

Created by  
QA Engineer



**New Zealand  
Tube Mills**

## Technical Information

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Revision Date  
03-Feb-09

No  
02

Approved by:  
QA Engineer

**NZTM-Q06C:- G450 / Z450 GALVANIZED STEEL (BHP N.Z STEEL)  
{Hot-Dipped zinc-coated with spangled}**

A specification covering the mechanical properties and chemical composition of **G450 / Z450 grade Galvanized Steel** material sourced from BHP New Zealand Steel and used by the New Zealand Tube Mills prior to being manufactured into tubular section.

**Zinc coating helps in two different ways of protecting steel substrate from rusting:-**

- 1) Barrier Effect - Protect from direct intrusion agent to the steel**
- 2) Galvanic Effect - Protect its adjacent steel substrate by scarifying itself**

*When forming steel strip into tubular sections, the mechanical properties are affected. The extent of this effect depends on the specific dimensions of tube being produced and particularly the tube diameter to thickness ratio. In general during tube forming, the yield stress will be substantially increased, the tensile strength slightly increased and elongation reduced.*

### **SPECIFIED MINIMUM MECHANICAL PROPERTIES OF STRIP**

YIELD STRESS	<b>450 MPa (min.)</b>
TENSILE STRESS	480 MPa (min.)
ELONGATION	10 % (min.)

### **NORMAL RANGE OF MECHANICAL PROPERTIES OF STRIP**

YIELD STRESS	465 to 590 MPa
TENSILE STRESS	550 to 630 MPa
ELONGATION	11 to 17 %

### **SPECIFIED CHEMICAL COMPOSITION - (LADLE ANALYSIS)**

CARBON	C	0.050 % max.
MANGANESE	Mn	0.220 % max.
PHOSPHORUS	P	0.020 % max.
SULPHUR	S	0.025 % max.

### **ZINC COATING WEIGHT**

COATING WEIGHT (Z450)	<b>450</b>	<b>g / m<sup>2</sup></b>	<b>both side</b>
Calculated Coating Thickness (Z450)	<b>63</b>	<b>μ m</b>	
Based on Standard AS1397 - 2001			

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