

List of Abbreviations

Abbreviation	Full form
API	American Petroleum Institute
HSLA	High strength low alloy steel
C-Mn	Carbon manganese
CMnCb	Carbon manganese Columbium
Nb	Niobium
Al	Aluminium
Ni	Nickel
Mo	Molybdenum
Ti	Titanium
C	Carbon
BI	Basicity Index
TMCP	Thermomechanically controlled processing
AcC	Accelerated cooling
IIW	International Institute of welding
M/A	Martensite-austenite
CaF ₂	Calcium fluoride
SiO ₂	Silica
MgO	Magnesium oxide source
Al ₂ O ₃	Aluminium oxide
P	Phosphorous
Mg	Magnesium
Fe	Iron
S	Sulphur
TiO ₂	Rutile
BM	Base metal
FW	Filler wire
WM	Weld metal
HAZ	Heat affected zone
XRF	X-ray fluorescence
TGA	Thermogravimetric analysis
FTIR	Fourier Transform Infrared Spectroscopy
XRD	X-ray diffraction
ANOVA	Analysis of variance
SS	Sum of square
DOF	Degree of freedom
MS	Mean sum of square
DCEP	Direct current electrode positive polarity
B	Basic flux system
RA	Rutile acidic flux system
RB	Rutile basic flux system
GFN	Grain fineness number
TC	Thermal conductivity
TD	Thermal diffusivity
ΔH	Change in enthalpy
SH	Specific heat
D	Density
WC	Weight loss

AFS	American foundrymen's society
ASTM	American society for testing and materials
SAW	Submerged arc welding
DC	Direct current
AC	Alternating current
F5B & F15B	Basic flux no. 5 & 15
F5RB & F7RB	Rutile-basic flux no. 5 & 7
F3RA & F19RA	Rutile-acidic flux no. 3 & 9
C.F	Commercial flux
UTM	Universal testing machine
YS	Yield strength (N/mm ²)
UTS	Ultimate tensile strength (N/mm ²)
%E	Percentage elongation
HIC	Hydrogen induced cracking
CLR	Crack length ratio
CSR	Crack sensitivity ratio
CTR	Crack thickness ratio
HT-1	Heat treatment procedure-1
HT-2	Heat treatment procedure-2
STS	Sodium thiosulphate solution
FW	Fresh water
SW	Sea water
AR	As received
S	No of specimen
GS	Grain size
MH	Microhardness
CR	Corrosion rate (mm/yr)
CE	Carbon equivalent
F-P	Ferritic-Pearlitic
B	Bainite
PF	Polygonal ferrite
GBF	Grain boundary ferrite
TM	Tempered martenstic
CGHAZ	Coarse-grained heat-affected zone
FGHAZ	Fine-grained heat-affected zone
AF	Acicular ferrite
LC	Longitudinal crack
TC	Transverse crack

