

Mulch and Transport of Mulch or Chips from Pallet Chipping

Notes on Conversions and Calculation

(cy = cubic yard)

Weight of chipped pallets:

1 cy = 486 lbs

Transport by truck:

One dump Truck (18 cy standard) can carry:

12 cy of sand (weight limit)

22 cy of mulch (heaped ok for mulch, otherwise only 18 cy)

Best truckload at 22 cy weighs 10,692 lbs or $\approx 5.3t$

Tractor trailer (also walking floor trailer or live trailer) can carry 100 cy of mulch, 24t weight limit

Pallets:

One 48 foot flatbed tractor trailer will carry hand stacked 10t of pallets

Average weight of 1 pallet: 70 lbs

Average volume of 1 pallet: 0.26 cy or 12,000 cubic inches

1 dump truck can hold heaped 22 cy or 85 pallets hand stacked

The weight of 85 pallets is 85×70 lbs or approx. 5,900 lbs or $\approx 3t$

Assumption: 100 tons of pallets are to be transported either whole or chipped:

100 tons of whole pallets are transported by dump truck

- a) Weight: 100t
- b) Number of pallets: 2,850
- c) Hand stacked volume: 741 cy
- d) 1 dump truck can hold 85 pallets
- e) 33 dump trucks are needed to haul 100t of empty (whole) pallets

100 tons of pallets ground into mulch and transported by dump truck

- a) Weight: 100t dry pallets
- b) Typical chipping and chip handling losses (mostly wood dust, some moisture) by weight 2.2% or $\approx 4,000$ lbs (2 tons)
- c) as 1 cy of mulch has a weight of 486 lbs, $100t - 2t = 98t$ (196,000 lbs) of wood material ground or chipped has a volume of $196,000/486 = 403$ cy
- d) 1 dump truck can hold heaped 22 cy (no weight consideration needed, load is only 5.3t)
- e) $403/22$ trucks = 18 dump trucks