

TABLE 2 DESIGN LOAD CALCULATION FOR DN 200mm SS

DATA: Crushing strength = 40 kN/m; Unit weight of backfill = 19.6 kN/m³; Ext. dia. = 242mm

Ku' = 0.13; Ku = 0.19; r_{sd}ρ = 0.7, Traffic load = 112.5kN; Factor of safety = 1.25

Trench cover m	Design load kN/m	Bedding factor	Design load kN/m	Bedding factor	Design load kN/m	Bedding factor	Design load kN/m	Bedding factor
0.6	33.46	1.05	33.46	1.05	33.46	1.05	33.46	1.05
0.7	30.10	0.94	30.10	0.94	30.10	0.94	30.10	0.94
0.8	27.95	0.87	27.95	0.87	27.95	0.87	27.95	0.87
0.9	21.57	0.67	21.57	0.67	21.57	0.67	21.57	0.67
1.0	25.35	0.79	25.35	0.79	25.35	0.79	25.35	0.79
1.1	24.62	0.77	24.62	0.77	24.62	0.77	24.62	0.77
1.2	24.14	0.75	24.14	0.75	24.14	0.75	24.14	0.75
1.3	23.88	0.75	23.88	0.75	23.88	0.75	23.88	0.75
1.4	23.77	0.74	23.77	0.74	23.77	0.74	23.77	0.74
1.5	23.74	0.74	23.74	0.74	23.74	0.74	23.74	0.74
1.6	23.82	0.74	23.82	0.74	23.82	0.74	23.82	0.74
1.7	23.97	0.75	23.97	0.75	23.97	0.75	23.97	0.75
1.8	24.19	0.76	24.19	0.76	24.19	0.76	24.19	0.76
1.9	24.44	0.76	24.44	0.76	24.44	0.76	24.44	0.76
2.0	24.73	0.77	24.73	0.77	24.73	0.77	24.73	0.77
2.1	25.08	0.78	25.08	0.78	25.08	0.78	25.08	0.78
2.2	25.42	0.79	25.42	0.79	25.42	0.79	25.42	0.79
2.3	25.81	0.81	25.81	0.81	25.81	0.81	25.81	0.81
2.4	26.20	0.82	26.20	0.82	26.20	0.82	26.20	0.82
2.5	26.63	0.83	26.63	0.83	26.63	0.83	26.63	0.83
2.6	27.06	0.85	27.06	0.85	27.06	0.85	27.06	0.85
2.7	27.52	0.86	27.52	0.86	27.52	0.86	27.52	0.86
2.8	27.98	0.87	27.98	0.87	27.98	0.87	27.98	0.87
2.9	28.48	0.89	28.48	0.89	28.48	0.89	28.48	0.89
3.0	28.98	0.91	28.98	0.91	28.98	0.91	28.98	0.91
3.1	29.50	0.92	29.50	0.92	29.50	0.92	29.50	0.92
3.2	30.01	0.94	30.01	0.94	30.01	0.94	30.01	0.94
3.3	30.54	0.95	30.54	0.95	30.54	0.95	30.54	0.95
3.4	31.08	0.97	31.08	0.97	31.08	0.97	31.08	0.97
3.5	31.64	0.99	31.64	0.99	31.64	0.99	31.64	0.99
3.6	32.20	1.01	32.20	1.01	32.20	1.01	32.20	1.01
3.7	32.57	1.02	32.77	1.02	32.77	1.02	32.77	1.02
3.8	32.72	1.02	33.35	1.04	33.35	1.04	33.35	1.04
3.9	32.90	1.03	33.94	1.06	33.94	1.06	33.94	1.06
4.0	33.05	1.03	34.54	1.08	34.54	1.08	34.54	1.08
4.1	33.25	1.04	35.19	1.10	35.19	1.10	35.19	1.10
4.2	33.44	1.05	35.84	1.12	35.84	1.12	35.84	1.12
4.3	33.62	1.05	36.49	1.14	36.49	1.14	36.49	1.14
4.4	33.80	1.06	37.15	1.16	37.15	1.16	37.15	1.16
4.5	33.77	1.06	37.61	1.18	37.61	1.18	37.61	1.18
4.6	33.94	1.06	38.28	1.20	38.28	1.20	38.28	1.20
4.7	34.11	1.07	38.96	1.22	38.96	1.22	38.96	1.22
4.8	34.27	1.07	39.64	1.24	39.64	1.24	39.64	1.24
4.9	34.42	1.08	40.32	1.26	40.32	1.26	40.32	1.26
5.0	34.39	1.07	40.82	1.28	40.82	1.28	40.82	1.28
5.1	34.54	1.08	41.51	1.30	41.51	1.30	41.51	1.30
Trench width,m	0.7		0.8		0.9		1.0	

Narrow trench load

Wide trench load

DESIGN LOAD CALCULATION FOR DN 200mm SS

Trench cover m	Design load kN/m	Bedding factor	Design load kN/m	Bedding factor	Design load kN/m	Bedding factor	Design load kN/m	Bedding factor
5.2	34.68	1.08	42.21	1.32	42.21	1.32	42.21	1.32
5.3	34.82	1.09	42.67	1.33	42.90	1.34	42.90	1.34
5.4	34.95	1.09	42.88	1.34	43.60	1.36	43.60	1.36
5.5	34.91	1.09	42.93	1.34	44.13	1.38	44.13	1.38
5.6	35.03	1.09	43.14	1.35	44.84	1.40	44.84	1.40
5.7	35.15	1.10	43.34	1.35	45.55	1.42	45.55	1.42
5.8	35.27	1.10	43.54	1.36	46.25	1.45	46.25	1.45
5.9	35.38	1.11	43.73	1.37	46.97	1.47	46.97	1.47
6.0	35.36	1.11	43.78	1.37	47.55	1.49	47.55	1.49
6.1	35.45	1.11	43.94	1.37	48.24	1.51	48.24	1.51
6.2	35.53	1.11	44.09	1.38	48.93	1.53	48.93	1.53
6.3	35.60	1.11	44.24	1.38	49.63	1.55	49.63	1.55
6.4	35.67	1.11	44.38	1.39	50.32	1.57	50.32	1.57
6.5	35.73	1.12	44.51	1.39	51.02	1.59	51.02	1.59
6.6	35.80	1.12	44.65	1.40	51.72	1.62	51.72	1.62
6.7	35.87	1.12	44.78	1.40	52.42	1.64	52.42	1.64
6.8	35.93	1.12	44.90	1.40	53.13	1.66	53.13	1.66
6.9	35.99	1.12	45.02	1.41	53.83	1.68	53.83	1.68
7.0	36.04	1.13	45.13	1.41	54.53	1.70	54.53	1.70
7.1	36.10	1.13	45.25	1.41	55.01	1.72	55.25	1.73
7.2	36.16	1.13	45.37	1.42	55.20	1.73	55.97	1.75
7.3	36.21	1.13	45.48	1.42	55.38	1.73	56.68	1.77
7.4	36.27	1.13	45.58	1.42	55.55	1.74	57.40	1.79
7.5	36.31	1.13	45.68	1.43	55.72	1.74	58.11	1.82
7.6	36.35	1.14	45.78	1.43	55.88	1.75	58.83	1.84
7.7	36.40	1.14	45.87	1.43	56.03	1.75	59.54	1.86
7.8	36.43	1.14	45.96	1.44	56.18	1.76	60.26	1.88
7.9	36.47	1.14	46.04	1.44	56.33	1.76	60.97	1.91
8.0	36.50	1.14	46.12	1.44	56.46	1.76	61.69	1.93
8.1	36.54	1.14	46.21	1.44	56.61	1.77	62.41	1.95
8.2	36.58	1.14	46.29	1.45	56.75	1.77	63.14	1.97
8.3	36.62	1.14	46.37	1.45	56.88	1.78	63.86	2.00
8.4	36.65	1.15	46.45	1.45	57.01	1.78	64.59	2.02
8.5	36.68	1.15	46.52	1.45	57.14	1.79	65.32	2.04
8.6	36.71	1.15	46.59	1.46	57.26	1.79	66.04	2.06
8.7	36.74	1.15	46.65	1.46	57.38	1.79	66.77	2.09
8.8	36.76	1.15	46.71	1.46	57.49	1.80	67.50	2.11
8.9	36.79	1.15	46.78	1.46	57.60	1.80	68.22	2.13
9.0	36.81	1.15	46.83	1.46	57.70	1.80	68.95	2.15
9.1	36.84	1.15	46.89	1.47	57.81	1.81	69.46	2.17
9.2	36.86	1.15	46.95	1.47	57.92	1.81	69.63	2.18
9.3	36.88	1.15	47.01	1.47	58.02	1.81	69.78	2.18
9.4	36.91	1.15	47.07	1.47	58.12	1.82	69.93	2.19
9.5	36.93	1.15	47.12	1.47	58.21	1.82	70.08	2.19
9.6	36.94	1.15	47.17	1.47	58.30	1.82	70.22	2.19
9.7	36.96	1.16	47.21	1.48	58.39	1.82	70.36	2.20
9.8	36.98	1.16	47.26	1.48	58.47	1.83	70.50	2.20
9.9	36.99	1.16	47.30	1.48	58.55	1.83	70.63	2.21
10.0	37.01	1.16	47.34	1.48	58.63	1.83	70.75	2.21
Trench width,m	0.7		0.8		0.9		1.0	

Narrow trench load

Wide trench load