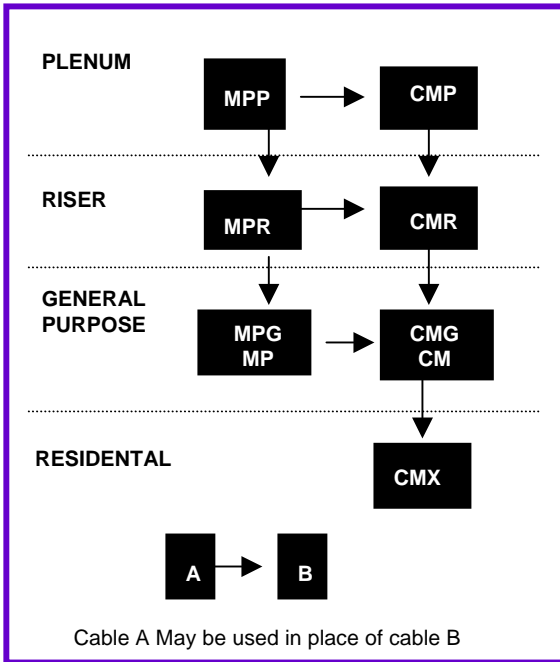


National Electric Code
Cable Substitution

Hierarchy

NEC and CSA
Fire Resistance

Levels



| Fire Resistance Level | Test Requirement | NEC 800 |
|---|---|---------|
| (Highest) Plenum Cables | UL-910 (Steiner Tunnel) CSA-FT6 (Steiner Tunnel) | MPP CMP |
| Riser Cables Multiple Floors | UL-1666 (Vertical Shaft) CSA-FT4,CMG (Vertical Tray) | MPR CMR |
| General Purpose Cables | UL-1581 (Vertical Tray) CSA-FT4, CMG (Vertical Tray) | MP CM |
| (Lowest) Residential Cables Restricted Use | UL-1581 VW-1 CSA-FT1 | CMX |

Notes

- Cables with a higher fire resistance level may be substituted for those with a lower fire resistance level, except that FT6 must also be marked FT4 for FT4 applications
- Cables rated CM may be used in runs penetrating one floor. (NEC 800-53)

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Conduit Fill Chart

| Conduit Size | 1/2 | 3/4 | 1 | 1-1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 3 1/2 | 4 |
|----------------|-----|-----|----|-------|-------|----|-------|-----|-------|-----|
| .19" cable OD | 4 | 7 | 12 | 21 | 28 | 47 | 82 | 124 | 163 | 208 |
| .195" cable OD | 4 | 7 | 11 | 20 | 27 | 45 | 78 | 118 | 154 | 197 |
| .20" cable OD | 4 | 6 | 11 | 19 | 26 | 42 | 74 | 112 | 147 | 188 |
| .205" cable OD | 3 | 6 | 10 | 18 | 24 | 40 | 71 | 107 | 140 | 178 |
| .210" cable OD | 3 | 6 | 10 | 17 | 23 | 40 | 71 | 102 | 133 | 170 |
| .215" cable OD | 3 | 6 | 9 | 16 | 22 | 37 | 64 | 97 | 127 | 162 |
| .222" cable OD | 3 | 5 | 9 | 15 | 21 | 35 | 61 | 93 | 121 | 155 |
| .225" cable OD | 3 | 5 | 8 | 15 | 20 | 33 | 59 | 89 | 116 | 148 |
| .230" cable OD | 3 | 5 | 8 | 14 | 19 | 32 | 56 | 85 | 111 | 142 |
| .235" cable OD | 3 | 5 | 8 | 13 | 18 | 31 | 54 | 81 | 106 | 136 |
| .240" cable OD | 2 | 4 | 7 | 13 | 18 | 29 | 51 | 78 | 102 | 130 |
| .245" cable OD | 3 | 4 | 7 | 12 | 17 | 28 | 49 | 75 | 98 | 125 |

The above chart is based upon the National Electric Code Standard (US) of 40% maximum fill. This chart is for referencing only. OD = outside diameter of cable.