Density of Fresh and Hardened Concrete

The density of both fresh and hardened concrete is of interest to the engineer for numerous reasons including its effect on durability, strength and resistance to permeability.

Hardened concrete density is determined either by simple dimensional checks, followed by weighing and calculation, or by weight in air/water buoyancy methods.

Density of Hardened Concrete

EN 12390-7, 1097-6

The density of hardened concrete specimens such as cubes and cylinders can be quickly and accurately determined using a Buoyancy Balance.

Buoyancy Balance

The buoyancy balance system developed by ELE consists of a rigid support frame, incorporating a water tank mounted on a platform. The water tank has internal dimensions of 380 x 240 x 280 mm (l x w x h).

A mechanical lifting device is used to raise the water tank through the frame height immersing the specimen suspended below the balance. The balance supplied calculates the specific gravity of the sample automatically.

The balance may also be used as a standard weighing device, thus providing a versatile and comprehensive weighing system in the laboratory.

Ordering Information

EL34-8100/09 Buoyancy Balance. 15 kg x 0.5 g. Supplied with frame, water tank and suspension hook. For 110 – 240 V AC, 50 – 60 Hz, 1 ph.

Accessory

EL34-8105 Cradle for supporting cube and cylinders.

EL34-8105 Cradle

Density of Compacted Fresh Concrete

BS 812; EN 1097-3, 12350-6; ASTM C138

Bulk Density Measures

Manufactured from heavy gauge steel these bulk density measures comply with the requirements of either BS 812, EN 1097-3, 12350-6 or ASTM C138. All measures incorporate carrying handles as standard.

Ordering Information

EL34-2800 Set of 3 Bulk Density Measures comprising, 1 x 30 litre, 1 x 15 litre and 1 x 10 litre.

For other bulk density measures see Section 42.

Accessories

Compacting Bar for BS/EN tests see EL34-2910

Tamping Rod for ASTM tests see EL34-0130

EL34-8100/09 Buoyancy Balance

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