signal cables, the maximum number of cables shall conform to 392.22(A)(1)(a) through (A)(1)(c).

(a) Where all of the cables are 4/0 AWG or larger, the sum of the diameters of all cables shall not exceed the cable tray width, and the cables shall be installed in a single layer. Where the cable ampacity is determined according to 392.80(A)(1)(c), the cable tray width shall not be less than the sum of the diameters of the cables and the sum of the required spacing widths between the cables.

(b) Where all of the cables are smaller than 4/0 AWG, the sum of the cross-sectional areas of all cables shall not exceed the maximum allowable cable fill area in Column 1 of Table 392.22(A)(1) for the appropriate cable tray width.

(c) Where 4/0 AWG or larger cables are installed in the same cable tray with cables smaller than 4/0 AWG, the sum of the cross-sectional areas of all cables smaller than 4/0 AWG shall not exceed the maximum allowable fill area resulting from the calculation in Column 2 of Table 392.22(A)(1) for the appropriate cable tray width. The 4/0 AWG and larger cables shall be installed in a single layer, and no other cables shall be placed on them.

(2) Ladder or Ventilated Trough Cable Trays Containing Multiconductor Control and/or Signal Cables Only. Where a ladder or ventilated trough cable tray having a usable inside depth of 150 mm (6 in.) or less contains multiconductor control and/or signal cables only, the sum of the cross-sectional areas of all cables at any cross section shall not exceed 50 percent of the interior cross-sectional area of the cable tray. A depth of 150 mm (6 in.) shall be used to calculate the allowable interior cross-sectional area of any cable tray that has a usable inside depth of more than 150 mm (6 in.).

Δ **(3) Solid Bottom Cable Trays Containing Any Mixture of Cables.** Where solid bottom cable trays contain multiconductor power or lighting cables, or any mixture of multiconductor power, lighting, control, and signal cables, the maximum number of cables shall conform to 392.22(A)(3)(a) through (A)(3)(c).

(a) Where all of the cables are 4/0 AWG or larger, the sum of the diameters of all cables shall not exceed 90 percent of the cable tray width, and the cables shall be installed in a single layer.

(b) Where all of the cables are smaller than 4/0 AWG, the sum of the cross-sectional areas of all cables shall not exceed the maximum allowable cable fill area in Column 3 of Table 392.22(A)(1) for the appropriate cable tray width.

(c) Where 4/0 AWG or larger cables are installed in the same cable tray with cables smaller than 4/0 AWG, the sum of the cross-sectional areas of all cables smaller than 4/0 AWG shall not exceed the maximum allowable fill area resulting from the computation in Column 4 of Table 392.22(A)(1) for the appropriate cable tray width. The 4/0 AWG and larger cables shall be installed in a single layer, and no other cables shall be placed on them.

Δ ***TABLE 392.22(A)(1)*** *Allowable Cable Fill Area for Multiconductor Cables in Ladder, Ventilated Trough, or Solid Bottom Cable Trays for Cables Rated 2000 Volts or Less*

Inside Width of Cable Tray		Maximum Allowable Fill Area for Multiconductor Cables							
		Ladder or Ventilated Trough or Wire Mesh Cable Trays, 392.22(A)(1)				Solid Bottom Cable Trays, 392.22(A)(3)			
		Column 1 Applicable for 392.22(A)(1)(b) Only		Column 2[a] Applicable for 392.22(A)(1)(c) Only		Column 3 Applicable for 392.22(A)(3)(b) Only		Column 4[a] Applicable for 392.22(A)(3)(c) Only	
mm	in.	mm^2	$in.^2$	mm^2	$in.^2$	mm^2	$in.^2$	mm^2	$in.^2$
50	2.0	1,500	2.5	1,500 – (30 Sd)[b]	2.5 – (1.2 Sd)[b]	1,200	2.0	1,200 – (25 Sd)[b]	2.0 – Sd[b]
100	4.0	3,000	4.5	3,000 – (30 Sd)[b]	4.5 – (1.2 Sd)	2,300	3.5	2,300 – (25 Sd)	3.5 – Sd
150	6.0	4,500	7.0	4,500 – (30 Sd)[b]	7 – (1.2 Sd)	3,500	5.5	3,500 – (25 Sd)[b]	5.5 – Sd
200	8.0	6,000	9.5	6,000 – (30 Sd)[b]	9.5 – (1.2 Sd)	4,500	7.0	4,500 – (25 Sd)	7.0 – Sd
225	9.0	6,800	10.5	6,800 – (30 Sd)	10.5 – (1.2 Sd)	5,100	8.0	5,100 – (25 Sd)	8.0 – Sd
300	12.0	9,000	14.0	9,000 – (30 Sd)	14 – (1.2 Sd)	7,100	11.0	7,100 – (25 Sd)	11.0 – Sd
400	16.0	12,000	18.5	12,000 – (30 Sd)	18.5 – (1.2 Sd)	9,400	14.5	9,400 – (25 Sd)	14.5 – Sd
450	18.0	13,500	21.0	13,500 – (30 Sd)	21 – (1.2 Sd)	10,600	16.5	10,600 – (25 Sd)	16.5 – Sd
500	20.0	15,000	23.5	15,000 – (30 Sd)	23.5 – (1.2 Sd)	11,800	18.5	11,800 – (25 Sd)	18.5 – Sd
600	24.0	18,000	28.0	18,000 – (30 Sd)	28 – (1.2 Sd)	14,200	22.0	14,200 – (25 Sd)	22.0 – Sd
750	30.0	22,500	35.0	22,500 – (30 Sd)	35 – (1.2 Sd)	17,700	27.5	17,700 – (25 Sd)	27.5 – Sd
900	36.0	27,000	42.0	27,000 – (30 Sd)	42 – (1.2 Sd)	21,300	33.0	21,300 – (25 Sd)	33.0 – Sd

[a]The maximum allowable fill areas in Columns 2 and 4 shall be calculated. For example, the maximum allowable fill in mm^2 for a 150-mm wide cable tray in Column 2 shall be 4500 minus (30 multiplied by Sd) [the maximum allowable fill, in square inches, for a 6-in. wide cable tray in Column 2 shall be 7 minus (1.2 multiplied by Sd)].

[b]The term *Sd* in Columns 2 and 4 is equal to the sum of the diameters, in mm, of all cables 107.2 mm (inches, of all 4/0 AWG) and larger multiconductor cables in the same cable tray with smaller cables.