Deformation Induced Martensitic Transformation and Its Initial Microstructure Dependence in a High Alloyed Duplex Stainless Steel

Deformation induced martensitic transformation (DIMT) usually occurs in metastable austenitic stainless steels. Recent studies have shown that DIMT may occur in the austenite phase of low alloyed duplex stainless steels. The present study demonstrates that DIMT can also take place in a high alloyed Fe–23Cr–8.5Ni duplex stainless steel, which exhibits an unexpectedly rapid transformation from γ-austenite into α′-martensite. However, an inhibited martensitic transformation has been observed by varying the initial microstructure from a coarse alternating austenite and ferrite band structure to a fine equiaxed microduplex structure.

General information
Publication status: Published
Organisations: Department of Mechanical Engineering, Department of Wind Energy, Materials and Surface Engineering, Materials science and characterization, Chongqing University, Yanshan University, Kyoto University
Number of pages: 9
Publication date: 2017
Peer-reviewed: Yes

Publication information
Journal: Steel Research International
Volume: 88
Issue number: 12
Article number: 1700169
ISSN (Print): 1611-3683
Ratings:
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.5 SJR 0.783 SNIP 1.088
Web of Science (2017): Impact factor 1.424
Web of Science (2017): Indexed yes
Original language: English
DOI:
10.1002/srin.201700169
Source: FindIt
Source-ID: 2394025496
Research output: Contribution to journal › Journal article – Annual report year: 2017 › Research › peer-review