

CIRCULAR Nr. 8/2007

REFERENCE DATA TO BE VERIFIED AT THE BUILDING SITE

For domestic use, recommended diameter: 32 –40 mm

For large earthworks: 62-70mm

HOLE DIAMETER	DISTANCE BETWEEN HOLES	Nr. of HOLES	Resulting cubic meters	Kg of CRAS/l. meter	CONSUMPTION CRAS/m3
70	70 x 70 cm.	2	1	6.25	12.50 Kg
	80 x 80 cm.	2	1.28	6.25	9.80 Kg
	100 x 100 cm.	1	1	6.25	6.25 Kg
62.5	62.5 x 62.5	3	1.17	4.70	12.00 Kg
	70 x 70 cm.	2	1	4.70	9.20 Kg
50	50 x 50 cm.	4	1	2.80	11.20 Kg
	60 x 60 cm.	3	1.08	2.80	7.50 Kg
40	40 x 40 cm.	6	1	2.00	12.00 Kg
	50 x 50 cm	4	1	2.00	8.00 Kg

How to calculate CRAS consumption per m/l

- 1.-Formula for volume = $3.14 \cdot r^2$
- 2.-Formula weight = Volume x density (2,30)
- 3.-Due to the use of a 30% of water, consumption is a 70% of the weight.

Example: diameter 60 mm Radius (r) = 30 mm

1. $3.14 \times 30 \times 30 = 2,826$
2. $2,826 \times 2.30 = 6,499$
3. $6,499 \times 70\% = 4,549 = 4.60 \text{ kg}$

How to estimate the number of holes to extract 1 m3

Sketching, for example, a grid with 60 cm x 60 cm diameter, we can see that we have, with three holes, 1.80 m long, and .60 m width. Therefore we would extract:
 $1.80 \times 0.60 = 1.08 \text{ m}^3$.

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Vitoria, February 15th, 2007