	-	6,25
-	_	1000	1200	6,25
1200	1030	-	-	6,25

Millimeters [mm]

Length tolerance: ±1% Lengths are provided with socket (or coupler) and gasket The socket is part of the length TRANSPORT: see page 36



Connection system AVAILABLE (see page 18)



MAIN FEATURES

- > WIDE RANGE OF DIAMETERS
- > HIGH RING STIFFNESS: SN 16
- > SMOOTH INNER WALL AND CORRUGATED **OUTER WALL**
- > SOCKET OR COUPLING CONNECTIONS WITH **GASKET**
- > LIGHTWEIGHT AND EASY TO INSTALL
- > HIGH CHEMICAL AND ABRASION RESISTANCE
- > INERT TO STRAY CURRENTS
- > RECYCLABLE













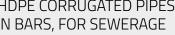




MAGNUM



HDPE CORRUGATED PIPES IN BARS, FOR SEWERAGE







DN/OD	$d_{_{\mathrm{im}}}$	DN/ID	$d_{_{\mathrm{e}}}$	m
125	105	-	-	6,00/6,25
160	137	-	-	6,00/6,25
200	172	-	-	6,00/6,25
250	218	-	-	6,25
-	-	250	284	6,25
315	272	-	-	6,25
-	-	300	350	6,25
400	347	-	-	6,25
-	-	400	468	6,25
500	433	-	-	6,25
-	-	500	565	6,25
630	535	-	-	6,25
-	-	600	701	6,25/6,75
800	678	-	-	6,25/6,75
-	-	800	935	6,25/6,75
1000	852	-	-	6,25/6,75
-	-	1000	1200	6,25/6,75
1200	1030	-	-	6,25/6,75

Millimeters [mm]

Length tolerance: ±1% Lengths are provided with socket (or coupler) and gasket The socket is part of the length

TRANSPORT: see page 36



Connection system **AVAILABLE** (see page 18)



MAIN FEATURES

- > WIDE RANGE OF DIAMETERS
- > RING STIFFNESS: SN 4-8
- > SMOOTH ON THE INSIDE AND CORRUGATED ON THE OUTSIDE
- > SOCKET OR COUPLING CONNECTIONS WITH SEALING GASKET
- > LIGHTWEIGHT AND EASY INSTALLATIO
- > HIGH CHEMICAL AND ABRASION RESISTANCE
- > INERT TO STRAY CURRENTS
- > RECYCLABLE

























Standard length

DN/OD	$d_{\rm im}$	m
200	172	6,00
250	218	6,00
315	272	6,00
400	347	6,00
500	433	6,00

Millimeters [mm]

Bar length: 6 m TRANSPORT: see page 36





The system of water flow reduction inside the network is provided with the SLOW FLOW AMR pipe and also vortexwells:

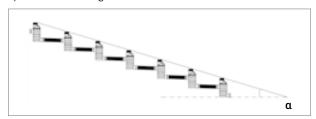
- they reduce the speed of water in the manhole
- they reduce the risk of occlusion and spit up of the exit pipe
- self cleaning of the manhole's base



MAIN FEATURES

- > RING STIFFNESS: SN 8
- > CORRUGATED OUTER WALL AND WAVY INNER SURFACE
- > ABILITY TO SLOW DOWN THE SPEED OF WATER (< 3 M/SEC) UP TO SLOPES OF 20%
- > REDUCTION OF HEIGHT AND NUMBER OF DROP MANHOLES
- > SOCKET OR COUPLING CONNECTIONS WITH SEALING GASKET
- > LIGHTWEIGHT AND EASY TO INSTALL
- > HIGH CHEMICAL AND ABRASION RESISTANCE
- > INERT TO STRAY CURRENTS
- > RECYCLABLE

A **TRADITIONAL** system with cascading manholes



SLOW FLOW AMR

system with vortex manholes





SEWER

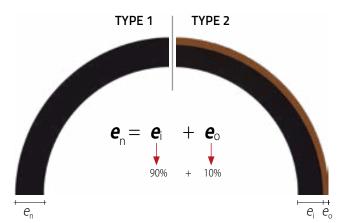
MADE BY @CENTRALTUBI

BLACK HDPE PIPES, WITH OR WITHOUT BROWN STRIPES FOR GRAVITY UNDERGROUND SEWERAGE SYSTEM





Millimeters [mm]



Visual safety of carving degree measurement of the external wall



MAIN FEATURES

- > 100% PERMANENT WATER TIGHTNESS
- > HIGH BENDING RADIUS
- > LOW MODULUS OF ELASTICITY
- > PLASTIC BEHAVIOUR IN UNSTABLE SITUATIONS
- > WIDE RANGE OF FITTINGS AND FABRICATED FITTINGS, STANDARD AND CUSTOMIZED
- > INERT TO STRAY CURRENTS
- > HIGH CHEMICAL RESISTANCE (ISO/TR 10358)
- > HIGH ABRASION RESISTANCE
- > HIGH SHOCK ABSORPTION CAPACITY
- > RECYCLABLE















MADE BY ITALIANA CORRUGATI



SYSTEM OF SEWERAGE CORRUGATED PIPES PROVIDED WITH THE CORPRESS JOINT





BRIEF DESCRIPTION

click here

Double shell mechanical joint with high sealing performances, for corrugated pipes (PE and PP).

The outer wall is made of polypropylene (PP), and the inner one, which is made of TPE, has a specific shape designed to adhere to the entire outer surface of the pipes that need to be connected.

This feature increases the hydraulic sealing performances (compared to the traditional ones) and adds an anti-slip ability, both particularly useful in specific applications and installation techniques.

The joining between the two shells that compose the joint takes place on the construction site with stainless steel screws and bolts, which need to be fitted and tightened following the specifications submitted by the producer.

PLEASE NOTE:

the corrugated shape of the TPE inner wall of CorPress joints, was designed and made following the external shapes of corrugated pipes made by System Group companies mentioned in the current product page.

Therefore, we cannot supply any tightness guarantee in case of usage on corrugated pipes manufactured by other producers.



MAIN FEATURES

- > HIGH TIGHTNESS RELIABILITY
- > EASY TO INSTALL
- > ANTI-SLIP ABILITY
- > POSSIBILITY OF USING AS REPAIR KIT
- > ELIGIBLE FOR VERTICAL WALL OR UNDER ROOF INSTALLATIONS (EX. BRIDGES AND VIADUCTS)
- > HIGH SHOCK ABSORPTION CAPACITY



STANDARDS

UNI EN 13476

CorPress FITTING

UNE EN 1053 – ISO 13254 UNE EN ISO 13254 (8 h at 2 bar)









(V)

MAIN FEATURES

- > HIGHER HYDRAULIC TIGHTNESS PERFORMANCE
- > HIGH ANTI-SLIPPING PERFORMANCE
- > AVAILABLE FOR PE AND PP CORRUGATED PIPES
- > WALL FIXING COST SAVING
- > INSTALLATION SAVING (ONLY 1 PERSON REQUIRED)









RIRIGID PVC U PIPES FOR DRAINAGE AND SEWERAGE NETWORKS





MAIN FEATURES

- > RING STIFFNESS: SN 2 4 8
- > "ICE" CERTIFICATION (IMPACT RESISTANCE TEST AT -10°C FOR INSTALLATION IN COLD CLIMATES) WITH MARKING **
- > SOCKET CONNECTIONS WITH LIP SEAL MADE OF EPDM (EN 681)
- > SOCKET CONNECTIONS WITH DINLOCK GASKET TYPE (WITH RIGID INSERT MADE OF PP)
- > COLD INSERTION (EN 681)

- > SOCKET CONNECTIONS WITH POWERLOCK GASKET TYPE (WITH RIGID INSERT MADE OF PP)
- > WARM INSERTION (EN 681)
- > GLUE SOCKET CONNECTIONS
- > WIDE RANGE OF STANDARD MOULDED FITTINGS
- > HIGH CHEMICAL AND ABRASION RESISTANCE
- > INERT TO STRAY CURRENTS

Ø est.	SDR41 SN4 thickness	SDR34 SN8 thickness	pipes per pallet n.
110	3,2	3,2	67
125	3,2	3,7	60
160	4,0	4,7	33
200	4,9	5,9	23
250	6,2	7,3	11
315	7,7	9,2	8
400	9,8	11,7	6
500	12,3	14,6	4
attit i E	1		

Millimeters [mm]



CERTIFICATIONS



BRIEF DESCRIPTION

Solid wall pipes made of polyvinyl chloride (PVC) with a smooth inner and outer surface, available in brick-red colour (RAL 8023), produced in compliance with EN 1401 standard. The diameters range (DN/OD) goes from 110 up to 500 mm. Pipes are delivered in bars of 3 or 6 m with a built-in socket for glue connection or provided with a gasket. They are used for the construction of non-pressurized waste water systems outside the buildings (application code: "U") or buried inside the building (application code: "D").





EPDM

The male-female plug-in connection consists of a tightened gasket, in accordance with the UNI EN 681-1, made of thermoplastic elastomer.



DINLOCK

The male-female plug-in connection consists of a tightened gasket combined through lip and compression, in accordance with the UNI EN 681-1, made of thermoplastic elastomer with a reinforcement element made of polypropylene in order to guarantee higher security of the gasket pre-installed in the pipe socket.



POWERLOCK

The male-female plug-in connection consists of a tightened gasket, in accordance with the UNI EN 681-1, made of flexible rubber with a reinforcement element made of polypropylene, installed during the phase of socket creation. The elements are part of the pipe in order to avoid any movement during the handling phase.

Elasticity modulusE(1mln) > 3200 MPaAverage coefficient of linear thermal expansion $\sim 0.08 mm/mK$ Thermal conductivity $\sim 0.16 WK^{-1} m^{-1}$ Surface resistance $\times >10^{12}$ Poisson ratio0.35

Creep ratio EN ISO 9967 < 2









MADE BY GENTRALTUBI

HDPE SPIRAL PIPES IN LARGE **DIAMETERS FOR:**

- DRAINAGE
- SEWERAGE
- EMBANKMENT CROSSINGS
- TANKS
- RETENTIONING SYSTEMS
- OIL AND SAND SEPARATORS





CERTIFICATIONS







MAIN FEATURES

- > WIDE RANGE OF DIAMETERS
- > SMOOTH OR PROFILED OUTER SURFACE
- > WIDE RANGE OF STRUCTURED PROFILES (MOMENT OF INERTIA - RING STIFFNESS)
- > SOCKET CONNECTIONS WITH ELECTROFUSION TECHNOLOGY (OR WITH SEALING GASKET)
- > HIGH RELIABILITY OF CONNECTIONS TIGHTNESS
- > LIGHTWEIGHT AND EASY TO INSTALL
- > HIGH CHEMICAL AND ABRASION RESISTANCE
- > INERT TO STRAY CURRENTS
- > RECYCLABLE

M



RANGE OF DIAMETERS

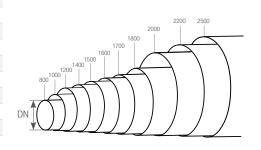
DN mm

800 1000 1200

2000 2200 2500

MAIN PROFILES

All sizes (DN/ID) can be used for both drainage, storage, purification and inspection manhole systems



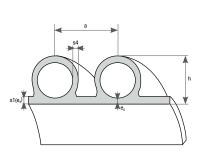
INSPECTION SYSTEMS



normal inspection grafted onto external corrugated profile *pipe*

normal inspection grafted onto external *smooth*

profile pipe



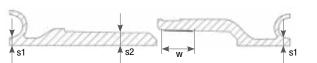




offset



ELECTROFUSION JOINTS



EF ≈ 70 mm

Electrofusion socket joint system: reliable / 100% watertight / easy and fast

TANKS - RETENTIONING SYSTEMS - OIL AND SAND SEPARATORS



big traditional manhole

out-of-gauge tangential inspection









JUNCTION KIT (sleeve and gaskets) Not included



Inspection (welded on fitting)

D110 D90 D50



MAIN FEATURES

- > WIDE RANGE OF DIAMETERS AND SHAPES
- > CUSTOMIZED SHAPES
- > RING STIFFNESS: PE SN4/8 PP SN16
- > SMOOTH ON THE INSIDE AND CORRUGATED ON THE OUTSIDE
- > COUPLER CONNECTIONS WITH GASKETS
- > LIGHTWEIGHT AND QUICK TO INSTALL
- > HIGH CHEMICAL AND ABRASION RESISTANCE
- > INERT TO STRAY CURRENTS
- > RECYCLABLE

FORMED FITTINGS M/M

Connection kit (coupler + gaskets) not included

DN/OD	DN/ID
125	-
160	-
200	-
250	-
-	250
315	-
-	300
400	-
-	400
500	-
-	500
630	-
-	600
800	-
-	800
1000	-
-	1000
1200	-





45° ELBOW



60° ELBOW



90° ELBOW



TEE 90°



TEE 45°



TEE 90° **REDUCED**



TEE 45° **REDUCED**





DN/ID
-
-
-
-
250
-
300
-
400
-
500
-

CROSS



SIPHON DN 110 INSPECTION



LINEAR **INSPECTION 110**



TEE 90° WITH **FLANGING**





DN/OD	DN/ID
125	-
160	-
200	-
250	-
-	250
315	-
-	300
400	-
-	400
500	-
-	500
630	-

800

1000

1200

600

800

1000

ECCENTRIC INCREASE M/M



ECCENTRIC INCREASE F/F



M CAP



F CAP





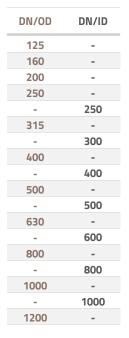










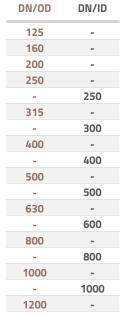






SLEEVE





MAIN FEATURES

- > WIDE RANGE OF SHAPES AND DIAMETERS
- > RELIABILITY
- > INERT TO STRAY CURRENTS
- > HIGH CHEMICAL RESISTANCE (ISO/TR 10358)
- > HIGH SHOCK ABSORPTION CAPACITY
- > RECYCLABLE





REDUCING M/F



TEE 90°



45° ELBOW



90° ELBOW









MAIN FEATURES

- > TRIPLE WALL PROFILE
- > HIGH TOLERANCE OF POINT LOADINGS
- > HIGH RING STIFFNESS
- > BETTER COMPACTION OF THE SURROUNDING SOIL
- > JOINT SYSTEM (SOCKET OR SLEEVE) WITH DOUBLE GASKET
- > GASKETS EQUIPPED WITH ANTI-SLIP DEVICE
- > CUSTOMIZATION AVAILABLE ON REQUEST
- > LIGHTWEIGHT AND EASY TO INSTALL
- > HIGH CHEMICAL RESISTANCE
- > INERT TO STRAY CURRENTS
- > RECYCLABLE

CONNECTION KIT (SLEEVE + GASKETS) NOT INCLUDED

DN/OD	
125	
160	
200	
250	



30° ELBOW





45° ELBOW





60° ELBOW



90° ELBOW





FORMED F



FF FORMED



ECCENTRIC INCREASE

CONNECTION SYSTEMS STANDARD CONNECTION KIT

for connection of TECH3 elements without socket

DM/OD	DIN/ID
125 x 125	250 x 250
160 x 160	300 x 300
200 x 200	400x 400
250 x 250	



DN/ID
250
300
400















BRIEF DESCRIPTION

Injection moulded PVC fittings for smooth PVC pipe networks operating without pressure, complying with the EN 1401 standard. They are equipped with socket and spigot in the opposite ends. Every socket is equipped with a sealing gasket.



MAIN FEATURES

- > WIDE RANGE OF SHAPES AND DIAMETERS
- > RELIABILITY
- > INERT TO STRAY CURRENTS
- > HIGH CHEMICAL RESISTANCE (ISO/TR 10358)
- > RECYCLABLE

15° ELBOW WITH O-RING



Ø mm
110
125
160
200
250
315
400
500

30° ELBOW WITH O-RING



Ø mm
110
125
160
200
250
315
400
500

45° ELBOW WITH O-RING



Ø mm
110
125
160
200
250
315
400
500

67° ELBOW WITH O-RING



Ø mm
110
125
160
200

87° ELBOW WITH O-RING



Ø mm
110
125
160
200
250
315
400
500

45° BRANCH WITH O-RING



Ø mm	
110	
125	
160	
200	
250	
315	
400	
500	

87° BRANCH WITH O-RING



Ø mm	
110	
125	
160	
200	
250	
315	
400	
500	

45° REDUCING TEE WITH **O-RING**



Ø mm
125/110
160/110
160/125
200/110
200/125
200/160
250/110
250/125
250/160
250/200
315/110
315/125
315/160

87° REDUCING TEE WITH **O-RING**



Ø mm
125/110
160/110
160/125
200/110
200/125
200/160
250/110
250/125
250/160
250/200
315/110
315/125
315/160

DOUBLE SOCKET COUPLING WITHOUT **CENTRE STOP**



Ø mm	
110	
125	
160	
200	
250	
315	
400	
500	

MALE SCREW CAP



Ø mm	
110	
125	
160	
200	
250	
315	

45° DOUBLE TEE WITH **O-RING**



Ø mm	
110	
125	
160	

MALE END CAP



Ø	mm
1	110
1	125
1	160
- 2	200
	250
3	315
	+00

INSPECTION PIPE WITH **O-RING AND** CAP



Ø mm	
110	
125	
160	
200	
250	
315	
400	
500	

CHECK VALVE WITH O-RING C/1 AND **SINGLE**



Øm	ım
11	0
12	5
16	0
20	0
25	0
31	5

90° **MECHANICAL** CLIP (SADDLE) WITH O-RING



Ø mm
110/125
110/160
125/160
125/200
160/200
200/250
250/315
315/400

ECCENTRIC ENLARGER COUPLING WITH O-RING



Ø mm
110/125
110/160
125/160
125/200
160/200
200/250
250/315
315/400

45° SADDLE COUPLING WITH O-RING



Ø mm
160/125
200/125
200/160
250/125
250/160
315/160
315/200
400/160
400/200
500/125
500/160

MALE **END CAP**



Ø mm	
110	
125	
160	
200	

TYPE SYPHON WITH O-RING



Ø mm
110
125
160
200
250
315

TYPE SYPHON WITH O-RING WITH TWO CAPS



Ø mm	
110	
125	
160	
200	
250	
315	

GASKETS



 $\mathsf{DINLOCK}_{\mathsf{TM}}$ STANDARD

Ø mm
110
125
160
200
250
315
400
500





BRIEF DESCRIPTION

Special fittings for connections through CorPress joint, to solve various problems of connection between corrugated and/or smooth pipes and special pieces.



MAIN FEATURES

> ABILITY TO THE SYSTEM WITH SMOOTH PIPES ALSO

D	N
16	50
20	00
25	50
31	15
40	00
50	00

FOR FLANGED CONNECTION

PE STUB END



PE STUB END WITH (OR WITHOUT) STEEL FLANGE



TRANSITION MODULE FOR SMOOTH PIPES



END CAP



For corrugated pipes DN/OD series

Please note that the connection system CorPress is recommended for corrugated pipes made by ITALIANA CORRUGATI S.p.A. AND FUTURA SYSTEMS SL.

The usage of CorPress on other pipes does not guarantee the performances declared on this document

SYSTEM GROUP ALSO PROVIDES PRODUCTS (PIPES, FITTINGS AND FABRICATED FITTINGS) FOR

PRESSURE SEWER SYSTEMS





HDPE PIPES EN 12201 **UNI EN ISO 15494** (PE100 - PE100 RC)













MODULAR COMPOSITION





MAIN FEATURES

- > COMPLIANCE WITH (UNI) EN 13598-1-2 STANDARDS
- > DESIGN VERSATILITY HIGH NUMBER OF POSSIBLE TECHNICAL AND DESIGN SOLUTIONS
- > FREE BIM LIBRARY AND TECHNICAL SUPPORT AVAILABLE
- > FLEXIBILITY OPTIMAL PLASTIC BEHAVIOUR IN SEISMIC AND UNSTABLE AREAS
- > CHEMICAL, ELECTRICAL, BIOLOGICAL RESISTANCE DURABILITY, EVEN AGAINST AGGRESSIVE LIQUIDS
- > RESISTANCE OF THE SYSTEM TO VERTICAL LOADS (RIGID DISTRIBUTION PLATE RELIEVES LOAD STRAIN ON THE MANHOLE)

- > SYSTEM UNIFORMITY (THE SAME BEHAVIOUR AND DURABILITY OF CONNECTED PLASTIC PIPES)
- > RELIABILITY OF SEAL SAME TYPE OF JOINT USED (BETWEEN THE PIPES AND THE MANHOLE)
- > LIGHTNESS EASE AND SPEED OF INSTALLATION
- > COSTS REDUCTION OF SAFETY AND HEALTH IN THE WORKING SITE
- > SAVINGS ON INSTALLATION AND SAFETY COSTS, INCREASING DURABILITY AND EFFICIENCY SYSTEM
- > RECYCLABILITY

APPLICATION





INTERSECTION MANHOLE







VORTEX MANHOLE



CASCADE MANHOLE





MADE WITH COMPACT PROFILE PIPE BODY





CHARACTERISTICS AND APPLICATIONS

- > HIGH DESIGN FLEXIBILITY
- > THICKNESSES CAN BE DIMENSIONED ACCORDING TO TECHNICAL NEEDS
- > SUITABLE FOR INSTALLATION WITH **AQUIFER LEVELS**
- > HIGH RESISTANCE TO POINT LOAD
- > BASE WITH DOUBLE BOTTOM WELDED **AVAILABLE**
- > WIDE DIAMETERS RANGE (up to ID 2500 mm)
- > SUITABLE FOR GREATER DEPTH INSTALLATION

MADE WITH STRUCTURED CORRUGATED PIPE BODY





CHARACTERISTICS AND APPLICATIONS

- > SUITABLE FOR NORMAL SITUATIONS
- > LIGHTWEIGHT AND EASE OF TRANSPORTATION (MANUAL TOO) AND INSTALLATION
- > PREFERRED IN LAYING SITUATIONS WITH **CONFINED SPACE**
- > AQUIFER ABSENT OR 2 m MAXIMUM
- > (UNI) EN 13598-1-2 AND PRODUCT **QUALITY MARK**
- > CORRUGATED PIPE WITH HIGH RING STIFNESS

MADE WITH STRUCTURED SPIRAL PIPE BODY





CHARACTERISTICS AND APPLICATIONS

- > HIGH DESIGN FLEXIBILITY
- > STRUCTURED PROFILES (SMOOTH OR NOT OUTSIDE)
- > SUITABLE FOR AQUIFER INSTALLATION
- > HIGH RESISTANCE TO LOAD POINTS
- > POSSIBILITY TO CONNECT THE BODY'S ELEMENTS THROUGH THE ELECTRO-FUSION TECHNOLOGY ELEMENTS USING THE MALE AND FEMALE **SYSTEM**
- > DIAMETERS RANGE FROM DN-ID 800 (up to 2500 mm)























CERTIFICATIONS

DVS 2212-2

Manual weldings by personnel certified according to (UNI) EN 13067 - class 3



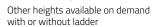
MAIN FEATURES

- > EASE OF INSTALLATION
- > CUSTOMIZED SOLUTIONS
- > COST-EFFECTIVE
- > FLEXIBILITY

ROCK MANHOLE

INLET-OUTLET

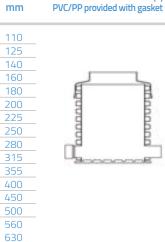
DE/OD mm	H manhole
	1200
1000	2200
	3200
	1200
1200	2200
	3200
	044 4-1-4 1-4 4 4

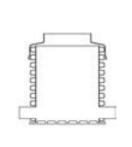


Welded socket for PE smooth pipe/

OD

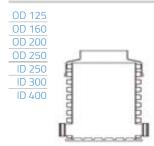
OD mm	Welded socket for corrugated pipe provided with gasket
125	
160	
200	
250	
284	A A
315	9 6
350	g E
400	8 B
468	d b
500	Socooooo
565	
575	_
630	_
701	
800	





PE stub pipe SDR 17 for PE

smooth pipe/PVC/PP

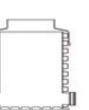


DN

mm















BRIEF DESCRIPTION

Channels for road surface drainage made of PP (polypropylene), provided with heel guard grids made of various materials, suitable for all loading classes from A15 (pedestrians) up to F900 (airports).

Channels are provided with:

inline connection system of interlocking channels, available with a lateral inclination up to 2° predisposition to orthogonal connection system between channels predisposition to exit pipes connection, both sideways and on the floor.



MAIN FEATURES

- > LIGHTWEIGHT
- > EASY AND QUICK TO INSTALL
- > HIGH CHEMICAL RESISTANCE
- > HIGH ABRASION RESISTANCE
- > HIGH THERMAL SHOCK RESISTANCE
- > LOW ROUGHNESS (EXCELLENT HYDRAULIC BEHAVIOUR)
- > EXCELLENT MECHANICAL RESISTANCE
- > WIDE RANGE OF LOADING CLASSES





LxH	L1 x H1
100 x 50	150 x 100
100 x 100	150 x 150
100 x 150	150 x 200
150 x 100	200 x 150
150 x 150	200 x 200
200 x 50	250 x 100
200 x 100	250 x 150
200 x 150	250 x 200
200 x 200	250 x 250
200 x 250	250 x 300
200 x 300	250 x 350
300 x 200	390 x 260
300 x 300	390 x 360
500 x 500	590 x 560

Millimeters [mm]

CLASSES

CLASS	RESIS	STANCE	USE
A15	15 kN	1500 kg	Pedestrian, precincts, cycle-lanes, parks
P B125	125 kN	12500 kg	Sidewalks, lay by, multilevel car parks
C250	250 kN	25000 kg	Strip that extends from 50 cm of the carriageway to 20cm on the sidewalk
D400	400 kN	40000 kg	Carriageway of roads and highways
E600	600 kN	60000 kg	Industrial and harbour sites used for heavy loading
F900	900 kN	90000 kg	Airports, army bases, heavy loading areas

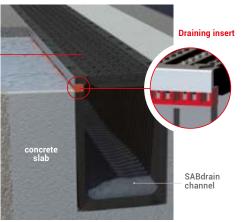
















STANDARD TRANSPORT

TRUCK

Vehicles with load platform length = 13,6 m

		PE S	МООТН Р	IPES	PVC SMOOTH PIPES					
Ø	pipe length	truck	PAI	LET deta	ils	pipe length	truck	PA	LLET deta	ils
m	m	m	n./truck	bars n.	m	m	m	n./truck	bars n.	m
90										
110						6	5.472	12	76	456
125						6	4.320	12	60	360
160	12	2.400	10	20	240	6	2.808	12	39	234
200	12	1.488	8	31	372	6	1.680	12	45	270
250	12	900	8	31	372	6	1.056	12	28	168
315	12	576	8	12	144	6	648	12	9	54
355	12	576	loose	48	576					
400	12	420	loose	35	420	6	432	12	6	36
500	12	288	loose	24	288	6	240	12	6	36
630	12	180	loose	15	180					
800	12	108	loose	9	108					
1000	12	60	loose	5	60					

Pipe bars can be tailor-made in any transportable length

		PE-PP CORRUGATED PIPES					PP TRIPLE WALL PIPES				
Ø)	pipe length	truck	PAI	LET deta	iils	pipe length	truck	PAI	LET deta	iils
OD	ID	m	m	n./truck	bars n.	m	m	m	n./truck	bars n.	m
90		6		8							
110		6	5.952	8	124	744					
125		6	4.512	8	94	564	6	8.640	16	1.440	8.640
160		6	2.832	8	59	354	6	5.184	16	864	5.184
200		6	1.680	8	35	210	6	3.072	16	512	3.072
250		6	960	8	20	120	6	1.296	12	216	1.296
	250	6,25	900	8	18	112,5	6				
	300	6,25	500	8	10	62,5	6				
315		6,25	600	8	12	75					
400		6,25	400	8	8	50					
	400	6,25	300	8	6	37,5					
500		6,25	250	8	5	31,25					
	500	6,25	250	loose	40	250					
	600	6,75	150	loose	24	150					
630		6,25	200	loose	32	200					
	800	6,75	75	loose	12	75					
800		6,75	112,5	loose	18	112,5					
1000		6,75	62,5	loose	10	62,5					
1200		6,75	54	loose	8	54					

	PE SPIRAL PIPES						
DN/OD	Pipes		truck				
m	length [m]	n.	m				
800	6	12	72				
1000	6	8	48				
1200	6	6	36				
1400	6	2/4	12/24				
1500	6	2	12				
1600	6	2	12				
1700	6	2	12				
1800	6	2	12				
2000	6	2	12				
2200*	6	2	12				
2500*	6	2	12				

^{*} exceptional transports

DD TDIDLE WALL DIDEC

STANDARD TRANSPORT

CONTAINER

40' HC with load platform length = 12 m

	PE S	моотн	PIPES	PVC SMOOTH PIPES			
Ø	m/bar	bars n.	m	m/bar	bars n.	m	
110	11,8	540	6.372	5,75	912	5.244	
125	11,8	410	4.838	5,75	750	4.312,5	
140	11,8	320	3.776	5,75	600	3.450	
160	11,8	238	2.808,4	5,75	473	2.719,75	
180	11,8	182	2.147,6	5,75	312	1.794	
200	11,8	154	1.817,2	5,75	294	1.690,5	
225	11,8	120	1.416	5,75	228	1.311	
250	11,8	99	1.168,2	5,75	188	1.081	
280	11,8	80	944	5,75	120	690	
315	11,8	63	743,4	5,75	118	678,5	
355	11,8	48	566,4	5,75	76	437	
400	11,8	35	413	5,75	60	345	
450	11,8	29	342,2	5,75	52	299	
500	11,8	24	283,2	5,75	48	276	
560	11,8	18	212,4				
630	11,8	15	177	5,75	24	138	
710	11,8	11	129,8	*			
800	11,8	9	106,2	*			
900	11,8	6	70,8	*			
1000	11,8	5	59				

Ø		PE-PP C	ORRUGAT	ED PIPES	PP TR	RIPLE WALL	PIPES
OD	ID	m/bar	bars n.	m	m/bar	bars n.	m
90		5,9	1.508	8.897,2	6	200	1200
110		5,9	1.002	5.911,8	6	200	1200
125		5,9	756	4.460,4			
160		5,9	412	2.430,8			
200		5,9	256	1.510,4			
	250	5,75	144	828			
250		5,9	174	1.026,6			
	300	5,75	84	483			
315		5,9	112	660,8			
400		5,9	68	401,2			
	400	5.9	40				
500		5,75	46	264,5			
	500	5,75	32	184			
	600	5,75	24	138			
630		5,75	30	172,5			
800		5,75	16	92			
	800	5,75	10	57,5			
1000		5,75	10	57,5			
1200		5,75	6	34,5			

DN ID	PE SPIRAL PIPES		
	m/bar	bars n.	m
800	5,8	10	58
1000	5,8	6-8	34,8-46,4
1200	5,8	4	23,2
1400	5,8	2	11,6
1500	5,8	2	11,6
1600	5,8	2	11,6
1700	5,8	2	11,6
1800	5,8	2	11,6
2000	5,8	2	11,6
2200	5,8	2	11,6



TRUCK:

vehicle with load platform length = 13,6 m

CONTAINER:

40' HC with load platform length = 12 m

Other loading solutions are available on request, in standard or exceptional dimensions too.

The picture shows a truck with 20 m HDPE smooth pipe lengths.

UNILINE is the SYSTEM GROUP logistic Company, operating and certified according to UNI ISO 28000

^{*} on request







SYSTEM GROUP OFFERS ITS CLIENTS THE FOLLOWING SERVICES AS PART OF ITS RELATIONSHIP:

- Technical portal for different calculations, manuals and direct contact with our Engineering and R&D Department, easily accessible from the website too
- Technical support during the design phase
- BIM libraries, in Revit and IFC format for open software
- Working site welding services
- Welding machine renting
- Video inspection services
- and more







AL MAFRAQ (JORDAN 2016): WWTP UPGRADE

MAGNUM PE CORRUGATED PIPES WITH BIG PE MANHOLES MADE FROM SPIRAL PIPES



STOCKHOLM (SWEDEN 2019): PRESSURE SEWERAGE SYSTEM FOR SUBMARINE CHANNEL CROSSING IN THE CITY

PE100 SMOOTH SOLID WALL PIPES Ø 1000 mm PN16



GENOA (ITALY 2020): SAN GIORGIO NEW BRIDGE RECONSTRUCTION

PE SGK *SPIRAL* PIPES SYSTEM (PIPES + INTEGRATED MANHOLES) DN 2000 – 2500 mm



BOLOGNA (ITALY 2019): NEW BRIDGE DRAINAGE SYSTEM

TECH3 PP TRIPLE WALL PIPES DN 300 mm SN16







KONZA (KENYA 2019): 1° AFRICAN SMART CITY CONSTRUCTION

PE SGK SPIRAL AND MAGNUM CORRUGATED PIPES



REALIZATION OF DRAINAGE SYSTEM WITH TAILOR-MADE CASCADE MANHOLES

PE DOUBLE WALL **MAGNUM** CORRUGATED PIPES JOINED WITH **CORPRESS** JUNCTION SYSTEM



SVITTO CANTON (SWITZERLAND 2019): MOUNTAIN HARVESTING WATER SYSTEM

 ${f SGK}$ ${\it TANK}$ PROGRAM, MADE BY 36 m LENGTH OF DN 2000 mm SN4 PE SPIRAL PIPES



JERASH (JORDAN 2016): RAINWATER DRAINAGE CHANNELS REPLACEMENT IN SERVICE STATIONS

SABDRAIN DRAINAGE CHANNELS 200X200 mm WITH STEEL EDGES AND D400 CAST IRON GRIDS



FLORENSAC (FRANCE 2009): DAMAGED CONCRETE CHANNEL REHABILITATION WITH PIPE INSERTION

SGK PE SPIRAL PIPES DN 1200 mm SN8 WITH INTEGRATED ELECTROFUSION SOCKET



RICCIONE (ITALY 2012): NO-FIRE SYSTEM FOR ENVIRONMENTAL PROTECTION AND ANTI-SPREAD OF FIRE IN THE COLLECTOR OF THE ROAD TUNNEL

HYDRO16 PP DOUBLE WALL CORRUGATED PIPES \emptyset 400 mm SN16 (WITH NO-FIRE TRAP GULLY)





MÉRIDA – BADAJOZ (SPAIN 2021): DRAINAGE SYSTEM CONSTRUCTION FOR AMAZON STORAGE BUILDING

N. 160 **ROCK** PE MANHOLES



CROATIA 2006: STORM WATERS DRAINAGE SYSTEM CONSTRUCTION FOR A NEW MOTORWAY

FUTURA PE MANHOLES MADE BY MOLDED MODULAR ELEMENTS



NERUNGRI (RUSSIA 2021): AIRPORT DRAINAGE SYSTEM **CONSTRUCTION**

MAGNUM PE DOUBLE WALL CORRUGATED PIPES, DOUBLE PIPES SYSTEM WITH THERMAL MIDDLE **INSULATION LAYER**



TAILOR MADE SPECIAL PIECES REALIZATIONS



OTHER PRODUCTS FROM SYSTEM GROUP





PRESSURE SYSTEMS





GRAVITY SYSTEMS





RAINWATER HARVESTING





TELECOM, ENERGY AND MCV





IRRIGATION





MARINE, AQUACULTURE AND DREDGING





BIOGAS AND LANDFILL





SERVICES





TECHNICAL MANUALS



PVC PIPE

SPIRAL PIP

FITTINGS

MANHOLES

DRAINAGE THANNELS

ACKAGING AN TRANSPORT

> ECHINICA SUPPOR

Software design tools and technical documentation available on **www.tubi.net**



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