



**1210**

Aurora Center Of Excellence  
**Title: PRODUCT STANDARD**

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## Product Standard

for

### **1210 - Type "B" Parallel Constructed Bundled Tubing**



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Changes: (DK-89-3655) (DK-98-4797)(DK-01-5284a)(05-6610)



**DESCRIPTION**

Eaton's Protecto-Pac "B" consists of multiple number coded, Synflex® 1204 high density polyethylene tubes positioned adjacent and parallel, tape heat barrier and separator, and polyvinyl chloride jacket overall.

**PRODUCT TECHNICAL DATA**

No. Of Tubes	Part Number	Net Wt. Lbs/C'	Approx. Shpg. Wt. Lbs/C'	Nominal O.D. (Inches)	Jacket Thickness (Inches) (nom.)
<u>1/4" O.D. x 0.040" Wall High Density Polyethylene Tubes</u>					
2	1210-40200	23.8	31	5/8 x 7/8	.188
3	1210-40300	28.3	36	13/16 x 7/8	.188
4	1210-40400	35.2	43	7/8 x 1-1/16	.188
7	1210-40700	40.5	54	1-1/16 x 1-1/8	.188
8	1210-40800	45.0	58	1-1/8 x 1-5/16	.188
10	1210-41000	53.4	66	1-1/16 x 1-3/8	.188
12	1210-41200	56.6	70	1-5/16 x 1-3/8	.188
14	1210-41400	61.4	82	1-3/8 x 1-1/2	.188
19	1210-41900	72.2	93	1-1/2 x 1-5/8	.188
37	1210-43700	108.6	143	1-15/16 x 2-1/8	.188
<u>3/8" O.D. x 0.062" Wall High Density Polyethylene Tubes</u>					
2	1210-60200	33.5	49	3/4 x 1-1/8	.188
3	1210-60300	40.9	56	1-1/16 x 1-1/8	.188
4	1210-60400	50.6	66	1-1/8 x 1-7/16	.188
7	1210-60700	63.7	79	1-7/16 x 1-1/2	.188
10	1210-61000	78.3	104	1-7/16 x 1-7/8	.188
12	1210-61200	88.6	115	1-3/4 x 1-7/8	.188



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No. Of Tubes	Part Number	Jacket Tolerance	Jacket TIR	Minimum Bend Radius (inches)	Max. Recommended Pulling tension (lbs)	Min. Install. Temperature (°F)
<u>1/4" O.D. X 0.040" Wall High Density Polyethylene Tubes</u>						
2	1210-40200	+0.018 - 0.012	.020	3-1/2	94	+15
3	1210-40300	+0.018 - 0.012	.020	3-1/2	110	+15
4	1210-40400	+0.018 - 0.012	.020	4	145	+15
7	1210-40700	+0.018 - 0.012	.020	4	196	+15
8	1210-40800	+0.018 - 0.012	.020	4-1/2	212	+15
10	1210-41000	+0.018 - 0.012	.020	5	256	+15
12	1210-41200	+0.018 - 0.012	.020	6	296	+15
14	1210-41400	+0.018 - 0.012	.020	7	342	+15
19	1210-41900	+0.018 - 0.012	.020	9	429	+15
37	1210-43700	+0.018 - 0.012	.020	12	755	+15
<u>3/8" O.D. X 0.062" Wall High Density Polyethylene Tubes</u>						
2	1210-60200	+0.018 - 0.012	.020	5	155	+15
3	1210-60300	+0.018 - 0.012	.020	5	191	+15
4	1210-60400	+0.018 - 0.012	.020	6	257	+15
7	1210-60700	+0.018 - 0.012	.020	7	371	+15
10	1210-61000	+0.018 - 0.012	.020	10	511	+15
12	1210-61200	+0.018 - 0.012	.020	10	574	+15



Part Number	Bundle Area for Max. O.D. Allowed	Maximum Lengths Available
1210-40200	.601	2000'
1210-40300	.601	2000'
1210-40400	.886	2000'
1210-40700	.994	2000'
1210-40800	1.289	2000'
1210-41000	1.485	2000'
1210-41200	1.485	2000'
1210-41400	1.767	2000'
1210-41900	2.074	2000'
1210-43700	3.547	2000'
1210-60200	.994	1000'
1210-60300	.994	1000'
1210-60400	1.553	1000'
1210-60700	1.767	1000'
1210-61000	2.761	1000'
1210-61200	2.761	1000'

Recommended Support Centers
3 - 4 Ft. Horizontal
10 - 20 Ft. Enclosed Vertical
6 - 12 Ft. Open Vertical

**COEFFICIENT OF LINEAR THERMAL EXPANSION**

The coefficient of linear thermal expansion will be comparable to values obtained for high density polyethylene. The coefficient of linear thermal expansion will be  $6.1 \times 10^{-5}$  to  $8.1 \times 10^{-5}$  in./in./°C.

**AVAILABILITY**

Synflex® Protecto-Pac Type “B” is available in continuous lengths up to 2,000 ft. for 1/4” O.D. tubing bundles and lengths up to 1,000 ft. for 3/8” O.D. tubing bundles.



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### **SPECIFY AS**

As a harness of number coded black high density polyethylene tubes as per ASTM D-1693. The tubes are to be positioned adjacent and parallel. Each harness will be contained in a PET tape barrier envelope and jacketed with an extruded black polyvinyl sheath with a nominal thickness of .188 inches.

### **PRODUCT ADVANTAGES**

1. Will not work harden as will metal tubing.
2. Resistant to most chemicals and hydrocarbons.
3. Weighs up to 50% less than comparable copper tube bundles.
4. Available in continuous lengths to 2,000 feet for 1/4" tube bundles and up to 1,000 feet for 3/8' O.D. tube bundles.
5. Designed to withstand flash fires.
6. Resists weld spatter.

### **INSTALLATION SUGGESTIONS**

1. When pulling Protecto-Pac "B", apply grips over jacket; do not pull on individual tubes alone.
2. Allow 10" per 100 ft. per 100°F temperature change for thermal expansion and contraction.
3. Minimum recommended installation temperature is +15°F.