

# COMPANY

## PROFILE



**ZACK PLAS**

PIPE EXTRUSION & INJECTION MOULDING







Duct and Injection Mouldin Manufacturer  
for the Telecommunications Industry





01

TAILORED SOLUTIONS  
Underpinned by Technical Expertise



## ABOUT US }

Zack Plas is a proudly South African pipe extrusion and injection moulding manufacturer providing tailored solutions for the telecommunications industry. Our range of fibre ducts and related products offers our customers products to meet any of their needs and our tailored solutions ensures that we can solve any of their challenges. Our team of highly skilled technicians and management have nearly a century of combined knowledge and expertise in the injection moulding industry.

Founded in 2017 as a response to increased demand and lack of supply within the industry, Zack Plas has positioned itself as a specialist manufacturer and supplier to the telecommunications sector focused on delivering quality products with superior technical performance, to help the industry solve its challenges.

Our company's four primary focus areas is product development, manufacturing, sales & distribution and quality management, which includes our Material Testing Facility (MTF).

### Product Development

With our current product range, we are confident that we can meet the most sort after needs of our customers. We are however continually looking at ways that our current and future products can add greater value to our customers.

We believe that by keeping communication lines open, between our customers and our manufacturing plant, we are able to provide them with technical expertise to meet their needs. This communication also ensures that our product offering is up-to-date with industry demands and practices, allowing us to tailor our products to solve industry challenges.

Because of our technical expertise we are able to swiftly move through new product development stages, ensuring that the time-to-market is kept as brief as possible.





## Manufacturing

We use leading design and manufacturing processes to solve our customers challenges. Our 2,500m<sup>2</sup> manufacturing and operations plant based in Montague Gardens, Cape Town, has direct access to all major transport routes. With our current manufacturing capacity of 16,000m of bundled micro duct per day, we can deliver fast, effective solutions to the telecommunications sector.

Our Plant is equipped with the latest Technology, and the industry standard in injection moulding and pipe extrusion equipment, ensuring our customers can rely on us to deliver.

## Sales & Distribution

Zack Plas provides solutions to a range of customers including network infrastructure developers, government organisations, ISPs and state-owned enterprises. With our range of micro ducts, bundled micro ducts, sub-ducts and junction boxes, we are able supply our customers with a range of solutions to meet their needs.

Our on-site loading equipment allows us to easily load and stack heavy vehicles and through strategic partnerships we are able to offer distribution services and collection points across the country, from Cape Town to Gauteng, Durban and Port Elizabeth. Also exporting internationally.

## Quality Management

We are committed to providing quality solutions for our customers which is why one of our key focus areas is quality management. With access to our own in-house material testing facility, we are able to manage the quality of raw materials from our suppliers, which has a direct impact on the quality of our final product. Ensuring that we deliver only the best quality products with superior technical performance, to our customers.





02

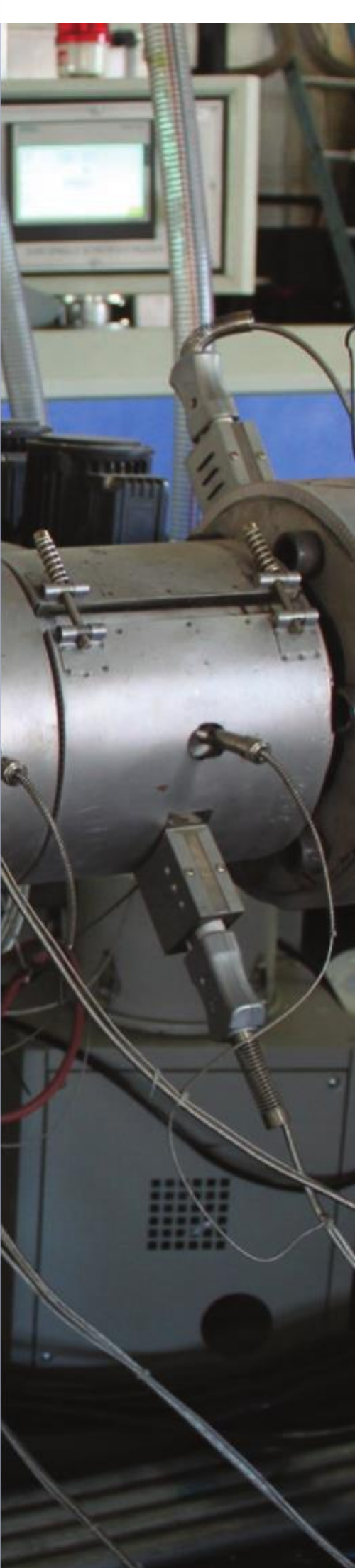
PROVIDING  
Quality Solutions











# PRODUCTS >

As a company we are always looking at developing new products that could meet the needs and challenges of our customers. We believe that we need to do our part in helping to create an enabling environment to connect our country. We understand that through greater connectivity across our communities we enable faster communication. A connected city and community mean a more informed society, able to make better choices with better access to information.

## Ducting Solutions

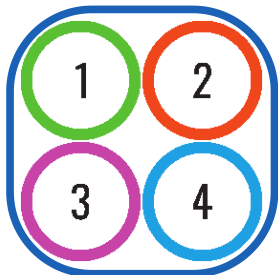
We supply the following micro duct, bundled micro duct and sub-duct systems.



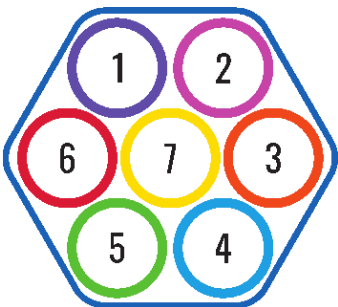
One-way  
(Profile System)



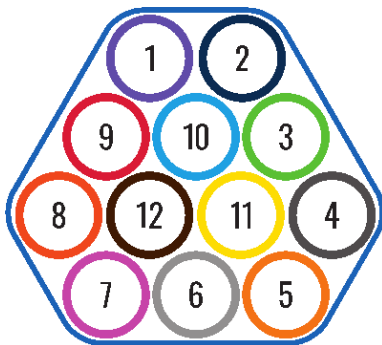
Two-way  
(Profile system with  
protective sheath)



Four-way  
(Profile system with  
protective sheath)



Seven-way  
(Profile system with  
protective sheath)



Twelve-way  
(Profile system with  
protective sheath)

## 4-Way Tapping Box

The Zack Plas 4-Way Tapping Box is a distribution enclosure used to distribute fibre cables branching off to customer premises. The enclosure enables technicians & installers to create a window-cut in the fibre cable sheath to access the fibres, which can then be spurred into drop micro tubes/cables up to 8 mm in diameter. The enclosure is UV resistant and has an IP68 international sealing standard rating, allowing it to be installed in an indoor or outdoor environment.



### FEATURES

- Can accommodate an in-line retractable cable from 3mm to 18mm in diameter
- Can accommodate two drop tubes / cables of up to 8mm in diameter
- Cable entry port has a moulded lip to support and secure incoming cables to the tapping enclosure with a cable tie
- Suitable for direct buried applications
- Mechanical sealing allows ease of installation – IP68 sealing standard rating utilising special lubricant provided
- Impact and crush resistant
- Suitable for internal or external use
- Custom colours can be produced to suit end user





## KIT CONTENTS

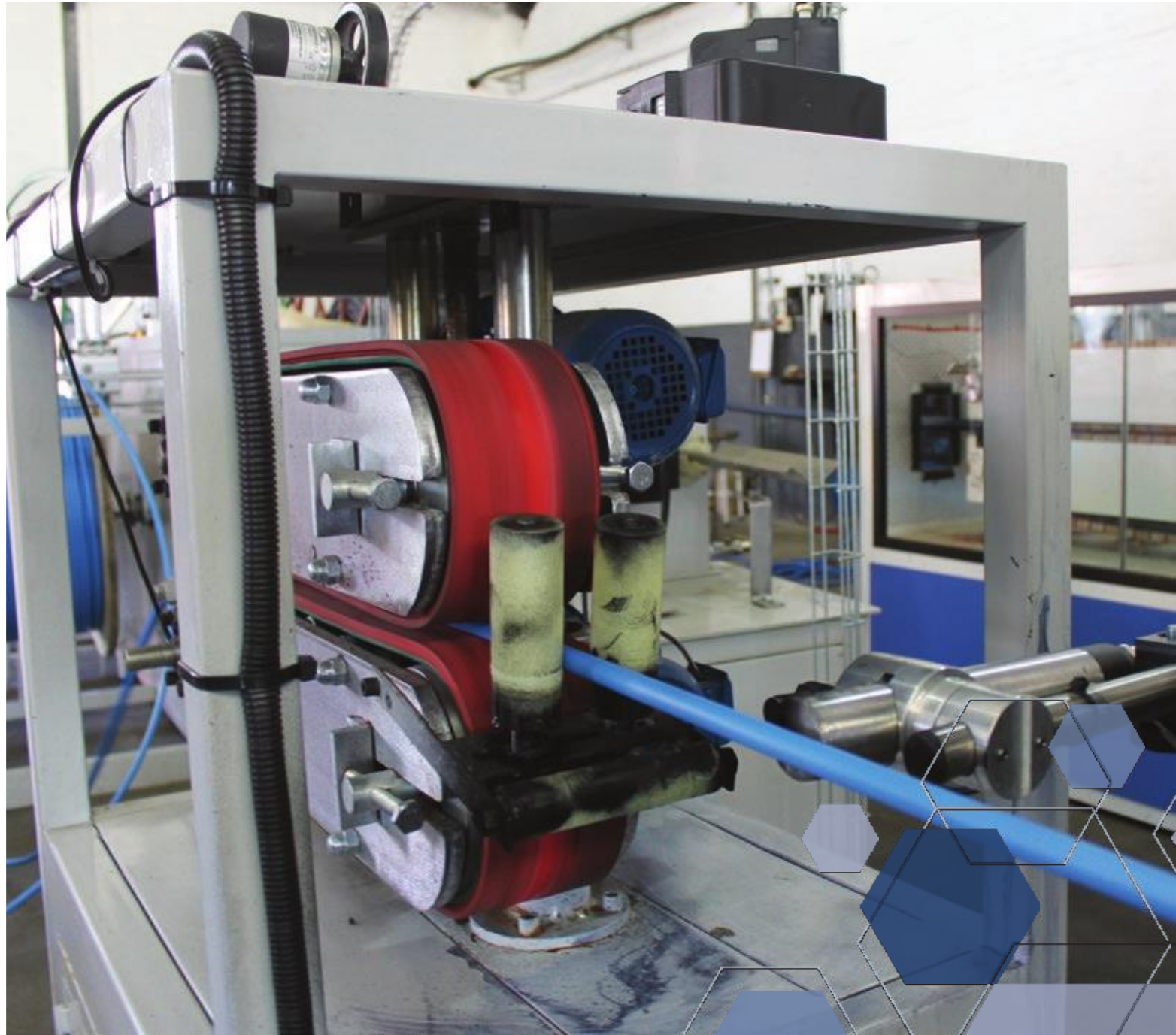
The 4-way tapping box kit includes: 1x box; 3x lid screws; lubricant; rubber seals; sealing instructions



## TECHNICAL DATA

- Material: Polypropylene
- Temperature range: -10°C to +50°C (transport, installation and storage)
- Temperature range: -20°C to +60°C (In operation)
- Number of Cable Entries: 1 in-line, 2 Drops
- In-line Cable Diameter: Max 18mm
- Drop Cable Diameter: Max 8mm
- Fibre bending radius: Minimum 15mm (ITU-T G.657 A2 fibre)
- Cable retention: 18mm cable: 350N
- mm drop tube: 150N
- Water immersion: IP68 (No water ingress at 1m water pressure for 7 days)
- Impact resistance: 10Nm @ 20 °C, radius 200mm
- Crush resistance: 1000N @ 20 °C on top surface of the box

L x W x H	Adaptor Plate	Cable ports	Max Splice Tray capacity	Max. Diameter of cable (mm)
201 x 105 x 37 (mm)	none	1 x In-line 2 x Branch	none	1 x In-line port < 18mm 2 x Branch port < 10mm



03

DELIVERING SUPERIOR  
Technical Performance





# MATERIAL TESTING FACILITY >

Our on-site material testing facility (MTF) allows us to reliably, efficiently and professionally test our products, with fast and accurate reporting of test results. Our test equipment undergoes regular maintenance and calibration in-line with industry standards.

MTF ensures that we produce products of the highest quality standard that is verified. Our test technicians are all trained and certified in the use of all equipment, ensuring that tests are accurately executed, allowing us to test the performance of new products ensuring that they meet the rigid technical specification that our clients demand.

## What is material testing?

Material testing is the execution of highly specific techniques that measure the characteristics and behaviour of materials. The test data obtained is then used to determine the suitability of the material for specific applications.

## Why is material testing important?

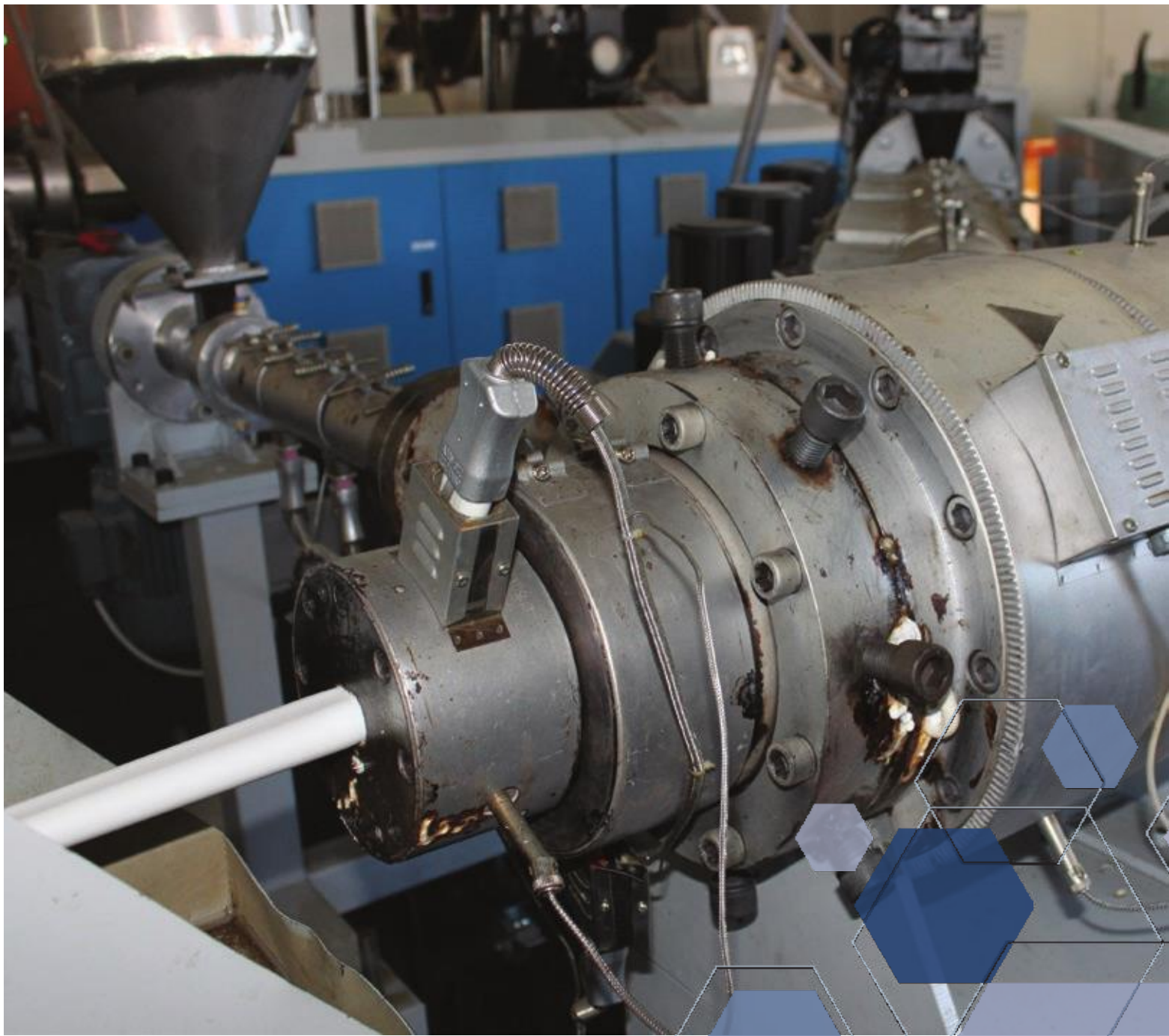
Material testing is important because it determines the performance of a specific material or product under certain conditions. If a material or product is to be successful in its application, then it needs to pass every specific requirement that the product needs to deliver on. Material testing is also used to determine a material or products limitations. This will enable manufacturers to determine which applications best suit the specific material. For Zack Plas it is critical that we test our materials and products regularly to ensure that they continue to deliver superior technical performance to meet our customers' needs.

Our material testing facility has the following capabilities:

- Temperature Testing
- Friction & Coefficient Testing
- Impact Resistance Testing
- Environmental Stress Cracking Testing
- Kink/Bending Testing
- Crush Resistance Testing
- Pressure Testing
- Duct Integrity Testing (DIT)

# ACCREDITATIONS >

All of our product development, manufacturing and testing is carried-out to the highest quality standard and as such, we are ISO 9001 : 2015 compliant. Zack Plas is compliant with Broad-Based Black Economic Empowerment (B-BBEE) and currently holds a Level 2 certificate.



04

HELPING INDUSTRY  
Solve its Challenges



## PRODUCT TECHNICAL DATA

Product: 8/5mm	Bundle: 1 way	Micro Duct – Direct burial
Product supply: 2000m	Type: reel / drum	Wall thickness: 1.5mm
Inner diameter: 5mm	Outer diameter: 8mm	

Characteristics	
Construction	Outer layer: HDPE Inner layer: Silicone
Material	HDPE (Polyethylene)

Properties	
Ovality	<5%
Pressure Rating	12 bar for 5 minutes
Coefficient of Friction	(Less than one)
Ball Testing	80% of inside diameter, ball passes freely
Chemical Resistance	Petrol, Diesel, Acetone, Ingepol
Colour	RAL Codes
Kink Test	Passes
Bending Radii	20 x outside diameter



One-way  
(Profile System)

Handling & Storage	
Storage Temperature	-20 °C to +60 °C
Installation Temperature	+15 °C to +40 °C
UV Resistance Period	1-year outdoor storage
Installation	As per SABS 1200LB

Material Properties	Values	Test Method
Index (190°C/2.16kg)	0.40g/10 minutes	ASTM D1238
Density	0.941 – 0.957g/cm <sup>3</sup>	ASTM D1505
Vicat Softening Point @ 10 N, 50°C/hr	125 °C	ASTM D1525
Melting Point	133 °C	ASTM D2117
Tensile Strength at Yield Point	320kg/ m <sup>3</sup>	ASTM D638
Tensile Strength at Break Point	400kg/ m <sup>3</sup>	ASTM D638
Elongation at Break	1000%	ASTM D638
Stiffness	10,000kg/ m <sup>2</sup>	ASTM D747
Flexural Modulus	14,000kg/ m <sup>2</sup>	ASTM D790
Notched Izod Impact Strength	15kg.cm/cm – Partial Break	ASTM D256
Durometer Hardness	65 Shore D	ASTM D2240
ESCR (Condition B, 25% Ingepol)	400hrs, F50	ASTM D1693

### ZACK PLAS - Pipe extrusion & injection moulding

Head Office: 5 Marconi Crescent, Montague Gardens, 7441, Cape Town | Tel: +27(0) 82 450 0997 (Joop Robbertse) | E-mail: info@zackplas.co.za

## PRODUCT TECHNICAL DATA

Product: 12/10mm	Bundle: 1 way	Micro Duct – Direct burial
Product supply: 1000m	Type: reel / drum	Wall thickness: 1mm
Inner diameter: 10mm	Outer diameter: 12mm	

Characteristics	
Construction	Outer layer: HDPE Inner layer: Silicone
Material	HDPE (Polyethylene)

Properties	
Ovality	< 5%
Pressure Rating	12 bar for 5 minutes
Coefficient of Friction	(Less than one)
Ball Testing	80% of inside diameter, ball passes freely
Chemical Resistance	Petrol, Diesel, Acetone, Ingepol
Colour	RAL Codes
Kink Test	Passes
Bending Radii	20 x outside diameter



One-way  
(Profile System)

Handling & Storage	
Storage Temperature	-20 °C to +60 °C
Installation Temperature	+15 °C to +40 °C
UV Resistance Period	1-year outdoor storage
Installation	As per SABS 1200LB

Material Properties	Values	Test Method
Index (190°C/2.16kg)	0.40g/10 minutes	ASTM D1238
Density	0.941 – 0.957g/cm <sup>3</sup>	ASTM D1505
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Flexural Modulus	14,000kg/ m <sup>2</sup>	ASTM D790
Notched Izod Impact Strength	15kg.cm/cm – Partial Break	ASTM D256
Durometer Hardness	65 Shore D	ASTM D2240
ESCR (Condition B, 25% Ingepol)	400hrs, F50	ASTM D1693

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## PRODUCT TECHNICAL DATA

Product: 14/10mm	Bundle: 1 way	Micro Duct – Direct burial
Product supply: 1000m	Type: reel / drum	Wall thickness: 2mm
Inner diameter: 10mm	Outer diameter: 14mm	

Characteristics	
Construction	Outer layer: HDPE Inner layer: Silicone
Material	HDPE (Polyethylene)

Properties	
Ovality	<5%
Pressure Rating	12 bar for 5 minutes
Coefficient of Friction	(Less than one)
Ball Testing	80% of inside diameter, ball passes freely
Chemical Resistance	Petrol, Diesel, Acetone, Ingepol
Colour	RAL Codes
Kink Test	Passes
Bending Radii	10 x outside diameter

Handling & Storage	
Storage Temperature	-20 °C to +60 °C
Installation Temperature	+15 °C to +40 °C
UV Resistance Period	1-year outdoor storage
Installation	As per SABS 1200LB

Material Properties	Values	Test Method
Index (190°C/2.16kg)	0.40g/10 minutes	ASTM D1238
Density	0.841 - 0.957g/m <sup>3</sup>	ASTM D1505
Vicat Softening Point @ 10 N, 50°C/hr	125°C	ASTM D1525
Melting Point	133°C	ASTM D2117
Tensile Strength at Yield Point	320kg/m <sup>3</sup>	ASTM D638
Tensile Strength at Break Point	400kg/m <sup>3</sup>	ASTM D638
Elongation at Break	1000%	ASTM D638
Stiffness	10,000kg/m <sup>2</sup>	ASTM D747
Flexural Modulus	14,000kg/m <sup>2</sup>	ASTM D790
Notched Izod Impact Strength	15kg.cm/cm - Partial Break	ASTM D256
Durometer Hardness	65 Shore D	ASTM D2240
ESCR (Condition B, 25% Ingepol)	400hrs, F50	ASTM D1693



One-way  
(Profile System)

## PRODUCT TECHNICAL DATA

Product: 16/13mm	Bundle: 1 way	Micro Duct – Direct burial
Product supply: 1000m	Type: reel / drum	Wall thickness: 1.5
Inner diameter: 13mm	Outer diameter: 16mm	

Characteristics	
Construction	Outer layer: HDPE Inner layer: Silicone
Material	HDPE (Polyethylene)

Properties	
Ovality	<5%
Pressure Rating	12 bar for 5 minutes
Coefficient of Friction	<0.1
Ball Testing	80% of inside diameter, ball passes freely
Chemical Resistance	Petrol, Diesel, Acetone, Ingapol
Colour	RAL Codes
Kink Test	Passes
Bending Radii	10 x outside diameter

Handling & Storage	
Storage Temperature	-20 °C to +60 °C
Installation Temperature	+15 °C to +40 °C
UV Resistance Period	1-year outdoor storage
Installation	As per SABS 1200LB

Material Properties	Values	Test Method
Index (190°C/2.16kg)	0.40g/10 minutes	ASTM D1238
Density	0.941 - 0.957g/m <sup>3</sup>	ASTM D1505
Vicat Softening Point @ 10 N, 50°C/hr	125°C	ASTM D1525
Melting Point	133°C	ASTM D2117
Tensile Strength at Yield Point	320kg/m <sup>3</sup>	ASTM D638
Tensile Strength at Break Point	400kg/m <sup>3</sup>	ASTM D638
Elongation at Break	1000%	ASTM D638
Stiffness	10,000kg/m <sup>2</sup>	ASTM D747
Flexural Modulus	14,000kg/m <sup>2</sup>	ASTM D790
Notched Izod Impact Strength	15kg.cm/cm - Partial Break	ASTM D256
Durometer Hardness	65 Shore D	ASTM D2240
ESCR (Condition B, 25% Igepal)	400hrs, F50	ASTM D1693



One-way  
(Profile System)



## PRODUCT TECHNICAL DATA

Product: 8/5mm	Bundle: 2 way	Bundled Duct – Direct burial
Product supply: 2000m	Type: reel / drum	Wall thickness: 1mm
Inner diameter: 5mm	Outer diameter: 8mm	

Characteristics	
Construction	Outer layer: HDPE Inner layer: Silicone
Material	HDPE (Polyethylene)

Properties	
Ovality	<5%
Pressure Rating	12 bar for 5 minutes – Inner ducts
Coefficient of Friction	(Less than one)
Ball Testing	80% of inside diameter, ball passes freely
Chemical Resistance	Petrol, Diesel, Acetone, Ingepol
Colour	RAL Codes
Kink Test	Passes
Bending Radii	20 x outside diameter



Two-way  
(Profile system with  
protective sheath)

Handling & Storage	
Storage Temperature	-20 °C to +60 °C
Installation Temperature	+15 °C to +40 °C
UV Resistance Period	1-year outdoor storage
Installation	As per SABS 1200LB

Material Properties	Values	Test Method
Index (190°C/2.16kg)	0.40g/10 minutes	ASTM D1238
Density	0.941 – 0.957g/cm <sup>3</sup>	ASTM D1505
Vicat Softening Point @ 10 N, 50°C/hr	125 °C	ASTM D1525
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Notched Izod Impact Strength	15kg.cm/cm – Partial Break	ASTM D256
Durometer Hardness	65 Shore D	ASTM D2240
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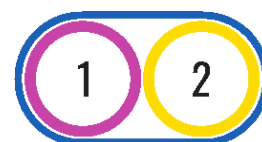
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## PRODUCT TECHNICAL DATA

Product: 12/10mm	Bundle: 2 way	Bundled Duct – Direct burial
Product supply: 1000m	Type: reel / drum	Wall thickness: 1mm
Inner diameter: 10mm	Outer diameter: 12mm	

Characteristics	
Construction	Outer layer: HDPE Inner layer: Silicone
Material	HDPE (Polyethylene)

Properties	
Ovality	<5%
Pressure Rating	12 bar for 5 minutes – Inner ducts
Coefficient of Friction	(Less than one)
Ball Testing	80% of inside diameter, ball passes freely
Chemical Resistance	Petrol, Diesel, Acetone, Ingepol
Colour	RAL Codes
Kink Test	Passes
Bending Radii	20 x outside diameter



Two-way  
(Profile system with  
protective sheath)

Handling & Storage	
Storage Temperature	-20 °C to +60 °C
Installation Temperature	+15 °C to +40 °C
UV Resistance Period	1-year outdoor storage
Installation	As per SABS 1200LB

Material Properties	Values	Test Method
Index (190°C/2.16kg)	0.40g/10 minutes	ASTM D1238
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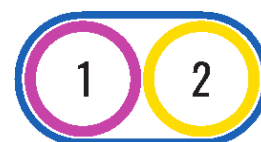
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## PRODUCT TECHNICAL DATA

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Product supply: 1000m	Type: reel / drum	Wall thickness: 1mm
Inner diameter: 10mm	Outer diameter: 14mm	

Characteristics	
Construction	Outer layer: HDPE Inner layer: Silicone
Material	HDPE (Polyethylene)

Properties	
Ovality	<5%
Pressure Rating	12 bar for 5 minutes – Inner ducts
Coefficient of Friction	(Less than one)
Ball Testing	80% of inside diameter, ball passes freely
Chemical Resistance	Petrol, Diesel, Acetone, Ingepol
Colour	RAL Codes
Kink Test	Passes
Bending Radii	20 x outside diameter



Two-way  
(Profile system with  
protective sheath)

Handling & Storage	
Storage Temperature	-20 °C to +60 °C
Installation Temperature	+15 °C to +40 °C
UV Resistance Period	1-year outdoor storage
Installation	As per SABS 1200LB

Material Properties	Values	Test Method
Index (190°C/2.16kg)	0.40g/10 minutes	ASTM D1238
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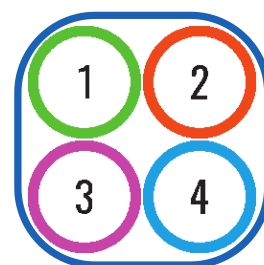


## PRODUCT TECHNICAL DATA

Product: 8/5mm	Bundle: 4 way	Bundled Duct – Direct burial
Product supply: 1000m	Type: reel / drum	Wall thickness: 1mm
Inner diameter: 5mm	Outer diameter: 8mm	

Characteristics	
Construction	Outer layer: HDPE Inner layer: Silicone
Material	HDPE (Polyethylene)

Properties	
Ovality	<5%
Pressure Rating	12 bar for 5 minutes – Inner ducts
Coefficient of Friction	(Less than one)
Ball Testing	80% of inside diameter, ball passes freely
Chemical Resistance	Petrol, Diesel, Acetone, Ingepol
Colour	RAL Codes
Kink Test	Passes
Bending Radii	20 x outside diameter



Four-way  
(Profile system with protective sheath)

Handling & Storage	
Storage Temperature	-20 °C to +60 °C
Installation Temperature	+15 °C to +40 °C
UV Resistance Period	1-year outdoor storage
Installation	As per SABS 1200LB

Material Properties	Values	Test Method
Index (190°C/2.16kg)	0.40g/10 minutes	ASTM D1238
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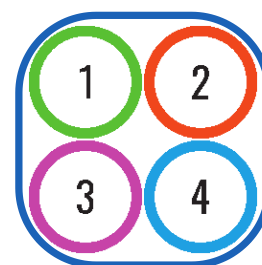
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## PRODUCT TECHNICAL DATA

Product: 12/10mm	Bundle: 4 way	Bundled Duct – Direct burial
Product supply: 1000m	Type: reel / drum	Wall thickness: 1mm
Inner diameter: 10mm	Outer diameter: 12mm	

Characteristics	
Construction	Outer layer: HDPE Inner layer: Silicone
Material	HDPE (Polyethylene)

Properties	
Ovality	<5%
Pressure Rating	12 bar for 5 minutes – Inner ducts
Coefficient of Friction	(Less than one)
Ball Testing	80% of inside diameter, ball passes freely
Chemical Resistance	Petrol, Diesel, Acetone, Ingepol
Colour	RAL Codes
Kink Test	Passes
Bending Radii	20 x outside diameter



Four-way  
(Profile system with  
protective sheath)

Handling & Storage	
Storage Temperature	-20 °C to +60 °C
Installation Temperature	+15 °C to +40 °C
UV Resistance Period	1-year outdoor storage
Installation	As per SABS 1200LB

Material Properties	Values	Test Method
Index (190°C/2.16kg)	0.40g/10 minutes	ASTM D1238
Density	0.941 – 0.957g/cm <sup>3</sup>	ASTM D1505
Vicat Softening Point @ 10 N, 50°C/hr	125 °C	ASTM D1525
Melting Point	133 °C	ASTM D2117
Tensile Strength at Yield Point	320kg/ m <sup>3</sup>	ASTM D638
Tensile Strength at Break Point	400kg/ m <sup>3</sup>	ASTM D638
Elongation at Break	1000%	ASTM D638
Stiffness	10,000kg/ m <sup>2</sup>	ASTM D747
Flexural Modulus	14,000kg/ m <sup>2</sup>	ASTM D790
Notched Izod Impact Strength	15kg.cm/cm – Partial Break	ASTM D256
Durometer Hardness	65 Shore D	ASTM D2240
ESCR (Condition B, 25% Ingepol)	400hrs, F50	ASTM D1693

### ZACK PLAS - Pipe extrusion & injection moulding

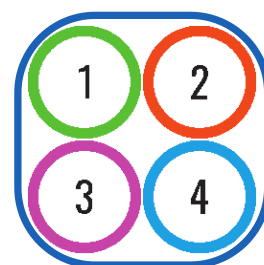
Head Office: 5 Marconi Crescent, Montague Gardens, 7441, Cape Town | Tel: +27(0) 82 450 0997 (Joop Robbertse) | E-mail: [info@zackplas.co.za](mailto:info@zackplas.co.za)

## PRODUCT TECHNICAL DATA

Product: 14/10mm	Bundle: 4 way	Bundled Duct – Direct burial
Product supply: 1000m	Type: reel / drum	Wall thickness: 1mm
Inner diameter: 10mm	Outer diameter: 14mm	

Characteristics	
Construction	Outer layer: HDPE Inner layer: Silicone
Material	HDPE (Polyethylene)

Properties	
Ovality	<5%
Pressure Rating	12 bar for 5 minutes – Inner ducts
Coefficient of Friction	<0.1
Ball Testing	80% of inside diameter, ball passes freely
Chemical Resistance	Petrol, Diesel, Acetone, Ingepol
Colour	RAL Codes
Kink Test	Passes
Bending Radii	20 x outside diameter



Four-way  
(Profile system with  
protective sheath)

Handling & Storage	
Storage Temperature	-20 °C to +60 °C
Installation Temperature	+15 °C to +40 °C
UV Resistance Period	1-year outdoor storage
Installation	As per SABS 1200LB

Material Properties	Values	Test Method
Index (190°C/2.16kg)	0.40g/10 minutes	ASTM D1238
Density	0.941 - 0.957g/m <sup>3</sup>	ASTM D1505
Vicat Softening Point @ 10 N, 50°C/hr	125°C	ASTM D1525
Melting Point	133°C	ASTM D2117
Tensile Strength at Yield Point	320kg/m <sup>3</sup>	ASTM D638
Tensile Strength at Break Point	400kg/m <sup>3</sup>	ASTM D638
Elongation at Break	1000%	ASTM D638
Stiffness	10,000kg/m <sup>2</sup>	ASTM D747
Flexural Modulus	14,000kg/m <sup>2</sup>	ASTM D790
Notched Izod Impact Strength	15kg.cm/cm - Partial Break	ASTM D256
Durometer Hardness	65 Shore D	ASTM D2240
ESCR (Condition B, 25% Ingepol)	400hrs, F50	ASTM D1693

### ZACK PLAS - Pipe extrusion & injection moulding

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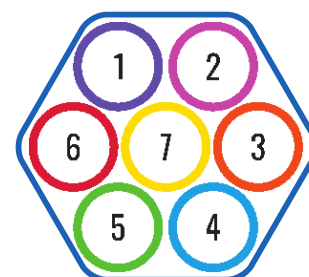


## PRODUCT TECHNICAL DATA

Product: 8/5mm	Bundle: 7 way	Bundled Duct – Direct burial
Product supply: 1000m	Type: reel / drum	Wall thickness: 1mm
Inner diameter: 5mm	Outer diameter: 8mm	

Characteristics	
Construction	Outer layer: HDPE Inner layer: Silicone
Material	HDPE (Polyethylene)

Properties	
Ovality	<5%
Pressure Rating	12 bar for 5 minutes – Inner ducts
Coefficient of Friction	(Less than one)
Ball Testing	80% of inside diameter, ball passes freely
Chemical Resistance	Petrol, Diesel, Acetone, Ingepol
Colour	RAL Codes
Kink Test	Passes
Bending Radii	20 x outside diameter



Seven-way  
(Profile system with protective sheath)

Handling & Storage	
Storage Temperature	-20 °C to +60 °C
Installation Temperature	+15 °C to +40 °C
UV Resistance Period	1-year outdoor storage
Installation	As per SABS 1200LB

Material Properties	Values	Test Method
Index (190°C/2.16kg)	0.40g/10 minutes	ASTM D1238
Density	0.941 – 0.957g/cm <sup>3</sup>	ASTM D1505
Vicat Softening Point @ 10 N, 50°C/hr	125 °C	ASTM D1525
Melting Point	133 °C	ASTM D2117
Tensile Strength at Yield Point	320kg/ m <sup>3</sup>	ASTM D638
Tensile Strength at Break Point	400kg/ m <sup>3</sup>	ASTM D638
Elongation at Break	1000%	ASTM D638
Stiffness	10,000kg/ m <sup>2</sup>	ASTM D747
Flexural Modulus	14,000kg/ m <sup>2</sup>	ASTM D790
Notched Izod Impact Strength	15kg.cm/cm – Partial Break	ASTM D256
Durometer Hardness	65 Shore D	ASTM D2240
ESCR (Condition B, 25% Ingepol)	400hrs, F50	ASTM D1693

### ZACK PLAS - Pipe extrusion & injection moulding

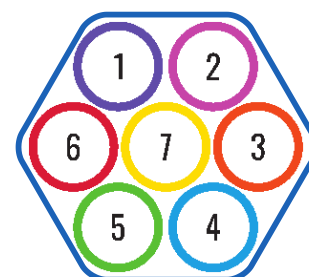
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## PRODUCT TECHNICAL DATA

Product: 12/10mm	Bundle: 7 way	Bundled Duct – Direct burial
Product supply: 1000m	Type: reel / drum	Wall thickness: 1mm
Inner diameter: 10mm	Outer diameter: 12mm	

Characteristics	
Construction	Outer layer: HDPE Inner layer: Silicone
Material	HDPE (Polyethylene)

Properties	
Ovality	<5%
Pressure Rating	12 bar for 5 minutes – Inner ducts
Coefficient of Friction	(Less than one)
Ball Testing	80% of inside diameter, ball passes freely
Chemical Resistance	Petrol, Diesel, Acetone, Ingepol
Colour	RAL Codes
Kink Test	Passes
Bending Radii	20 x outside diameter



Seven-way  
(Profile system with protective sheath)

Handling & Storage	
Storage Temperature	-20 °C to +60 °C
Installation Temperature	+15 °C to +40 °C
UV Resistance Period	1-year outdoor storage
Installation	As per SABS 1200LB

Material Properties	Values	Test Method
Index (190°C/2.16kg)	0.40g/10 minutes	ASTM D1238
Density	0.941 – 0.957g/cm <sup>3</sup>	ASTM D1505
Vicat Softening Point @ 10 N, 50°C/hr	125 °C	ASTM D1525
Melting Point	133 °C	ASTM D2117
Tensile Strength at Yield Point	320kg/ m <sup>3</sup>	ASTM D638
Tensile Strength at Break Point	400kg/ m <sup>3</sup>	ASTM D638
Elongation at Break	1000%	ASTM D638
Stiffness	10,000kg/ m <sup>2</sup>	ASTM D747
Flexural Modulus	14,000kg/ m <sup>2</sup>	ASTM D790
Notched Izod Impact Strength	15kg.cm/cm – Partial Break	ASTM D256
Durometer Hardness	65 Shore D	ASTM D2240
ESCR (Condition B, 25% Ingepol)	400hrs, F50	ASTM D1693

### ZACK PLAS - Pipe extrusion & injection moulding

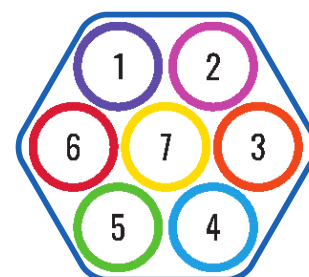
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## PRODUCT TECHNICAL DATA

Product: 14/10mm	Bundle: 7 way	Bundled Duct – Direct burial
Product supply: 1000m	Type: reel / drum	Wall thickness: 1mm
Inner diameter: 10mm	Outer diameter: 14mm	

Characteristics	
Construction	Outer layer: HDPE Inner layer: Silicone
Material	HDPE (Polyethylene)

Properties	
Ovality	<5%
Pressure Rating	12 bar for 5 minutes – Inner ducts
Coefficient of Friction	<0.1
Ball Testing	80% of inside diameter, ball passes freely
Chemical Resistance	Petrol, Diesel, Acetone, Ingepol
Colour	RAL Codes
Kink Test	Passes
Bending Radii	20 x outside diameter



Seven-way  
(Profile system with protective sheath)

Handling & Storage	
Storage Temperature	-20 °C to +60 °C
Installation Temperature	+15 °C to +40 °C
UV Resistance Period	1-year outdoor storage
Installation	As per SABS 1200LB

Material Properties	Values	Test Method
Index (190°C/2.16kg)	0.40g/10 minutes	ASTM D1238
Density	0.941 - 0.957g/m <sup>3</sup>	ASTM D1505
Vicat Softening Point @ 10 N, 50°C/hr	125°C	ASTM D1525
Melting Point	133°C	ASTM D2117
Tensile Strength at Yield Point	320kg/m <sup>3</sup>	ASTM D638
Tensile Strength at Break Point	400kg/m <sup>3</sup>	ASTM D638
Elongation at Break	1000%	ASTM D638
Stiffness	10,000kg/m <sup>2</sup>	ASTM D747
Flexural Modulus	14,000kg/m <sup>2</sup>	ASTM D790
Notched Izod Impact Strength	15kg.cm/cm - Partial Break	ASTM D256
Durometer Hardness	65 Shore D	ASTM D2240
ESCR (Condition B, 25% Ingepol)	400hrs, F50	ASTM D1693

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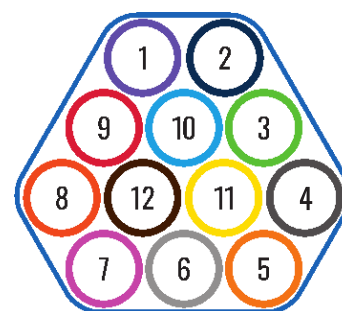


## PRODUCT TECHNICAL DATA

Product: 8/5mm	Bundle: 12 way	Bundled Duct – Direct burial
Product supply: 1000m	Type: reel / drum	Wall thickness: 1mm
Inner diameter: 5mm	Outer diameter: 8mm	

Characteristics	
Construction	Outer layer: HDPE Inner layer: Silicone
Material	HDPE (Polyethylene)

Properties	
Ovality	<5%
Pressure Rating	12 bar for 5 minutes – Inner ducts
Coefficient of Friction	<0.1
Ball Testing	80% of inside diameter, ball passes freely
Chemical Resistance	Petrol, Diesel, Acetone, Ingepol
Colour	RAL Codes
Kink Test	Passes
Bending Radii	20 x outside diameter



Twelve-way  
(Profile system with  
protective sheath)

Handling & Storage	
Storage Temperature	-20 °C to +60 °C
Installation Temperature	+15 °C to +40 °C
UV Resistance Period	1-year outdoor storage
Installation	As per SABS 1200LB

Material Properties	Values	Test Method
Index (190°C/2.16kg)	0.40g/10 minutes	ASTM D1238
Density	0.941 - 0.957g/m <sup>3</sup>	ASTM D1505
Vicat Softening Point @ 10 N, 50°C/hr	125°C	ASTM D1525
Melting Point	133°C	ASTM D2117
Tensile Strength at Yield Point	320kg/m <sup>3</sup>	ASTM D638
Tensile Strength at Break Point	400kg/m <sup>3</sup>	ASTM D638
Elongation at Break	1000%	ASTM D638
Stiffness	10,000kg/m <sup>2</sup>	ASTM D747
Flexural Modulus	14,000kg/m <sup>2</sup>	ASTM D790
Notched Izod Impact Strength	15kg.cm/cm - Partial Break	ASTM D256
Durometer Hardness	65 Shore D	ASTM D2240
ESCR (Condition B, 25% Ingepol)	400hrs, F50	ASTM D1693

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## PRODUCT TECHNICAL DATA

Product: 32/27mm	Bundle: 1 way	Sub-duct – Direct burial
Product supply: 500m	Type: coiled	Wall thickness: 3mm
Inner diameter: 27mm	Outer diameter: 32mm	

Characteristics	
Construction	Outer layer: HDPE Inner layer: Silicone
Material	HDPE (Polyethylene)

Properties	
Ovality	<5%
Pressure Rating	12 bar for 5 minutes
Coefficient of Friction	<0.1
Ball Testing	80% of inside diameter, ball passes freely
Chemical Resistance	Petrol, Diesel, Acetone, Ingepol
Colour	RAL Codes
Kink Test	Passes
Bending Radii	20 x outside diameter

Handling & Storage	
Storage Temperature	-20 °C to +60 °C
Installation Temperature	+15 °C to +40 °C
UV Resistance Period	1-year outdoor storage
Installation	As per SABS 1200LB

Material Properties	Values	Test Method
Index (190°C/2.16kg)	0.40g/10 minutes	ASTM D1238
Density	0.941 - 0.957g/m <sup>3</sup>	ASTM D1505
Vicat Softening Point @ 10 N, 50°C/hr	125°C	ASTM D1525
Melting Point	133°C	ASTM D2117
Tensile Strength at Yield Point	320kg/m <sup>3</sup>	ASTM D638
Tensile Strength at Break Point	400kg/m <sup>3</sup>	ASTM D638
Elongation at Break	1000%	ASTM D638
Stiffness	10,000kg/m <sup>2</sup>	ASTM D747
Flexural Modulus	14,000kg/m <sup>2</sup>	ASTM D790
Notched Izod Impact Strength	15kg.cm/cm - Partial Break	ASTM D256
Durometer Hardness	65 Shore D	ASTM D2240
ESCR (Condition B, 25% Ingepol)	400hrs, F50	ASTM D1693



One-way  
(Profile System)

## PRODUCT TECHNICAL DATA

Product: 40/34mm	Bundle: 1 way	Sub-duct – Direct burial
Product supply: 500m	Type: coiled	Wall thickness: 3mm
Inner diameter: 34mm	Outer diameter: 40mm	

Characteristics	
Construction	Outer layer: HDPE Inner layer: Silicone
Material	HDPE (Polyethylene)

Properties	
Ovality	<5%
Pressure Rating	12 bar for 5 minutes
Coefficient of Friction	<0.1
Ball Testing	80% of inside diameter, ball passes freely
Chemical Resistance	Petrol, Diesel, Acetone, Ingepol
Colour	RAL Codes
Kink Test	Passes
Bending Radii	20 x outside diameter

Handling & Storage	
Storage Temperature	-20 °C to +60 °C
Installation Temperature	+15 °C to +40 °C
UV Resistance Period	1-year outdoor storage
Installation	As per SABS 1200LB

Material Properties	Values	Test Method
Index (190°C/2.16kg)	0.40g/10 minutes	ASTM D1238
Density	0.941 - 0.957g/m <sup>3</sup>	ASTM D1505
Vicat Softening Point @ 10 N, 50°C/hr	125°C	ASTM D1525
Melting Point	133°C	ASTM D2117
Tensile Strength at Yield Point	320kg/m <sup>3</sup>	ASTM D638
Tensile Strength at Break Point	400kg/m <sup>3</sup>	ASTM D638
Elongation at Break	1000%	ASTM D638
Stiffness	10,000kg/m <sup>2</sup>	ASTM D747
Flexural Modulus	14,000kg/m <sup>2</sup>	ASTM D790
Notched Izod Impact Strength	15kg.cm/cm - Partial Break	ASTM D256
Durometer Hardness	65 Shore D	ASTM D2240
ESCR (Condition B, 25% Ingepol)	400hrs, F50	ASTM D1693



One-way  
(Profile System)



## PRODUCT TECHNICAL DATA

Product: 50/42mm	Bundle: 1 way	Sub-duct – Direct burial
Product supply: 500m	Type: coiled	Wall thickness: 4mm
Inner diameter: 42mm	Outer diameter: 50mm	

Characteristics	
Construction	Outer layer: HDPE Inner layer: Silicone
Material	HDPE (Polyethylene)

Properties	
Ovality	<5%
Pressure Rating	12 bar for 5 minutes
Coefficient of Friction	<0.1
Ball Testing	80% of inside diameter, ball passes freely
Chemical Resistance	Petrol, Diesel, Acetone, Ingepol
Colour	RAL Codes
Kink Test	Passes
Bending Radii	20 x outside diameter



One-way  
(Profile System)

Handling & Storage	
Storage Temperature	-20 °C to +60 °C
Installation Temperature	+15 °C to +40 °C
UV Resistance Period	1-year outdoor storage
Installation	As per SABS 1200LB

Material Properties	Values	Test Method
Index (190°C/2.16kg)	0.40g/10 minutes	ASTM D1238
Density	0.941 - 0.957g/m <sup>3</sup>	ASTM D1505
Vicat Softening Point @ 10 N, 50°C/hr	125°C	ASTM D1525
Melting Point	133°C	ASTM D2117
Tensile Strength at Yield Point	320kg/m <sup>3</sup>	ASTM D638
Tensile Strength at Break Point	400kg/m <sup>3</sup>	ASTM D638
Elongation at Break	1000%	ASTM D638
Stiffness	10,000kg/m <sup>2</sup>	ASTM D747
Flexural Modulus	14,000kg/m <sup>2</sup>	ASTM D790
Notched Izod Impact Strength	15kg.cm/cm - Partial Break	ASTM D256
Durometer Hardness	65 Shore D	ASTM D2240
ESCR (Condition B, 25% Ingepol)	400hrs, F50	ASTM D1693

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**ZACK PLAS - Pipe extrusion & injection moulding**

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