

CONTENTS OF EARTHWORK.

In estimating the number of cubic yards in an excavation or embankment, the solid contents of the earth before breaking up is taken or "measured in place," as it is commonly termed. If measurements are to be taken from a loose heap, a deduction must be made according to the nature of the soil. In ordinary soils it is the usual practice to deduct one-third or one-fourth.

SHRINKAGE OF EMBANKMENT.—[From Trautwine's Handbook.]—"Earthwork when first dug and loosely thrown out swells about 1-5 part, so that a cubic yard in place averages about 1 1-5 or 1.2 cubic yards when dug, or 1 cubic yard dug is equal 5-6 of a cubic yard in place. When made into an embankment it gradually subsides and settles or shrinks into a less bulk than it occupied before being dug."

The following are approximate averages of the shrinkage, or in other words, the earth measures in place in a cut will, when made into embankment, occupy a bulk less than before by about the following proportions: Gravel or sand, about 8 per cent., or 1 in 12½ less; clay about 10 per cent., or 1 in 10 less; loam about 12 per cent., or 1 in 8½ less; loose vegetable surface soil, about 15 per cent., or 1 in 6⅔ less; puddled clay about 25 per cent., or 1 in 4 less.

Trautwine further says, from trials of his own, that one cubic yard of any hard rock in place will make from 1⅓ to 1¼ cubic yards of embankment; say, on an average, 1.7 cubic yards, or that one cubic yard of rock embankment requires .5882 of a cubic yard in place. He found that a solid cubic yard when broken into fragments made about as follows:

	CUBIC YARDS.	OF WHICH THERE WERE	
		SOLID.	VOIDS.
In loose heap.....	1.9	52.6%	47.4%
Carelessly piled.....	1.75	57.0%	43.0%
Carefully piled.....	1.6	63.0%	37.0%
Rubble very carelessly scabbled....	1.5	67.0%	33.0%
Rubble somewhat carefully scabbled	1.25	80.0%	20.0%

Excavation is measured by the cubic yard. To ascertain the number of cubic yards of excavation made, take the length and multiply the same by the width and the average height; the result will give the number of cubic feet, which divided by 27, will be the amount in cubic yards. Example:—How many yards of excavation in a cellar 15 feet wide by 18 feet long and 7 feet high? Answer: 15 times 18 times 7 are 1,860 cubic feet; divided by 27 are 70 cubic yards. Trenches and pier holes double measurements are usually allowed.

TESTS FOR SLATE.

A German trade journal advocates the following method for testing the quality of roof slates: The samples of the slate to be tested should be carefully weighed, and then put into boiling water for a quarter of an hour. The water must, however, be fairly free from lime, saltpetre and ammonia. The slates are then reweighed, and those that show the greatest increase of weight are those most capable of resisting deterioration.

Cracks in floors, around the skirting board or other parts of a room, may be neatly and permanently filled by thoroughly soaking newspapers in paste made of one pound of flour, three quarts of water and a tablespoonful of alum, thoroughly boiled and mixed. The mixture will be about as thick as putty, and should be forced into the cracks with a bent knife or other handy tool. When dry it will be harder than the boards.