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Annex 01

Pressure acting due to dead load and live load at different depths

Due to dead loading

Depth [mm]	Wf [kN/m2]
150	3.28
200	4.36
250	5.44
300	6.24
350	7.03
400	7.83
450	8.62
500	9.34
550	10.07
600	10.79
650	11.51
700	12.23
750	12.95

Due to live loading

Depth [mm]	Wt [kN/m2]
150	178.72
200	126.64
250	93.56
300	76.76
350	62.97
400	50.17
450	38.38
500	32.66
550	25.93
600	20.21
650	15.49
700	10.77
750	8.05

Bending stress at pipe crown due to dead loads

Depth [mm]	B.Stress [kN/m2]
150	79.5
200	105.6
250	131.7
300	150.9
350	170.2
400	189.4
450	208.7
500	226.1
550	243.6
600	261.0
650	278.5
700	295.9
750	313.4

Bending stress at pipe crown due to live loads

Depth [mm]	B.Stress [kN/m2]
150	3043.5
200	2156.6
250	1593.3
300	1307.2
350	1072.3
400	854.4
450	653.5
500	556.1
550	441.7
600	344.2
650	263.8
700	183.4
750	137.1

Bending stress at pipe bottom due to dead loads

Depth [mm]	B.Stress [kN/m2]
150	103.7
200	137.7
250	171.8
300	196.9
350	222.0
400	247.1
450	272.2
500	295.0
550	317.7
600	340.5
650	363.3
700	386.0
750	408.8
800	431.5
850	454.3
900	477.1
950	499.8

Bending stress at pipe bottom due to live loads

Depth [mm]	B.Stress [kN/m2]
150	440.5
200	312.1
250	230.6
300	189.2
350	155.2
400	123.7
450	94.6
500	80.5
550	63.9
600	49.8
650	38.2
700	26.5
750	19.8

HS 20 Truck

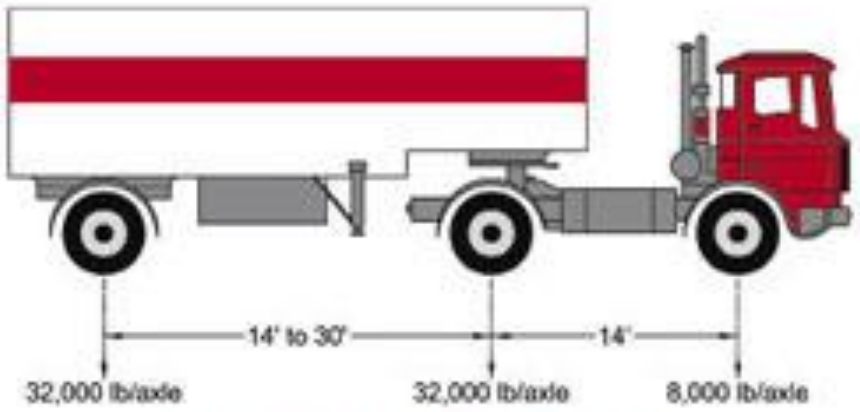
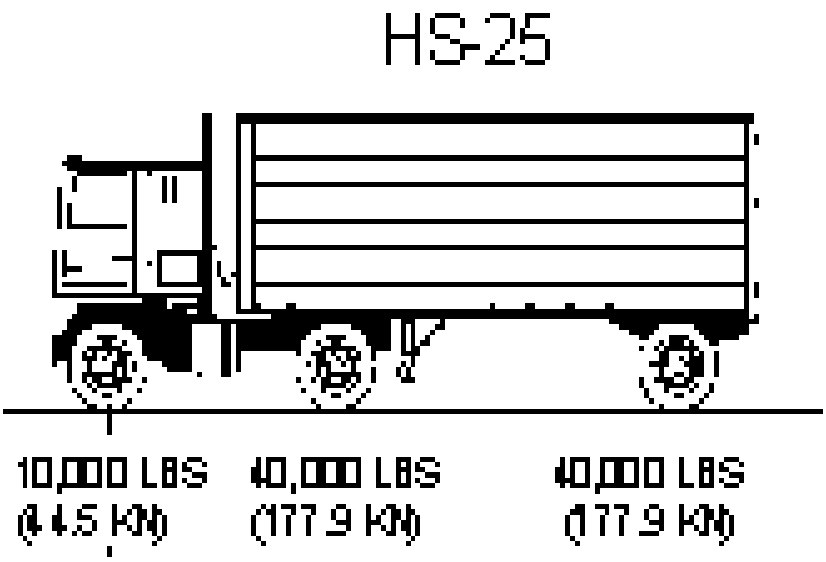
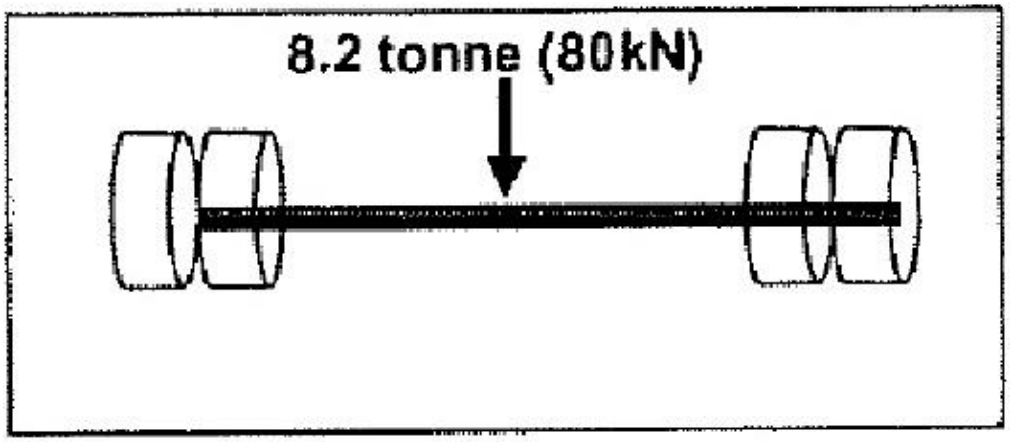


FIGURE 2: HS20 TRUCK

HS 25 Truck



SADT configuration



Specimen calculation for obtaining the live load acting on the pipe in Table 11

CIRCLY software gives the combined pressure which comes due to dead load and live load. To find live load, it is required to separately calculate dead load component. For obtaining dead load for the pipe 2 ft below the selected pavement,

P=ɣC ɣ-unit weight (kN/m3) , C- depth of each layer above pipe top level

Layer	**Unit weight (kN/m3)**	**Depth (m)**
Asphalt	22.55	0.05
ABC	21.57	0.2
Soil	15.91	0.2
sand	14.42	0.15

P= (22.55x0.05)+(21.57x0.2)+(15.91x0.2)+(14.42x0.15)

= 10.79 kN/m2

Dead + live load acting at 2 ft depth (Table 7) = 31 kN/m2

Live load (w_f) = 31 – 10.79

= 20.21 kN/m2

= 0.020 MPa