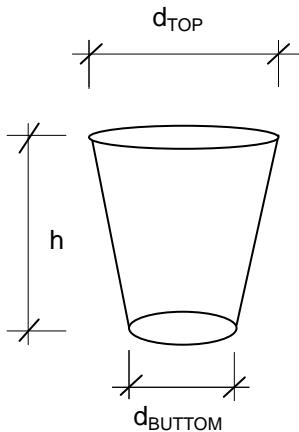


# bulk density

Name: \_\_\_\_\_

Date: \_\_\_\_\_

BUCKET


 $m_{TARE} =$  \_\_\_\_\_ kg

(TARE = weight of the empty bucket)

 $d_{TOP} =$  \_\_\_\_\_ cm

 $d_{BOTTOM} =$  \_\_\_\_\_ cm

 $h =$  \_\_\_\_\_ cm

$$V_{BUCKET} = 0,196 * (d_{TOP} + d_{BOTTOM})^2 * h$$

 $V_{BUCKET} =$  \_\_\_\_\_ cm<sup>3</sup>
 $=$  \_\_\_\_\_ m<sup>3</sup>
( 1m<sup>3</sup> = 1,000,000cm<sup>3</sup>)

heap	mass			evaluated	nett	bulk
	1	2	3	gross mass	mass	density
[-]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg/m <sup>3</sup> ]

$$evaluated\ gross\ mass = \frac{mass1 + mass2 + mass3}{3}$$

$$nett\ mass = evaluated\ gross\ mass - m_{TARE}$$

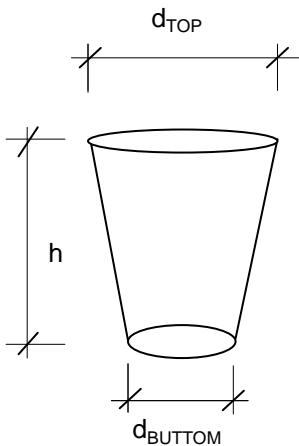
$$bulk\ density = \frac{nett\ mass}{V_{BUCKET}}$$

# bulk density

Name: Hans Mustermann

Date: 14th January 2004

BUCKET


 $m_{TARE} = 0,50 \text{ kg}$ 

(TARE = weight of the empty bucket)

Step 1

Step 1

 $d_{TOP} = 25 \text{ cm}$ 
 $d_{BOTTOM} = 22 \text{ cm}$ 
 $h = 31 \text{ cm}$ 

$$V_{BUCKET} = 0,196 * (d_{TOP} + d_{BOTTOM})^2 * h$$

 $V_{BUCKET} = 13422 \text{ cm}^3$ 
 $= 0,0134 \text{ m}^3$ 
(1 m<sup>3</sup> = 1,000,000 cm<sup>3</sup>)

heap	mass			evaluated	nett	bulk
	1	2	3	gross mass	mass	density
[-]	[kg]	[kg]	[kg]	[kg]	[kg]	[kg/m <sup>3</sup> ]
	Step 3					
2	2,35	3,4	2,67	2,81	2,31	172,1
3	5,67	4,89	5,24	5,27	4,77	355,7
4	1,78	2,66	2,03	2,16	1,66	123,6
5	2,03	2,15	2,3	2,16	1,66	123,9

$$\text{evaluated gross mass} = \frac{\text{mass1} + \text{mass2} + \text{mass3}}{3}$$

$$\text{nett mass} = \text{evaluated gross mass} - m_{TARE}$$

$$\text{bulk density} = \frac{\text{nett mass}}{V_{BUCKET}}$$

Date: \_\_\_\_\_

d <sub>TOP</sub>	=	cm
d <sub>BOTTOM</sub>	=	cm
h	=	cm

$$V_{BUCKET} = 0,196 * (d_{TOP} + d_{BUTTOM})^2 * h$$

V <sub>BUCKET</sub>	=	cm <sup>3</sup>
	=	m <sup>3</sup>
( 1m <sup>3</sup> = 1,000,000cm <sup>3</sup> )		

[illegible]