

Mannings n Roughness Coefficients - Closed Conduits

The following Manning's n Roughness Coefficient table is from the United States Department of Transportation – Federal Highway Administration: Hydraulic Engineering [website](#):

Table B.3. Manning's n Values for Closed Conduits.		
Description		Manning's n Range
Concrete pipe		0.011–0.013
Corrugated metal pipe or pipe-arch:		
Corrugated Metal Pipes and Boxes, Annular or Helical Pipe (Manning's n varies with barrel size)	68 by 13 mm (2-2/3 x 1/2 in.) corrugations	0.022–0.027
	150 by 25 mm (6 x 1 in.) corrugations	0.022–0.025
	125 by 25 mm (5 x 1 in.) corrugations	0.025–0.026
	75 by 25 mm (3 x 1 in.) corrugations	0.027–0.028
	150 by 50 mm (6 x 2 in.) structural plate corrugations	0.033–0.035
	230 by 64 mm (9 x 2-1/2 in.) structural plate corrugations	0.033–0.037
Corrugated Metal Pipes Helical Corrugations, Full Circular Flow	68 by 13 mm (2-2/3 x 1/2 in.) corrugations	0.012–0.024
Spiral Rib Metal Pipe	Smooth walls	0.012–0.013
Vitrified clay pipe		0.012–0.014
Cast-iron pipe, uncoated		0.013
Steel pipe		0.009–0.013
Brick		0.014–0.017
Monolithic concrete:	1. Wood forms, rough	0.015–0.017
	2. Wood forms, smooth	0.012–0.014
	3. Steel forms	0.012–0.013
Cemented rubble masonry walls:	1. Concrete floor and top	0.017–0.022
	2. Natural floor	0.019–0.025
Laminated treated wood		0.015–0.017
Vitrified clay liner plates		0.015

On this section:

- [Configuration Keywords](#)
- [Mannings n Roughness Coefficients - Closed Conduits](#)
- [Mannings N Roughness Coefficients - Open Channel](#)
- [Real Time Control Examples](#)
- [Roughness Coefficients](#)
- [Sample Output File](#)
- [SWMM Theory](#)
- [EXTRAN Theory - Dynamic Wave Solution](#)
- [Reference Publications](#)
- [Detailed Bed Shear Equations](#)
- [Stream Power](#)
- [Curve Numbers](#)
- [Broad-crested Weir Coefficients](#)
- [Inlet Control Theory](#)
- [TUFLOW.exe Control File - .tcf File](#)
- [Plug Flow Theory](#)
- [Time of Concentration Calculator](#)