

Vzorce a průběžné výsledky výpočtu kubatur

| Stoka | Stanič. Bjha | Rozšíření na šachtě | | | | | Chráněná | | | | | Součty | | | | | | | | | | | | | | | | |
|------------------|-----------------|-------------------------|-----------------------|-------------------------|------------------------------|------------------------------------|------------------------|----------------------|-------------------------|---------------------------------|-----------------------------|---|-----------------------|-----------------------------|-----------------------|---|-----------------|-------------------------|-----------------|-------------------------------|-----------------|-------------------------|------|---------------------|------|-------------------|------|---------------------|
| | | Hloubka (n) Výpočet | Vrstva (n) Výpočet | Kubatura (n) Výpočet | Vrstva pažení (n) Výpočet | Pažení (n) Výpočet | Hloubka (n) Výpočet | Délka (n) Výpočet | Kubatura (n) Výpočet | Šířka rýhy (n) Výpočet | Hloubka rýhy (n) Výpočet | Kubatura (n) Výpočet | Pažení (n) Výpočet | Kubatura (n) Výpočet | Pažení (n) Výpočet | | | | | | | | | | | | | |
| stoka Y2 0.00000 | | | | | | | (10) | 2.050+0.150+0=2.200 | (11) | 1.000+2*(0.120+0.200)=1.640 | (12) | (1.640*1.640*2.200)-(1.640*1.350*2.050)=1.378 | | (32) | 0+1.378+0+0=1.378 | (33) | | | | | | | | | | | | |
| stoka Y2 0.00850 | (1) | 0.5*(2.050+2.040)=2.045 | (2) | 2.045-0-0-0-0-0=2.045 | (3) | 2.045*1.350*(8.500-0)=23.466 | (6) | 2.045-0=2.045 | (7) | 2*2.045*(8.500-0)=34.765 | | | (26) | D<sr, src=1.350 | (27) | 2.040+0.5*(0.500-0.400)=2.090 | (28) | 2.090*1.350*2.000=5.643 | (31) | 2.090*2.000*2=8.160 | (32) | 23.466+0+0+0=23.466 | (33) | 34.765+0+0+0=34.765 | | | | |
| stoka Y2 0.01050 | | | | | | | | | | | | | | (32) | 0+0+5.643=5.643 | (33) | 0+0+0.160=0.160 | | | | | | | | | | | |
| stoka Y2 0.01610 | (1) | 0.5*(2.040+2.040)=2.040 | (2) | 2.040-0-0-0-0-0=2.040 | (3) | 2.040*1.350*(16.100-10.500)=15.422 | (6) | 2.040-0=2.040 | (7) | 2*2.040*(16.100-10.500)=22.848 | (10) | 2.040+0.150+0=2.190 | (11) | 1.000+2*(0.120+0.200)=1.640 | (12) | (1.640*1.640*2.190)-(1.640*1.350*2.040)=1.374 | (32) | 15.422+1.374+0+0=16.796 | (33) | 22.848+0+0+0=22.848 | | | | | | | | |
| stoka Y2 0.03240 | (1) | 0.5*(2.040+2.040)=2.040 | (2) | 2.040-0-0-0-0-0=2.040 | (3) | 2.040*1.350*(32.400-16.100)=44.890 | (6) | 2.040-0=2.040 | (7) | 2*2.040*(32.400-16.100)=66.504 | (10) | 2.040+0.150+0=2.190 | (11) | 1.000+2*(0.120+0.200)=1.640 | (12) | (1.640*1.640*2.190)-(1.640*1.350*2.040)=1.374 | (32) | 44.890+1.374+0+0=46.264 | (33) | 66.504+0+0+0=66.504 | | | | | | | | |
| stoka Y2 0.06140 | (1) | 0.5*(2.040+2.140)=2.090 | (2) | 2.090-0-0-0-0-0=2.090 | (3) | 2.090*1.350*(61.400-32.400)=81.823 | (6) | 2.090-0=2.090 | (7) | 2*2.090*(61.400-32.400)=121.220 | (10) | 2.140+0.150+0=2.290 | (11) | 1.000+2*(0.120+0.200)=1.640 | (12) | (1.640*1.640*2.290)-(1.640*1.350*2.140)=1.421 | (32) | 81.823+1.421+0+0=83.245 | (33) | 121.220+0+0+0=121.220 | | | | | | | | |
| stoka Y2 0.07750 | (1) | 0.5*(2.140+2.220)=2.180 | (2) | 2.180-0-0-0-0-0=2.180 | (3) | 2.180*1.350*(77.500-61.400)=47.382 | (6) | 2.180-0=2.180 | (7) | 2*2.180*(77.500-61.400)=70.196 | (10) | 2.220+0.150+0=2.370 | (11) | 1.000+2*(0.120+0.200)=1.640 | (12) | (1.640*1.640*2.370)-(1.640*1.350*2.220)=1.459 | (32) | 47.382+1.459+0+0=48.842 | (33) | 70.196+0+0+0=70.196 | | | | | | | | |
| stoka Y2 0.08080 | (1) | 0.5*(2.220+2.080)=2.150 | (2) | 2.150-0-0-0-0-0=2.150 | (3) | 2.150*1.350*(80.800-77.500)=9.578 | (6) | 2.150-0=2.150 | (7) | 2*2.150*(80.800-77.500)=14.190 | | | | | | | (26) | D<sr, src=1.350 | (27) | 2.040+0.5*(0.500-0.400)=2.090 | (28) | 2.090*1.350*2.000=5.643 | (31) | 2.090*2.000*2=8.160 | (32) | 9.578+0+0+0=9.578 | (33) | 14.190+0+0+0=14.190 |
| stoka Y2 0.08280 | | | | | | | | | | | | | | | | | | (32) | 0+0+5.643=5.643 | (33) | 0+0+0.160=0.160 | | | | | | | |
| stoka Y2 0.09400 | (1) | 0.5*(2.000+1.520)=1.760 | (2) | 1.760-0-0-0-0-0=1.760 | (3) | 1.760*1.350*(94.000-82.800)=26.611 | (6) | 1.760-0=1.760 | (7) | 2*1.760*(94.000-82.800)=39.424 | (10) | 1.520+0.150+0=1.670 | (11) | 1.000+2*(0.120+0.200)=1.640 | (12) | (1.640*1.640*1.670)-(1.640*1.350*1.520)=1.126 | (32) | 26.611+1.126+0+0=27.738 | (33) | 39.424+0+0+0=39.424 | | | | | | | | |
| stoka Y3 0.00000 | | | | | | | | | | | | | | | | | | (32) | 0+0+0+0+0=0 | (33) | 0+0+0+0+0=0 | | | | | | | |
| stoka Y3 0.00460 | (1) | 0.5*(2.140+1.850)=1.995 | (2) | 1.995-0-0-0-0-0=1.995 | (3) | 1.995*1.150*(4.600-0)=10.554 | (6) | 1.995-0=1.995 | (7) | 2*1.995*(4.600-0)=18.354 | (8) | 0.150+0=0.150 | (9) | 0.315+2*(0.120+0.200)=0.955 | (12) | (0.955*0.955*2.000)-(0.955*1.150*1.850)=0.137 | (32) | 10.554+0.137+0+0=10.690 | (33) | 18.354+0+0+0=18.354 | | | | | | | | |
| stoka Y4 0.00000 | | | | | | | | | | | | | | | | | | (32) | 0+0+0+0+0=0 | (33) | 0+0+0+0+0=0 | | | | | | | |
| stoka Y4 0.00160 | (1) | 0.5*(2.040+1.940)=1.990 | (2) | 1.990-0-0-0-0-0=1.990 | (3) | 1.990*1.150*(1.600-0)=3.662 | (6) | 1.990-0=1.990 | (7) | 2*1.990*(1.600-0)=6.368 | (8) | 0.150+0=0.150 | (9) | 0.315+2*(0.120+0.200)=0.955 | (12) | (0.955*0.955*2.000)-(0.955*1.150*1.940)=0.137 | (32) | 3.662+0.137+0+0=3.798 | (33) | 6.368+0+0+0=6.368 | | | | | | | | |
| stoka Y5 0.00000 | | | | | | | | | | | | | | | | | | (32) | 0+0+0+0+0=0 | (33) | 0+0+0+0+0=0 | | | | | | | |
| stoka Y5 0.00160 | (1) | 0.5*(2.040+1.950)=1.995 | (2) | 1.995-0-0-0-0-0=1.995 | (3) | 1.995*1.150*(1.600-0)=3.671 | (6) | 1.995-0=1.995 | (7) | 2*1.995*(1.600-0)=6.384 | (8) | 0.150+0=0.150 | (9) | 0.315+2*(0.120+0.200)=0.955 | (12) | (0.955*0.955*2.100)-(0.955*1.150*1.950)=0.137 | (32) | 3.671+0.137+0+0=3.808 | (33) | 6.384+0+0+0=6.384 | | | | | | | | |
| Stoka Y6 0.00000 | | | | | | | | | | | | | | | | | | (32) | 0+0+0+0+0=0 | (33) | 0+0+0+0+0=0 | | | | | | | |
| Stoka Y6 0.00150 | (1) | 0.5*(2.050+1.950)=2.000 | (2) | 2.000-0-0-0-0-0=2.000 | (3) | 2.000*1.150*(1.500-0)=3.450 | (6) | 2.000-0=2.000 | (7) | 2*2.000*(1.500-0)=6.000 | (8) | 0.150+0=0.150 | (9) | 0.315+2*(0.120+0.200)=0.955 | (12) | (0.955*0.955*2.100)-(0.955*1.150*1.950)=0.137 | (32) | 3.450+0.137+0+0=3.587 | (33) | 6.000+0+0+0=6.000 | | | | | | | | |

Vysvětlivky

v ... vrstva
hl ... hloubka výkopu z
h2 ... hloubka výkopu k
v k ... vozovka kryt
v p ... vozovka podklad
c k ... chodník kryt
c p ... chodník podklad
or ... ornice
kh ... kubatura
sr ... šířka rýhy
sr1 ... šířka rýhy d
sr2 ... šířka rýhy h
st1 ... staničení z
st2 ... staničení k
ds ... průměr šachty
tls ... tloušťka stěny šachty
mz ... mezera
khr ... kubatura rošíření
hr ... hloubka rýhy
tld ... tloušťka dna
kal ... kalosen
hlr ... hloubka rošíření
sro ... šířka rošíření
dhn ... délka dna nádrže
dm ... délka vika nádrže
pdm ... plocha dna nádrže
pvm ... plocha vika nádrže
EFG ... rozměry nádrže
dsn ... průměr / šířka nádrže
zvn ... zapuštěná výška nádrže
rdn ... poloměr dna nádrže
rvn ... poloměr vika nádrže
pi ... 3.14159267
kdn ... kubatura nádrže
vp ... vrstva pro pažení
gp ... plocha pažení
gpk ... plocha pažení kalojemu
on ... otvor nádrže
gpn ... pažení nádrže
src ... šířka rýhy pro chráničku
hrc ... hloubka rýhy pro chráničku
pc ... průměr chráničky
ppt ... průměr potrubí
dc ... délka chráničky
kbc ... kubatura pro chráničku
gpc ... plocha pažení pro chráničku
kub ... součet kubatur

Vzorce

(1) ... $hr=0.5*(hl+h2)$
(2) ... $v=hr-v\ k-v\ p-c\ k-c\ p-or$
(3) ... $kh=v*sr*(st2-st1)$
(4) ... $kh=v*0.5(sr1+sr2)*(st2-st1)$
(5) ... $k<0 \quad k=0$
(6) ... $vp=hr-or$
(7) ... $gp=2*vp*(st2-st1)$
(8) ... $hlr=tld+kal$
(9) ... $sro=ds*2*(tls+mz)$
(10) ... $hlr=v*tld+kal$
(11) ... $sro=ds*2*(tls+mz)$
(12) ... $khr=(sro*sro*hlr)-(sro*sr*v)$
(13) ... $gpk=4*kal*sro$
(14) ... $dhn=F*2*(tls+mz)$
(15) ... $dm=F*F*G*2*(tls+mz)$
(16) ... $pdm=dhn*dsn$
(17) ... $pdm=dvn*dsn$
(18) ... $kdn=zvn/2*(pdm+V(pdm*pdm)+pdm)$
(19) ... $rdn=0.5*F*Mz+tls$
(20) ... $rdv=0.5*(G*F+G)*Mz+tls$
(21) ... $kdn=zvn/2*pi*(rdn*rdn+rdn*rdv+rdv*rdn)$
(22) ... $dm=2*(G*F+G*4*mz+dsn)$
(23) ... $on=pi*dsn$
(24) ... $gpn=on*zvn$
(25) ... $sro=pc*2*mz$
(26) ... $sro=sr$
(27) ... $hrc=hr+0.5*(pc-gpt)$
(28) ... $kbc=hrc*sro*dc$
(30) ... $kbc=0.5*(sr1+sr2)*hr*dc$
(31) ... $gpc=hrc*dc^2$
(32) ... $kub=kh+khr+kdn+kbc$
(33) ... $paž=gp+gpk+gpn+gpc$