

Fatigue Cracks in HVOF Thermally Sprayed WC-CO Coatings

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Abstract

Initiation and early growth of fatigue cracks of a medium carbon steel with HVOF thermally sprayed WC-Co coatings prepared from two types of commercially available powders with similar total chemical composition were investigated under rotating bending conditions.

The morphology of the fatigue crack is divided into two type - linear cracks and net-like cracks depending on the types of powders and the thickness of the coatings. The fatigue cracks in thinner coatings were closer to each other than those for the thick coatings.

Keywords:

coating thickness, fatigue crack, fatigue initiation, fatigue strength, HVOF, WC-Co coating