

Stainless Steel – Type 1.4509

Introduction

Stainless steel producers have an ongoing programme of development designed to produce new grades. These new grades are sometimes developed for specific end uses and sometimes to improve upon an existing grade. Type 1.4509 spans both of these two areas since it was developed for a particular range of applications in certain industries where it can be used in place of type 1.4301 (304). On some aspects, its properties and performance in service are actually superior to 304 whilst on others it falls between 430 and 304. Notably however, it is also lower cost than 304.

Features

- ◆ Good for Deep Drawing
- ◆ Good Weldability
- ◆ Good pitting corrosion resistance
- ◆ Good brightness
- ◆ Polishes well

Applications/Industries

- ◆ The main target sector is catering equipment to replace grade 304

Availability

- ◆ 1250mm & 1500mm wide
- ◆ Thicknesses 0.5mm to 2.0mm
- ◆ Finishes Bright Annealed or Polished

Alloy Designations

Stainless steel 1.4509 is a modified version of AISI 439 and corresponds to the following:

Uginox F17TNb

Typical Mechanical Properties

Grade	1.4509	430	304
Tensile Strength (MPa)	490	500	670
Proof Stress 0.2% (MPa)	300	340	320
Elongation A5 (%)	30	26	50

Typical Chemical Composition

%	1.4509	430	304
C	0.02	0.05	0.05
Cr	17.8	16.5	18.2
Ni	0	0	8.1
Ti & Nb	0.7	0	0

Typical Physical Properties

Property	Value
Density	7.70
Melting Point	1505 °C
Modulus of Elasticity	220 GPa
Electrical Resistivity	0.60x10 ⁻⁶ Ω.m
Thermal Conductivity	25 W/m.K at 25°C
Thermal Expansion	11.0x10 ⁻⁶ /K at 100°C

Performance Comparison

(1 = Poor / 5 = Excellent)

Property	1.4509	430	304
Deep Drawing	3	1	1
Stretching	1	1	4
Pitting @20°C	2	2	4
Welding	1	1	5
Polishing	5	5	5
Brightness	5	5	3

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