





WWW.MARINESHINE.CO.TH



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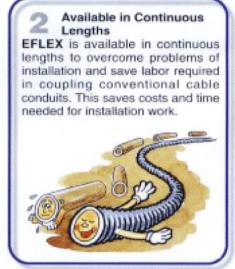


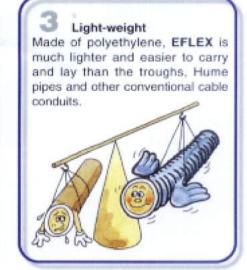


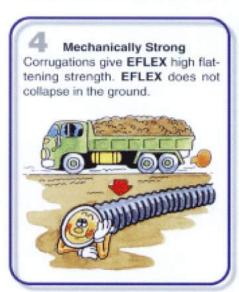


EFLEX Offers a Range of Merits Not Shared by Conventional Conduits Such as Steel and PVC Pipes

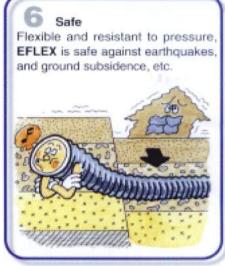
Easy to Bend Because of its corrugations, EFLEX can be bent freely and can be easily laid around obstacles.

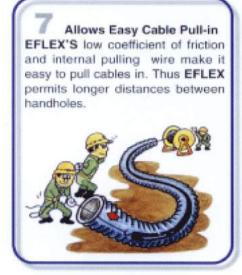


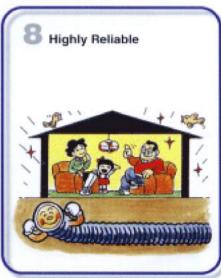






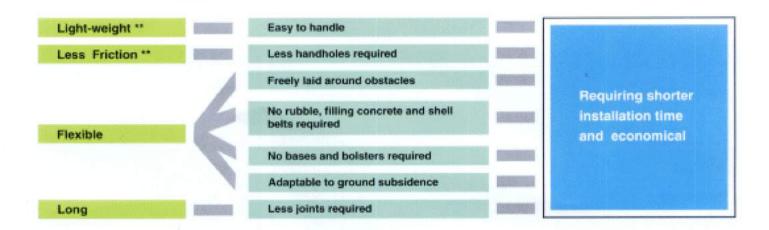








EFLEX - the New Cable Conduit, Well Designed to Reduce Installation Time and Costs



The above features of **EFLEX** can be summarized as: "it requires only simple installation and is all round more economical."

* Weight per unit length (per100Ø-m)

EFLEX	1.1 kg
Trough	42.0 kg
Lined steel pipe	13.1 kg
Hume pipe	26.5 kg
Hard virryl pipe	3.4 kg

** Coefficient of friction

EFLEX	0.3
Lined steel pipe	0.5
Hume pipe	0,7
Hard vinyl pipe	0.4

EFLEX Is Available in Many Sizes Ranging from 30 Ø to 150 Ø — Ready to Be Delivered upon Request

The standard dimensions of EFLEX are as shown in the table below. A pilot wire is provided inside EFLEX in the course of its production. It is connected with the cable pilot wire to pull the cable in to the pipe. EFLEX is, as a rule, shipped from the factory, wound in a coil. A pilot wire has an allowable tensile strength of 50 kg.

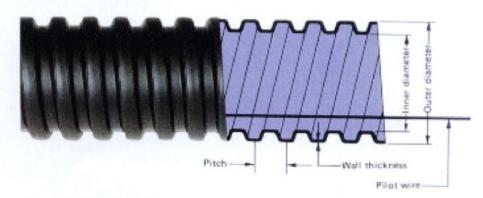


Table of Standard Dimensions

SIZE mm	Outer Diameter about mm	Inner Diameter about mm	Wall Thickness about mm	Pitch about mm	Weight for reference kg/m	Standard length per coil m	Standard OD and height of coil m
30 Ø	40	30	1.4	10	0.23	300	1.4 x 0.55
50 Ø	64	50	1.4	17	0.36	200	1.5 X 0.7
80 Ø	102	80	1.9	25	0.8	100	1.7 X 0.7
100 Ø	130	100	2.0	33	1.1	100	1.9 X 0.8
125 Ø	160	125	2.2	39	1.6	100	2.05 X 1.0
150 Ø	188	150	2.5	44	2.3	50	1.7 X 1.25

- When purchasing EFLEX, it is recommended that its nominal diameter be more that 1.5 times as large as the outer diameter of the cable to be accommodated.
- Dimensions other than the above standards are acceptable, but requests for longer dimensions cannot always be met due to transportation considerations.

EFLEX (Corrugated High Density Polyethylene Pipe.) Realize Major Saving Labor Costs in Underground Installation Use Only EFLEX!

EFLEX/EFLEX-FR "corrugated high density polyethylene / with flame retardant respectively Pipe" developed by FURUKAWA ELECTRIC CO.,LTD. (Japan) Spirally corrugated, EFLEX has several times as much flattening strength as ordinary uncorrugated plastic pipes and is remarkably flexible and easy to handle.

Easy to bend, strong and economical, EFLEX replaces conventional pipes and has already been

used extensively in many underground cable installations to favorable reviews. EFLEX won an award of the U.S. wire Association in 1968 and was also awarded the 11th Ichimura Prize in Japan. It was produced in Thailand by Bangkok Telecom Co.,Ltd.

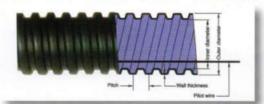




Table of Standard Dimension

EFLEX Size (mm)	Outer diameter Approx (mm)	Inner diameter Approx (mm)	Wall thickness Approx (mm)	Pitch Approx (mm)	Weight Approx (kg/m)	Standard Lenght / Coil (m)	Weight / Coil Approx (kg/coil)	Dimensions Coil OD x Height Approx (m)
30	40	30	1.4	10	0.23	300	78	1.40 x 0.55
50	64	50	1.4	17	0.36	200	80	1.50 x 0.70
80	102	80	1.9	25	0.80	100	80	1.70 x 0.70
100	130	100	2.0	33	1.10	100	115	1.90 x 0.80
125	160	125	2.2	39	1.60	100	163	2.05 x 1.00
150	188	150	2.5	44	2.30	50	116	1.70 x 1.25

The standard dimensions of EFLEX are a shown in the table above. A pilot wire is provided inside EFLEX in the course of its production. It is connected with the cable pilot wire to pull the cable in to the pipe. EFLEX is, as a rule, shipped from the factory, wound in a coil. A pilot wire has an allowable tensile strength of 50 kg.

Material Properties (for reference) EFLEX Offers Excellent Properties Exceptional Strength, Corrosion Resistance, Durability and Resistance to Chemicals.

Description		R	emarks
Density	0.95 g/cm ³	Standard JIS	K - 6760
Vicat softening point	120 °c	JIS	K - 6870
Brittle temperature	<-70 °c	JIS	K - 6723
Thermal expansivity	1.3 x10 ⁻⁴ deg ⁻¹	AST	M D - 698
Yield tensile strength	2.4 kg/mm ²	JIS	K - 6761
Yield elongation	10%	JIS	K - 6761
Breaking Tensile strength	2.7 kg/mm ²	ЛS	K - 6761
Breaking elongation	800%	ЛS	K - 6761
Torsional resistance	150 kg/cm ²	AST	M D- A1004
Hardness	66	ЛЅ	K -7072
Oil resistant tensile strength residual rate	>95%	JIS	K - 6723 (JIS oil, class2)
Oil resistant elongation	>95%	JIS	K - 6723 70° c x 4 hr
residual rate			
Heat aging tensile strength residual rate	>95%	JIS	K - 6723 90 °c x 96 hr
Heat aging elongation residual rate	>85%	JIS	K - 6723
Environmental cracking resistance	>200hr	modi	fied ASTM D1693-60

Chemical	resistan	ce		
Chemicals	To	emperature		
Chemicals	25 c	50 c	75 c	
30% hydrochloric acid	0	0	0	
20% sulphuric acid	0	0	0	
10% nitric acid	0	0	0	
20% acetic acid	0	0	0	
20% caustic soda	0	0	0	
10% ammonia water	0	0	0	
JIS,Class 2 insulation oil	0	0	0	
Sea water	0	0	0	
50% formalin	0	0	1	
Benzene	0	0	1	
Gasoline	0	0	1	
Ethanol	0	0	1	

ONot affected

....Slinghtly affected

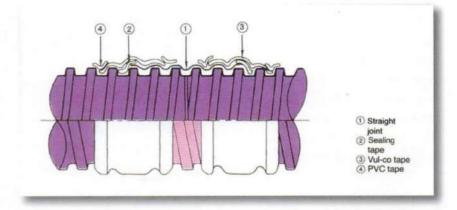
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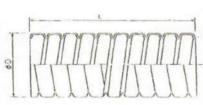
EFLEX Accessories.

STRAIGHT JOINT

Screw the straight joint into one of the ends of EFLEX to be joined and connect pilot wire. Align the two EFLEX ends and join EFLEX together by turning the sleeves in opposite directions. Wrap the sealing tape around both ends of the sleeve and cover the sealed part with Vul-co tape Secure the tape edges with PVC tape.







Size (mm)	D (mm)	L (mm)	Weight Approx (g/PC)
30.0	47.0	102.0	40.4
50 Ø	72.0	169.0	83.6
80 Ø	111.0	245.0	242.4
100 Ø	142.0	327.0	342.2
125.0	175.0	392.0	457.4
150 Ø	205.0	436.0	1053.2

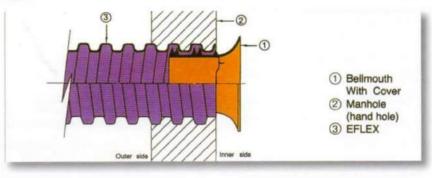
Material: Black high density polyethylene

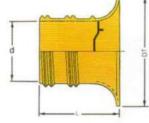
BELLMOUTH WITH END COVER

For preventing sand from entering spare conduits

A cover is attached to the bellmouth to prevent sand and dust from entering conduits. The cover should be removed when the bellmouth is in use.







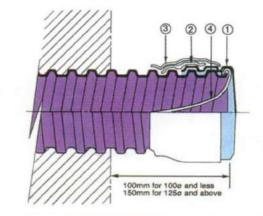
DT (mm)	d (mm)	L (mm)	Weight Approx (g/PC)
50.0	25.5	40.0	7.6
78.0	44.5	60.0	22.6
115.0	74.5	85.0	61.4
144.0	93.5	105.0	147.0
176.0	116	130.0	229.0
205.0	140.5	150.0	326.4
	50.0 78.0 115.0 144.0 176.0	(mm) (mm) 50.0 25.5 78.0 44.5 115.0 74.5 144.0 93.5 176.0 116	(mm) (mm) (mm) 50.0 25.5 40.0 78.0 44.5 60.0 115.0 74.5 85.0 144.0 93.5 105.0 176.0 116 130.0

Material: Black high density polyethylene

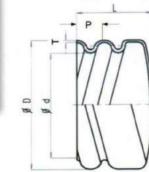
END CAP

Screw the End cap onto the outside of EFLEX (the amount of EFLEX protruding from a wall should match the amount of taping). Wrap sealing tape around the boundary line of EFLEX and secure its end with PVC tape.





- 1 End cap
- Sealing tape
- ③ PVC tape
- 4 Pilot wire



Size (mm)	D (mm)	d (mm)	L (mm)	Approx (g/Pc)
30 Ø	48.0	38.0	24.0	4.8
50 Ø	72.0	58.0	39.0	14.0
80 Ø	111.0	94.0	60.0	62.0
100 Ø	142.0	116.0	85.0	97.0
125 Ø	175.0	140.0	105.0	141.6
150 Ø	205.0	169.0	120.0	232.4

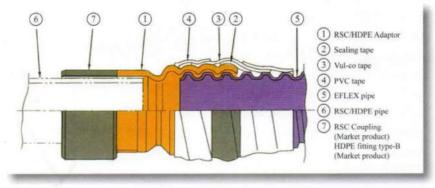
Material: Black high density polyethylene

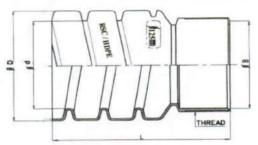
ADAPTOR • RSC/HDPE ADAPTOR

Screw RSC/HDPE adaptor onto the outside of EFLEX. Screw coupling RSC or HDPE with RSC/HDPE adaptor until fits the joints. Wrap sealing tape around the boundary line of EFLEX and wrap Vul-co tape its end with PVC tape.









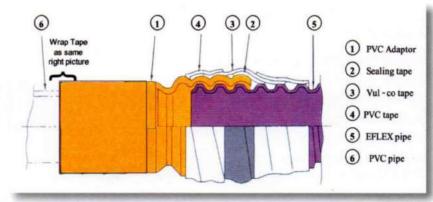
Material: Black high density polyethylene

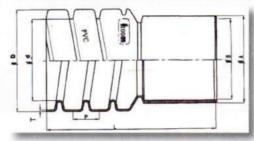
Size (mm)	B (mm)	D (mm)		L (mm)	Approx (g/PC)
30.0	34.0	48.0	40.0	102.0	26.8
50 Ø	51.0	72.0	63.0	110.0	76.8
80 Ø	82.0	111.0	93.0	156.0	139.8
100 Ø	105.0	142.0	117.0	180.0	192.0
125 Ø	128.0	181.0	140.0	275.0	435.4
150 Ø	156.0	205.0	167.0	237.0	495.6

PVC ADAPTOR

Screw the PVC adaptor onto the outside of EFLEX until fits the joints and connect PVC adaptor with PVC pipe. Wrap sealing tape, Vul-co tape and PVC tape at the end of both end adaptor.







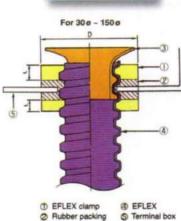
Material: Black high density polyethylene

Size (mm)	B (mm)	D (mm)	d (mm)	L (mm)	Weight Approx (g/PC)
100 Ø	114.0	142.0	110.0	275.0	328.2

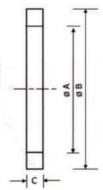
EFLEX CLAMP

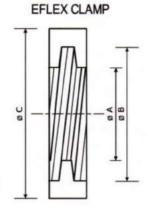
If EFLEX units are fitted to a terminal box, use EFLEX clamps as shown in the Figure. A hole such as that indicated in the Table below should be opened on the EFLEX fitting plane of the terminal box to mach the diameter of EFLEX used.





RUBBER PACKING





Material: Aluminum and coating silver colour

Size	E	Weight		
(mm)	A (mm)	B (mm)	C (mm)	Approx (g/PC)
30.00	35.5	40.0	63.5	92.4
50 Ø	55.5	64.0	80.0	82.0
80 Ø	91.0	105.0	122.5	175.2
100 Ø	110.0	136.0	160.0	561.0
125 Ø	135.0	163.0	191.0	798.6
150 Ø	170.0	193.5	222.0	993.8

Size (mm)	Hole dia. of wall (mm)
30 Ø	Approx 50
50.0	Approx 75
80 Ø	Approx 110
100 Ø	Approx 140
125 Ø	Approx 170
150 Ø	Approx 200

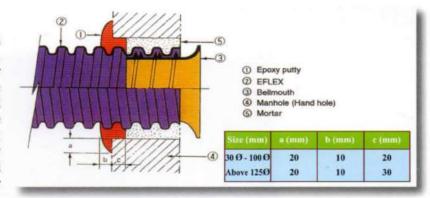
Size	RU	Weight		
(mm)	A (mm)	B (mm)	C (mm)	Approx (g/PC)
30 Ø	43.5	64.0	2.1	5.4
50 Ø	64.5	80.0	2.2	6.2
80 Ø	97.0	112.0	2.8	9.0
100 Ø	110.0	160.0	2.8	16.8
125 Ø	155.0	190.0	2.8	36.8
150 Ø	197.0	222.0	2.8	50.8

EPOXY PUTTY

If EFLEX is laid in a location with a high underground water level, a waterproof wall seal is necessary for EFLEX systems set in manholes. The waterproof wall sealing compound (Epoxy putty) is composed of a base (black) and a hardener (white). Mix the sealing compound well and apply it into cavities between the wall and the EFLEX. Be sure to wear rubber gloves when handing the compound.

When ordering

Please specify "epoxy putty compound" A package consists of a can containing 1.5 kg of the compound and a can containing 1.5 kg of curing agent (total of 3 kg). The compound and agent are also available as a 0.5 kg = 0.25 kg + 0.25 kg set. (However, the sale unit is 1 kg)



Amount of Epoxy Putty

EF	LEX	Dia of hole on wall	Amount of Epoxy putt		
Size (mm)	Outer dia. (mm)	Approx. mm	kg		
30 Ø	40	80	0.5		
50 Ø	65	110	0.5		
80 Ø	105	160	1.0		
100 Ø	130	180	1.5		
125 Ø	160	210	2.0		
150 Ø	190	260	4.0		

SAND PREVENTIVE

Material for EFLEX Used in Manholes and Outdoors

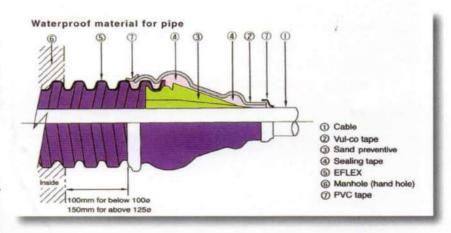
Waterproof material should be applied to EFLEX attached to a manhole into which water may penetrate and to EFLEX used outdoors.

Application procedure

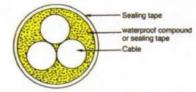
Insert sand preventive ③ into an end of EFLEX and cover with waterproof compound ④ or sealing tape. Wrap Vul-co tape around it and secure its end with PVC tape. The end of the sand preventive should be cut beforehand so that its length matches the outer diameter of the cable. When EFLEX is attached to a manhole part, the amount that protrudes should match the amount required for taping before it is attached to the manhole.

When ordering

Please specify your order for waterproof material (Sand Preventive) as follows: Sand Preventive Table mm. ØEFLEX. Also, please specify whether your order for waterproof material is for multiplex cables: when the cable is triplex or when multiplex cables are collectively pulled through EFLEX.



Example of when multiplex cables are pulled through EFLEX



When triplex cables or multiplex cables are pulled through EFLEX, they should be rounded to resemble a single cable and should also be pulled through EFLEX as a single cable.



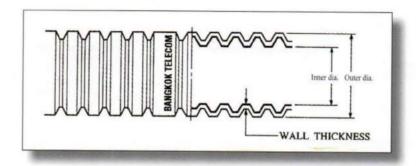
1	m	
*D3		Material: Rubber
		-

n) Approx (g/PC)
.0 32.6
.0 99.6
.0 314.0
.0 791.0
.0 1274.6
.0 2037.2

PFLEX-CD / CD-FR and Accessories.

Low-cost, strong, easy-to-bend, corrugated conduits.

Developed for in concrete PFLEX-CD and expose areas for PFLEX CD-FR



PFLEX-CD

PFLEX-CD is a flexible high density polyethylene conduits in conformity with Japanese Industrial Standard (JIS) C8411 abd C8412. PFLEX CD conduit is single wall structure. It is a flexible CD conduit with corrugations designed for in concrete installation.



PFLEX CD-FR

PFLEX CD-FR is also a flexible plastic conduit. It has a single wall construction. But it has flame-retardant property, and can be used for both exposed and in concrete installation. It is also available in five sizes.



Table of Standard Dimension

PFLEX-CD/ CD-FR Size (mm)	Outer diameter Approx (mm)	Innex diameter Approx (mm)	Wall thickness Approx (mm)	Weight Approx (g/m)	Standard Lenght / Coil (m)	Weight / Coil Approx (kg/coil)	Dimensions Coil OD x Height Approx (mm)
14	19	14	0.8	80	50	4	570 x 180
16	21	16	0.9	87	50	4	600 x 180
22	28	22	0.9	135	50	7	680 x 180
28	34	28	1.0	195	30	6	680 x 180
36	42	36	1.0	230	30	7	660 x 255



EFLEX-FR will be need as a cable protecting conduit in exposed area of factories, building and power stations where nonflammability is demanded and optimum for work sites.

HIGH LEVEL OF NONFLAMMABILITY

1. NONFLAMMABILITY

Meet the nonflammability test stipulared in IEEE STANDARD 383.

2. OUTSTANDING STRENGTH

Endowed with excellent flattening compression strength same as EFLEX.

3. WORK ABILITY

Laying EFLEX-FR can be done in a minimum space and serves for the upgrading of working efficiency short time and labour saving.



FACTORIES



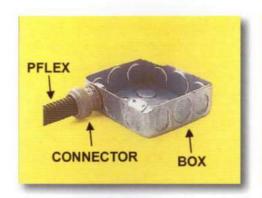
POWER STATION

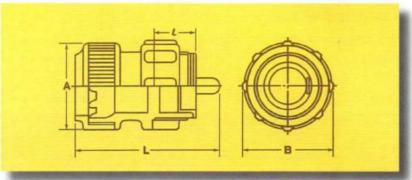


MANHOLE

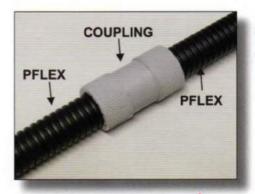


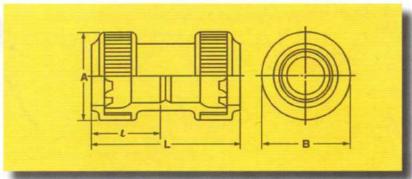
CABLE TUNNEL





Connector	ITEM No.	APPLICABLE	1	WEIGHT APPROX			
		CONDUIT	Ā	В	·	L	(g/Pc)
	DCN-14	PFLEX-CD/CD-FR 14	26.9	30.0	14.0	42.0	13.4
	DCN-16	PFLEX-CD/CD-FR 16	33.0	30.0	11.5	41.5	11.6
	DCN-22	PFLEX-CD/CD-FR 22	41.0	35.0	14.5	52.0	15.8
	DCN-28	PFLEX-CD/CD-FR 28	44.0	44.0	15.0	62.5	33.6
	DCN-36	PFLEX-CD/CD-FR 36	53.5	55.0	15.0	73.0	55.4





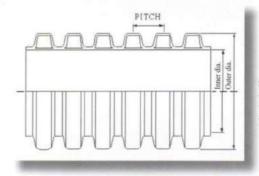
Coupling	ITEM No.	APPLICABLE		WEIGHT APPROX			
		CONDUIT	A	В	ł	L	(g/Pc)
	DCP-14	PFLEX-CD/CD-FR 14	26.9	30.0	26.5	55.2	13.0
	DCP-16	PFLEX-CD/CD-FR 16	33.0	33.0	25.2	55.0	14.2
	DCP-22	PFLEX-CD/CD-FR 22	41.0	41.0	33.0	72.0	22.0
	DCP-28	PFLEX-CD/CD-FR 28	44.0	46.0	44.0	92.8	49.2
	DCP-36	PFLEX-CD/CD-FR 36	53.5	55.0	50.0	107.2	68.2

A corrugated outer layer and a smooth inner wall

DWP (Double Wall Pipe)

DWP, The corrugated high density polyethylene pipe which provides semi-rigid high strength pipe ideal use for underground telecommunication or electrical installation. DWP is produced in standard of 6 meters length and comes completely with a connector for easy joining.





The two side structure of corrugated outer layer and smooth inner layer get more stiffness for conduit structure. DWP can be used where high crush loads may occur during installations.

Table of Standard Dimensions.

DWP Size (mm)	Outer diameter Approx (mm)	Inner diameter Approx (mm)	Pitch Approx (mm)	Weight Approx (g/m)	Standard Lenght (m)
125 (ID. 100 mm)	121.6	100	14.15	1080	6
140 (ID. 125 mm)	142.0	125	16.51	1700	6

Accessories



Straught joint 125 mm



Straught joint 140 mm



Adapter 125 & 140 mm



Bell mouth 125 & 140 mm



Plastic plug 125 & 140 mm



Deflexion 5 degree 140 mm

PE SUB-DUCT

PE SUB-DUCT shall be made of high molecular weight high-density polyethylene, containing 2% of carbon black circular in cross section.

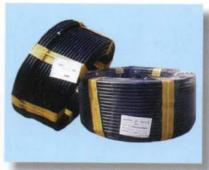
The dimension of PE SUB-DUCT is shown in table. The dimensions of PE SUB-DUCT shall be measured by the methods shown in Fig.1

**Standard Length 600 Meter/Coil

Table of Standard Dimensions.

	Outer diam	Outer diameter nominal		Wall Thickness		Weight	Standard Length /	Weight/ Coil	Dimensions
Siz (mm)	Standard (mm)	Tolerance (mm)	Character 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Standard (mm)	Tolerance (mm)	Approx (g/m)	ceil (m)	Approx (kg/coil)	Approx (ODxHeight)
30	31	± 0.3	26.8	2.1	± 0.3	190	600	114	1.65 x 0.44
33	33	± 0.3	28.0	2.5	± 0.3	240	600	144	1.70 x 0.44
35	35	± 0.3	29.8	2.5	± 0.3	260	600	156	1.82 x 0.44

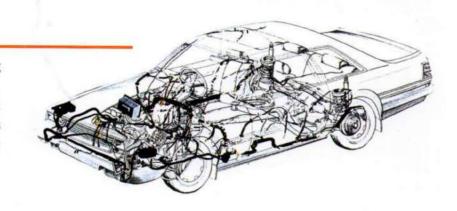






COT/COTO TUBE

COT TUBE for wiring harnesses. Used in automobiles. By JIS (Japanese Industrial Standard) COT TUBE make from high quality PP. (Poly Propylene) non-flammable.



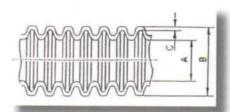


Table of Standard Dimensions.

OT-TUBE	With solit	Inside	Dia (A)	Outside	Dia (B)	Wall This	kness (C)		Standard Length /	Weight /	Standard Packing
Sim (mm)		Standard (mm)	Tolerance (mm)	Standard (mm)	Tolerance (mm)	Standard (mm)	Tolerance (mm)	Approx (g/m)	coil (m)	Apprex (kg/coil)	(coil / hox)
7	Yes	7.4	±0.4	10.2	± 0.4	0.27	±0.1	12.4	300	3.72	5
10	Yes	10.7	±0.4	14.1	±0.4	0.27	±0.1	18.8	300	5.64	3
13	Yes	13.2	±0.4	17.5	±0.4	0.27	±0.1	25.5	200	5.10	3
15	Yes	15.2	±0.4	19.5	±0.4	0.27	±0.1	28.3	200	5.66	2
19	Yes	19.5	± 0.4	23.8	± 0.4	0.27	±0.1	33.2	100	3.32	3
22	Yes	22.1	±0.4	27.0	±0.4	0.30	±0.1	45.3	100	4.53	2

EFLEX-FR

EFLEX - FR CORRUGATED HARD POLYETHYLENE PIPE WITH FLAME RETARDANT



EFLEX - FR will be needed as a cable protecting conduit in exposed area of factories, building and power stations where nonflammability is demanded and optimum for work sites.

HIGH LEVEL OF NONFLAMMABILITY

1. NONFLAMMABILITY

Meet the nonflammability test stipulared in IEEE STANDARD 383.

2. OUTSTANDING STRENGTH

Endowed with excellent flattening compression strength same as EFLEX.

3. WORK ABILITY

Laying EFLEX - FR can be done in a minimum space and serves for the upgrading of working efficiency short time and labour saving



FACTORIES



POWER STATION



MANHOLE



CABLE TUNNEL





ท่ออีเฟล็ก ร้อยสายไฟใต้ดิน

EFLEX Corrugated Hard Polyethylene Pipe in Underground Cable Installation

ท่ออีเฟล็ก

EFLEX Pipe



นิ้ว (inch)	UU (mm.)	บาท/เมดร (Baht/m.)	ความยาว ม./ขด (M./Coil)
1	30	95	300
2	50	128	200
3	80	194	100
4	100	275	100
5	125	385	100
6	150	462	50

ท่ออีเฟล็ก ชนิดหน่วงไฟ

EFLEX Flame Retardant



นิ้ว (inch)	UU (mm.)	บาท/เมตร (Baht/m.)	ความยาว ม./ขด (M./Coil)	
1	30	110	300	
2	50	167	200	
3	80	267	100	
4	100	382	100	
5	125	537	100	
6	150	640	50	

ข้อต่อตรง

Straight Joint



นิ้ว (inch)	UU (mm.)	บาท/เมตร (Baht/m.)
1	30	37
2	50	80
3	80	100
4	100	181
5	125	221
6	150	256

ปากแตร แบบมีฝาปิด

Bell Mouth with End Cover



นั่ว	มม	บาท/เมตร
(inch)	(mm.)	(Baht/m.)
1	30	42
2	50	50
3	80	67
4	100	95
5	125	119
6	150	165

ฝาปิดท่อ

End Cover



นั้ว	חח	บาท/เมดร
(inch)	(mm.)	(Baht/m.)
1	30	27
2	50	31
3	80	53
4	100	70
5	125	83
6	150	91

กรวยยางปิดท่อ

Sand Preventive



นั้ว	บบ	บาท/เมตร
(inch)	(mm.)	(Baht/m.)
1	30	110
2	50	210
3	80	344
4	100	399
5	125	634
6	150	815

แคล้ม อุปกรณ์ยึดท่อกับตู้

Clamp



นิ้ว	นน	บาท/เมตร
(inch)	(mm.)	(Baht/m.)
1	30	326
2	50	471
3	80	706
4	100	1,141
5	125	1,629
6	150	1.991

ข้อต่อกับท่ออื่น แบบเกลียวนอก ข้อต่อกับท่ออื่น แบบท่อเรียบ

HDPE/RSC Adaptor







ใช้กับ ข้อต่อพีอี Coupling Type B

ιĎο	มม	บาท/เมตร
(inch)	(mm.)	(Baht/m.)
1	30	41
2	50	53
3	80	95
4	100	183
5	125	270
6	150	280

PVC Adaptor



นั้ว

(inch)





HDPE 100 mm NN บาท/เมตร (mm.) (Baht/m.)

183

100

ınu





^{*} สินค้านำเข้า อาจมีการเปลี่ยนแปลงราคา

ข้อต่อแบบเรียบ ผลิตขนาดเดียว

^{*} ราคานี้มีผลตั้งแต่ 1 มกราคม 2560

ขอสงวนสิทธิ์ในการเปลี่ยนแปลงราคา โดยไม่ต้องแจ้งให้ทราบล่วงหน้า