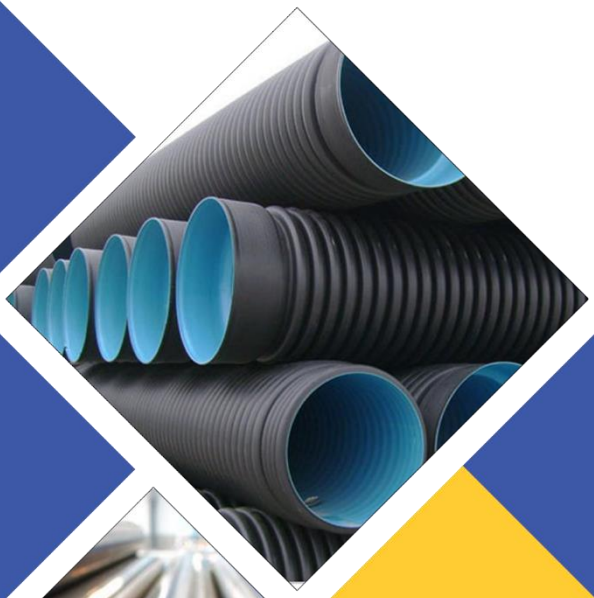
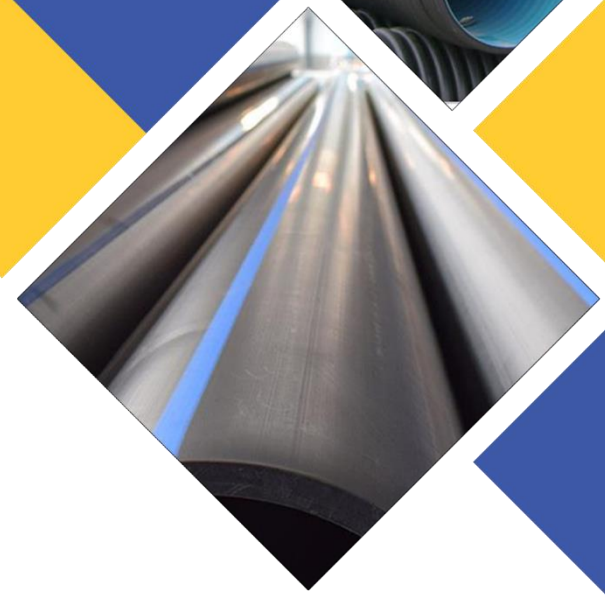
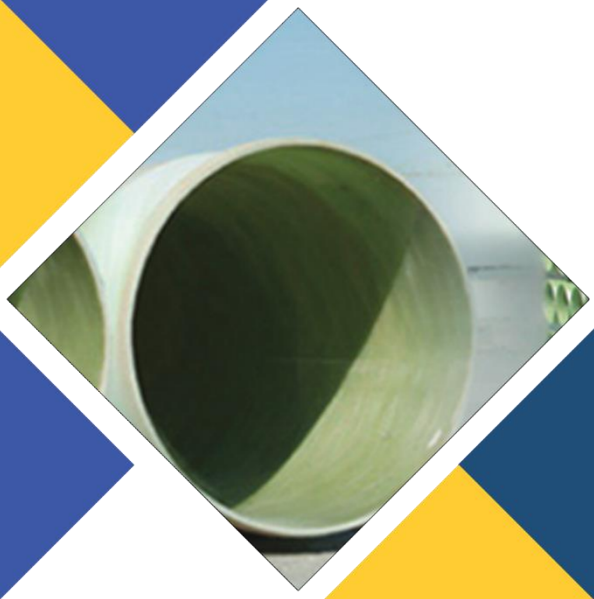
SAHARA EMIRATES GROUP

ENGINEERING, PROCUREMENT & CONTRACTING

20 YEARS OF TECHNICAL BRILLIANCE







sahara emirates | sahara saudi | sahara americas | sahara oman | PLAST MIDDLE EAST

PIPING SYSTEMS

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ABOUT US

Sahara Emirates Group was established in the year 2000 under the collective vision of exemplary professionals from the construction industry. The immense experience of these professionals and their expertise in the Engineering and Construction fields was the beginning of a new chapter that would cater to the ever growing needs of infrastructure in the Middle East region.

Our selection of pipes and fittings range from 20 mm up to 2000 mm.

OUR PREQUALIFICATIONS

Sahara Emirates Group has successfully completed numerous large-scale ventures for many prestigious clients in different sectors including major projects such as:

- Doha Metro
- New Doha International Airport
- Doha Port
- Lusail Stadium
- Raslaffan GTL Projects
- Various projects for Ashgal
- Dukhan Express Highway
- QP Qatar
- QDB Qatar
- Kahrama
- Banyan Resort
- Abu Dhabi Airport extension
- Water Supply to Falcon Housing
- Al Gurm Resort Development
- Safran Forest Belt
- Innovation Center Borouge
- Old Ruwais Housing Complex
- Khalifa Port & Industrial Zone
- Qatar Foundation Golf Course
- Building at Business Bay (Dubai)
- Banana Island, Qatar
- N.D.I.A. (Qatar)
- FEWA – Oman Road - RAK
- Gulf Course City (Dubai)
- Shaikh Mohd. Bin Zayed Farm (Liwa)
- Al Maqam (Al Ain)
- Golf Gardens Residential Community
- Safran Forest Belt
- Farm at Al Maqam, Al Ain Region
- SH. Mohammed Bin Zayed Farm, Liwa
- New Garden in Shaahia Al Jadida
- Al Raha Garden (Abu Dhabi)
- Yas Island (Abu Dhabi)
- H.H. Sheikh Saif Bin Zayed Palace, Al Ain
- Al Falah Community B & C
- Roads & Infra for Baniyas S. Club
- Ras Al Khaima Ring Road
- ICAD 2&3 (Abu Dhabi)
- Irrigation Line from Mafraq WWTP to Al Khatem Bridge
- Garden Construction at Al Nahyan Base
- Saadiyat Beach Public Realm Streetscape Landscape Works
- Al Rawafed Private School
- Extension Services of Naval Base
- Supply & Installation of Water Distribution Networks for New Development Areas in Al Ain Region
- Jumerah Golf Estate
- Hudariyat Bateen Beach Park
- District Cooling Scheme - Meleiha Camp, Sharjah
- Project K-Race Tracks at Yas Island
- Building at Palm Jumerah (Dubai)
- F1 Yas Island
- Improvement of Water Pipeline Network in Mussafah Eastern Region
- Qasr Al Sarab-Hamim Resort, Abu Dhabi
- Al Meena Palace Royal Chalet
- Sea water intake lines for Palm Jumerah
- Royal Amwaj Resort
- Al Raha Beach Development (Abu Dhabi)
- Al Dhafra Contract & Road
- Gharebashamal, Al Shuaiba
- Al Ghadeer development
- Dhabi Al Reem Island,
- Shams Al Reem Island (Abu Dhabi)
- Building Plumbing Storm water, Sewer & Drinking Water - BourugeIII Site
- HDPE Fittings ACC. Oily (Ayline) & Drinking Water - Borouge
- HDPE Welding Works - Borouge III Site
- Hazza Palace
- Al Saadiyat Island Express Way (Abu Dhabi)
- EPC works for Water Supply System for Fujairah Distribution Network - TRANSCO
- Water Supply Works –Al SOWA Island
- Development Of South Shamkah
- Al Ajban Farm/Royal Advance
- Golden Tower Projects - Jeddah
- Al Zorah Golf Course, Ajman
- Yas Island Development, Zone K
- Jebel Ali Power Station Project

PIPING SYSTEMS

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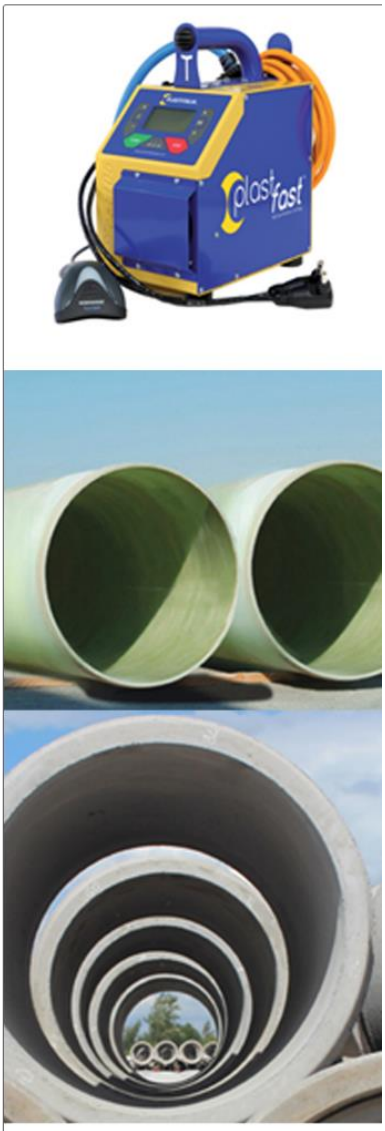


CONTRACTING AND INSTALLATION SERVICES

We are an approved supplier and contractor for many competent authorities within Qatar and the Middle East region. We focus on all scales of projects with specialists for each section: from intimate residential gardens through to large five-star hotel resorts. Our portfolio includes many of the regions' renowned golf courses, iconic landmark hotels & resorts, government projects and public works, together with a considerable number of the Middle East's more prestigious residential communities.

Sahara Middle East Group of Companies believes in combining the best of people, products and technology to provide customized solutions and services to its customers.

From storm water drainage piping systems to water plant renovations and irrigation works, we can handle every aspect of pipes supply, installation and maintenance, drawing upon our deep experience to serve a wide range of customers, from resorts, hotels and retail centers, to estates and private residences. Our goal is to ensure that the value of your landscape investment appreciates through proper care and sustainable enhancements.

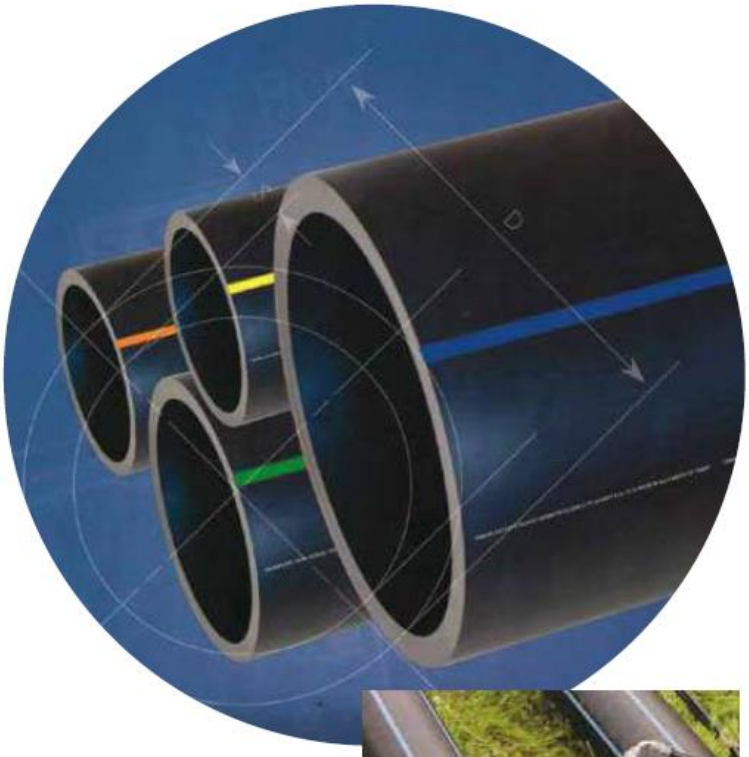
Sahara Middle East Group of Companies develops a unique program for each individual property, taking into account local and seasonal factors and the context of the client's business needs and budget.

- Design and Installation Services
- Conceptual design
- Review existing designs and plans
- Provide energy efficient hydraulic designs, calculations, and schematics
- Consult on water sanitization options
- Specify support equipment (based upon reoccurring maintenance expenses, ROI's & efficiencies)
- Controls, automation & systems integration
- Provide construction & bidding documents (to include all/part):
- Project layout
- Cross sections
- Equipment machine/room layout (to scale
- Equipment room support facilities (electrical, ventilation, drainage, etc.)
- Plumbing schematics
- Lighting schematics (vessel, area, or landscape)
- Shop drawings
- Installation practices & methodologies
- Material Specifications
- Workmanship Standards

HDPE PIPES

The success of polyethylene as a piping material over a decade of use has led to its recognition in a wide spectrum of piping applications where a tough, durable material is required to assure long-term performance.

Polyethylene pipes provide a cost-effective solution for a wide range of piping applications including pressure-rated, above-ground, buried, trench-less, floating and submarine installations, pipe linings, etc. One of the major factors that contribute to the growth of polyethylene as a piping material is the cost savings in installation, labor and equipment coupled with lower maintenance cost and increased service life as compared to traditional piping materials.



Property	Test Method	Units	PE 80	PE 100
Density (Compound)	ISO 1183	Kg/m^3	956	959
Melt Flow Rate (190˚C/5kg)	ISO 1133	g/10 min	0.3	0.25
Tensile Stress at Yield (50mm/min)	ISO 527-2	MPa	22	25
Elongation at Break	ISO 527-2	%	> 600	> 600
Charpy Impact Strength, notched	ISO179/1eA	kj/m^2	14	16
Carbon Black Content	ASTM D 1603	%	2-2.5	2 -2.5
Vicat Softening Point	ASTM D 1525	˚C	118	122
Brittleness Temperature	ASTM D 746	˚C	< -70	< -70
ESCR (10% Igepal), F50	ASTM D 1693A	Hrs.	> 10.000	> 10.000
Thermal Conductivity	DIN 52612	W/m˚K	0.4	0.4
Linear Thermal Expansion	ASTM D 696	mm/mm/k	$1.5x10^{-4}$	$1.5x10^{-4}$

DIMENSIONS OF HDPE PIPES (ISO 4427-2)

SDR	6	7.4	9	11	13.6	17	21	26	33	41
Pipe Series (S)	2.5	3.2	4	5	6.3	8	10	12.5	16	20
Nominal Pressure (P N)[a] (bar)										
PE 80	PN 25	PN 20	PN 16	PN 12.5	PN 10	PN 8	PN 6[c]	PN 5	PN 4	PN 3.2
PE 100	-	PN 25	PN 20	PN 16	PN 12.5	PN 10	PN 8	PN 6[c]	PN 5	PN 4
Nominal size / OD (mm)	Wall Thickness [e]min (mm)									
20	3.4	3.0	2.3[b]	2.0	-	-	-	-	-	-
25	4.2	3.5	3.0	2.3[b]	2.0[b]	-	-	-	-	-
32	5.4	4.4	3.6	3.0	2.4	2.0	-	-	-	-
40	6.7	5.5	4.5	3.7	3.0	2.4	2.0	-	-	-
50	8.3	6.9	5.6	4.6	3.7	3.0	2.4	2.0	-	-
63	10.5	8.6	7.1	5.8	4.7	3.8	3.0	2.5	-	-
75	12.5	10.3	8.4	6.8	5.6	4.5	3.6	2.9	-	-
90	15.0	12.3	10.1	8.2	6.7	5.4	4.3	3.5	-	-
110	18.3	15.1	12.3	10.0	8.1	6.6	5.3	4.2	-	-
125	20.8	17.1	14.0	11.4	9.2	7.4	6.0	4.8	-	-
140	23.3	19.2	15.7	12.7	10.3	8.3	6.7	5.4	-	-
160	26.6	21.9	17.9	14.6	11.8	9.5	7.7	6.2	-	-
180	29.9	24.6	20.1	16.4	13.3	10.7	8.6	6.9	-	-
200	33.2	27.4	22.4	18.2	14.7	11.9	9.6	7.7	-	-
225	37.4	30.8	25.2	20.5	16.6	13.4	10.8	8.6	-	-
250	41.5	34.2	27.9	22.7	18.4	14.8	11.9	9.6	-	-
280	46.5	38.3	31.3	25.4	20.6	16.6	13.4	10.7	-	-
315	52.3	43.1	35.2	28.6	23.2	18.7	15.0	12.1	9.7	7.7
355	59.0	48.5	39.7	32.2	26.1	21.1	16.9	13.6	10.9	8.7
400	-	54.7	44.7	36.4	29.4	23.7	19.1	15.3	12.3	9.8
450	-	61.5	50.3	40.9	33.1	26.7	21.5	17.2	13.8	11.0
500	-	-	55.8	45.4	36.8	29.7	23.9	19.1	15.3	12.3
560	-	-	62.5	50.8	41.2	33.2	26.7	21.4	17.2	13.7
630	-	-	70.3	57.2	46.3	37.4	30.0	24.1	19.3	15.4
710	-	-	79.3	64.5	52.2	42.1	33.9	27.2	21.8	17.4
800	-	-	89.3	72.6	58.8	47.4	38.1	30.6	24.5	19.6
900	-	-	-	81.7	66.2	53.3	42.9	34.4	27.6	22.0
1000	-	-	-	90.2	72.5	59.3	47.7	38.2	30.6	24.5
1200	-	-	-	-	88.2	70.6	57.2	45.9	36.7	29.4
1400	-	-	-	-	102.9	82.4	66.7	53.5	42.9	34.3
1600	-	-	-	-	117.6	94.1	76.2	61.2	49.0	39.2
1800	-	-	-	-	-	105.9	85.17	69.1	54.5	43.8
2000	-	-	-	-	-	117.6	95.2	76.9	60.6	48.8

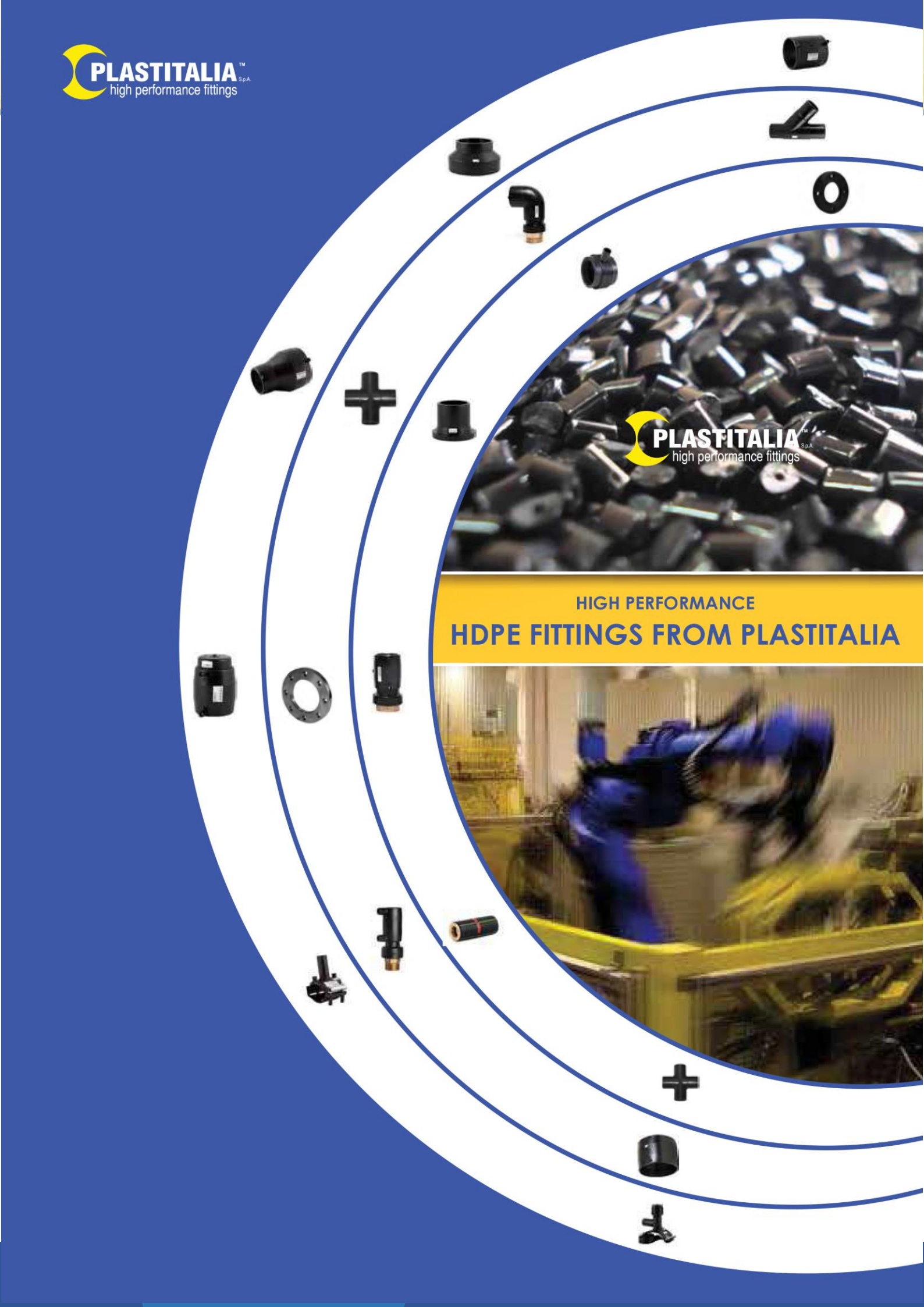
Note : Pipe sizes above 1200mm can be manufactured as per customer requirements

[a] = PN values are based on C = 1.25

[b] = The calculated value of [e]min according to ISO 4065 is rounded up to the nearest value of either 2.0, 2.3 or 3.0. This is to satisfy certain national requirements. For practical reasons, a wall thickness of 3.0mm is recommended for electrofusion joining and lining applications

[c] = Actual calculated values are 6.4 bar for PE 100 and 6.3 bar for PE 80

PLASTITALIA™ S.p.A.
high performance fittings



HIGH PERFORMANCE

HDPE FITTINGS FROM PLASTITALIA

PLASTITALIA™ S.p.A. high performance fittings

HDPE INJECTION MOULDED FITTINGS

Tee 90° Long Spigot
25mm to 630mm injection moulded

Reduced Tee 90° Long Spigot
20mm to 630mm injection moulded

Reducer Short Spigot
250mm to 2000mm injection moulded

Cross Long Spigot
63mm to 355mm injection moulded

Branch Saddle
90mm to 315mm injection moulded

Tee 45° Long Spigot
63mm to 160mm injection moulded

Y Long Spigot
32mm to 50mm injection moulded

Elbow 90° Long Spigot
63mm to 500mm injection moulded

Elbow 45° Long Spigot
63mm to 500mm injection moulded

Reducer Long Spigot
63mm to 315mm injection moulded

Flange Adaptor Long Spigot
25mm to 400mm injection moulded

Electrofusion Coupler
20mm to 1200mm injection moulded

Manifold PE
25mm to 63mm

Transition Fittings PE/Brass
20mm to 110mm

Branch Saddle
40mm to 315mm

Injection moulded available from 20 mm to 1200 mm dia / Fabricated from 355 mm to 2000

PLASTITALIA™ S.p.A. high performance fittings

HDPE INJECTION MOULDED FITTINGS

Balloon Saddle
90mm to 315mm injection moulded

High Volume Branch Saddle
50mm to 1200mm

Transition Fitting PE/Steel
25mm to 125mm

Transition Fitting PE/Steel coated
25mm to 125mm

Mono Socket Joint
110mm to 800mm

Double Socket Joint
150mm to 380mm

End Cap Long Spigot
63mm to 315mm injection moulded

Tapping Valve
40mm to 315mm injection moulded

Curved Transition Fitting PE/Steel
25mm to 125mm

Electrofusion Elbow 90°
20mm to 315mm injection moulded

Tapping Tee
40mm to 315mm injection moulded

Extension Spindle
1.2m to 2.0m

Zinc Coated Steel Flange
For PN25 Adapter

Aluminum Flange
Designed for Flange Adapter

EPDM Gasket
For water and industrial uses

Injection moulded available from 20 mm to 1200 mm dia / Fabricated from 355 mm to 2000 mm dia.

HDPE FABRICATED FITTINGS

Tee 90°
355mm to 1200mm fabricated

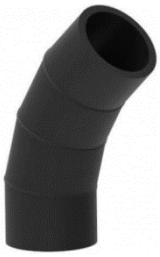
Tee 45°
355mm to 1200mm fabricated

Reducing Tee 90°
355mm to 1200mm fabricated

Cross
355mm to 1200mm fabricated

Bend 90°
355mm to 1200mm fabricated

Bend 60°
355mm to 1200mm fabricated



Bend 45°
355mm to 1200mm fabricated

Bend 30°
355mm to 1200mm fabricated

Injection moulded available from 20 mm to 1200 mm dia / Fabricated from 355 mm to 2000

For Technical Data Sheets and Submittals, please send your request to:
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ELECTROFUSION WELDING MACHINES

IPlast 105

IPlast 60

IPlast 30

IPlast 105 belongs to a last generation equipment born to make electrofusion welding of pipes and fittings, to be used in water and gas fuels, more secure.

This new control unit has been designed to keep under control the whole welding process and to take-out all risks connected to the job, reducing your tasks only to the preparation of materials.

Features:

- ✓ Able to weld fittings up to a diameter of 1600 mm
- ✓ Able to deliver a constant power of 65 A for 6 hours or 105 A for a maximum time of 1400 seconds
- ✓ Safety output current system powered by a double insulation transformer with galvanic separation for maximum work safety at job site.

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BUTT FUSION WELDING MACHINES

The machines have been designed and constructed for the welding of PE, PE100, PP, PVDF and other thermoplastics pipes and fittings.

The self-aligning frame and the compact dimensions make the machines highly suited for working in road constructions, ditches, aqueducts, gas ducts, sewers and irrigation systems.

Models:

- ✓ PT 125 – Range 40 – 125 mm
- ✓ PT 160 – Range 40 – 160 mm
- ✓ PT 200 – Range 63 – 200 mm
- ✓ PT 250 – Range 63 – 250 mm
- ✓ PT 315 – Range 90 – 315 mm
- ✓ PT 355 – Range 90 – 355 mm
- ✓ PT 500 – Range 200 – 500 mm
- ✓ PT 630 – Range 315 – 630 mm
- ✓ PT 800 – Range 450 – 800 mm
- ✓ PT 1000 – Range 630 – 1000 mm
- ✓ PT 1200 – Range 630 – 1200 mm
- ✓ PT 1600 – Range 1000 – 1600 mm

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CONTRACTING PROJECTS

CONTRACTING PROJECTS

CONTRACTING PROJECTS

UPVC PIPES AND FITTINGS

Coupling

45˚ Elbow

90˚ Elbow

Equal Tee

Reducing Tee

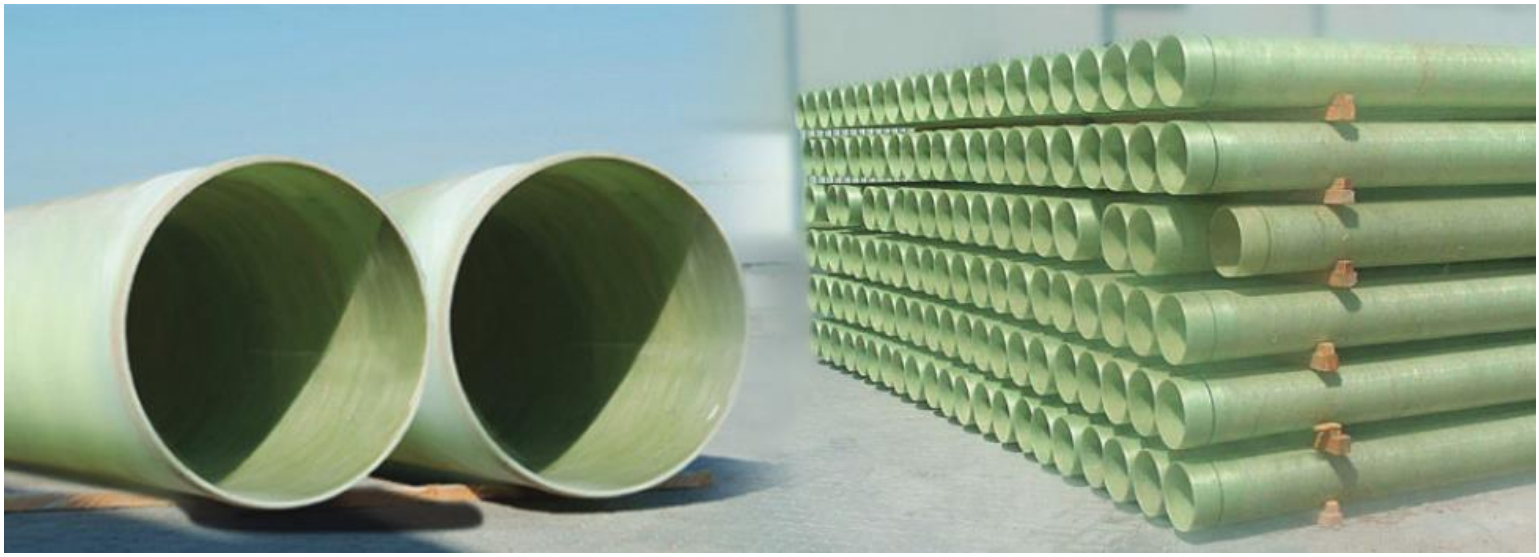
End Cap

Male Threaded Adapter

Single Piece Flange

Union

GRP PIPES AND FITTINGS



Fiberglass pipes are characterized by availability to apply for many applications without worried about possibility of reaction with materials used to be transmitted, or deformed by the sun.

Glass Reinforced Pipes commonly called GRP pipes are made of fiber glass reinforcements which are set in cured thermosetting resin. GRP pipes combine the benefits of durability, strength, and corrosion resistance; moreover, they offer great design flexibility with the possibility to customize the pipe design in a wide range of properties, the same is applicable to providing a wide range of different fittings profile and shape.

The various applications for which GRP Pipes are used:

- System for Water distribution
- Water Transmission
- Potable water
- Geothermal water
- Desalination plants
- Seawater intake and outfalls
- Sanitary sewers
- Storm sewers Irrigation
- Industrial wastes and effluent
- Oil fields
- Irrigation
- Chemical process
- Power plant cooling and raw water supply
- Fire protection

DWC PIPES AND FITTINGS

Sahara Emirates Group stocks and supplies Double Wall Corrugated Pipes in addition to HDPE, PE, uPVC pipes.

We have been part of supply and installation of DWC and HDPE pipes and piping systems to several large scale and prestigious projects. The piping systems include Double Wall Corrugated Sewer Pipes, fittings and PE manholes to offer a complete sewer piping solution.

Double Wall Corrugated PP sewer pipes system shows considerable weight reduction as compared to solid wall pipes without losing its stiffness strength. The main characteristic feature of non- pressure pipe is ring stiffness to resist the external loads. Ring stiffness is achieved by a combination of right material and right design of the structure of the wall. Different design principles are used for different size ranges to obtain optimum stiffness/ weight ratio. One of the most efficient design is the Double Wall corrugation where the outer wall is corrugated to offer stiffness with minimum weight and smooth inner wall to offer better flow.

The fittings are Injection moulded and the jointing is done by using ring seal system.

DUCTILE IRON PIPES AND FITTINGS

Socket Joints	Flanged Fittings	Joints for PVC - PP Pipes
		
COR	FLR	COP
		
FLP	FDD	SSD
		

CONCRETE PIPES

Concrete Manhole System includes a comprehensive range of diameters. Mono bases with benching, riser of different heights, reducer slabs, concrete top slab cover options, with accessories like step ladder, Stanchions, joint sealants & clamps. The joint interlocking profiles of the manhole make the installation quick and effective, and the use of effective sealing material between the sections makes the system watertight.

Features:

- Strength and durability
- Manufactured to local & international standards
- Reinforced & Modular precast system
- Ports are provided for ease of installation

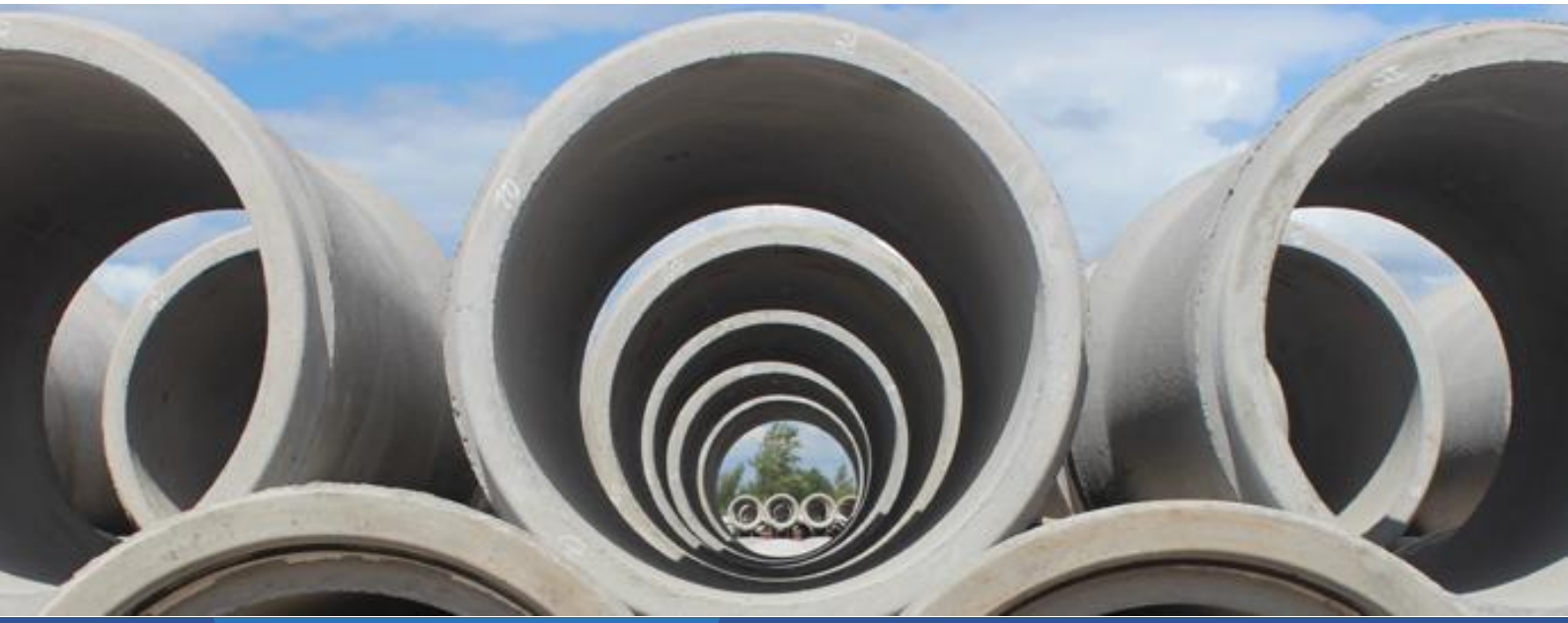
Benefits:

- High resistance to infiltration and leaking
- Able to meet all design requirements
- Economic overall compared to cast in situ
- Reduced construction time with fewer traffic hold-ups, when compared to cast in situ

Applications:

- Storm water Manholes
- Sewer Manholes
- Pipeline junctions
- Pipeline direction changes

Pipe Internal diameter	Allowable Jacking load*
(mm)	(tones)
450	184
500	253
600	344
700	450
900	653
1000	794
1200	950
1500	1332
1800	1944
2000	2436



MICRO DUCT PIPING

Micro Ducts piping bundled with a polyethylene oversheath:

Configurations: 1-way to 24+1-way

- Cost-Effective – multiple pathways for one installation cost
- Ships on a Standard Reel
- Piping is designed for installation using the same tools and equipment that are used for traditonal conduit or inner-duct. No special tools or equipment are required.
- Multiple pathways in place for future growth
- Optional 20 gauge locate wire making locates easy and reliable

VALVES

Flanged 2-Way Ball Valve

Flanged 3-Way Ball Valve

Threaded/Socket Welded/Butt Welded 3-Way Ball Valve

VALVES

Butterfly Valves

Gate Valves

Globe Valves

Lift Check

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ENGINEERING, PROCUREMENT & CONTRACTING

PIPING SYSTEMS

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PLAST MIDDLE EAST

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