

NEC Table 310.79 {Detail 1 - One Circuit, 1-3/c in Single Duct}

Ambient Earth Temperature = 20 Deg C, Earth Thermal resistivity (RHO) = 90, Concrete Thermal resistivity (RHO) = 85,
Load Factor = 100%, Copper Conductors.

1 Circuit, 1-3/c Copper Cable in Single Duct (Fig. B-310-60, Detail 1)																	
COPPER							COPPER										
Size (AWG or kcmil)	2001-5000 Volts Ampacity						5001-35,000 Volts Ampacity										
	90C (194F) Type	105C (221F) Type		90C (194F) Type	105C (221F) Type		90C (194F) Type	105C (221F) Type		90C (194F) Type	105C (221F) Type		90C (194F) Type				
	MV-90	MV-105		MV-90	MV-105		MV-90	MV-105		MV-90	MV-105		MV-90	MV-105			
	NEC			AmpCalc			%Deviation			NEC			AmpCalc			%Deviation	
8	59	64		57.4	61.8		-2.7%	-3.4%		-	-		-	-		-	-
6	78	84		76.5	82.4		-1.9%	-1.9%		88	95		87.2	94.0		-0.9%	-1.1%
4	100	110		99.9	107.6		-0.1%	-2.2%		115	125		112.8	121.6		-1.9%	-2.7%
2	135	145		130.2	140.2		-3.6%	-3.3%		150	160		149.4	161.2		-0.4%	0.7%
1	155	165		151.5	163.2		-2.3%	-1.1%		170	185		170.5	183.9		0.3%	-0.6%
1/0	175	190		173.4	186.9		-0.9%	-1.6%		195	210		193.8	209.1		-0.6%	-0.4%
2/0	200	220		198.6	214.0		-0.7%	-2.7%		220	235		219.2	236.5		-0.4%	0.6%
3/0	230	250		227.4	245.1		-1.1%	-2.0%		250	270		249.0	268.7		-0.4%	-0.5%
4/0	265	285		260.3	280.6		-1.8%	-1.5%		285	305		282.8	305.3		-0.8%	0.1%
250	290	315		288.1	310.5		-0.7%	-1.4%		310	335		309.8	334.5		-0.1%	-0.1%
350	355	380		349.7	377.1		-1.5%	-0.8%		375	400		371.5	401.4		-0.9%	0.3%
500	430	460		424.4	458.0		-1.3%	-0.4%		450	485		448.3	484.9		-0.4%	0.0%
750	530	570		520.2	562.4		-1.8%	-1.3%		545	585		545.9	591.6		0.2%	1.1%
1000	600	645		598.1	647.9		-0.3%	0.4%		615	660		618.4	671.7		0.6%	1.8%
Average Deviation =							-1.5%	-1.7%									
Average Deviation =							-0.4%	-0.1%									

AmpCalc References:

AmpCalc Library = IEERUB_3, Duct library = NEC_PVC, 5" duct.
AmpCalc Volume = IEERUB1
1 kV non-shielded

AmpCalc Library = IEERUB_3, Duct library = NEC_PVC, 5" duct.
AmpCalc Volume = IEERUB8 for #6, 4, IEERUB15 for all others
8 or 15 kV shielded with both ends grounded

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NEC Table 310.79 {Detail 2 - Three Circuits, 1-3/c in Each Duct}

Ambient Earth Temperature = 20 Deg C, Earth Thermal resistivity (RHO) = 90, Concrete Thermal resistivity (RHO) = 85,
Load Factor = 100%, Copper Conductors.

3 Circuits, 1-3/c Copper Cable in each Duct (Fig. B-310-60, Detail 2)																	
COPPER						COPPER											
Size (AWG or kcmil)	2001-5000 Volts Ampacity						5001-35,000 Volts Ampacity										
	90C (194F) Type	105C (221F) Type		90C (194F) Type	105C (221F) Type		90C (194F) Type	105C (221F) Type		90C (194F) Type	105C (221F) Type						
	MV-90	MV-105		MV-90	MV-105		MV-90	MV-105		MV-90	MV-105						
	NEC			AmpCalc			%Deviation			NEC			AmpCalc			%Deviation	
8	53	57		51.4	55.4		-3.0%	-2.8%		-	-		-	-		-	-
6	69	74		67.7	73.0		-1.9%	-1.4%		75	81		74.7	80.5		-0.4%	-0.6%
4	89	96		87.7	94.5		-1.5%	-1.6%		97	105		95.9	103.4		-1.1%	-1.5%
2	115	125		113.5	122.2		-1.3%	-2.2%		125	135		124.9	134.8		-0.1%	-0.1%
1	135	145		130.9	141.0		-3.0%	-2.8%		140	155		141.7	153.0		1.2%	-1.3%
1/0	150	165		149.1	160.7		-0.6%	-2.6%		160	175		160.4	173.2		0.3%	-1.0%
2/0	170	185		169.8	183.0		-0.1%	-1.1%		185	195		180.8	195.3		-2.3%	0.2%
3/0	195	210		193.4	208.4		-0.8%	-0.8%		205	220		204.4	220.8		-0.3%	0.4%
4/0	225	240		220.1	237.2		-2.2%	-1.2%		230	250		230.9	249.5		0.4%	-0.2%
250	245	265		242.2	261.1		-1.1%	-1.5%		255	270		252.0	272.4		-1.2%	0.9%
350	295	315		291.3	314.1		-1.3%	-0.3%		305	325		299.7	324.2		-1.7%	-0.2%
500	355	380		350.6	378.4		-1.2%	-0.4%		360	385		358.2	387.8		-0.5%	0.7%
750	430	465		426.2	460.8		-0.9%	-0.9%		430	465		431.1	467.9		0.3%	0.6%
1000	485	520		485.4	525.8		0.1%	1.1%		485	515		484.1	526.7		-0.2%	2.3%
				Average Deviation =			-1.3%	-1.3%					Average Deviation =			-0.4%	0.0%

AmpCalc References:

AmpCalc Library = IEERUB_3, Duct library = NEC_PVC, 5" duct.
AmpCalc Volume = IEERUB1
1 kV non-shielded

AmpCalc Library = IEERUB_3, Duct library = NEC_PVC, 5" duct.
AmpCalc Volume = IEERUB8 for #6, 4, IEERUB15 for all others
8 or 15 kV shielded with both ends grounded

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NEC Table 310.79 {Detail 3 - Six Circuits, 1-3/c in Each Duct}

Ambient Earth Temperature = 20 Deg C, Earth Thermal resistivity (RHO) = 90, Concrete Thermal resistivity (RHO) = 85,
Load Factor = 100%, Copper Conductors.

6 Circuits, 1-3/c Copper Cable in each Duct (Fig. B-310-60, Detail 3)																	
COPPER						COPPER											
Size (AWG or kcmil)	2001-5000 Volts Ampacity						5001-35,000 Volts Ampacity										
	90C (194F) Type MV-90	105C (221F) Type MV-105		90C (194F) Type MV-90	105C (221F) Type MV-105		90C (194F) Type MV-90	105C (221F) Type MV-105		90C (194F) Type MV-90	105C (221F) Type MV-105						
	NEC			AmpCalc			%Deviation			NEC			AmpCalc			%Deviation	
8	46	50		45.0	48.5		-2.2%	-3.0%		-	-		-	-		-	-
6	60	65		58.6	63.2		-2.3%	-2.8%		63	68		62.9	67.8		-0.2%	-0.3%
4	77	83		75.5	81.3		-1.9%	-2.0%		81	87		80.3	86.5		-0.9%	-0.6%
2	98	105		96.9	104.4		-1.1%	-0.6%		105	110		102.9	111.1		-2.0%	1.0%
1	110	120		111.0	119.6		0.9%	-0.3%		115	125		116.3	125.6		1.1%	0.5%
1/0	125	135		125.9	135.7		0.7%	0.5%		130	145		131.1	141.7		0.8%	-2.3%
2/0	145	155		142.8	153.9		-1.5%	-0.7%		150	160		147.5	159.4		-1.7%	-0.4%
3/0	165	175		161.9	174.5		-1.9%	-0.3%		170	180		166.1	179.6		-2.3%	-0.2%
4/0	185	200		183.4	197.7		-0.9%	-1.2%		190	200		186.9	202.2		-1.6%	1.1%
250	200	220		201.0	216.7		0.5%	-1.5%		205	220		203.4	220.1		-0.8%	0.0%
350	240	270		240.1	258.9		0.0%	-4.1%		245	275		240.4	260.4		-1.9%	-5.3%
500	290	310		287.2	310.0		-1.0%	0.0%		290	305		285.2	309.4		-1.7%	1.4%
750	350	375		347.1	375.3		-0.8%	0.1%		340	365		340.3	370.2		0.1%	1.4%
1000	390	420		392.8	425.5		0.7%	1.3%		380	405		379.8	414.3		-0.1%	2.3%
Average Deviation =							-0.8%	-1.0%	Average Deviation =							-0.8%	-0.1%

AmpCalc References:

AmpCalc Library = IEERUB_3, Duct library = NEC_PVC, 5" duct.
AmpCalc Volume = IEERUB1
1 kV non-shielded

AmpCalc Library = IEERUB_3, Duct library = NEC_PVC, 5" duct.
AmpCalc Volume = IEERUB8 for #6, 4 , IEERUB15 for all others
8 or 15 kV shielded with both ends grounded

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