

**Weir Head and Unit Flow Rates**

Weir Head (inches)	Weir Head (inches)	Unit Flow Rate <sup>a</sup> (gpm/ft)	Weir Head (inches)	Weir Head (inches)	Unit Flow Rate <sup>l</sup> (gpm/ft)	Weir Head (inches)	Weir Head (inches)	Unit Flow Rate <sup>l</sup> (gpm/ft)	Weir Head (inches)	Weir Head (inches)	Unit Flow Rate <sup>l</sup> (gpm/ft)
0.03	1/32	0.20	1.03	1 1/32	37.49	2.03	2 1/32	103.64	3.03	3 1/32	188.93
0.06	1/16	0.56 <sup>b</sup>	1.06	1 1/16	39.21	2.06	2 1/16	106.04	3.06	3 1/16	191.86
0.09	3/32	1.03	1.09	1 3/32	40.95	2.09	2 3/32	108.46	3.09	3 3/32	194.81
0.13	1/8	1.58 <sup>c</sup>	1.13	1 1/8	42.72	2.13	2 1/8	110.90	3.13	3 1/8	197.77
0.16	5/32	2.21	1.16	1 5/32	44.51	2.16	2 5/32	113.35	3.16	3 5/32	200.74
0.19	3/16	2.91 <sup>d,e</sup>	1.19	1 3/16	46.33	2.19	2 3/16	115.82	3.19	3 3/16	203.73
0.22	7/32	3.66	1.22	1 7/32	48.17	2.22	2 7/32	118.32	3.22	3 7/32	206.73
0.25	1/4	4.47 <sup>f</sup>	1.25	1 1/4	50.03	2.25	2 1/4	120.82	3.25	3 1/4	209.75
0.28	9/32	5.34	1.28	1 9/32	51.92	2.28	2 9/32	123.35	3.28	3 9/32	212.78
0.31	5/16	6.25	1.31	1 5/16	53.83	2.31	2 5/16	125.89	3.31	3 5/16	215.83
0.34	11/32	7.22	1.34	1 11/32	55.76	2.34	2 11/32	128.45	3.34	3 11/32	218.89
0.38	3/8	8.22 <sup>g</sup>	1.38	1 3/8	57.72	2.38	2 3/8	131.03	3.38	3 3/8	221.97
0.41	13/32	9.27	1.41	1 13/32	59.70	2.41	2 13/32	133.63	3.41	3 13/32	225.06
0.44	7/16	10.36	1.44	1 7/16	61.70	2.44	2 7/16	136.24	3.44	3 7/16	228.16
0.47	15/32	11.49	1.47	1 15/32	63.72	2.47	2 15/32	138.87	3.47	3 15/32	231.28
0.50	1/2	12.66 <sup>h</sup>	1.50	1 1/2	65.77	2.50	2 1/2	141.51	3.50	3 1/2	234.41
0.53	17/32	13.86	1.53	1 17/32	67.83	2.53	2 17/32	144.17	3.53	3 17/32	237.56
0.56	9/16	15.10	1.56	1 9/16	69.92	2.56	2 9/16	146.85	3.56	3 9/16	240.72
0.59	19/32	16.38	1.59	1 19/32	72.03	2.59	2 19/32	149.54	3.59	3 19/32	243.89
0.63	5/8	17.69	1.63	1 5/8	74.16	2.63	2 5/8	152.26	3.63	3 5/8	247.08
0.66	21/32	19.03	1.66	1 21/32	76.31	2.66	2 21/32	154.98	3.66	3 21/32	250.28
0.69	11/16	20.41	1.69	1 11/16	78.48	2.69	2 11/16	157.73	3.69	3 11/16	253.50
0.72	23/32	21.81	1.72	1 23/32	80.67	2.72	2 23/32	160.48	3.72	3 23/32	256.73
0.75	3/4	23.25	1.75	1 3/4	82.88	2.75	2 3/4	163.26	3.75	3 3/4	259.97
0.78	25/32	24.72	1.78	1 25/32	85.11	2.78	2 25/32	166.05	3.78	3 25/32	263.23
0.81	13/16	26.22	1.81	1 13/16	87.36	2.81	2 13/16	168.86	3.81	3 13/16	266.50
0.84	27/32	27.75	1.84	1 27/32	89.63	2.84	2 27/32	171.68	3.84	3 27/32	269.78
0.88	7/8	29.30	1.88	1 7/8	91.91	2.88	2 7/8	174.52	3.88	3 7/8	273.08
0.91	29/32	30.89	1.91	1 29/32	94.22	2.91	2 29/32	177.37	3.91	3 29/32	276.39
0.94	15/16	32.50	1.94	1 15/16	96.55	2.94	2 15/16	180.24	3.94	3 15/16	279.71
0.97	31/32	34.13	1.97	1 31/32	98.89	2.97	2 31/32	183.12	3.97	3 31/32	283.05
1.00	1	35.80	2.00	2	101.26	3.00	3	186.02	4.00	4	286.40

<sup>a</sup>Gupta, Ram S., Hydrology & Hydraulic Systems, Prentice Hall, 1989, page 266, Francis equation,  $Q = (2/3) \cdot C_d \cdot (2 \cdot g)^{0.5} \cdot (L - 0.1 \cdot n \cdot H) \cdot H^{1.5}$  where  $C_d = 0.62$  and units are  $L^3T^{-1}$ . Substituting, rearranging, and converting for units,  $Q_{gpm} = (35.799701 \cdot L_{ft} \cdot h_{in}^{1.5}) - (0.298331 \cdot n \cdot h_{in}^{2.5})$  where weir length  $L = 1$  ft and the number of end-contractions  $n = 0$ .

<sup>b</sup>Recommended operational flow rate for slot-edges and non-sheeting vanishing edges with  $\pm 1/16$ " edge tolerance.

<sup>c</sup>Recommended pressure system design flow rate for slot-edges and non-sheeting vanishing edges with  $\pm 1/16$ " edge tolerance.

<sup>d</sup>Recommended gravity system design flow rate for slot-edges and non-sheeting vanishing edges with  $\pm 1/16$ " edge tolerance.

<sup>e</sup>Recommended pressure system design flow rate for vanishing edges with downstream sheet-effect or rough surface and  $\pm 1/16$ " edge tolerance.

<sup>f</sup>Recommended gravity system design flow rate for vanishing edges with downstream sheet-effect or rough surface and  $\pm 1/16$ " edge tolerance.

<sup>g</sup>Recommended pressure system design flow rate for vanishing edges with downstream clear-sheet-effect and  $\pm 1/16$ " edge tolerance.

<sup>h</sup>Recommended gravity system design flow rate for vanishing edges with downstream clear-sheet-effect and  $\pm 1/16$ " edge tolerance.

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