

# BRICK TECHNICAL DATA SHEET

## ENGINEERING CONCRETE BRICKS

Edenhall's Engineering Concrete Bricks are durable, high strength bricks, specially manufactured to accommodate high loads and cope with exposure to aggressive ground conditions. Made from selected dense aggregates and a choice of cements, the bricks, which exhibit low porosity and high dimensional accuracy, are completely frost resistant and suitable for use below ground where natural sulphates, up to and exceeding Class 3 levels, are present. Two grades of bricks in two forms are available:

- (a) Red or Blue Engineering Brick made with Ordinary Portland Cement. Available in Solid, and Frogged forms.
- (b) Sulphate Resisting Engineering Quality Brick [EQ] made with Sulphate Resisting Cements. Available in Solid form only.

Engineering Bricks are manufactured and tested in accordance with BS EN 771-3: 2011; Specification for Masonry Units: Aggregate Concrete Masonry Units and meet the criteria for strength, durability and sulphate resistance as detailed in BS 5628 Pt 3: 2005 and PD 6697 and other Standards.

<b>Application</b>	Can be used: below d.p.c; for inspection chambers; manholes; catch pits containing surface water or foul drainage and for earth retaining walls.
<b>Appearance</b>	(a); Red or Blue colour. (b) (EQ); Tawney colour. All bricks have a close texture. Colour consistency not guaranteed.
<b>Dimensions</b>	215mm x 100mm x 65mm Tolerances Category D1 (+3-5mm in all directions)
<b>Configuration</b>	Solid (no frogs/perforations); Frogged (Indent in one bed face); Perforated (Three perforations through the bed face)
<b>Composition</b>	Dense aggregate and Portland OR Sulphate Resisting blended cements, with a minimum cement content of 360kg/m <sup>3</sup> . Both types of Engineering bricks have been surface carbonated in accordance with BRE Special Digest 1:2005, Concrete in Aggressive Ground Conditions: Part F5.
<b>Dry Density</b>	Average 2200kg/m <sup>3</sup>
<b>Dry Weight</b>	3.1kg - 3.3kg approximately
<b>Compressive Strength</b>	>50N/mm <sup>2</sup> mean. Air dry.

Note: Under the standards BS EN 771-1: Clay Bricks and BS EN 771-3: Concrete Masonry Units the test method for measuring compressive strength has been amended. This results in higher strengths being achieved at test but with no inherent alteration in the fundamental properties of the product. Engineering Concrete Bricks harden with age and a standard 50N/mm<sup>2</sup> brick will perform in a similar manner as regards durability to a Clay Class B.

<b>Thermal Conductivity</b>	1.24 W/mK (Dry); 1.24 W/mK (@ 3%); 1.33 W/mK (@ 5%)
<b>Durability</b>	Engineering Concrete bricks comply in all respects to the standards required by BS 5628: 2005, the NHBC, the Highways Agency, the Water Research Council and the Department of Transport. They are suitable for use in sulphate soil conditions up to and including DS-1, DS-2 and DS-3.  The EQ brick may be suitable up to DS-4 conditions subject to satisfying the other criteria laid down in the relevant BRE Special Digest. Edenhall Engineering Bricks are not suitable for use as an actual damp proof course.  None of the Engineering Bricks, nor the mortar, are resistant where high levels of acid are present and degradation will occur to varying degrees dependant on the pH levels as shown below: *pH 6.5-5.5 - slight degradation *pH 5.5-4.5 - severe degradation *pH < 4.5 - very severe degradation
<b>Water Absorption by Capillarity</b>	<45g/m <sup>2</sup> /s0.5. Average water absorption <7%. Engineering bricks are required to have a water absorption of less than 7%. This traditional test method is measured by a different test to that of water absorption by capillarity.
<b>Moisture Movement</b>	<0.6mm/m
<b>Water Vapour Permeability</b>	5/15μ (Tabulated from EN 1745)
<b>Reaction to Fire</b>	Euroclass A1
<b>Shear Bond Strength</b>	0.15N/mm <sup>2</sup> (Tabulated from EN 998-2: 2003, Annex C)
<b>Green Guide Rating</b>	A+
<b>Presentation</b>	Self-contained packs, shrink-wrapped in most instances to non-returnable pallets, typically containing 448 No. bricks.

Further information on the history and performance of Edenhall's Engineering Concrete Bricks can be found in our [Technical Bulletin BTB11](#).

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