


Created by QA Engineer	 New Zealand Tube Mills	Technical Information	
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NZTM-Q05D:-	4D (NZ) Steel Coil Material - NZCC-4D {Cold Rolled , Annealed & Temper Rolled (Re-rolled)}		
This internal specification covers the mechanical properties and chemical composition of Cold Rolled 4D (medium strength) Steel coil sourced from New Zealand Steel and used by NZ Tube Mills for the manufacture of tube			

NOTE: 4D MATERIAL HAS HIGHER YIELD & TENSILE VALUES AND LOWER ELONGATION VALUES IN COMPARISON TO CONVENTIONAL MILD STEEL MATERIAL.

4D MATERIAL IS TEMPER ROLLED TO 70 HRB MINIMUM HARDNESS

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 (0.2% PROOF) STRENGTH	350 MPa (min.)	470 MPa (max.)
TENSILE STRENGTH	370 MPa (min.)	490 MPa (max.)
ELONGATION	10 % (min.)	
HARDNESS	70 - 85 HRB	

NORMAL RANGE OF MECHANICAL PROPERTIES OF STRIP

YIELD (0.2% PROOF) STRENGTH	390 to 430 MPa	
TENSILE STRENGTH	420 to 465 MPa	
ELONGATION	18 to 22 %	
HARDNESS	72 - 80 HRB	

SPECIFIED CHEMICAL COMPOSITION - (LADLE ANALYSIS)

CARBON	C	0.07 % max.
MANGANESE	Mn	0.25 % max.
PHOSPHORUS	P	0.03 % max.
SULPHUR	S	0.03 % max.
SILICON	Si	0.030 % max.

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