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THE SHAPES OF PORES IN METALS

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ABSTRACT

In this overview a wide variety of pores, including gas bubbles, irradiation-induced voids and creep cavities, is considered. The factors which govern the shape of a pore are discussed and equations from which the ultimate thermodynamic equilibrium shape of a cavity can be deduced are presented. However it is pointed out that kinetic factors, rather than thermodynamic considerations, frequently determine the shapes which are observed. Consequently cavities may develop facets which are not predicted by thermodynamic reasoning; several examples are shown in the paper. Finally consideration is given to the extent to which observations of pore shape can be used to deduce the anisotropy of surface energy (the gamma-plot).

