Pressure Drop per Length Converter (Pa/m, bar/km, psi/100 ft)

Convert a pressure drop per unit length of pipe or duct between Pa/m, kPa/m, bar/km, mmWC/m, inWC/100 ft, ftWC/100 ft and psi/100 ft.

Method: Unit definitions per NIST SP 811 and the SI Brochure (exact where defined)

Input parameters

Unit system: SI

Parameter	Value	Unit
Pressure gradient (choose its unit)	100.00	Pa/m

Calculated results

Parameter	Value	Unit
Pa/m	100.00	Pa/m
kPa/m	0.10000	kPa/m
bar/km	1.0000	bar/km
mmWC/m	10.197	mmWC/m
inWC/100 ft	12.237	inWC/100 ft
ftWC/100 ft	1.0197	ftWC/100 ft
psi/100 ft	0.44208	psi/100 ft

Notes for this case

• Pipe and duct sizing tables give friction loss per length: water pipes are often sized for 100–400 Pa/m (about 1–4 ftWC/100 ft), ducts for about 1 Pa/m (0.1 inWC/100 ft), and gas pipelines in bar/km. 1 inWC/100 ft is 8.17 Pa/m; 1 psi/100 ft is 226.2 Pa/m.

Formula and method

$$1\ \text{inWC/100 ft} = 8.174\ \text{Pa/m}, \quad 1\ \text{psi/100 ft} = 226.2\ \text{Pa/m}$$

Variables

$\Delta p/L$	Pressure gradient (choose its unit)	Pa/m

Method and standards

Gradient units.

Assumptions and limits

- Water column at 4 °C conventional density.

References

Unit definitions per NIST SP 811 and the SI Brochure (exact where defined)

Report details

Report reference	FCC-FDQQ-WDG1 (the same inputs always give the same reference)
Generated	23 November 2026, 17:51 UTC
Calculator	Pressure Drop per Length Converter (Pa/m, bar/km, psi/100 ft)
Method last reviewed	17 November 2026
Software release	FireCAD Calc, release of 22 November 2026
Release checks	2 reference cases of this calculator, computed independently, are checked on every release

Results are for engineering estimation. Verify critical designs against the referenced standards and your own data.

This calculator online

https://calc.firecad.com/general/unit-conversions/pressure-gradient-converter

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.