

Machine hour calculation: Excavation topsoil				Take away				Calculation of transport							
Number of m3 to be moved in solid measure				500 m ³				Choice of vehicle: Scania R114CB							
Bucket size				2,00 m ³				Max load pr vehicle: 0 kg							
Choice of Machine: Excavator Volvo EC210C								Max number of m3 12,00 m ³							
								Do not exceed the maximum payload 22.200							
Pos.nr:															
Text	Formel.	Quantity	Unit	Text	Formel.	Quantity	Unit	Text	Formel.	Quantity	Unit				
Bucket size		2,00	m ³	Max. Weigth		22.200	kg								
		500	m ³	Distance to tip		5	km								
Density		1850	kg/m ³	Speed		50	km/t								
Efficiency		0,6	Faktor	Max volume.	(max weigth/soildensity)/loadingfactor	12,00	m ³								
Cyclus time		30	Sek	Drivingtime total	2*(distance*60min/h)/avarage speed	12,00	min								
Loadind factor	0,8	0,8	Faktor	Loadingtime	Max volum/bucketsize*(cyklustime/60)	5,00	min								
Bucket factor		1	Faktor	Unloading time		1,00	min								
				Maneuvretime		1,60	min								
Production.	Bucketsize*(3600/cyclus time) *Efficiency.*bucket	126,00	m ³ /time	Circulationtime	Loadingtime+drivingtime+maneuvre+ unload	20,00	min								
				Lorrys production	(60min/h/ circulationtime)*max.volume	35,00	m ³ /time								
				Number off trucks		3,0									
Hours total				3 Hours				Hours total				14 Hours			

Machine hour calculation: excavation topsoil				Calculation of transport							
Number of m3 to be moved in solid measure				2609,4 m ³				Choice of vehicle: Mercedes- Benz 2538			
Bucket size				5,00 m ³				Max load pr vehicle: 20000 kg			
Choice of Machine: Wheel loader VOLVO L602E								Max number of m3 18,00 m ³			
								Do not exceed the maximum payload 33.300			
Pos.nr:											
Text	Formel.	Quantity	Unit	Text	Formel.	Quantity	Unit	Text	Formel.	Quantity	Unit
Bucket size		5,00	m ³	Max. Weigth		33.300	kg				
		2609,4	m ³	Distance to tip		5	km				
Density		1850	kg/m ³	Speed		40	km/t				
Efficiency		0,6	Faktor	Max volume.	(max weigth/soildensity)/loadingfactor	18,00	m ³				
Cyclus time		30	Sek	Drivingtime total	2*(distance*60min/h)/avarage speed	15,00	min				
				Loadingtime	Max volum/bucketsize*(cyklustime/60)	3,00	min				

Loadind factor	0,8	0,8 Faktor	Unloading time	1,00 min
Bucket factor		1 Faktor	Maneuвреtime	1,60 min
Production.	Bucket size*(3600/cyclus time) *Efficiency.*bucket	288,00 m ³ /time	Circulationtime Lorrys production	21,35 min (60min/h/ circulationtime)*max.volume
			Number off trucks	5,0
Hours total		9 Hours	Hours total	
			51 Hours	

Machine hour calculation: Excavation foundation		Calculation of transport	
Number of m3 to be moved in solid measure	2514 m ³	Choice of vehicle: Mercedes- Benz 2538	
Bucket size	3,00 m ³	Max load pr vehicle:	20000 kg
Choice of Machine: CAT 390D I		Max number of m3	18,00 m ³
		Do not exceed the maximum payload	33.300

Pos.nr:			
Text	Formel.	Quantity	Unit
Bucket size		3,00	m ³
		2514	m ³
Density		1850	kg/m ³
Efficiency		0,6	Faktor
Cyclus time		20	Sek
Loadind factor	0,8	0,8	Faktor
Bucket factor		1	Faktor
Production.	Bucket size*(3600/cyclus time) *Efficiency.*bucket	259,20	m ³ /time
Hours total		9 Hours	
Text	Formel.	Quantity	Unit
Max. Weigth		33.300	kg
Distance to tip		5	km
Speed		40	km/t
Max volume.	(max weigth/soildensity)/loadingfactor	18,00	m ³
Drivingtime total	2*(distance*60min/h)/avarage speed	15,00	min
Loadingtime	Max volum/bucket size*(cyklustime/60)	4,00	min
Unloading time		1,00	min
Maneuвреtime		1,60	min
Circulationtime	Loadingtime+drivingtime+maneuvre+ unload	21,00	min
Lorrys production	(60min/h/ circulationtime)*max.volume	49,00	m ³ /time
Number off trucks		5,0	
Hours total		9 Hours	
Hours total			50 Hours

Machine hour calculation: Exavation sewer		Calculation of transport	
Number of m3 to be moved in solid measure	259,67 m ³	Choice of vehicle: Mercedes- Benz 2538	
Bucket size	3,00 m ³	Max load pr vehicle:	20000 kg
Choice of Machine: CAT 390D I		Max number of m3	18,00 m ³
		Do not exceed the maximum payload	33.300

Pos.nr:

Text	Formel.	Quantity	Unit	Text	Formel.	Quantity	Unit
Bucket size		3,00	m ³	Max. Weigth		33.300	kg
		259,67	m ³	Distance to tip		5	km
Density		1850	kg/m ³	Speed		40	km/t
Efficiency		0,6	Faktor	Max volume.	(max weigth/soildensity)/loadingfactor	18,00	m ³
Cyclus time		20	Sek	Drivingtime total	2*(distance*60min/h)/avarage speed	15,00	min
Loadind factor	0,8	0,8	Faktor	Loadingtime	Max volum/bucketsize*(cyklustime/60)	4,00	min
Bucket factor		1	Faktor	Unloading time		1,00	min
Production.	Bucketsize*(3600/cyclus time) *Efficiency.*bucket	259,20	m ³ /time	Maneuvertime		1,60	min
				Circulationtime	Loadingtime+drivingtime+maneuvre+ unload	21,00	min
				Lorrys production	(60min/h/ circulationtime)*max.volume	49,00	m ³ /time
				Number off trucks		5,0	
Hours total		1	Hours	Hours total		5	Hours

Machine hour calculation: Excavation parking		Calculation of transport	
Number of m3 to be moved in solid measure	568,75 m ³	Choice of vehicle:	Mercedes- Benz 2538
Bucket size	3,00 m ³	Max load pr vehicle:	20000 kg
Choice of Machine: CAT 390D I		Max number of m3	18,00 m ³
		Do not exceed the maximum payload	33.300

Pos.nr:							
Text	Formel.	Quantity	Unit	Text	Formel.	Quantity	Unit
Bucket size		3,00	m ³	Max. Weigth		33.300	kg
		568,75	m ³	Distance to tip		5	km
Density		1850	kg/m ³	Speed		40	km/t
Efficiency		0,6	Faktor	Max volume.	(max weigth/soildensity)/loadingfactor	18,00	m ³
Cyclus time		20	Sek	Drivingtime total	2*(distance*60min/h)/avarage speed	15,00	min
Loadind factor	0,8	0,8	Faktor	Loadingtime	Max volum/bucketsize*(cyklustime/60)	4,00	min
Bucket factor		1	Faktor	Unloading time		1,00	min
Production.	Bucketsize*(3600/cyclus time) *Efficiency.*bucket	259,20	m ³ /time	Maneuvertime		1,60	min
				Circulationtime	Loadingtime+drivingtime+maneuvre+ unload	21,00	min
				Lorrys production	(60min/h/ circulationtime)*max.volume	49,00	m ³ /time
				Number off trucks		5,0	

Hours total	2 Hours	Hours total	11 Hours
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Machine hour calculation: Backfilling topsoil		Calculation of transport	
Number of m3 to be moved in solid measure	205,38 m ³	Choice of vehicle: Mercedes- Benz 2538	
Bucket size	3,00 m ³		
Choice of Machine: Excavator Volvo EC210C		Max load pr vehicle:	20000 kg
		Max number of m3	18,00 m ³
		Do not exceed the maximum payload	33.300
Pos.nr:			

Text	Formel.	Quantity	Unit	Text	Formel.	Quantity	Unit
Bucket size		3,00	m ³	Max. Weigth		33.300	kg
		205,38	m ³	Distance to tip		5	km
Density		1850	kg/m ³	Speed		40	km/t
Efficiency		0,6	Faktor	Max volume.	(max weigth/soildensity)/loadingfactor	18,00	m ³
Cyclus time		20	Sek	Drivingtime total	2*(distance*60min/h)/avarage speed	15,00	min
Loadind factor	0,8	0,8	Faktor	Loadingtime	Max volum/bucketsize*(cyklustime/60)	4,00	min
Bucket factor		1	Faktor	Unloading time		1,00	min
Production.	Bucketsize*(3600/cyclus time) *Efficiencie.*bucket	259,20	m ³ /time	Maneuvretime		1,60	min
				Circulationtime	Loadingtime+drivingtime+maneuvre+ unload	21,00	min
				Lorrys production	(60min/h/ circulationtime)*max.volume	49,00	m ³ /time
				Number off trucks		5,0	

Hours total	#iVALOR! Hours	Hours total	4 Hours
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Machine hour calculation: backfilling parking		Calculation of transport	
Number of m3 to be moved in solid measure	1129 m ³	Choice of vehicle: Mercedes- Benz 2538	
Bucket size	3,00 m ³		
Choice of Machine: Excavator Volvo EC210C		Max load pr vehicle:	20000 kg
		Max number of m3	20,00 m ³
		Do not exceed the maximum payload	37.000
Pos.nr:			

Text	Formel.	Quantity	Unit	Text	Formel.	Quantity	Unit
Bucket size		3,00	m ³	Max. Weigth		37.000	kg
		1129	m ³	Distance to tip		5	km
Density		1850	kg/m ³	Speed		40	km/t

Efficiency		0,6 Faktor	Max volume.	(max weighth/soildensity)/loadingfactor	20,00 m ³
Cyclus time		20 Sek	Drivingtime total	2*(distance*60min/h)/avarage speed	15,00 min
Loadind factor	0,8	0,8 Faktor	Loadingtime	Max volum/bucketsize*(cyklustime/60)	4,00 min
Bucket factor		1 Faktor	Unloading time		1,00 min
			Maneuvretime		1,60 min
Production.	Bucketsize*(3600/cyclus time) *Efficiency.*bucket	259,20 m ³ /time	Circulationtime	Loadingtime+drivingtime+maneuvre+ unload	22,00 min
			Lorrys production	(60min/h/ circulationtime)*max.volume	53,00 m ³ /time
			Number off trucks		4,0
Hours total		4 Hours	Hours total		20 Hours

Machine hour calculation: backfilling foundation		Calculation of transport	
Number of m3 to be moved in solid measure	2543,9 m ³	Choice of vehicle: Mercedes- Benz 2538	
Bucket size	3,00 m ³	Max load pr vehicle:	20000 kg
Choice of Machine: Excavator Volvo EC210C		Max number of m3	20,00 m ³
		Do not exceed the maximum payload	37.000

Pos.nr:				Pos.nr:			
Text	Formel.	Quantity	Unit	Text	Formel.	Quantity	Unit
Bucket size		3,00	m ³	Max. Weigth		37.000	kg
		2543,9	m ³	Distance to tip		5	km
Density		1850	kg/m ³	Speed		40	km/t
Efficiency		0,6	Faktor	Max volume.	(max weighth/soildensity)/loadingfactor	20,00	m ³
Cyclus time		20	Sek	Drivingtime total	2*(distance*60min/h)/avarage speed	15,00	min
Loadind factor	0,8	0,8	Faktor	Loadingtime	Max volum/bucketsize*(cyklustime/60)	4,00	min
Bucket factor		1	Faktor	Unloading time		1,00	min
				Maneuvretime		1,60	min
Production.	Bucketsize*(3600/cyclus time) *Efficiency.*bucket	259,20	m ³ /time	Circulationtime	Loadingtime+drivingtime+maneuvre+ unload	22,00	min
				Lorrys production	(60min/h/ circulationtime)*max.volume	53,00	m ³ /time
				Number off trucks		4,0	
Hours total		9 Hours		Hours total		47 Hours	

Machine hour calculation:		Calculation of transport	
Number of m3 to be moved in solid measure	0 m ³	Choice of vehicle:	
Bucket size	0,00 m ³		

Choice of Machine:	Max load pr vehicle:	0 kg
	Max number of m3	0,00 m ³
	Do not exceed the maximum payload	0

Pos.nr:			
Text	Formel.	Quantity	Unit
Bucket size		0,00	m ³
		0	m ³
Density		0	kg/m ³
Efficiency		0,6	Faktor
Cyclus time		0	Sek
Loadind factor	0,8	0,8	Faktor
Bucket factor		1	Faktor
Production.	Bucketsize*(3600/cyclus time) *Efficiency.*bucket	#;DIV/0!	m ³ /time
Max. Weigth		0	kg
Distance to tip		0	km
Speed		0	km/t
Max volume.	(max weigth/soildensity)/loadingfactor	0,00	m ³
Drivingtime total	2*(distance*60min/h)/avarage speed	#;DIV/0!	min
Loadingtime	Max volum/bucketsize*(cyklustime/60)	#;DIV/0!	min
Unloading time		1,00	min
Maneuvretime		1,60	min
Circulationtime	Loadingtime+drivingtime+maneuvre+ unload	#;DIV/0!	min
Lorrys production	(60min/h/ circulationtime)*max.volume	#;DIV/0!	m ³ /time
Number off truks		#;DIV/0!	
Hours total		#;DIV/0!	Hours

Machine hour calculation: Excavation topsoil

Number of m3 to be moved in solid measure	0 m ³
Bucket size	0,00 m ³

Choice of Machine:

Calculation of transport

Choice of vehicle:

Max load pr vehicle:	0 kg
Max number of m3	0,00 m ³
Do not exceed the maximum payload	0

Pos.nr:			
Text	Formel.	Quantity	Unit
Bucket size		0,00	m ³
		0	m ³
Density		0	kg/m ³
Efficiency		0,6	Faktor
Cyclus time		0	Sek
Loadind factor	0,8	0,8	Faktor
Bucket factor		1	Faktor
Max. Weigth		0	kg
Distance to tip		0	km
Speed		0	km/t
Max volume.	(max weigth/soildensity)/loadingfactor	0,00	m ³
Drivingtime total	2*(distance*60min/h)/avarage speed	#;DIV/0!	min
Loadingtime	Max volum/bucketsize*(cyklustime/60)	#;DIV/0!	min
Unloading time		1,00	min
Maneuvretime		1,60	min

Production.	$\text{Bucket size} \cdot (3600 / \text{cyclus time})$ *Efficiency.*bucket	#;DIV/0! m ³ /time	Circulationtime Lorrys production	$\text{Loadingtime} + \text{drivingtime} + \text{maneuvre} + \text{unload}$ $(60 \text{ min/h} / \text{circulationtime}) \cdot \text{max. volume}$	#;DIV/0! min #;DIV/0! m ³ /time
			Number off trucks		#;DIV/0!

Hours total	#;DIV/0! Hours	Hours total	#;DIV/0! Hours
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Machine hour calculation:		Calculation of transport	
Number of m3 to be moved in solid measure	0 m ³	Choice of vehicle:	
Bucket size	0,00 m ³	Max load pr vehicle:	0 kg
Choice of Machine:		Max number of m3	0,00 m ³
		Do not exceed the maximum payload	0

Pos.nr:

Text	Formel.	Quantity	Unit	Text	Formel.	Quantity	Unit
Bucket size		0,00	m ³	Max. Weigth		0	kg
		0	m ³	Distance to tip		0	km
Density		0	kg/m ³	Speed		0	km/t
Efficiency		0,6	Faktor	Max volume.	$(\text{max weigth} / \text{soildensity}) / \text{loadingfactor}$	0,00	m ³
Cyclus time		0	Sek	Drivingtime total	$2 \cdot (\text{distance} \cdot 60 \text{ min/h}) / \text{avarage speed}$	#;DIV/0!	min
Loadind factor	0,8	0,8	Faktor	Loadingtime	$\text{Max volum} / \text{bucket size} \cdot (\text{cyklustime} / 60)$	#;DIV/0!	min
Bucket factor		1	Faktor	Unloading time		1,00	min
				Maneuvretime		1,60	min
Production.	$\text{Bucket size} \cdot (3600 / \text{cyclus time})$ *Efficiency.*bucket	#;DIV/0!	m ³ /time	Circulationtime Lorrys production	$\text{Loadingtime} + \text{drivingtime} + \text{maneuvre} + \text{unload}$ $(60 \text{ min/h} / \text{circulationtime}) \cdot \text{max. volume}$	#;DIV/0! min #;DIV/0! m ³ /time	
				Number off trucks		#;DIV/0!	

Hours total	#;DIV/0! Hours	Hours total	#;DIV/0! Hours
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