

Specifications

Wiring Duct — Wire Fill Capacity

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

Ty-Duct™ and Accessories

| NOMINAL<br>DUCT SIZE<br>(INCHES)<br>W H |        |      | AREA<br>(INCHES <sup>2</sup> ) |      |     | 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 | 0.250  | 0.422 |        |  |  |
|   |        | THHN | THHN                           | THHN | MTW | THHN       | MTW   | MTW    | THHN  | MTW    | THHN  | MTW    | MTW   | UTP/CM<br>CAT5E | UTP/CM<br>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

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

## 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-0  | 94 V-1       |

The above information is believed reliable. The user should, however, 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 50° C (122° F)
- Economical wiring duct material

### Halogen Free

- For use in halogen-free or high-temperature applications
- UL flammability rating of V-1
- UL94 recognized for use in temperatures up to 95° C (203° F)
- 20% lighter than PVC

Specifications

Wiring Duct — Wire Fill Capacity

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Ty-Duct™ and Accessories

| NOMINAL<br>DUCT SIZE<br>(INCHES)<br>W H |        |      | AREA<br>(INCHES <sup>2</sup> ) |      |     | 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 | 0.250  | 0.422 |        |  |  |
|   |        | THHN | THHN                           | THHN | MTW | THHN       | MTW   | MTW    | THHN  | MTW    | THHN  | MTW    | MTW   | UTP/CM<br>CAT5E | UTP/CM<br>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          |        |       |        |       |        |  |  |
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| 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          |        |       |        |       |        |  |  |
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| 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         |        |       |        |       |        |  |  |
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| 3.00 X 3.00                             | 9.000  | 54   | 110                            | 173  | 103 | 233        | 133   | 94     | 279   | 165    | 364   | 201    | 609   | 55              | 41             | 14         |        |       |        |       |        |  |  |
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| 3.00 X 5.00                             | 15.000 | 90   | 183                            | 288  | 172 | 389        | 222   | 157    | 465   | 274    | 607   | 336    | 1014  | 91              | 69             | 24         |        |       |        |       |        |  |  |
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| 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-0  | 94 V-1       |

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- UL94 recognized for use in temperatures up to 95° C (203° F)
- 20% lighter than PVC