

Duct Accessories

Couplings, Connectors, Reducers, End Caps and Plug Ends for connecting and sealing PE ducts



BBBEE Level 3 Contributor

Contents

1	Introduction.....	3
2	Abbreviations / Definition	3
3	Couplers	3
3.1	Performance	4
4	Plug Ends	4
4.1	Performance	4
5	End Caps.....	4
6	Sizes:.....	5
7	Material.....	5
7.1	Coupler & Plug end	5
7.2	End cap	5
8	END.....	5

1 Introduction

“Push-Fit” accessories for connecting, sealing off and testing ducts and micro-ducts (MD). These fittings / accessories are specifically designed to match the inside and outside dimensions of ducts / MD to ensure seamless interconnections. Accessories are pushed onto a clean-cut duct / MD and seals onto it via an O-rings. The fitting is secured via a metal or plastic claw / grips. These can be unlocked by pushing the collet towards the center.

In this document we will address:

Couplers (connectors)

End caps (tube covers)

Plug ends (end stop / sealing caps)

2 Abbreviations / Definition

Polyethylene	PE
Micro-ducts	MD – PE tubing of sizes less than 20mm
Millimeters	mm
Direct buried	DB
Direct install	DI
Milliliter	ml
Minute	min
Newton	N

3 Couplers

We will look at 2 types of couplers: direct buried couples (DB) and normal couplers – direct install (DI)

Note DB coupler are more robust and suitable to withstand forces of being buried underground. DB couplers are suitable for DI application as well but it might not be worth the premium you pay for these robust connectors to use them in this application.



3.1 Performance

Coupler operating conditions	16bar at -15°C to +45 °C
Burst pressure	> 26bar
Gas tightness	Leakage at 16Bar pressure 1ml/min Leakage at 0.7Bar pressure 0.1ml/min
Water ingress	Sealed against 6m water head
Insertion force	50N Maximum

4 Plug Ends

Plug ends are used to seal off ducts and MD the same way couplers connect. Plug ends are also used in the duct integrity test to test for leaks and to ensure the ducts system can operate at 16bar pressure. Typically, cables are blown in the system at 10-15bar pressure.



4.1 Performance

Coupler operating conditions	16bar at -20°C to +60 °C
Burst pressure	> 26bar
Gas tightness	Leakage at 16Bar pressure 1ml/min Leakage at 0.7Bar pressure 0.1ml/min
Water ingress	Sealed against 6m water head
Insertion force	50N Maximum

5 End Caps

End cap comes in various sizes and shapes and are used to seal-off unused ducts from foreign objects that could block or damage the ducts or inside wall. They are designed to fit tightly onto the duct end with 2 inner ribs.



6 Sizes:

Duct Straight Couplers		
	Duct size (outside)	Duct size (inside)
Direct install	3mm	2.1mm
	5mm	2.1mm
	5mm	3.5mm
	7mm	3.5mm
Direct buried	8mm	5mm
	10mm	8mm
	12mm	10mm
	14mm	10mm
	16mm	13mm
	18mm	15mm

Duct reducers Couplers			
	From Duct Size	To Duct Size	Duct size (inside)
Direct install	3mm	5mm	2.1mm
	3mm	7mm	2.1mm
	5mm	7mm	3.5mm
	5mm	8mm	3.5mm
	5mm	12mm	3.5mm
	7mm	12mm	3.5mm
	8mm	12mm	10mm
	12mm	14mm	10mm
	12mm	16mm	10mm

End cap / Plug Ends	
	Duct size (outside)
Direct install	3mm
	5mm
	7mm
	8mm
	10mm
	12mm
	14mm
	16mm
	18mm

End caps for duct bundles	
	Bundle Type
Direct install	12way bundle
	7way bundle
	4way bundle
	2way bundle
	32mm
	40mm
	50mm
	110mm
160mm	

7 Material

7.1 Coupler & Plug end

BODY: acetal copolymer, impact resistant

COLLET: acetal copolymer, stainless steel teeth

O-RINGS: nitrile rubber

7.2 End cap

All plastic covers are manufactured using LDPE material (low density polyethylene).

8 END.