

50 GRADES OF STAINLESS STEEL



The BSSA has selected 50 Grades of Stainless Steel as its theme for 2014. Each week throughout the year, we will showcase one grade and illustrate the variety of corrosion resistant, mechanical and physical properties which determine its suitability for a wide range of applications.

#4

2205 Duplex 1.4462 S31803/S32205



Beckton Desalination Plant
Courtesy of Millstock Stainless



Fasteners for Pumps and Valves
Courtesy of West Special Fasteners

2205 Duplex is a generic term for the most common of the duplex stainless steels. It has become the grade of choice where 316/316L does not have adequate corrosion resistance.

Approximate Composition – 22% Cr 5% Ni 3% Mo 0.15% N (exact composition ranges vary between EN and ASTM standards).

This grade combines the following characteristics:

- Design strength 2 times that of standard austenitic grades
- Excellent pitting and crevice corrosion resistance
- Excellent resistance to stress corrosion cracking
- Good weldability
- Moderate impact toughness down to minus 80°C

Many chemical and marine processes operate in very aggressive conditions. These push the more familiar grades such as 316/316L (1.4401/1.4404) beyond their limits. 2205 Duplex (1.4462) provides a significant improvement in corrosion resistance. The increased strength can also lead to a reduction in section thickness which means that the

overall cost can be comparable to that of 316/316L. Resistance to stress corrosion cracking is particularly important in chemical and food processing above 50°C. Although weldability is good, fabricators need to be trained in the specific parameters required to produce sound welds.

Typical applications include:

Offshore oil and gas, chemical processing, desalination plant, pulp and paper, sculptures in coastal locations, brewing, food processing, bridges, tensioning systems, nuclear reprocessing, tunnel infrastructure, chemical tanker ships.

2205 Duplex (1.4462) is the natural choice for more aggressive environments.

[Find out more about the 50 Grades of Stainless Steel campaign](#) →

[BSSA Home](#) | [BSSA Membership](#) | [Contact Us](#)



Park Suite, Forsyth Enterprise Centre, Bramall Lane, Sheffield, S2 4SU

Tel: +44 (0)114 292 2636 Fax: +44 (0)114 292 2633 Email: admin@bssa.org.uk

If you are interested in learning more about our campaign please [sign up](#) here.

If you no longer wish to receive emails from us please [unsubscribe](#) here.

British Stainless Steel Association (BSSA): registered in England and Wales as a private company limited by guarantee; registration no. 07547349