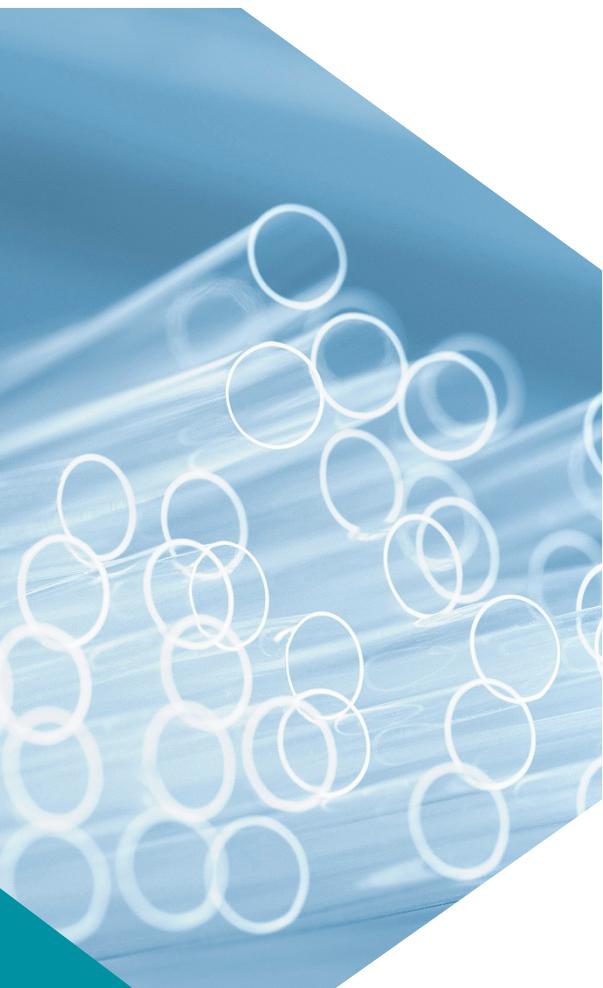


INDUSTRIAL HEAT SHRINK TUBING SOLUTIONS



Optinova heat shrink tubing solutions are best suited to offer a protective jacket for applications in extreme environments of heat, corrosion, shock and moisture.

Optinova heat shrink tubing solutions are produced in PTFE, FEP or in a combination of both. Their applications range from transportation, electronics and cable to food and beverage processing. We can also produce heat shrink tubing solutions in PFA and ETFE upon request.

PTFE and FEP tubes are available in 2:1 and 4:1 and 1.3:1 and 1.6:1 Shrink Ratio respectively. Custom dimensions and lengths can be made upon request.

Technical advice: We recommend using heat gun or oven to shrink the tube. You must maintain good ventilation when heating fluoropolymers. The fumes are invisible, odorless and at high temperatures can be unpleasant or cause nausea and flu-like symptoms.

KEY ADVANTAGES

- FDA or USP class VI approved raw materials
- Useful in high temperature applications
- Great chemical resistance to all common solvents, acids and bases
- Virtually unaffected by oxygen, ozone and UV light
- Non-stick and relatively frictionless
- Shrinking temperature: 100 °C – 340 °C

APPLICATIONS

- Insulation and jacketing
- Food and pharmaceutical packaging
- Encapsulation of sensor elements
- Covering of probes and antennas
- Roll covers for textile and paper industries
- Corrosion protection for metal parts
- Shutter protection for lamps

DIMENSIONS

PTFE Heat Shrink Tubing 2:1 AWG Sizes

AWG Size	Exp. ID (min)	Rec. ID (max)	Light wall recovered after max. shrinkage	Thin wall recovered after max. shrinkage	Standard wall recovered after max. shrinkage	
	mm		nom.	tol. +/-	nom.	tol. +/-
30	0.86	0.38	0.15	0.05	0.23	0.05
28	0.97	0.48	0.15	0.05	0.23	0.05
26	1.17	0.56	0.15	0.05	0.23	0.05
24	1.27	0.67	0.15	0.05	0.25	0.07
22	1.40	0.81	0.15	0.05	0.25	0.07
20	1.52	1.02	0.15	0.05	0.31	0.07
19	1.65	1.10	0.15	0.05	0.31	0.07
18	1.93	1.25	0.15	0.05	0.31	0.07
17	2.15	1.38	0.15	0.05	0.31	0.07
16	2.35	1.55	0.15	0.05	0.31	0.07
15	2.80	1.70	0.15	0.05	0.31	0.07
14	3.05	1.88	0.20	0.05	0.31	0.07
13	3.55	2.08	0.20	0.05	0.31	0.07
12	3.81	2.31	0.20	0.05	0.31	0.07
11	4.32	2.57	0.20	0.05	0.31	0.07
10	4.85	2.85	0.20	0.05	0.31	0.07
9	5.20	3.15	0.20	0.05	0.38	0.07
8	6.10	3.58	0.20	0.05	0.38	0.07
7	6.85	4.01	0.20	0.05	0.38	0.07
6	7.67	4.52	0.25	0.07	0.38	0.07
5	8.10	5.03	0.25	0.07	0.38	0.07
4	9.40	5.69	0.25	0.07	0.38	0.07
3	9.90	6.33	0.25	0.07	0.38	0.07
2	10.90	7.06	0.25	0.07	0.38	0.07
1	11.45	7.90	0.30	0.07	0.38	0.07
0	11.94	8.81	0.31	0.07	0.38	0.08

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DIMENSIONS

PTFE Heat Shrink Tubing 4:1

Order nr	Expanded ID mm	Rec. ID mm	Wall mm
mm			
5/64"	1.98	0.64	0.22
1/8"	3.18	0.94	0.25
3/16"	4.75	1.27	0.30
1/4"	6.35	1.60	0.30
5/16"	7.92	2.00	0.30
3/8"	9.52	2.44	0.30
7/16"	11.13	2.85	0.30
1/2"	12.70	3.66	0.38
9/16"	14.27	3.94	0.38
5/8"	15.88	4.52	0.38
11/16"	17.45	5.03	0.38
3/4"	19.05	5.70	0.38
7/8"	22.23	6.20	0.38
1"	25.40	7.06	0.38

Expanded diameters are not tolerated. Wall thickness and recovered IDs can differ if full shrinkage according to shrink ratio is not achieved.

DIMENSIONS

FEP Heat Shrink Tubing 1.3:1 AWG Sizes

AWG Size	Exp. ID (min)	Rec. ID (max)	Wall thickness			Exp. ID (min)	Rec. ID (max)	Wall thickness		
inch						mm				
			Min.	Nom.	Max.			Min.	Nom.	Max.
24	0.031	0.027	0.006	0.008	0.010	0.79	0.69	0.15	0.20	0.25
22	0.036	0.032	0.006	0.008	0.010	0.91	0.81	0.15	0.20	0.25
20	0.045	0.039	0.006	0.008	0.010	1.14	0.99	0.15	0.20	0.25
18	0.060	0.049	0.006	0.008	0.010	1.52	1.25	0.15	0.20	0.25
16	0.075	0.061	0.007	0.009	0.011	1.91	1.55	0.18	0.23	0.28
14	0.092	0.072	0.007	0.009	0.011	2.34	1.83	0.18	0.23	0.28
12	0.115	0.089	0.007	0.009	0.011	2.92	2.26	0.18	0.23	0.28
10	0.141	0.114	0.007	0.010	0.013	3.58	2.90	0.18	0.25	0.33
9	0.158	0.124	0.007	0.010	0.013	4.01	3.15	0.18	0.25	0.33
8	0.180	0.143	0.007	0.010	0.013	4.57	3.63	0.18	0.25	0.33
7	0.197	0.158	0.007	0.011	0.015	5.00	4.01	0.18	0.28	0.38
6	0.225	0.180	0.007	0.011	0.015	5.72	4.57	0.18	0.28	0.38
5	0.248	0.198	0.007	0.011	0.015	6.30	5.03	0.18	0.28	0.38
4	0.290	0.226	0.007	0.011	0.015	7.37	5.74	0.18	0.28	0.38
3	0.310	0.249	0.007	0.011	0.015	7.87	6.32	0.18	0.28	0.38
2	0.365	0.280	0.008	0.012	0.016	9.27	7.11	0.20	0.30	0.41
1	0.400	0.311	0.008	0.012	0.016	10.16	7.90	0.20	0.30	0.41
0	0.400	0.349	0.008	0.012	0.016	11.18	8.86	0.20	0.30	0.41

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DIMENSIONS

FEP Fractional Tubing 1.3:1												
Frac.	Dec.	Exp. ID (min)	Rec. ID (max)	Wall thickness			Dec.	Exp. ID (min)	Rec. ID (max)	Wall thickness		
inch							mm					
			Min. Nom. Max.						Min. Nom. Max.			
3/8	0.375	0.500	0.383	0.011	0.015	0.019	9.53	12.70	9.73	0.28	0.38	0.48
7/16	0.438	0.580	0.448	0.016	0.020	0.024	11.13	14.73	11.38	0.41	0.51	0.61
1/2	0.500	0.666	0.510	0.016	0.020	0.024	12.70	16.92	12.95	0.41	0.51	0.61
5/8	0.625	0.830	0.637	0.021	0.025	0.029	15.88	21.08	16.18	0.53	0.64	0.74
3/4	0.750	1.000	0.764	0.026	0.025	0.034	19.05	25.40	19.41	0.66	0.76	0.86
7/8	0.875	1.170	0.891	0.031	0.030	0.039	22.23	29.72	22.63	0.79	0.89	0.99
1	1.000	1.330	1.020	0.031	0.035	0.039	25.40	33.78	25.91	0.79	0.89	0.99
1 1/8	1.125	1.500	1.145	0.031	0.035	0.039	28.58	38.10	29.08	0.79	0.89	0.99
1 1/4	1.250	1.666	1.270	0.031	0.035	0.039	31.75	42.32	32.26	0.79	0.89	0.99
1 3/8	1.375	1.833	1.390	0.031	0.035	0.039	34.93	46.56	35.31	0.79	0.89	0.99
1 1/2	1.500	2.000	1.520	0.031	0.035	0.039	38.10	50.80	38.61	0.79	0.89	0.99

Expanded diameters are not tolerated. Wall thickness and recovered IDs can differ if full shrinkage according to shrink ratio is not achieved.

MATERIAL PROPERTIES

	PTFE	FEP
Shrink temperature	Ca 330 °C (626 °F)	Ca 100 °C (212 °F)
Shrink Ratio	2:1 and 4:1	1.3:1 and 1.6:1
Length change	+/- 12%	+/- 12%
Working temperature	-260 °C to 260 °C -436 °F to 500 °F	-100 °C to 205 °C -148 °F to 401 °F
Chemical resistance	Excellent	Very good
Flammability	UL 94 V0	UL 94 V0
Shelf life	Infinite	Infinite
Water absorption	>0,01%	>0,01%
Hardness	D60	D55
UV resistance	Unaffected	Unaffected
Ozone resistance	Unaffected	Unaffected
Sterilization	EtO, Steam	EtO, Steam
Food grade materials	Available	Available

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