

## عنوان مقاله:

Fatigue Properties of an Alloyed Austempered Ductile Iron of Initially Ferritic Matrix Structure Using Thermography as NDT

## محل انتشار:

دومین کنفرانس بین المللی بازرسی فنی و آزمون غیرمخرب (سال: 1387)

تعداد صفحات اصل مقاله: 12

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## خلاصه مقاله:

Infrared thermography techniques have been used for some time in a number of engineering applications but only recently has the method been applied for fatigue measurements of materials. This new methodology presents many advantages as apposed to the conventional Wöhler method. Compared to traditional method this technique enables the determination of fatigue limit in a short period of time, a small number of test specimens are required, NDT technique. In Austempered Ductile Iron (ADI) this leads to saving in material, machining, heat treating and testing costs. Variation of fatigue properties with austenitising time and temperature of a ductile cast iron containing copper and nickel was investigated. In general samples heat treated at 850,900,950, and 1000 for 15 to 360 min have fatigue strength values which increases as the soaking period increases and fall with further holding in the bath. This paper shows that infrared thermography can be used to determine the fatigue properties of ADI. The fatigue limit can be determined following accurate temperature measurements of the specimen's surface during cyclic loading and subsequent analysis of the thermal data. The optimum fatigue strength occurs at 900 and that the former drops as the solution treatment temperature increase to 1000.

## کلمات کلیدی:

NDT, Infrared, Fatigue, Austenitising, Ductile, and Austempering

## لینک ثابت مقاله در پایگاه سیویلیکا:

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