

Product Performance Testing Methodology

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Requirements and Test Methods for Concrete Masonry Units

Description:

The characteristics and performance requirements of aggregate concrete masonry units made from dense and lightweight aggregates or a combination of both for which the main intended uses are common facing or exposed masonry in load bearing or non-load bearing building and civil engineering applications are selected and determined in accordance with BS EN 771-3:2011+A1:2015. The units are suitable for all forms of walling, including single leaf, external leaf to chimneys, cavity wall, partitions, retaining, and basement. They can provide fire protection, thermal insulation, sound insulation and sound absorption properties.

Performance Requirements:

- **Compressive Strength:**
The average compressive strength is based on gross area of masonry blocks and that of an individual specimen shall not be less than the values given below when tested in accordance with BS EN 772-1:2011+A1:2015.
Normal weight concrete:
Non-Load Bearing Blocks: Average - 7.5 MPa; Individual not less than 6.0 MPa
Load-Bearing Blocks: Average - 12.5 MPa; Individual not less than 10.0 MPa
- **Net and Gross Density:**
The net density of each type and configuration of the masonry blocks shall not deviate by more than $\pm 10\%$ from the declared value when tested in accordance with BS EN 772-13:2000.
Normal weight concrete: Concrete having an oven dry density greater than 2000 kg/m^3 but not exceeding 2600 kg/m^3 .
Light weight concrete: Concrete having an oven dry net density not more than 2000 kg/m^3 .
- **Dimensions and Maximum Tolerances:**
The maximum average dimensional deviations from the declared sizes when measured in accordance with BS EN 772-16:2011 shall be within the values Length $\pm 3 \text{ mm}$; Width $\pm 3 \text{ mm}$ and Height $\pm 3 \text{ mm}$.
- **Drying Shrinkage:**
When tested in accordance with ASTM C426, the average drying shrinkage shall not exceed 0.06 % for masonry blocks.
- **Water Absorption:**
Water absorption (average of 3 units) tested in accordance with ASTM C140 shall not exceed 15% of its dry weight as per the guidelines given in Dubai Municipality Advisory Note Number 007.