

Wireway Fill Calculator

Calculate preliminary wireway or gutter fill from verified internal dimensions and conductor or cable area data.

Generated October 10, 2026

<https://www.elecatrix.com/wire-raceway-ampacity/wireway-fill-calculator/>

Inputs		
Input	Value	Unit
Wireway type	Metal wireway	
Verified internal area	12	in^2
Entered fill limit	40	%
Conductor or cable rows	Rows: 2	
Row 1 - Row label	Conductor group A	
Row 1 - Area per conductor or cable	0.8	in^2
Row 1 - Quantity	6	count
Row 2 - Row label	Cable group B	
Row 2 - Area per conductor or cable	1.2	in^2
Row 2 - Quantity	2	count
Results		
Result	Value	Unit
Occupied area	7.2	in^2
Fill percentage	60	%
Remaining internal area	4.8	in^2
Entered limit area	4.8	in^2
Margin vs entered limit	-2.4	in^2
Counted rows	2	rows
Fill comparison	Exceeds entered limit	

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Calculation details

Detail	Value	Unit
Calculation basis	Each row uses the entered area and quantity. The entered fill limit is a comparison input, not a hidden code constant.	
Wireway boundary	Preliminary area estimate only; verify wireway product dimensions, covers, dividers, entries, bending space, conductor data, adopted rules, and AHJ requirements separately.	

Formulas

Row occupied area = area per conductor or cable x quantity

Occupied area = sum row occupied areas

Fill percentage = (occupied area/verified internal area) x 100%

Entered limit area = verified internal area x (entered fill limit/100)

Fill margin = entered limit area - occupied area

Fill comparison: compare fill percentage with the entered fill limit

Warnings and limitations

This is a preliminary wireway area estimate. It does not reproduce NEC or manufacturer tables, choose a wireway product, check bending space, determine conductor ampacity, or establish code compliance.