

STEELMASTERS AUCKLAND LTD

79-81 O'RORKE RD, PENROSE, AUCKLAND

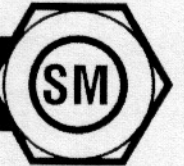
Ph 09 579 8196

Fax 09 579 1392

Email sales@steelmasters.co.nz

STEELMASTERS

Fastener Manufacturers and Distributors



The Nuts & Bolts of it – July'05

What can one say about the All Blacks Performance? It's not just that the Lions were woeful, we were wonderful.

A New Zealand crowd singing was something to hear. Even Millennium Stadium's crowd could not outdo that performance. Take a bow Wellington.

Let's not forget the Silver Ferns Spanking the Australians in the Netball. A great couple of sporting weeks!

Bolting Classes & Grades

It has been a little while since we discussed the relative Metric and Imperial strength Classes and Grades, and it is apparent there is still some confusion out there.

Let's try to clarify things. Firstly in the Metric System Bolts and Nuts have strength *Classes*, while in the Imperial system they are *Grades*.

In all cases there are equivalents, but the terminology leads to confusion. In the picture below, showing Head markings, equivalents are alongside each other.

	Metric	Imperial	
Class 4.6			Grade 2
Class 8.8			Grade 5
Class 10.9			Grade 8
High Strength			High Strength

Manufacturers' marks have been omitted for clarity. All but mild steel bolts must have a manufacturer's mark

The Metric system of Classes is far more enlightening than the Imperial. The figure before the decimal point in the Class is 1/100th of the minimum Tensile Strength expressed in Mpa. The rest indicates the proportion of Yield Strength to Tensile Strength.

For example a Class 8.8 bolt has a minimum Tensile Strength of 800 Mpa – 8 X 100. Its Yield Strength is 640 Mpa – 800 X 0.8.

Often on a bolting specification you will see letters. These do not refer to the strength, but rather to the way the bolts are to be tightened, and the type of joint or connection.

S, after the bolt class (e.g. **4.6S**) means the bolt is to be "snug" tight. Snug tight is defined as "the tightness attained by the full effort of a man on a standard length podger spanner, or that attained by a few solid impacts of an impact wrench. Where **8.8S** is specified, a standard high tensile bolt may be used.

TB, after the bolt class (e.g. **8.8TB**) means the bolt is to be fully tensioned, bearing type. This designation always means High Strength Structural Bolts, and unless a Load Indicator Washer is specified, Part Turn tightening is the only acceptable method of tightening.

TF, after the bolt class (e.g. **8.8TF**) means the bolt is to be fully tensioned friction type. This designation always means High Strength Structural Bolts, and assuming they are Hot Dip Galvanised, the comment above about tightening remains true.

Does this remove the confusion?

Branches at: **WHANGAREI**

Ph 09 430 6407

Fax 09 430 4023

PALMERSTON NORTH

Ph 06 356 5635

Fax 06 356 5630

NAPIER

Ph 06 842 0096

Fax 06 842 0098

Also in Australia:- Brisbane, Melbourne, and Townsville

Visit our website at www.steelmasters.co.nz