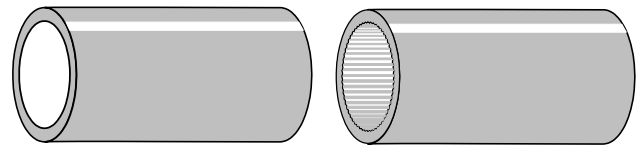
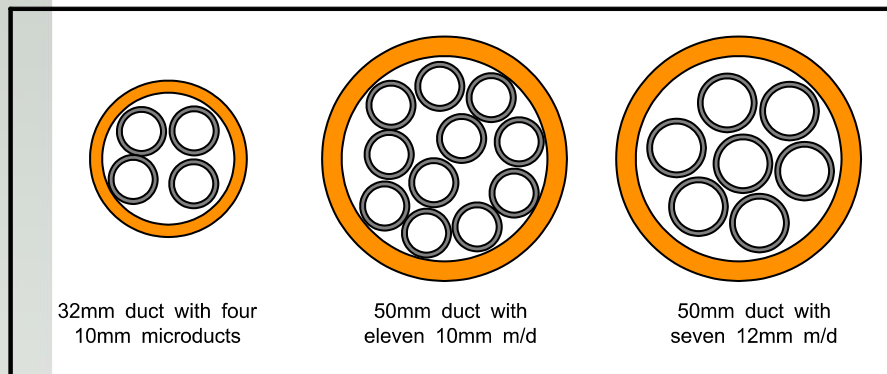


## Standard HDPE Duct (or 'sub-duct') For Loose Protected Microducts



### 1 General

- 1.1 This document defines a range of single, continuous duct made from HDPE, according to paragraph 2.
- 1.2 The duct features an internal bonded low friction dry silicone liner, and ribs to reduce frictional contact.
- 1.3 The duct is designed for the accommodation of PE microducts (m/d) of various sizes and numbers. Any suitable combination of m/ds from specification MHT 343 may be requested pre-installed into the HDPE ducts listed here. The m/ds should not occupy more than 60% of the available space. Some examples are shown:



If the m/d are to be re-installed for any reason, our advice is to follow the data given below.

- 1.4 The duct is supplied in coils or on returnable drums.

### 2 Raw Materials

- 2.1 The duct shall be extruded from standard pipe grade, high density polyethylene compound.
- 2.2 The derived density of the polyethylene shall be not less than 0.94 g/ml
- 2.3 The polyethylene is available in the following RAL colours: red, orange (RAL 2004), yellow, green, dark green, blue, violet, turquoise, pink, brown, grey, black and white.

### 3 Dimensions

'SIZE' OD/ID	SDR	Wall, nom	MASS, nom g/m = kg/km	max install tension		Drum length
		mm		kN	kg	
16 / 10	5.3	3.0	116	1.0	100	5km
16 / 12	8.0	2.0	84	0.7	70	5km
20 / 16	10.0	2.0	107	0.9	90	4km
25 / 20.4	10.9	2.3	156	1.4	140	3km
32 / 26	10.7	3.0	260	2.1	210	3km
32 / 27	12.8	2.5	220	1.8	180	3km
32 / 27.6	14.5	2.2	196	1.7	170	3km
40 / 32.2	10.3	3.9	420	3.7	370	2km
40 / 32.6	10.8	3.7	401	3.3	330	2km
40 / 33.2	11.8	3.4	371	3.2	320	2km
40 / 34	13.3	3.0	331	2.7	270	2km
40 / 35	16.0	2.5	280	2.4	240	2km
50 / 41	11.1	4.5	611	5.1	500	1150m
50 / 42	12.5	4.0	549	4.4	440	1150m
50 / 44	16.7	3.0	421	8.5	850	1150m

↳ 'SDR' is the standard dimension ratio (OD / wall). Lower SDRs indicate heavy-duty sizes.

- 3.1 The duct shall have dimensions (mm) as per table above.

3.2 The weight (mass) of the duct shall be nominally as stated in the table.

#### 4 Duct Performance

4.1 TENSILE: The duct shall withstand the stated axial installation tensions. On tensile test, the duct shall not fail below 20MPa stress.

4.2 INSTALLATION: We recommend that installation tension does not exceed that specified in the previous table, and that correct installation procedures are followed. After pulling and before cutting or connecting the duct, allow suitable relaxation time, ideally 24 hours or more.

4.3 FRICTION: Friction tests to ISO 8295 using cable in the duct show coefficient of friction of 0.011

4.4 BENDING: Minimum recommended bend radius with respect to temperature is as stated below. Remember that using HIGHER radii than these reduces stress in the ducts.

Duct size	Temperature of duct			
	-10°C	0°C	10°C	20°C
16mm	1.0m	0.8m	0.6m	0.35m
20mm	1.3m	1.0m	0.7m	0.4m
25mm	1.6m	1.3m	0.9m	0.5m
32mm	2.1m	1.6m	1.2m	0.7m
40mm	2.6m	2.0m	1.4m	0.8m
50mm	3.3m	2.5m	1.8m	1.0m

4.5 PRESSURE: Quality Assurance: Duct from selected production batches is pressure tested.

4.6 CONTINUITY: Quality Assurance: metal probe test on all batches to assure internal diameter.

4.7 EXPOSURE: The ducts shall be UV stabilised to withstand daylight exposure period of at least 12 months. However, for optimum performance, the duct is best stored for no longer than 6 months if outdoors.

4.8 THERMAL EXPANSION: Longitudinal coefficient of thermal expansion is  $1.4 \times 10^{-4}$ . Remember that expansion and contraction of long duct lengths will normally be less than this figure due to the duct weight restricting movement. Most expansion and contraction occurs at the ends, especially if exposed to daylight. See the installation instructions.

4.9 FIRE RISK: (This risk is typically during indoor storage, eg in a warehouse environment) Combustion temperature approx 250°C. Do not inhale the smoke. The duct contains no hazardous substances. If completely incinerated it produces carbon dioxide and water.

#### 5 Marking

Unless otherwise requested, the duct shall be marked at one metre intervals as below:

- Batch number
- Incremental metre-mark
- Production date
- Manufacturer

Optional marking:

- Duct dimensions
- Customer name, logo and / or other designations
- Stripes are also available on request

#### 6 Ordering

Please note that this duct is available with pre-installed microducts of any size and combination that is practicable, assuming some freedom of movement ('loose protected microducts') The microduct complies with Emtelle specification MHT 343.