

Capacity and Displacement of Drill Pipe

O.D. (mm)	MASS (kg/m)	I.D. (mm)	CAPACITY (m ³ /metre)	DISPLACEMENT (m ³ /metre)
60.3 (2 3/8")	7.20	50.70	0.0020	0.0009
	9.90	46.10	0.0017	0.0013
73.0 (2 7/8")	9.60	62.70	0.0031	0.0012
	10.20	62.00	0.0030	0.0013
	12.40	59.00	0.0027	0.0016
	15.50	54.60	0.0023	0.0020
88.9 (3 1/2")	12.70	77.80	0.0048	0.0016
	14.10	76.00	0.0045	0.0018
	16.70	73.70	0.0043	0.0021
	19.80	70.20	0.0039	0.0025
	23.10	66.10	0.0034	0.0029
101.6 (4")	17.60	88.30	0.0061	0.0023
	20.80	84.80	0.0057	0.0027
	23.40	82.30	0.0053	0.0030
114.3 (4 1/2")	19.00	101.60	0.0081	0.0024
	20.50	100.50	0.0079	0.0026
	24.70	97.20	0.0074	0.0032
	29.80	92.50	0.0067	0.0038
127.0 (5")	24.20	112.00	0.0098	0.0031
	29.00	108.60	0.0093	0.0037
	30.50	107.00	0.0090	0.0039
139.7 (5 1/2")	32.60	121.40	0.0116	0.0042
	36.80	111.60	0.0111	0.0047

The formula for calculating the capacity of a hole or a pipe is:

$$\text{Capacity (liters/metre)} = (\text{Inside diameter in millimeters, mm})^2 \times 0.0007854$$

The annular or displacement volume can be calculated using a similar formula:

$$\text{Capacity (litres/metre)} = (\text{OD in millimeters, mm})^2 - (\text{ID in millimeters, mm})^2 \times 0.0007854$$