



Till porosity

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This paper examines bulk porosity and pore shape, size and connectivity in a selection of Pleistocene tills with diverse properties from a field area in the Irish midlands. Methodologies have been developed in this research to examine till pores microscopically using thin section microstructure analysis, scanning electron microscopy, experimental pore cast production and micro x-ray computed tomography. Porosity is quantified using digital image analysis of thin section images from the petrographic microscope and SEM.

The use of micromorphological techniques in this research has allowed porosity to be related to other microstructures. Most of the till microstructures examined, including the pores, are indicative of either plastic or brittle subglacial deformation. The development of till porosity will be discussed in the context of till as a deforming bed. The type and extent of till deformation affects bulk porosity, pore type, size and pore connectivity.

Viewing tills as deforming glacier beds is leading to better understanding of till structures, including porosity. The methods and results presented in this paper may be applied to tills in other glaciated and formerly glaciated regions.