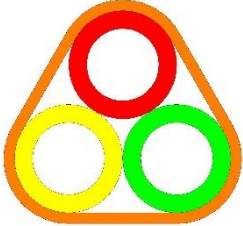


Seako Specification

**HDPE TUBE BUNDLE
3-WAYS 14/10mm**

SPEC-TB1410-3
Ver A
June 10, 2017

Test	Characteristic	Test Method	Acceptance Criteria
Raw Materials			
1	Bundles is manufactured with 100% virgin HDPE		
	2	Melt flow index	ASTM 1238 190°C @ 2.16KG Load ≤0.40 g/10min
	3	Density	ASTM D792 0.940~0.958 g/cm ³
	4	Environmental stress crack resist (F50)	ISO 4599 Min. 96h
Physical and Mechanical Properties – Inner Micro duct 14/10mm			
1	Visual appearance	Visual inspection	Ribbed inside & smooth outside surface, free from blisters, shrink hole, flaking, scratches & roughness.
2	Outer diameter	Seako	14.0mm ± 0.1mm
3	Wallthickness	Seako	2.00mm ± 0.10mm
4	Inner diameter clearance	Blowing steel ball	A 8.5mm steel ball can be blown freely through the duct.
5	Ovality	Seako	≤ 5%
6	Pressurization	5 minutes @25bar each duct	No damage and leakage
7	Kink	IEC 60794-1-2 Method E10	≤ 140mm
8	Tensile strength	Rate of extension: 100mm/min	≥1350N
9	Crush	Sample length: 250mm Load: 1400N Duration of Max. load: 1 min Recovery time: 1 hour	No residual deformation> 15% of inner and outer diameter, shall pass inner diameter clearance test.
10	Impact	IEC 60794-1-2 Method E4 1.5J Impact, recovery time 1 hour	No residual deformation> 15% of inner and outer diameter, shall pass inner diameter clearance test.
11	Heat reversion	110°C ~ 23°C, 1 hour	≤ 3%
12	Min. bend radius	168mm	No residual deformation> 15% of inner and outer diameter, shall pass inner diameter clearance test.
13	Co-efficient of Friction	750mm Diameter, 450°loop, 5kg mass	≤ 0.1
14	Color and printing	Visual inspection	As per customer specification

Seako Specification**HDPE TUBE BUNDLE
3-WAYS 14/10mm**

SPEC-TB1410-3

Ver A

June 10, 2017

Test	Characteristic	Test Method	Acceptance Criteria
Physical and Mechanical Properties – tube bundles			
1	Visual appearance	Visual inspection, Outer sheath: Black	Ribbed inside & smooth outside surface, free from blisters, shrink hole, flaking, scratches & roughness.
2	Outer diameter	Seako	30.4mm*28.6mm(± 1.1mm)
3	Sheath Wallthickness	Seako	1.20mm ± 0.20mm
4	Pressurization	5 minutes @25bar each duct	No damage and leakage
5	Tensile strength	Rate of extension: 100mm/min	≥3000N
6	Crush	Sample length: 250mm Load: 2000N Duration of Max. load: 1 min Recovery time: 1 hour	No residual deformation> 15% of inner and outer diameter, shall pass inner diameter clearance test.
7	Impact	IEC 60794-1-2 Method E4 10.0J Impact, recovery time 1 hour	No residual deformation> 15% of inner and outer diameter, shall pass inner diameter clearance test.
8	Min. bend radius	620mm	No residual deformation> 15% of inner and outer diameter, shall pass inner diameter clearance test.
9	Color and printing	Visual inspection	Black or as per customer specification

Completed packages of the HDPE micro duct on drum can be stored outdoor max. 6 months upon the date of production.

Storage temperature: -40°C ~ +70°C

Installation temperature: -30°C ~ +50°C

Operating temperature: -40°C ~ +70°C