

Laboratory measurements of porosity and dry density are presented for 2045 core samples from the Chalk of England. The data are subdivided on the basis of gross stratigraphy, i.e. Lower, Middle and Upper Chalk, and into four geographical areas: Northern England, East Anglia, Thames & Chilterns and Southern England. Statistical analysis of the data shows (i) that the porosity distributions for the Upper Chalk of the Southern and Thames & Chilterns regions are indistinguishable, (ii) that the porosity distributions for the middle and Lower Chalk of the East Anglian region are indistinguishable, and (iii) that the porosity distributions for each of the gross stratigraphical units from all other regions are statistically discrete. Porosities range from 3.3% to 55.5%, with a mean porosity of 34.0%. Dry densities range from 1210 kg/m<sup>3</sup> to 2510 kg/m<sup>3</sup>, with a mean dry density of 1790 kg/m<sup>3</sup>. In a given region there is a trend of increasing porosity from Lower to Middle to Upper Chalk. There are systematic variations in porosity between the regions. There is a trend of increasing porosity from the Northern England region to the Southern England region, to the Thames & Chilterns region, to East Anglia. No significant systematic variations in porosity-depth gradients were observed. Chalk porosity-depth gradients are typically high, of the order of -0.07 to -0.1 porosity per cent per metre.