

"Requirements for Steels for Arctic Use"

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Author: Bill Tyson is coordinator of CANMET's Metals Technology Laboratory program on materials for the resource industries encompassing offshore structures, marine vessels, pipelines, pressure vessels and mining equipment. He has been involved in research on mechanical properties of steel since joining CANMET and in general aspects of fracture control since 1980.

Abstract: Recent work at CANMET is described. A division of Energy, Mines and Resources Canada, CANMET is concerned with the cost-effective and environmentally safe use of steels in arctic regions. A review is provided of research into the low-temperature properties of steels and their weldments as performed both in-house by CANMET and supported by it in industry and universities. Weld metal toughness evaluation, corrosion fatigue, fracture toughness and weldment corrosion have been subjects of CANMET's recent work. In collaboration with industry, steels have been produced, welded, and tested to evaluate their properties and corrosion resistance. The experience gained in the work is beginning to be applied to selection criteria for arctic vessels. It is in this context that Canada and France are cooperating on the exchange of information and personnel.

"Protection of Pavement in Cold Regions"

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Author: Anthony Beaty obtained a doctorate in civil engineering from the University of Nottingham (1965) and, after a variety of engineering positions in Britain and Canada, joined the faculty at the University of Dundee in 1972. In 1978 he was appointed associate professor of civil engineering at Royal Military College in Kingston, Ontario, where he is responsible for highway and transport engineering and carries out research into bituminous surfacings for arctic runways. He has guest lectured throughout the world and has acted as a special consultant to the governments of several countries.