Appendix
Technical information

Wiring duct — wire fill capacity

NOTE: Wire fill is based on 50% fill of duct area.

Nominal duct size (inches)																			
															Electrical			Data cable	
				8 AWG	10 AWG	12 AWG			14 AWG			16 AWG		18 AWG		22 AWG	24 AWG		
				0.216	0.153	0.122	0.158	0.105	0.139	0.165	0.096	0.125	0.084	0.113	0.065	0.217	0.25	0.422
W		H	Area (inches²)	THHN	THHN	THHN	MTW	THHN	MTW	MTW	THHN	MTW	THHN	MTW	MTW	UTP/CM CAT5E	UTP/CM CAT6	UTP/CM
0.75	x	1.00	0.750	5	9	14	9	19	11	8	23	14	30	17	51	5	3	1
0.75	x	1.50	1.125	7	14	22	13	29	17	12	35	21	46	25	76	7	5	2
0.75	x	2.00	1.500	9	18	29	17	39	22	16	47	27	61	34	101	9	7	2
1.00	x	1.00	1.000	6	12	19	11	26	15	10	31	18	40	22	68	6	5	2
1.00	x	1.50	1.500	9	18	29	17	39	22	16	47	27	61	34	101	9	7	2
1.00	x	2.00	2.000	12	24	38	23	52	30	21	62	37	81	45	135	12	9	3
1.00	x	3.00	3.000	18	37	58	34	78	44	31	93	55	121	67	203	18	14	5
1.00	x	4.00	4.000	24	49	77	46	104	59	42	124	73	162	90	270	24	18	6
1.50	x	1.00	1.500	9	18	29	17	39	22	16	47	27	61	34	101	9	7	2
1.50	x	1.50	2.250	14	27	43	26	58	33	24	70	41	91	50	152	14	10	4
1.50	x	2.00	3.000	18	37	58	34	78	44	31	93	55	121	67	203	18	14	5
1.50	x	3.00	4.500	27	55	86	52	117	67	47	140	82	182	101	304	27	21	7
1.50	x	4.00	6.000	36	73	115	69	155	89	63	186	110	243	134	406	36	27	10
2.00	x	1.00	2.000	12	24	38	23	52	30	21	62	37	81	45	135	12	9	3
2.00	x	1.50	3.000	18	37	58	34	78	44	31	93	55	121	67	203	18	14	5
2.00	x	2.00	4.000	24	49	77	46	104	59	42	124	73	162	90	270	24	18	6
2.00	x	3.00	6.000	36	73	115	69	155	89	63	186	110	243	134	406	36	27	10
2.00	x	4.00	8.000	48	98	154	92	207	118	84	248	146	324	179	541	49	37	13
2.00	x	5.00	10.000	60	122	192	114	259	148	105	310	183	405	224	676	61	46	16
2.50	x	2.00	5.000	30	61	96	57	130	74	52	155	91	202	112	338	30	23	8
2.50	x	3.00	7.500	45	92	144	86	194	111	79	233	137	304	168	507	46	34	12
2.50	x	4.00	10.000	60	122	192	114	259	148	105	310	183	405	224	676	61	46	16
3.00	x	1.00	3.000	18	37	58	34	78	44	31	93	55	121	67	203	18	14	5
3.00	x	2.00	6.000	36	73	115	69	155	89	63	186	110	243	134	406	36	27	10
3.00	x	3.00	9.000	54	110	173	103	233	133	94	279	165	364	201	609	55	41	14
3.00	x	4.00	12.000	72	146	230	137	311	177	126	372	219	486	269	811	73	55	19
3.00	x	5.00	15.000	90	183	288	172	389	222	157	465	274	607	336	1014	91	69	24
4.00	x	1.50	6.000	36	73	115	69	155	89	63	186	110	243	134	406	36	27	10
4.00	x	2.00	8.000	48	98	154	92	207	118	84	248	146	324	179	541	49	37	13
4.00	x	3.00	12.000	72	146	230	137	311	177	126	372	219	486	269	811	73	55	19
4.00	x	4.00	16.000	96	195	307	183	415	237	168	496	293	648	358	1082	97	73	26
4.00	x	5.00	20.000	120	244	384	229	518	296	210	620	366	810	448	1352	121	91	32
6.00	x	4.00	24.000	144	293	461	275	622	355	252	744	439	972	537	1623	146	110	39

Formula for calculating fill capacity

$$\text{Number of wires} = \frac{\text{Duct W x H}}{1.75 \times (\text{Wire O.D.})^2} \Big/ 2$$

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Properties of materials used in wiring duct

Property	Units	ASTM test	PVC	Halogen-free
Specific gravity	–	D792	1.43	1.10
IZOD	ft.-lb./in.	D256	2	5.0
Flexural strength	psi	D790	10,900	12,800
Flexural modulus	psi	D790	382,000	360,000
Tensile strength	psi	D638	5,500	7,800
Compressive strength	psi	D695	8,600	16,000
Water absorption	24 hrs.–%	D570	0.10	0.07
Hardness	Rockwell	D785	R-111	R-115
	Duro D	D676	78	–
Dielectric strength	–	D149	–	–
60Hz, 25° C, s/t	vpm	–	–	400
Dielectric constant	–	D150	–	–
60Hz, Dry	–	–	1.9	2.65
1MHz, Dry	–	–	–	2.64
Volume resistivity	ohm-cm	D257	–	1017
Heat deflecting (° F@ 264 psi)	° F	D648	158	212
Flammability	–	–	94 V-O	94 V-1

Note: The user should check the applicable specifications to verify values.

Rigid polyvinyl chloride (PVC)

- General-purpose material for indoor applications
- UL flammability rating of V-0
- UL94 recognized for use in temperatures up to 60 °C (140 °F)
- Economical wiring duct material

Halogen-free

With 8-12 / 4-6mm slots

- Halogen-free thermoplastic in conformity with VDE 0472 standard Part 815: Br + Cl < 0.2 %, F < 0.1 %
- Toxic smoke index: 25.78 in conformity with NF X70-100 and NF F16-101 standards
- Opacity of smoke*:
  - Dm 352.2 (2 mm)
  - V0F4 475.8 (2 mm) in conformity with NF X10-702 standard (NF F16-101 reference)
- Based on the values obtained in the opacity and toxicity tests of smoke, the material belongs to class F2 (in conformity with NF F16-101 standard)
- Insulating, shock-resistant and self-extinguishing thermoplastic in conformity with UL94V-0 standard, resistant to abnormal heat and fire up to 850 °C (glow-wire test) in conformity with IEC 60695-2-1 standard
- Dimensional stability from -40 °C to 100 °C
- Standard length 2 meters
- Color RAL 7035 gray
- Conforms to EN 50085-2-3 standard
- Conforms to RoHS directive

* Reduced smoke opacity during the first 4 minutes of a fire facilitates evacuation from areas of risk.