



# APPARENT BULK DENSITY

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**Bulk density** is a property of powders, granules and other “divided” solids, especially used in reference to mineral components (soil, gravel), chemical substances, (pharmaceutical) ingredients, foodstuff or any other masses of corpuscular or particulate matter. It is defined as the mass of many particles of the material divided by the total volume they occupy. The total volume includes particle volume, inter-particle void volume and internal pore volume.

Bulk density is not an intrinsic property of a material; it can change depending on how the material is handled. For example, a powder poured into a cylinder will have a particular bulk density; if the cylinder is disturbed, the powder particles will move and usually settle closer together, resulting in a higher bulk density. For this reason, the bulk density of powders is usually reported both as “freely settled” (or “poured density”) and “tapped” density (where the tapped density refers to the bulk density of the powder after a specified compaction process, usually involving vibration of the container.)

## ASTM D1895 METHOD A

Primarily used to measure the apparent density of fine granules that can be poured readily through a “V” shaped funnel, the material under test is allowed to flow into a cylindrical cup with a known volume of 100cm<sup>3</sup>.



### TESTS THAT CAN BE CONDUCTED ARE:

- Apparent Density
- Bulk Factor
- Pourability

## ASTM D1895 METHOD B

The larger of the ASTM family Method B is primarily used to measure the apparent density of larger coarse granular materials, dice or pellets that cannot be poured readily through the method A funnel. The material under test is allowed to flow into a cylindrical cup with a known volume of 400cm<sup>3</sup>.



### TESTS THAT CAN BE CONDUCTED ARE:

- Apparent Density
- Bulk Factor
- Pourability

## ASTM D1895 METHOD A & METHOD B

### ASTM D1895 METHOD A TECHNICAL SPECIFICATION

- Conforms to ASTM D1895 method A
- V shaped funnel
- Measuring cup 100cm<sup>3</sup>
- Stand with funnel shut off

WEIGHTS & DIMENSIONS: ASTM D1895 A	
Net Weight (kg)	4
Width (cm)	18
Depth (cm)	23
Height (cm)	25

### ASTM D1895 METHOD B TECHNICAL SPECIFICATION

- Conforms to ASTM D1895 method B
- V shaped funnel
- Measuring cup 400cm<sup>3</sup>
- Stand with funnel shut off

WEIGHTS & DIMENSIONS: ASTM D1895 B	
Net Weight (kg)	9
Width (cm)	24
Depth (cm)	33
Height (cm)	52

### ASTM D1895 METHOD C & ISO METHOD R60

#### ASTM D1895 METHOD C

##### TECHNICAL SPECIFICATION

- Conforms to ASTM D1895 method C
- Measuring funnel
- Weight plunger
- Lead shot

##### WEIGHTS & DIMENSIONS: ASTM D1895 C

Net Weight (kg)	4
Width (cm)	10
Depth (cm)	10
Height (cm)	30 (max)

#### ISO METHOD R60

##### TECHNICAL SPECIFICATION

- Conforms to ISO R60 specification
- Measuring cup 100cm<sup>3</sup>
- Stand with funnel shut off

##### WEIGHTS & DIMENSIONS: ISO METHOD R60

Net Weight (kg)	4
Width (cm)	18
Depth (cm)	23
Height (cm)	25

### ASTM D1895 METHOD C

For course flakes, strands, chips and cut fibres that cannot be poured using test methods A and B Ray-Ran offer a measuring cylinder and plunger to method C of the ASTM test standard. Since these types of materials to be tested are very bulky when loosely poured and are usually compressed to lessen the bulk, a measure of their density under a small compression load is very useful. For this test a measuring cylinder of 1000 cm<sup>3</sup> is supplied along with a scaled weight plunger with 1mm graduations on the outside. Lead shot is used to increase the plunger weight to 2300g to compress the material under test.

#### TESTS THAT CAN BE CONDUCTED ARE

- Apparent Density



### ISO METHOD R60

Primarily used to measure the apparent density of moulding material that can be poured readily through a specified funnel, the material under test is allowed to flow into a cylindrical cup with a known volume of 100cm<sup>3</sup>.

#### TESTS THAT CAN BE CONDUCTED ARE

- Apparent Density
- Bulk Factor
- Pourability



**OTHER  
MODELS ARE  
AVAILABLE ON  
REQUEST**

**PLEASE CONTACT  
RAY-RAN FOR MORE  
INFORMATION  
REGARDING YOUR  
SPECIFIC REQUIREMENT**

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