TMT Quenching Box

There are various route to increase the strength of steel used for construction. One of the oldest route is the CTD Bar route. Here the bars are cold twisted after rolling. Another method is the Micro Alloying of steel to get high strength.

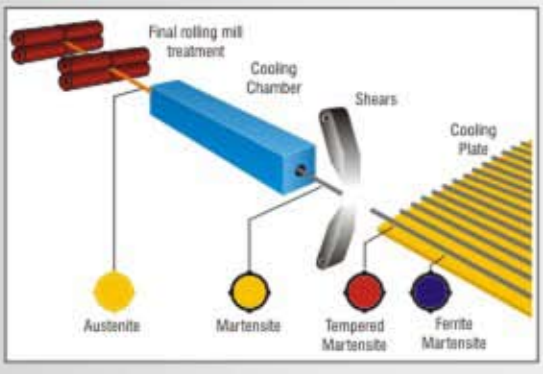
The problem with both these systems is the high labour, cost and time. In CTD bars the cost of twisting and this is the main bottleneck in all the mills. For Micro alloying the cost alloying elements is very high.

To counter these problems, SMT has developed High Strength with High Ductility

TMT Quenched & Tempered Ribbed Bars

of Grade Fe 415 & Fe 500 confirming to IS 1786

We are happy to offer our International Computerized Version with the latest development " Extended Nozzles ".



Thus, we have Quenched & Tempered TMT Bars having the following Advantages over CTD Bars

- High Strength with High Ductility
- High Corrosion Resistance
- Very High Weld - ability
- Very High Bend - ability
- High Strength at Elevated Temperature
- Bars are Stress Free
- Bars have Protective Shield
- Pollution Free
- Lower Manufacturing Cost
- 100% depreciation
- International Quality Products
- Saving in steel
- 50% Less Labour in Mills etc.

CHEMISTRY for Quality TMT

Billet / Ingot CHEMISTRY:
One of the major factor that effect that effect the Quality of TMT is CHEMISTRY. The word GIGO aptly describes the process :

Gold in Gold out
Also
Garbage in Garbage Out

To get good quality TMT ensure that Carbon Equivalent is around 0.38 For our purpose this formula holds good.

Carbon Equivalent Ce = Carbon C + Manganese Mn/6.

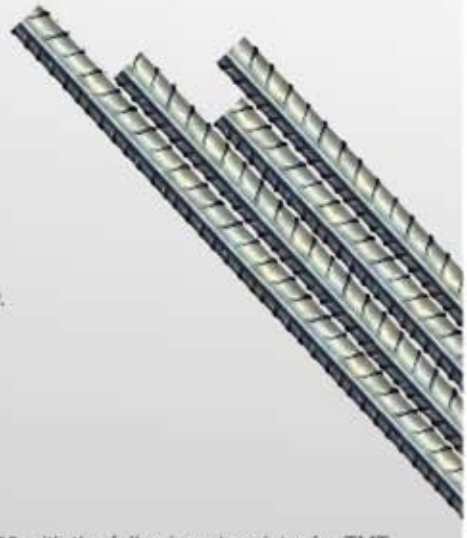
Ce = C+ Mn/6.

To get good weld - able quality TMT keep Carbon between 0.20 to 0.25

The implication is

For Carbon 0.20 Mn = 1.08
0.38 = 0.20 + Mn/6
Mn = [0.38 - 0.20] X 6 = 1.08

For Carbon 0.25 Mn = 1.78
0.38 = 0.25 + Mn/6
Mn = [0.38 - 0.25] X 6 = 0.78



With this composition we can assure good Quality TMT which has high strength with High Ductility.

Remember
Higher the Carbon, Lower the elongation
with same Carbon Equivalent Ce

TMT Process is a Quench & Temper Rolling process.
For prefabrication of TMT bars, lower Ce helps. With high Ce the weld - ability of TMT is effected.

Ce above 0.43 is not advisable for weld-able TMT bars.
In -order to get Premium Quality TMT bars with High Strength and High Ductility, Maintain Ce = 0.38 with the following chemistry for TMT bars.

It is very important to maintain all the elements at the correct percentage. Any dilution leads to Lowering of Quality and subsequent bar rejection.