Experimental analysis of cut welding in aluminium

Experimental analysis of cut welding in aluminium
Cut welding is a newly developed cold pressure welding process. In the present work, an experimental investigation was carried out analyzing the mechanisms involved in cut welding of a block to a strip. Experiments were carried out in technically pure aluminium. The investigation has involved tensile testing and metallographic investigations of the welds. The results show that this variant of cut welding is a very reproducible process giving a weld strength equal to 30-40% the strength of the parent material. The experiments have shown that the reason for this relatively low strength is an uneven pressure distribution along the weld due to a wave formed during sliding. Attempts to alter the material flow during sliding are presented.

General information
State: Published
Organisations: Department of Management Engineering
Contributors: Dorph, P., De Chiffre, L., Bay, N.
Pages: 357-360
Publication date: 1993
Peer-reviewed: Yes

Publication information
Journal: CIRP Annals - Manufacturing Technology
Volume: 42
Issue number: 1
ISSN (Print): 0007-8506
Ratings:
BFI (2019): BFI-level 2
Web of Science (2019): Indexed yes
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 4.09 SJR 2.034 SNIP 2.811
Web of Science (2017): Impact factor 3.333
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.93 SJR 2.055 SNIP 3.158
Web of Science (2016): Impact factor 2.893
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 3.83 SJR 2.088 SNIP 3.294
Web of Science (2015): Impact factor 2.492
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 4.39 SJR 3.123 SNIP 3.992
Web of Science (2014): Impact factor 2.542
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 3.87 SJR 2.598 SNIP 3.818
Web of Science (2013): Impact factor 2.541
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): CiteScore 3.04 SJR 2.086 SNIP 4.156
Web of Science (2012): Impact factor 2.251
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): CiteScore 2.81 SJR 2.117 SNIP 3.46
Web of Science (2011): Impact factor 1.708