

A REVIEW OF COLLECTED DATA ON THE CONVECTIVE COOLING OF RAILWAY BRAKES

This report reviews all the cooling data collected to date by Baking Systems Unit. Data is presented on an identical basis and compared with outside sources. Known generalised empirical equations are presented and further developed to correlate data to known fundamental processes involved in cooling. The equations are expressed in terms of Nusselts and Reynolds numbers, which involve disc dimensions, speed and the mechanical and thermal properties of air. Directly applicable equations are summarised in Section 5. The conclusions provide best estimates of the heat transfer coefficients from discs, ducts and wheels.