

Converting C&D Debris from Volume to Weight

A Fact Sheet for C&D Debris Facility Operators

Background: Florida regulations require that permitted C&D facilities in the State report to the Florida Department of Environmental Protection (FDEP), by February 1 of each year, the amounts and types of wastes managed during the previous year. This requirement for C&D facilities was developed, as with the certification of recyclers program, to help determine if Counties over a population of 100,000 will meet the 75 percent waste reduction goal set forth in the law.

Problem: The FDEP tracks the amount of waste managed by weight (in tons). Many C&D facilities do not have scales though and only measure their waste by volume (in cubic yards).

Solution: A simple equation can be used to convert the volume of C&D debris (in cubic yards or yd³) to weight (in tons):

$$\text{Weight of C\&D Debris} = \text{Volume of C\&D Debris} \times 0.24 \text{ tons/yd}^3$$

Example Calculation:

A C&D disposal facility receives 100,000 cubic yards of C&D debris in one year. The number of tons of C&D debris is calculated as follows:

$$\text{Weight of C\&D Debris} = 100,000 \text{ yd}^3 \times 0.24 \text{ tons/yd}^3 \text{ of C\&D Weight of C\&D Debris} =$$

24,000 tons

How was the conversion factor calculated?

The conversion factor, or average bulk density, was calculated by measuring the actual weights of loads of mixed C&D from facilities in Florida and comparing those weights to the volumes of the loads. Specifically, researchers at the University of Florida measured the weights, in tons, of 171 different loads of C&D debris at 10 facilities in the State and recorded the volume, in cubic yards, of each truck or container weighed. The conversion factor was then calculated by dividing the total weight by the total volume. For mixed C&D loads in Florida, the average bulk density was measured to be 484 pounds per cubic yard or approximately 0.24 tons of C&D per cubic yard.