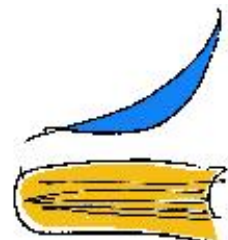


# Overburden Effect Behind Wall Report

## **PEYSANJ 2** **geotechnical engineering software**

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## Company name

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Wall height (m) : 6.5

Q(kg / cm<sup>2</sup>) : 1.8

Affect Rankine Ka latheral stress? True

X (m) : 1

m B=2 : بار گسترده

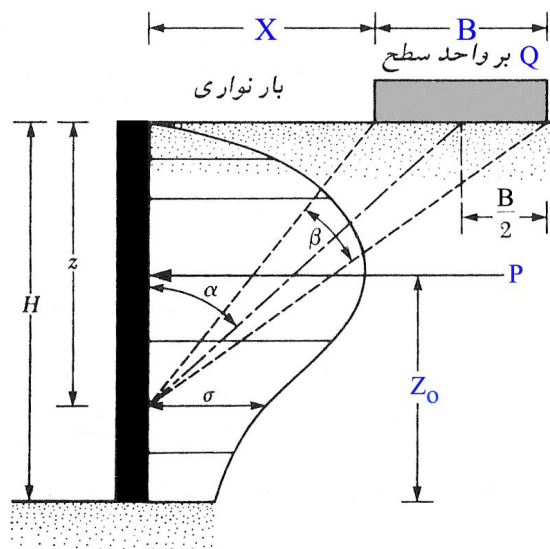
Fi=30 , gamma (t/m<sup>3</sup>)=2

$$\sigma = \frac{2q}{\pi} (\beta - \sin \beta \cdot \cos 2\alpha)$$

$$P = \frac{q}{90} [H(\theta_2 - \theta_1)]$$

$$\theta_1 = \tan^{-1} \left( \frac{b'}{H} \right) \text{ بر حسب درجه}$$

$$\theta_2 = \tan^{-1} \left( \frac{a' + b'}{H} \right) \text{ بر حسب درجه}$$



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Z=0 m , alpha=90 deg. , beta=0 deg.  
dP1 overburden=0 kg/cm2  
dp2 Rankin = 0 kg/cm2  
\* dp Total = 0 kg/cm2  
~  
Z=0.13 m , alpha=86.28 deg. , beta=4.93 deg.  
dP1 overburden=0.1961 kg/cm2  
dp2 Rankin = 0.009 kg/cm2  
\* dp Total = 0.205 kg/cm2  
~  
Z=0.26 m , alpha=82.59 deg. , beta=9.62 deg.  
dP1 overburden=0.3776 kg/cm2  
dp2 Rankin = 0.017 kg/cm2  
\* dp Total = 0.395 kg/cm2  
~  
Z=0.39 m , alpha=78.97 deg. , beta=13.9 deg.  
dP1 overburden=0.5331 kg/cm2  
dp2 Rankin = 0.026 kg/cm2  
\* dp Total = 0.559 kg/cm2  
~  
Z=0.52 m , alpha=75.43 deg. , beta=17.64 deg.  
dP1 overburden=0.6561 kg/cm2  
dp2 Rankin = 0.035 kg/cm2  
\* dp Total = 0.691 kg/cm2  
~  
Z=0.65 m , alpha=72 deg. , beta=20.8 deg.  
dP1 overburden=0.7451 kg/cm2  
dp2 Rankin = 0.043 kg/cm2  
\* dp Total = 0.788 kg/cm2  
~  
Z=0.78 m , alpha=68.69 deg. , beta=23.38 deg.  
dP1 overburden=0.8023 kg/cm2  
dp2 Rankin = 0.052 kg/cm2  
\* dp Total = 0.854 kg/cm2  
~  
Z=0.91 m , alpha=65.53 deg. , beta=25.43 deg.  
dP1 overburden=0.8318 kg/cm2  
dp2 Rankin = 0.061 kg/cm2  
\* dp Total = 0.892 kg/cm2  
~  
Z=1.04 m , alpha=62.53 deg. , beta=27 deg.  
dP1 overburden=0.8389 kg/cm2  
dp2 Rankin = 0.069 kg/cm2  
\* dp Total = 0.908 kg/cm2  
~  
Z=1.17 m , alpha=59.67 deg. , beta=28.17 deg.  
dP1 overburden=0.8286 kg/cm2  
dp2 Rankin = 0.078 kg/cm2  
\* dp Total = 0.907 kg/cm2  
~  
Z=1.3 m , alpha=56.98 deg. , beta=29 deg.  
dP1 overburden=0.8056 kg/cm2  
dp2 Rankin = 0.087 kg/cm2  
\* dp Total = 0.892 kg/cm2  
~  
Z=1.43 m , alpha=54.44 deg. , beta=29.55 deg.  
dP1 overburden=0.7738 kg/cm2  
dp2 Rankin = 0.095 kg/cm2  
\* dp Total = 0.869 kg/cm2  
~  
Z=1.56 m , alpha=52.05 deg. , beta=29.86 deg.  
dP1 overburden=0.7362 kg/cm2  
dp2 Rankin = 0.104 kg/cm2  
\* dp Total = 0.84 kg/cm2  
~  
Z=1.69 m , alpha=49.8 deg. , beta=29.99 deg.  
dP1 overburden=0.6954 kg/cm2  
dp2 Rankin = 0.113 kg/cm2  
\* dp Total = 0.808 kg/cm2  
~  
Z=1.82 m , alpha=47.7 deg. , beta=29.97 deg.  
dP1 overburden=0.6532 kg/cm2  
dp2 Rankin = 0.121 kg/cm2



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\* dp Total = 0.775 kg/cm2  
~  
Z=1.95 m , alpha=45.73 deg. , beta=29.83 deg.  
dP1 overburden=0.611 kg/cm2  
dp2 Rankin = 0.13 kg/cm2  
\* dp Total = 0.741 kg/cm2  
~  
Z=2.08 m , alpha=43.88 deg. , beta=29.59 deg.  
dP1 overburden=0.5696 kg/cm2  
dp2 Rankin = 0.139 kg/cm2  
\* dp Total = 0.708 kg/cm2  
~  
Z=2.21 m , alpha=42.14 deg. , beta=29.28 deg.  
dP1 overburden=0.5298 kg/cm2  
dp2 Rankin = 0.147 kg/cm2  
\* dp Total = 0.677 kg/cm2  
~  
Z=2.34 m , alpha=40.52 deg. , beta=28.91 deg.  
dP1 overburden=0.4919 kg/cm2  
dp2 Rankin = 0.156 kg/cm2  
\* dp Total = 0.648 kg/cm2  
~  
Z=2.47 m , alpha=39 deg. , beta=28.49 deg.  
dP1 overburden=0.4562 kg/cm2  
dp2 Rankin = 0.165 kg/cm2  
\* dp Total = 0.621 kg/cm2  
~  
Z=2.6 m , alpha=37.57 deg. , beta=28.05 deg.  
dP1 overburden=0.4228 kg/cm2  
dp2 Rankin = 0.173 kg/cm2  
\* dp Total = 0.596 kg/cm2  
~  
Z=2.73 m , alpha=36.23 deg. , beta=27.58 deg.  
dP1 overburden=0.3916 kg/cm2  
dp2 Rankin = 0.182 kg/cm2  
\* dp Total = 0.574 kg/cm2  
~  
Z=2.86 m , alpha=34.97 deg. , beta=27.1 deg.  
dP1 overburden=0.3628 kg/cm2  
dp2 Rankin = 0.191 kg/cm2  
\* dp Total = 0.553 kg/cm2  
~  
Z=2.99 m , alpha=33.78 deg. , beta=26.6 deg.  
dP1 overburden=0.3362 kg/cm2  
dp2 Rankin = 0.199 kg/cm2  
\* dp Total = 0.535 kg/cm2  
~  
Z=3.12 m , alpha=32.66 deg. , beta=26.11 deg.  
dP1 overburden=0.3116 kg/cm2  
dp2 Rankin = 0.208 kg/cm2  
\* dp Total = 0.52 kg/cm2  
~  
Z=3.25 m , alpha=31.61 deg. , beta=25.61 deg.  
dP1 overburden=0.289 kg/cm2  
dp2 Rankin = 0.217 kg/cm2  
\* dp Total = 0.506 kg/cm2  
~  
Z=3.38 m , alpha=30.61 deg. , beta=25.11 deg.  
dP1 overburden=0.2681 kg/cm2  
dp2 Rankin = 0.225 kg/cm2  
\* dp Total = 0.493 kg/cm2  
~  
Z=3.51 m , alpha=29.67 deg. , beta=24.62 deg.  
dP1 overburden=0.249 kg/cm2  
dp2 Rankin = 0.234 kg/cm2  
\* dp Total = 0.483 kg/cm2  
~  
Z=3.64 m , alpha=28.79 deg. , beta=24.13 deg.  
dP1 overburden=0.2314 kg/cm2  
dp2 Rankin = 0.243 kg/cm2  
\* dp Total = 0.474 kg/cm2  
~  
Z=3.77 m , alpha=27.95 deg. , beta=23.66 deg.  
dP1 overburden=0.2153 kg/cm2



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dp2 Rankin = 0.251 kg/cm2  
\* dp Total = 0.467 kg/cm2  
~  
Z=3.9 m , alpha=27.15 deg. , beta=23.19 deg.  
dP1 overburden=0.2005 kg/cm2  
dp2 Rankin = 0.26 kg/cm2  
\* dp Total = 0.46 kg/cm2  
~  
Z=4.03 m , alpha=26.39 deg. , beta=22.73 deg.  
dP1 overburden=0.1868 kg/cm2  
dp2 Rankin = 0.269 kg/cm2  
\* dp Total = 0.455 kg/cm2  
~  
Z=4.16 m , alpha=25.68 deg. , beta=22.28 deg.  
dP1 overburden=0.1743 kg/cm2  
dp2 Rankin = 0.277 kg/cm2  
\* dp Total = 0.452 kg/cm2  
~  
Z=4.29 m , alpha=24.99 deg. , beta=21.84 deg.  
dP1 overburden=0.1628 kg/cm2  
dp2 Rankin = 0.286 kg/cm2  
\* dp Total = 0.449 kg/cm2  
~  
Z=4.42 m , alpha=24.35 deg. , beta=21.42 deg.  
dP1 overburden=0.1521 kg/cm2  
dp2 Rankin = 0.295 kg/cm2  
\* dp Total = 0.447 kg/cm2  
~  
Z=4.55 m , alpha=23.73 deg. , beta=21 deg.  
dP1 overburden=0.1424 kg/cm2  
dp2 Rankin = 0.303 kg/cm2  
\* dp Total = 0.446 kg/cm2  
~  
Z=4.68 m , alpha=23.14 deg. , beta=20.6 deg.  
dP1 overburden=0.1333 kg/cm2  
dp2 Rankin = 0.312 kg/cm2  
\* dp Total = 0.445 kg/cm2  
~  
Z=4.81 m , alpha=22.58 deg. , beta=20.21 deg.  
dP1 overburden=0.125 kg/cm2  
dp2 Rankin = 0.321 kg/cm2  
\* dp Total = 0.446 kg/cm2  
~  
Z=4.94 m , alpha=22.04 deg. , beta=19.83 deg.  
dP1 overburden=0.1173 kg/cm2  
dp2 Rankin = 0.329 kg/cm2  
\* dp Total = 0.447 kg/cm2  
~  
Z=5.07 m , alpha=21.53 deg. , beta=19.46 deg.  
dP1 overburden=0.1102 kg/cm2  
dp2 Rankin = 0.338 kg/cm2  
\* dp Total = 0.448 kg/cm2  
~  
Z=5.2 m , alpha=21.04 deg. , beta=19.1 deg.  
dP1 overburden=0.1037 kg/cm2  
dp2 Rankin = 0.347 kg/cm2  
\* dp Total = 0.45 kg/cm2  
~  
Z=5.33 m , alpha=20.57 deg. , beta=18.75 deg.  
dP1 overburden=0.0976 kg/cm2  
dp2 Rankin = 0.355 kg/cm2  
\* dp Total = 0.453 kg/cm2  
~  
Z=5.46 m , alpha=20.12 deg. , beta=18.41 deg.  
dP1 overburden=0.0919 kg/cm2  
dp2 Rankin = 0.364 kg/cm2  
\* dp Total = 0.456 kg/cm2  
~  
Z=5.59 m , alpha=19.69 deg. , beta=18.08 deg.  
dP1 overburden=0.0867 kg/cm2  
dp2 Rankin = 0.373 kg/cm2  
\* dp Total = 0.459 kg/cm2  
~  
Z=5.72 m , alpha=19.27 deg. , beta=17.76 deg.



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dP1 overburden=0.0818 kg/cm2

dp2 Rankin = 0.381 kg/cm2

\* dp Total = 0.463 kg/cm2

~

Z=5.85 m , alpha=18.87 deg. , beta=17.45 deg.

dP1 overburden=0.0773 kg/cm2

dp2 Rankin = 0.39 kg/cm2

\* dp Total = 0.467 kg/cm2

~

Z=5.98 m , alpha=18.49 deg. , beta=17.15 deg.

dP1 overburden=0.0731 kg/cm2

dp2 Rankin = 0.399 kg/cm2

\* dp Total = 0.472 kg/cm2

~

Z=6.11 m , alpha=18.12 deg. , beta=16.86 deg.

dP1 overburden=0.0692 kg/cm2

dp2 Rankin = 0.407 kg/cm2

\* dp Total = 0.476 kg/cm2

~

Z=6.24 m , alpha=17.77 deg. , beta=16.57 deg.

dP1 overburden=0.0655 kg/cm2

dp2 Rankin = 0.416 kg/cm2

\* dp Total = 0.481 kg/cm2

~

Z=6.37 m , alpha=17.43 deg. , beta=16.3 deg.

dP1 overburden=0.0621 kg/cm2

dp2 Rankin = 0.425 kg/cm2

\* dp Total = 0.487 kg/cm2

~

Z=6.5 m , alpha=17.1 deg. , beta=16.03 deg.

dP1 overburden=0.0589 kg/cm2

dp2 Rankin = 0.433 kg/cm2

\* dp Total = 0.492 kg/cm2

~

Spread load behind wall (without Rankin effect)

teta1 = 8.75 deg. , teta2 = 24.78 deg.

P = 20.84 ton/m (length of wall)

Zo = 2.1 m (from bottom of wall)



