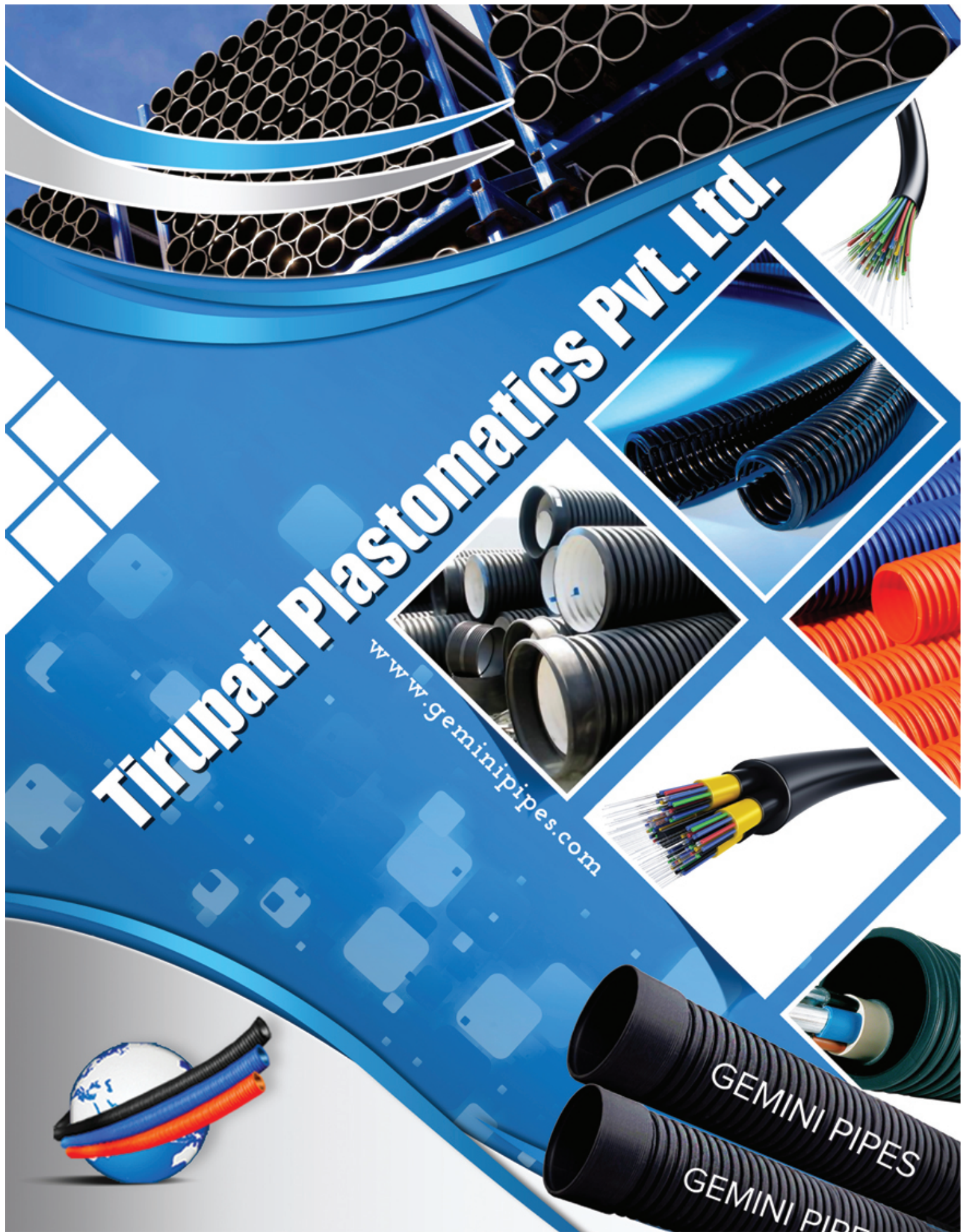
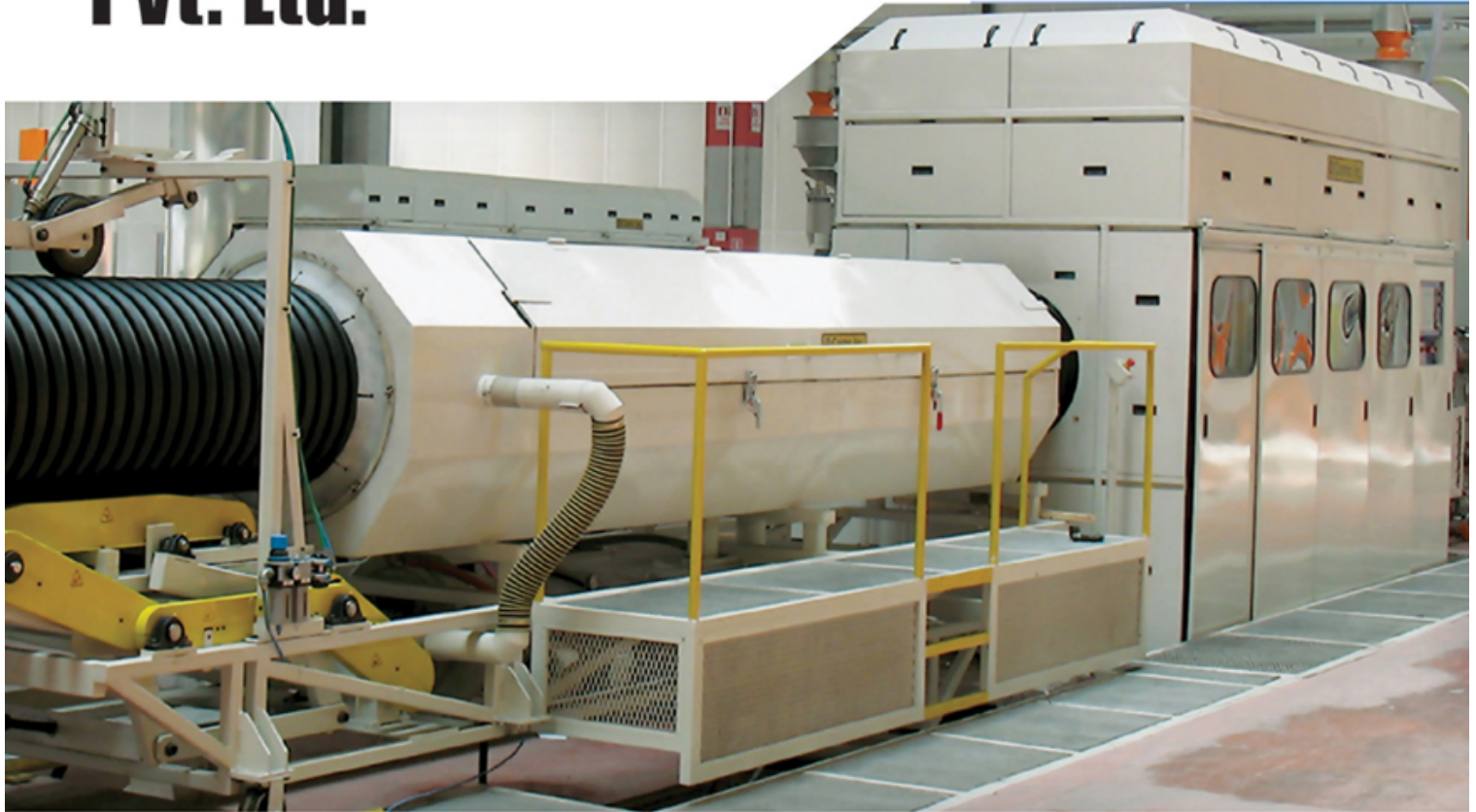


# Tirupati Plastomatics Pvt. Ltd.

[www.geminipipes.com](http://www.geminipipes.com)



# Tirupati Plastomatics Pvt. Ltd.



Tirupati Plastomatics Pvt. Ltd. is a ISO 9001 Company Having its plant situated at Vishwa karma Industrial Area, Jaipur is engaged in manufacture of HDPE Corrugated & Nylon Corrugated Pipes under brand name Gemini since year 2007. As on today Company produces 24 different sizes in HDPE Pipes and 8 sizes in Nylon Pipes.

GEMINI pipes are externally corrugated and internally smooth in case of Double Wall Corrugated (DWC) Pipes and inner & outer side corrugated for Single Wall Corrugated (SWC) and Nylon Pipes. HDPE Corrugated pipes have very high compression strength because of their design and have very long life expectancy ( More than 50 Years ). HDPE Corrugated pipes have multiple advantages over conventional pipes like RCC , Stone ware and GI Pipes and also very good economic viability. therefore, HDPE Corrugated pipes are most suitable pipes for underground electrical and telecom cable management and sewerage & drainage applications.. HDPE Corrugated pipes are in use through out the world for more than 30 years in various applications.

Tirupati Plastomatics Pvt. Ltd. manufactures Corrugated Pipes for such different applications viz Electrical. Telecom, Construction, Sewer, Waste water, Fiber Optics cables, Rail Coach Electrification etc. These Corrugated Pipes are produced according to Various Indian and International Specifications and standards.

## Unique Feature For Double Walled Corrugated (DWC Pipes) ( Electrical Conduit Systems )

**GEMINI PIPES** are designed as technically superior and cost-effective solution for the replacement of GI, RCC & PVC. pipes in the field of opticfiber cable, Railway Signaling cable, electric cable and Telecom cable networks.

**GEMINI PIPES** are manufactured from drugged and virgin High Density Polyethylene (HDPE ) in double walled Construction. The Outer Corrugated wall while making it light weight. gives excellent mechanical properties like high ring Stiffness, Impact strength and Crush Resistance. The inner smooth wall facilitates easy insertion of ducts and cables easily.

**GEMINI PIPES** with its excellent mechanical properties and ability to withstand heavy external loads when properly buried and back filled, is ideally suited for usage for usage as jacket/ casing duct in those environments where direct placement of duct and cable is note safe and easy.

### Advantage Of DWC

- Very good Resistance to corrosion
- Chemically inert
- Good impact strength
- Good abrasion resistance
- No weathering effect
- Environmentally safe
- Recyclable
- Available in colours on demand

### Advantage Of DWC

- Raw material Saving.
- Excellent Ring stiffness
- Smooth inner wall, hence easy insertion of cables.
- When bend, the roundness of pipe is retained.
- Moderate flexibility takes care of Soil Settlement if any
- Takes heavy earth loads
- Easy jointing by using snap-fit couplers.
- Bend, Tees of various sizes available.

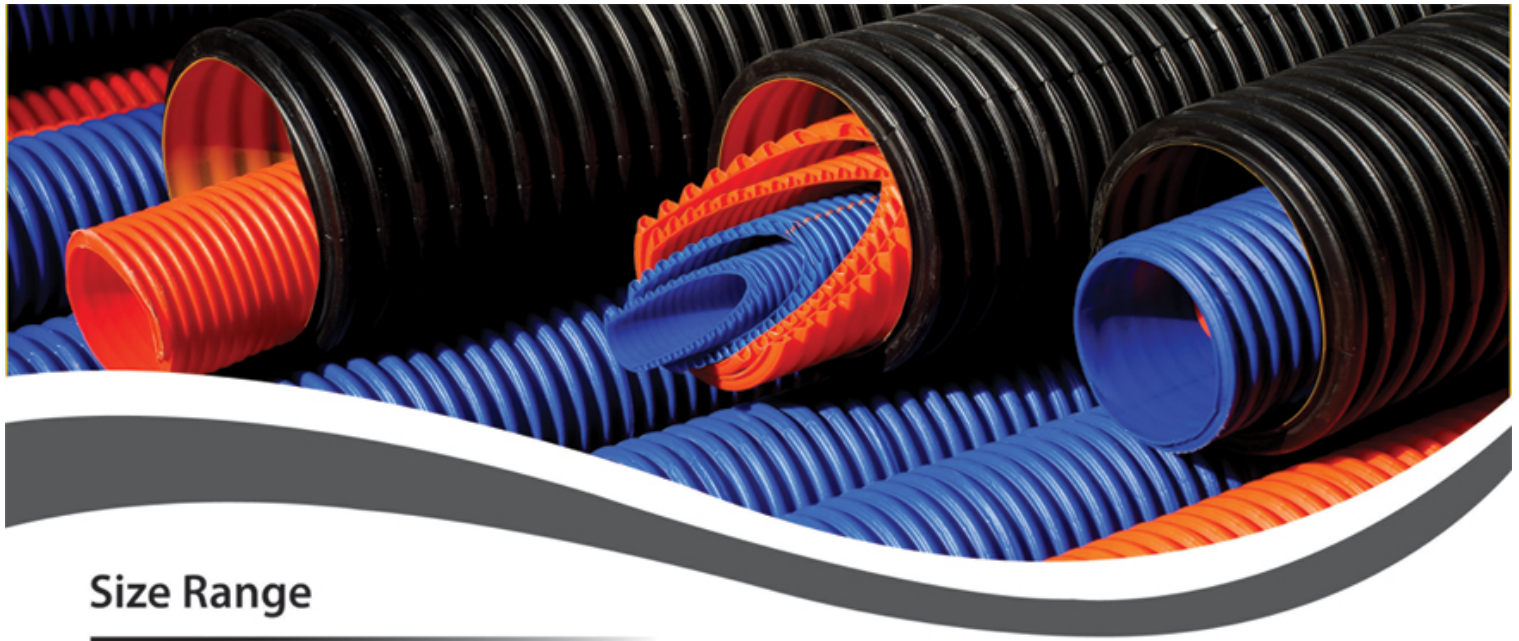
### Standard Lengths

- 40 mm / 50 mm / 63 mm ----- upto 100 mtr. Coils
- 75 mm and above sizes - 6 Mtrs straight bars.

### Unique Features On Request

- Anti Rodency - To Avoid rodent attacks
- Non Flame Propagating - Protection with resistance to flame Propagation





## Size Range

Serial No.	DWC Pipe Electrics Sizes in MM			
	Duct Size	Nominal O.D	Nominal I.D	Nominal Delivery Length (Mtrs.)
01.	40/32	40	32	100
02.	50/39	50	39	100
03.	63/50	63	50	100
04.	78/63	78	63	6
05.	90/76	90	76	6
06.	110/96	110	96	6
07.	120/103.5	120	103.5	6
08.	160/136	160	136	6
09.	180/152	180	152	6
10.	200/175	200	175	6
11.	250/217	250	217	6
12.	300/260	300	260	6
13.	315/275	315	275	6

## Standard

**GEMINI PIPES** are manufactured according to the relevant international and National standards like EN 50086. BIS standards IS 14930. (Part II) / IS 16205 (part 24) : 2018

- The length available as per requirement of customer for 50 mm and 63 mm OD size.
- The above sizes are also available in single walled corrugated pipe.
- All sizes are available in half split as well.

# DOUBLE WALL CORRUGATED SEWERAGE AND DRAINAGE PIPE

**"GEMINI" (BIS & ISO Approved Manufacturer)** Double Wall Corrugated Sewer and Drainage Pipes are for gravity and low pressure sewerage and drainage management such as waste water, sanitary sewer and storm sewerage for municipal or industrial use. The pipes important benefits and distinct advantages for sewer and drainage applications.

**GEMINI PIPES** are manufactured from rugged and virgin High Density Polyethylene (HDPE) in double walled Construction. The Outer Corrugated Wall while making it light weight, gives excellent mechanical properties like high ring Stiffness, Impact strength and Crush Resistance and inner smooth wall facilitates easy flow of sewer fluids due to low friction.

## Standards

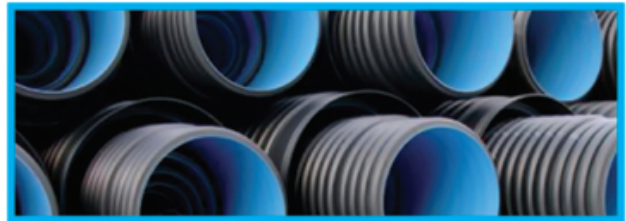
- BIS Standard IS : 16098 Part-II - 2013.
- ISO 21138 & BSEN 13476 - 1 TO 3

## Application

- Sewerage & Drainage
- Surface Drainage
- Culverts & Highways Drainage
- Construction Site waster water Drainage
- Rain Water Harvesting
- Storm Water Drainage
- Mini-Irrigation Projects.

## Key Facts

- 95% Lighter than Concrete pipes
- 30% lower annual amortized cost compared to Concrete Pipes
- Multifold longer life compared to Concrete Pipes
- 2.4 times longer in length, fewer joints to ensure better leakage protection
- Low friction Hence extra water flow compared to concrete pipe.
- CO2 emission for Concrete pipes is over 3 times that of plastic Pipes.
- Low Manning Co-Efficient



## Advantage Of HDPE

- Very Good Resistance to corrosion
- Available in colours on demand
- Chemically inert
- Environmentally safe
- Good impact strength
- Good abrasion resistance
- Recyclable
- Life Mini. 50 Yrs.
- Anti rodent properties ( On Request )

## Advantage due to DW Corrugation

- Raw Material Saving
- Excellent Ring stiffness
- Smooth inner wall, hence minimum Friction loss
- When bend, the roundness of pipe is retained
- Moderate flexibility takes care of Soil Settlement if any
- Takes heavy earth loads
- Easy jointing using by couplers provided by Our company.



## Size Range

Serial No.	Double Wall Corrugated Sewerage Pipe (mm)		
	Nominal ID	Stiffness Class	Length (Mtr)
01.	75	SN4 or SN8	6 Mtr.
02.	100	SN4 or SN8	6 Mtr.
03.	135	SN4 or SN8	6 Mtr.
04.	150	SN4 or SN8	6 Mtr.
05.	170	SN4 or SN8	6 Mtr.
06.	200	SN4 or SN8	6 Mtr.
07.	250	SN4 or SN8	6 Mtr.
08.	300	SN4 or SN8	6 Mtr.
09.	400	SN4 or SN8	6 Mtr.
10.	500	SN4 or SN8	6 Mtr.
11.	600	SN4 or SN8	6 Mtr.
12.	800	SN4 or SN8	6 Mtr.
13.	1000	SN4 or SN8	6 Mtr.



★ Size on Request - 95, 103, 125, 152, 175, 217, 260, 272

## Standard

GEMINI PIPES are manufactured according to the relevant Indian Standard IS - 16098: 2013 (Part-2) Equivalent international standards like BS EN 13476-1-3: 2007 / ISO-21138-3 / (Stiffness Class: SN 4 & SN 8) .

## Testing

- Ring Flexibility
- Ring Stiffness
- Creep Ratio
- Water Tightness Test
- Tensile Testing
- Melt Flow Index Test
- Impact Test
- Environmental Stress Cracking Resistance Test
- Oxidation Induction Time

Clients:-



**LARSEN & TOUBRO**  
It's all about Imaginering



GWSSB , VUDA , MJP , DJB , UPJN , RUIDP



## "Gemini" HDPE Corrugated Sheathing Ducts

( Used in internal bonded post tensioning in prestressed concrete

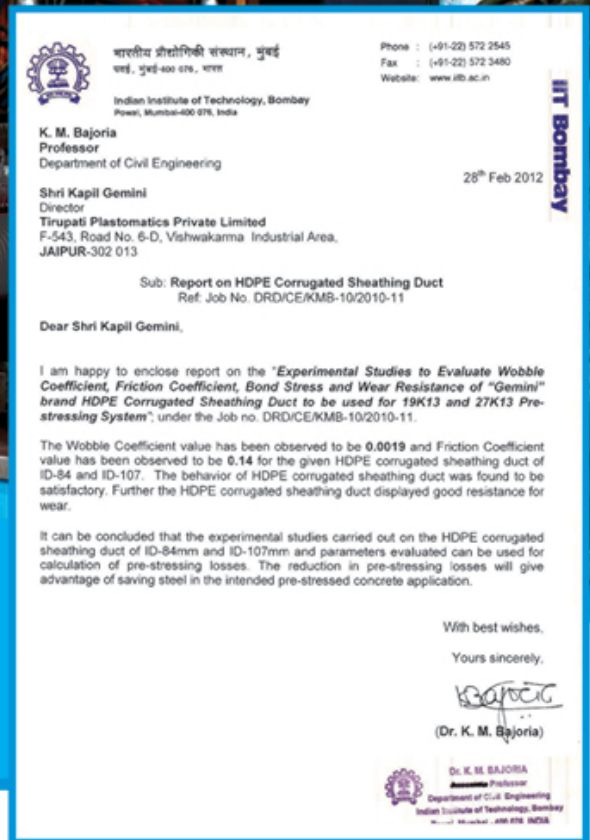
- Fib Bulletin - 7
- IRC : 18 -2000
- IRC : 112 - 2011
- Addendum and Corrigendum IRS Slip No. 6 Railway Concrete Bridge Code 1997

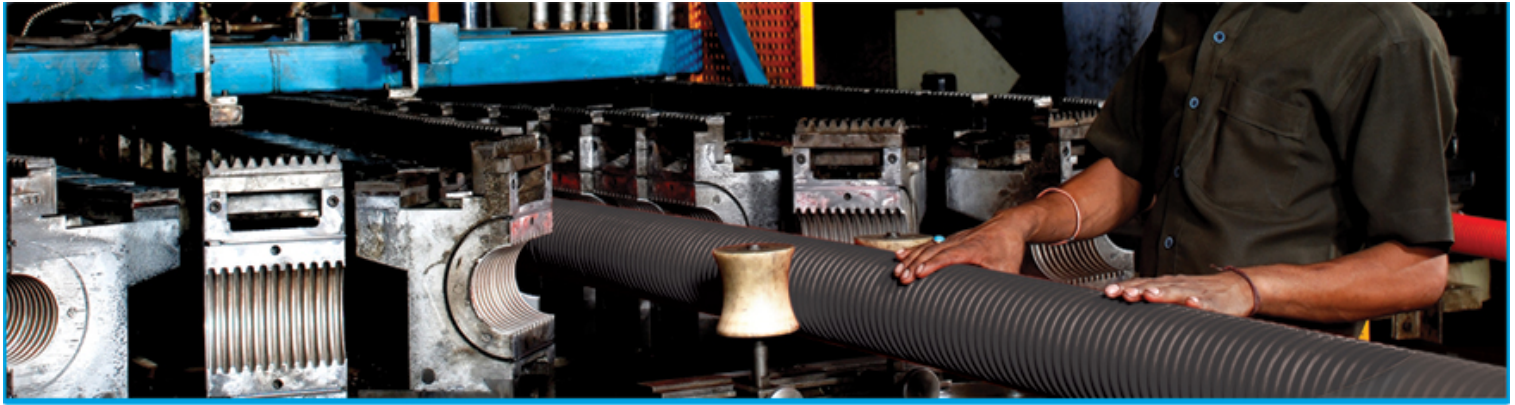
Tirupati Plastomatics Pvt. LTd. (Unit- II) (TPPL) (BIS & ISO Approved Manufacturer) a manufacturing unit situated at jaipur Rajasthan is engaged in manufacture of Corrugated Sheathing Ducts under the brand name "Gemini" for Post - Tensioning of structures Known as Single Wall Corrugated (SWC) Pipes. These pipes are manufactured on imported production lines and according to various national and international standards like -

TPPL is proud to state that it is associated with prestigious clients like airport authorities / PWDs / Municipal Corps. & Construction Companies for a long time. TPPL's customer list includes various Contractors in INDIA and ABROAD & These Customers are fully satisfied with quality & timely deliveries.

- Our total installed capacity to produce HDPE corrugated ducts of various sizes is approx.. 5,000 Mtrs. a day. on each production line & total 6 Nos. production line.
- TPPL is In the business of plastic pipe processing for Since Year 2007
- TPPL Has the complete know-how about product specifications, applications, testings, etc.

HDPE Sheathing Ducts manufactured by TPPL have been tested successfully for u (friction) & k (wobble) Bond stress and wear resistance under FIB Bulletin-7 by IIT Mumbai and these tests are very unique.





## SIZE RANGE



Serial No.	SWC Pipe Sizes in MM	
	ID	Anchorage System
01.	39	7k13 & 4k15
02.	50	12k13 & 7k15
03.	63	19k13 & 12k15
04.	75	19k15
05.	85	19k15 & 27k13
06.	95	7k13 & 4k15
07.	103	12k13 & 7k15
08.	107	19k13 & 12k15
09.	125	19k15
10.	135	19k15 & 27k13

## Advantage Of HDPE

- Enhance corrosion protection.
- Economical in comparison of Conventional sheathing ducts.
- Lower values of wobble co-efficient (k) & friction co-efficient than metallic ducts.
- Better bonding with the concrete due to higher - close corrugations.
- Water tightness, Chemically inert.
- Easy handling & speedy installation due to fewer joints.
- Good weathering resistance.
- Enhances the fatigue life of concrete (bridges & Fly overs).
- Good impact and compression strength.
- High stiffness and flexibility.
- Even when bend cross section of ducts retains its circularity.
- Also available in long lengths and hence minimum joints.
- All required Accessories are available with us in - In spares.
- These ducts are Strongly recommended in all mega projects, especially in marine climatic conditions and corrosion prone area.

## Flat Duct Size Range

Serial No.	System	Size
01.	For Anchorage	4 K 15 size -75mm X 25mm
02.	For Anchorage	5 K 15 - Size - 90mm X 25mm
03.	For Anchorage	3 K 13 - Size - 60mm X 22mm







## HDPE Flat Ducts

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We are ISO certified Manufacturers & Exporters of "Gemini" brand HDPE Flat Ducts used in internal bonded post-tensioning of tendons in pre-stressed concrete works in place of conventional metallic ducts in Elevated Roads, Bridges & Flyovers. We have all the complete know-how about product specifications, applications, testing, etc. And are already supplying these ducts to various prestigious projects in India & abroad. The details & advantages of the same are as below :

### Applications – PT Slabs

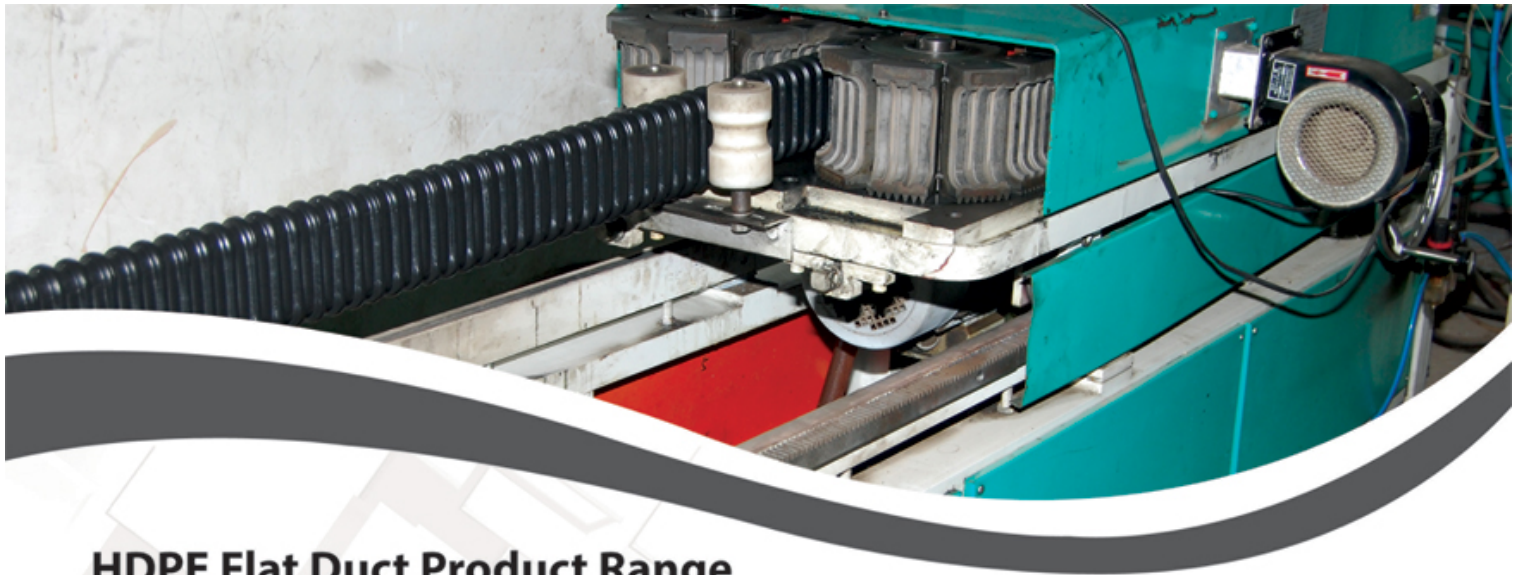
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- A. Bridges
- B. Buildings
- C. Hospitals, Shopping Centres, offices, car parkings
- D. Private residential housing, Hotels and Apartments
- E. Industrial buildings, Construction of Deck / Floor Slabs in flyovers / Elevated Structures

### Advantages of Pre-stressed Concrete Floors /PE Flat ducts

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- Enhance corrosion protection & Enhances fatigue life of tendons.
- Lower values of wobble co-efficient (k) & friction co-efficient ( $\mu$ ) than metallic ducts.
- Better bonding with the concrete.
- Increased Clear Span.
- Thinner Slabs.
- Lighter Structures.
- Reduced cracking & Deflections.
- Reduced Storeing Height.
- Rapid Construction.
- Better Water Tightness.
- Good impact - compression strength.
- High stiffness & flexibility.
- Environment friendly & chemically inert.
- Helps electrical monitoring of tendons.



## HDPE Flat Duct Product Range

At present, we are manufacturing HDPE Sheathing Ducts of following sizes.

HDPE Flat Ducts - Sizes available( As per Fib Bulletin 7)

For Anchorage System 4 K 15 size -75mm X 25mm

For Anchorage system 5 K 15 - Size - 90mm X 25mm

For Anchorage system 3 K 13 - Size - 60mm X 22mm

For Anchorage system 3 K 13 - Size - 48mm X 20mm

Conventional usage of bright metal sheets as duct material have explicit problems of corrosion, duct opening leading to slurry intrusion and higher short-term losses due to the large values of friction and wobble coefficients. The use of HDPE material, as pre-stressing duct, can eliminate the inherent problems associated with the metal ducts and reduce the pre-stress losses. Pre-stressed concrete slab (PT slab) construction has gained wide importance as a state of art technology,

due to a number of engineering solutions and economy that it provides. The use of HDPE material, as pre-stressing duct, can eliminate the inherent problems associated with the metal ducts and reduce the pre-stress losses.

## Flat Duct Size Range

Serial No.	Flat Duct Sizes in MM	
	OD	ID
01.	48	20
02.	60	22
03.	75	25
04.	90	25

## Flat Duct





## Cable & Utility Ducts/Channel Tray For The Protection Of Cables & Utilities

It is with our pride to introduce ourselves M/s. **Tirupati Plastomatics Pvt Ltd.** Flagship Company of Gemini group, established in 1987. As a leading pioneer manufacturer of DWC HDPE Pipes and Cable & utility duct/Channel Tray for the protection of Cable.

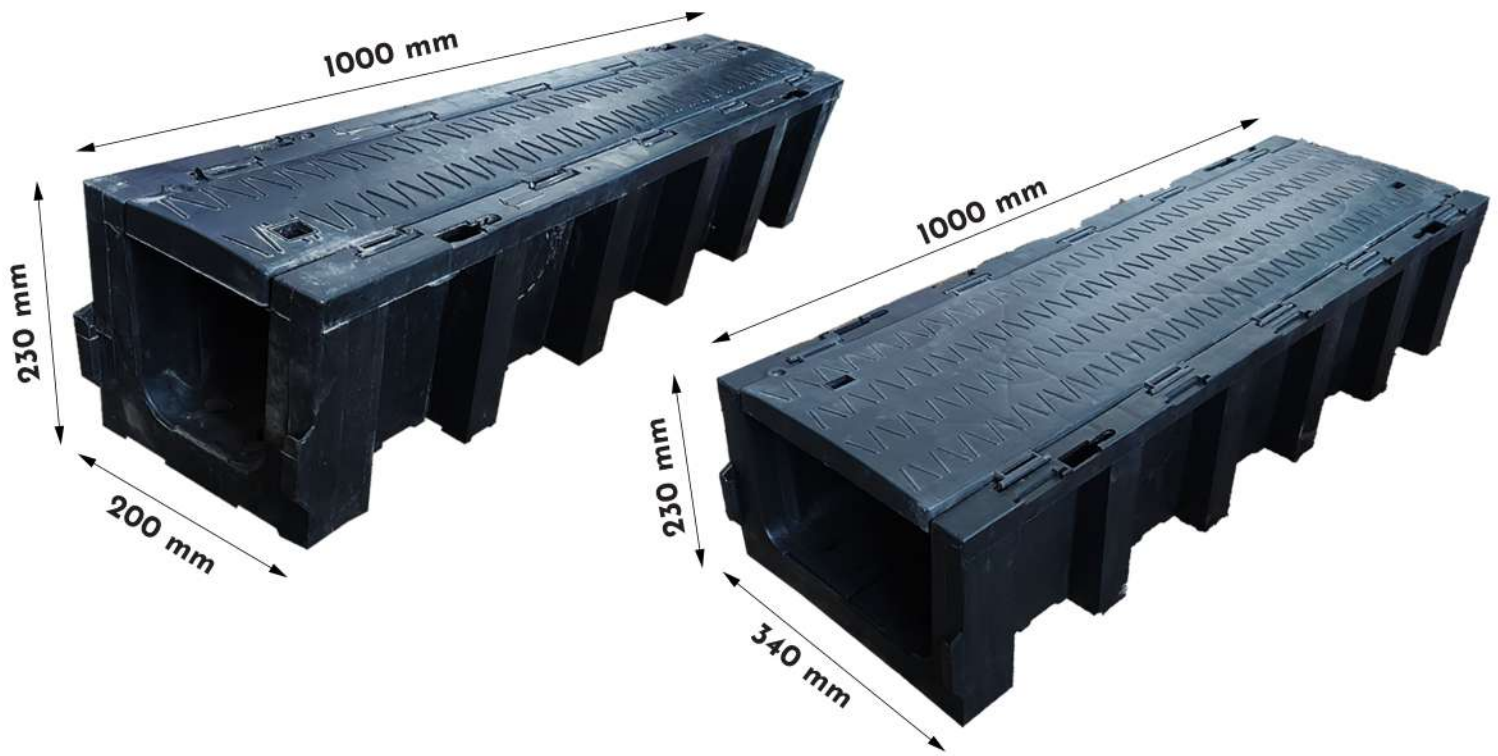
We are **ISO 9001:2015** Certified with complete "Technical know-how" about the product specifications / testing / application etc. and those products are being manufactured in our State-of-Art technology in our most modern plant at Jaipur. The products are "registered & approved" in various Govt. department. & Industrial partners. We are contributing our services in various sectors - Telecommunications, Signalling, Construction and Railway Contracting business in pan India.

### Product Features

- Eco friendly and UV Stabilized
- Fire Protection Class K 1
- Non - magnetic
- No corrosion , no chemical erosion
- Maintenance Free
- Easy to Lay & install
- Earthing Provision
- Cable Diversion Provision
- Light weight
- High Load bearing capacity
- Suitable for horizontal, vertical layout
- Low labor cost For Laying & Installation

### Applications

- Underground Signal & Communication lines on Railway routes
- Power Plants & Industrial cable installation.
- Utility corridor for municipal corp.
- Airports
- Dockyards
- Smart city
- Ring road projects



## Specification

Length	Type-I 1000 MM (1mtr)	Type-II 1000 MM (1mtr)
Width (Internal/External)	100mm / 200mm	240mm / 340mm
Height (Internal/External)	155mm / 230mm	155mm / 230mm
Material	Polyolefin	
Fire Behavior	Fire Protection Class K 1 As Per DIN53438 Part - 2	
Breaking Load	≥ 15 KN at Room Temperature	
Thermal Characteristics	Thermal Stability from -10 to +70 Degree Celsius	
Test	As Per RDSO Specification STS/Cable-Laying Practices Vol - IV Date - 09/05/2018	

## Easy Interlocking Joints





## Flexible Corrugated Polyamide Conduits

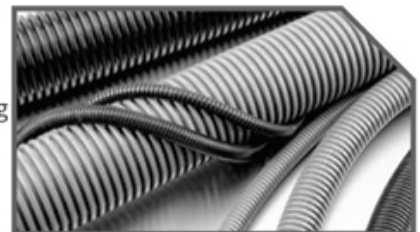
- Flexible Corrugate flexible Conduit made of special modified Polyamide PA6 (popularly known as nylon)
- Available in various sizes.



- Self extinguishing & Free of " Halogen, Phosphorus, Sulphur & Cadmium "
- Temperature range :  $-40^{\circ}\text{C}$  to  $+120^{\circ}\text{C}$
- Mechanical / Shock / Abrasion / Impact resistant according to EN-61386-1/23
- Available in UV Resistant (Black Version) & other assorted colours
- Free from any hazardous or toxic chemicals, solvents & Oils.



- Prevents damage of inside cables from corrosion / abrasion / Flame propagation / changing weather / hard impact / etc.
- Reduces Capital expenditure
- Light Weight & High Flexibility
- Easy to join with each other
- Minimizes installation time & cost
- Being made of Polymide PA6 hence more robust, durable & provides long lasting life.
- Chemical inert & environmental safe, that implies that PA6 is ultimate green choice.





## Conduits Size Range

**Conduit Size** flexible Corrugated Polyamide conduit Sizes in MM

	OD	ID
NW - 12	15.8 ± 0.2	11.5 ± 0.3
NW - 17	21.2 ± 0.2	16.0 ± 0.5
NW - 23	28.5 ± 0.2	22.3 ± 0.3
NW - 29	34.4 ± 0.2	28.0 ± 0.4
NW - 36	42.4 ± 0.2	35.8 ± 0.3
NW - 48	54.4 ± 0.2	47.0 ± 0.5

## Accessories

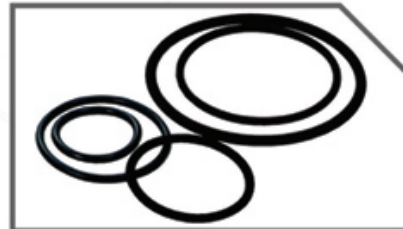


**Straight Connectors**



**Metal (Nickel Plated Brass) Straight Connectors**

Connectors are manufactured using special grade polyamide material which offers high impact strength. Metal offer extremely high connection strength ensuring safety & reliability.



**Sealing Rings**

Characteristics :

Material : NBR Elastomer

Temp : -30°C to +105°C

Colour : Black

Offer IP68 Protection Conduits & Connectors



**Metal (Nickel Planted ) Hexagonal Locknuts**

Nickel Plated Brass hexagonal locknuts designed to offer high strength and reliable connections.



# Comparative Advantages

Serial No.	Counts	RCC NP3 & NP4	PVC 6 KG / CM SQ	PLAIN HDPE 6 KG CM SQ	SALT GLAZED	G.I.	DWC SN-8 Class
01.	Standards & Specification	IS - 458:1988 Water, sewerage & drainage	IS - 4985 for potable water	IS - 4984. For potable water	IS 651: 1980 for sanitary application	IS-1239 for water application	ISO : 21138-1, 2 & 3 BSEN - 13476-3:2007 IS 14333:1996 PREN 13476:2
02.	Flexibility	Nil	Limited,Bend oval create barrier	Limited,Bend oval create barrier	Nil	Nil	Moderate Long Bend, Roundness retained
03.	Compression Test	Good Permanent Deformation	Low when no pressure indie gets crushed	Low when no pressure inside gets crushed	Low Permanent destruction	High	High
04.	Impact load	Passes	Low	Low	Total Destruction	Passes	Passes
05.	Labour & Laying cost	High	Low	Low & Skilled	High & Skilled	High & Skilled	Negligible
06.	Price	40% higher than DWC	20% higher Than DWC	60% higher than DWC.	Low Laying & damage cost high.	Extremely High 300%	Lowest
07.	No. of joint & joining method	High and tedious	Less and skilled labor	Less and skilled labor	High, time consuming high damage	Tedious and time consuming	Less easy Snap fit coupler
08.	Soil settlement	Cracking of Joints/Pipes	Pipes at bends become oval	Pipes at bends become oval	Cracking of joints/ Pipes	No effect	Moderate Flexibility no effect on pipes laid down
09.	Coefficient of friction	High	Low	Low	Very high	Low	Low inner surface very pain, smooth
10.	Transportation Cost	High and cumbersome	Lows and easy	Lows and easy	Charges and damages high	Changes are high	Low and easy
11.	Chemical properties	Limited	Inert	Inert	Inert	Gets rusted	Inert
12.	Life Span	Limited	High	High	High	Low	High

## Note

- NP1 & NP2 grade RCC pipes and SALT GLAZED pipes can't bear impact load due to high brittleness.
- PVC and HDPE pipes take internal pressure i.e. pressure due to water flow. The pipes get crushed, when there is no sufficient pressure inside.

# Tirupati Plastomatics Pvt. Ltd.

## Others Products



DWC PIPES



SWC PIPES



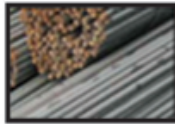
HDPE DUCT



MICRODUCT (FTTH)



RAILWAY SIGNALLING



TMT BAR



CABLEING



STEEL FABRICATION



RAILWAY TRACK WORK

## Our Associate Companies



(Unit II)

**Tirupati Plastomatics Pvt. Ltd.**

**Kiran infra Tech**



**KIRAN INFRA ENGINEERS LTD.**



**KIRAN INFRA ISPAT LTD.**



**Tirupati Plastomatics Pvt. Ltd.**



**TIRUPATI PLASTOMATICS PVT. LTD (PIPE DIVISION)**

PHONE NO. - 0141-2331030, 2330305, 2330427

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