

REAL SPAT & POWER LIMITED BORJHARA DIVISION
RAIPUR

*Joined in the
department of*

Quality control of steel bars

By

Ghanshyam Sahu

Btech 4th year Chemical Engineering

Institute of Technology Gurughasidas Vishwavidyalay Bilaspur Chhattisgarh



Existing Grades of TMT certified by BIS

Chemical Composition

Grades	Fe415	Fe415D	Fe415S	Fe500	Fe500D	Fe500S	Fe550	Fe550D	Fe600
%C max	0.30	0.25	0.25	0.30	0.25	0.25	0.30	0.25	0.30
%S max	0.06	0.045	0.045	0.055	0.04	0.04	0.055	0.04	0.04
%P max	0.06	0.045	0.045	0.055	0.04	0.04	0.05	0.04	0.04
%(S+P) max	0.110	0.085	0.085	0.105	0.075	0.075	0.100	0.075	0.075
%N max	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012
%(Nb+V+Ti+B) max	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
CE(for MA steel) max	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
CE= (C+Mn/6) max	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42

Proposal has been sent to BIS to include high strength grades Fe650 & Fe 700. Draft has been generated.

Mechanical Property

Grades	Fe415	Fe415D	Fe415S	Fe500	Fe500D	Fe500S	Fe550	Fe550D	Fe600
0.2PS / YS Mpa min	415	415	415	500	500	500	550	550	600
0.2PS / YS Mpa max	-	-	540	-	-	625	-	-	-
UTS Mpa min	485	500	-	545	565	-	585	600	660
TS/YS ratio min	1.1	1.12	1.25	1.08	1.10	1.25	1.06	1.08	1.06
%El min (GL=5.65√A)	14.5	18	20	12	16	18	10	14.5	10
%El @ maximum force	-	5	10	-	5	8	-	5	-

TO WHOM SOEVER IT MAY CONCERN

This is to certify that Mr. Ghanshyam a student of Guru
Ghasidas Viswavidyalaya Bilashpur , undergone industrial training in our
Quality Control department from 15-05-2024 to 15-06-2024

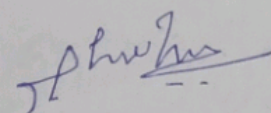
He was sincere hard working and punctual to the best of our
knowledge.

We wish him success in all his endeavors.

FOR REAL ISPAT AND POWER

LTD BORJHARA DIVISION

RAIPUR


Group AVP/HR& ADMIN

