



STEEL LTD.,

0045
Certificate no.: 0045-GPD-1090

Vijayanagar Works, Vidyanagar Post, Bellary Dist, Karnataka INDIA
Regd. Office : JSW Centre, Bandra Kurla Complex, Bandra(East), Mumbai 400051

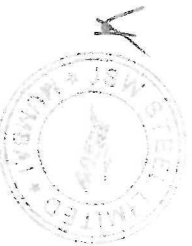
MILL TEST CERTIFICATE
(According to EN 10204 -3.1)

TO:
SALGITTER MANNAMANN INTERNATIONAL GMBH
SCHWANNSTR 12
40476 DUSSELDORF
GERMANY

T/C No: Germany/EXP13-14/Sapp00706
Product: Hot Rolled Steel Coils

Castl	Coil No.	Nominal Size (mm)				Weight(Net) Metric Tonnes	C %	Mn %	S %	P %	Si %	Al %	Cr %	Ni %	Nb %	Mo %	V %	Ti %	Cu %	N %	S1+2.5P %	C.E %	YS Mpa	UTS Mpa	EL %	Bend test TT, 180°	Remarks	
		T	X	W	X																							L
F609368	14542566	3.00 X	1.500 X	coil	28.550	0.110	0.80	0.011	0.012	0.015	0.044	0.014	0.012	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0043	0.0450	0.247	383	447	34	Pass	
E609286	14542966	3.00 X	2.000 X	coil	28.170	0.100	0.76	0.013	0.011	0.013	0.046	0.015	0.012	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0037	0.0405	0.231	365	435	31	Pass	
F609290	14542967	3.00 X	2.000 X	coil	24.350	0.109	0.80	0.013	0.018	0.030	0.045	0.016	0.011	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0035	0.0750	0.246	372	450	31	Pass	
F609304	14542968	3.00 X	2.000 X	coil	28.320	0.102	0.77	0.011	0.018	0.009	0.046	0.015	0.011	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0039	0.0540	0.234	358	435	36	Pass	
F609295	14542970	4.00 X	2.000 X	coil	28.400	0.092	0.76	0.011	0.017	0.016	0.049	0.012	0.012	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0036	0.0585	0.222	353	433	35	Pass	
C269878	14037375	4.00 X	1.250 X	coil	21.390	0.093	0.78	0.011	0.014	0.011	0.043	0.013	0.010	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0043	0.0460	0.227	341	422	36	Pass	
C269882	14037376	4.00 X	1.250 X	coil	21.231	0.093	0.78	0.011	0.014	0.011	0.043	0.013	0.010	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0043	0.0460	0.227	341	422	36	Pass	
B269882	14037377	4.00 X	1.250 X	coil	21.310	0.101	0.75	0.014	0.016	0.009	0.050	0.023	0.016	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0045	0.0490	0.232	354	439	34	Pass	
B269882	14037378	4.00 X	1.250 X	coil	21.308	0.101	0.75	0.014	0.016	0.009	0.050	0.023	0.016	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0045	0.0490	0.232	354	439	34	Pass	
F609075	14540820	4.00 X	1.500 X	coil	28.355	0.109	0.77	0.010	0.013	0.009	0.039	0.012	0.009	0.002	0.001	0.001	0.001	0.001	0.001	0.006	0.0045	0.0480	0.232	354	439	34	Pass	
E609363	14542314	4.00 X	1.500 X	coil	28.320	0.110	0.77	0.012	0.013	0.016	0.027	0.015	0.012	0.001	0.001	0.001	0.001	0.001	0.001	0.006	0.0035	0.0485	0.242	364	440	36	Pass	
E609358	14542491	4.00 X	1.500 X	coil	28.390	0.099	0.75	0.015	0.008	0.019	0.049	0.010	0.012	0.001	0.001	0.001	0.001	0.001	0.001	0.006	0.0036	0.0390	0.227	360	439	36	Pass	
E609358	14542492	4.00 X	1.500 X	coil	28.410	0.099	0.75	0.015	0.008	0.019	0.049	0.010	0.012	0.001	0.001	0.001	0.001	0.001	0.001	0.006	0.0036	0.0390	0.227	360	439	36	Pass	
F609256	14542642	4.00 X	2.000 X	coil	26.070	0.086	0.77	0.013	0.016	0.015	0.050	0.014	0.010	0.001	0.001	0.001	0.001	0.001	0.001	0.006	0.0032	0.0550	0.228	367	448	28	Pass	
E609242	14542643	4.00 X	2.000 X	coil	28.270	0.096	0.75	0.013	0.012	0.012	0.034	0.016	0.012	0.001	0.001	0.001	0.001	0.001	0.001	0.006	0.0042	0.0420	0.225	371	444	33	Pass	

Date: 12-04-2014
Sales contract No. JSW/HR/RS/2013-14/2923 DATED: 07.03.2014
Specification : EN 10025-2 S235JR





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Certificate no.: 0045-CPD-1090

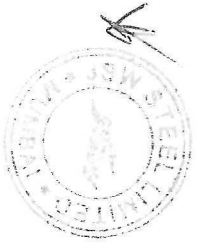
MILL TEST CERTIFICATE
(According to EN 10204 - 3.1)

TO: SALGITTER MANNAMANN INTERNATIONAL GMBH
SCHWANNSTR 12
40476 DUSSELDORF
GERMANY

TC No.:Geman/Exp13-14/Sap00706
Product: Hot Rolled Steel Coils

Date: 12-04-2014
Sales contract No.:JSW/HR/2013-14/2923 DATED:07.03.2014
Specification : EN 10025-2 S235JR

Casts	Coil No.	Nominal Size (mm)				Weight(Net) Metric Tonnes	Chemical Composition (%)															Si+2.5P %	C.E. %	YS Mpa	UTS Mpa	EL %	Bend test 1T, 180°	Remarks				
		T	W	X	L		C	Mn	S	P	SI	Al	Cr	Ni	Nb	Mo	V	Ti	Cu	N												
F609288	14542974	4.00	2.000	X	coil	28.320	0.098	0.80	0.005	0.017	0.022	0.050	0.015	0.011	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.0039	0.0645	0.227	393	450	33	Pass	
F609307	14542975	4.00	2.000	X	coil	28.430	0.098	0.76	0.012	0.016	0.012	0.039	0.014	0.011	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.0033	0.0520	0.228	387	450	34	Pass	
C269878	14037330	5.00	1.250	X	coil	21.290	0.093	0.78	0.011	0.014	0.011	0.043	0.013	0.010	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.0043	0.0460	0.227	339	431	33	Pass	
B269879	14037331	5.00	1.250	X	coil	21.211	0.097	0.79	0.014	0.015	0.009	0.044	0.016	0.011	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.0043	0.0490	0.232	341	429	38	Pass	
C269878	14037374	5.00	1.250	X	coil	21.380	0.101	0.75	0.014	0.016	0.009	0.050	0.016	0.011	0.001	0.003	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.006	0.0045	0.0490	0.232	364	447	38	Pass	
A269889	14037465	5.00	1.250	X	coil	21.380	0.093	0.78	0.011	0.014	0.011	0.043	0.013	0.010	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.0043	0.0460	0.227	339	431	33	Pass	
E609373	14542407	5.00	1.500	X	coil	21.330	0.098	0.76	0.013	0.018	0.007	0.048	0.017	0.014	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.006	0.0043	0.0520	0.229	357	439	33	Pass	
E609373	14542408	5.00	1.500	X	coil	28.590	0.109	0.78	0.010	0.016	0.014	0.048	0.016	0.013	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.006	0.0036	0.0540	0.243	371	450	35	Pass	
E609370	14542409	5.00	1.500	X	coil	28.455	0.109	0.78	0.010	0.016	0.014	0.048	0.016	0.013	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.006	0.0036	0.0540	0.243	371	450	35	Pass	
E609373	14542410	5.00	1.500	X	coil	28.350	0.100	0.80	0.013	0.016	0.015	0.048	0.016	0.013	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.003	0.006	0.0036	0.0540	0.237	342	443	37	Pass	
D609366	14542522	5.00	1.500	X	coil	28.550	0.109	0.78	0.010	0.016	0.014	0.048	0.016	0.013	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.006	0.0036	0.0540	0.243	371	450	35	Pass	
D609366	14542523	5.00	1.500	X	coil	28.210	0.098	0.78	0.015	0.014	0.010	0.027	0.011	0.012	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.006	0.0030	0.0450	0.231	361	440	33	Pass	
D609366	14542523	5.00	1.500	X	coil	28.390	0.098	0.78	0.015	0.014	0.010	0.027	0.011	0.012	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.006	0.0030	0.0450	0.231	361	440	33	Pass	
E609376	14542524	5.00	1.500	X	coil	28.220	0.115	0.76	0.008	0.012	0.015	0.045	0.009	0.012	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.0034	0.0450	0.245	348	441	34	Pass	





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TO:
SALGITTER MANNAMANN INTERNATIONAL GMBH
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40476 DUSSELDORF
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TC No:Gernany/Exp13-14/Sap00706
Product: Hot Rolled Steel Coils

Date: 12-04-2014
Sales contract No.JSW/HRS/2013-14/2923 DATED:07.03.2014
Specification : EN 10025-2 S235JR

Specifications requirements:-

Heat No.	Coil No.	Nominal Size (mm)				Weight(Metric)	Chemical Composition (%)														SI+2.5P	C.E.	YS	UTS	EL	Bend test	Remarks						
		T	X	W	X		Mn	S	P	SI	Al	Cr	Ni	Nb	Mo	V	Ti	Cu	N	SI+2.5P								C.E.	YS	UTS	EL	Bend test	
D609280	14542962	5.00	X	2.000	X	coil	28.065	0.115	0.80	0.008	0.012	0.013	0.039	0.015	0.012	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.0036	0.0430	0.252	348	436	35	Pass
F609288	14542953	5.00	X	2.000	X	coil	28.170	0.090	0.80	0.005	0.017	0.022	0.050	0.015	0.011	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.0039	0.0645	0.227	365	450	33	Pass
E609557	14544149	5.00	X	2.000	X	coil	28.030	0.103	0.77	0.011	0.015	0.011	0.043	0.014	0.010	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.006	0.0029	0.0485	0.235	370	438	38	Pass	
F609298	14542944	6.00	X	2.000	X	coil	27.200	0.101	0.75	0.011	0.015	0.015	0.046	0.013	0.012	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.006	0.0035	0.0525	0.230	373	445	41	Pass	
F609288	14542945	6.00	X	2.000	X	coil	28.205	0.091	0.75	0.015	0.012	0.011	0.048	0.011	0.010	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.006	0.0041	0.0410	0.219	327	425	35	Pass	
F609301	14542946	6.00	X	2.000	X	coil	28.100	0.090	0.80	0.005	0.017	0.022	0.050	0.015	0.011	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.0039	0.0645	0.227	354	435	39	Pass	
F609290	14542947	6.00	X	2.000	X	coil	28.215	0.103	0.77	0.011	0.015	0.011	0.043	0.014	0.010	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.006	0.0029	0.0485	0.235	337	431	36	Pass	
Total Weight in Metric Tonnes							1291.893															51			343	432	34	Pass					
Grand Total of coils							51															MT											
Grade code: JVH/R08A/E0							1291.893															MT											

We hereby certify that the material (Hot Rolled Steel Coils) described herein have been tested and inspected with satisfactory results in accordance with the requirements of the above specification.

Product : Hot rolled Steel coils, Fully killed, mill edge, unpickled, Uncoiled and nonskinpassed
Process Route: BOF-LHF-CCM-HSM
Legend: BOF = Basic Oxygen Furnace, LHF = Ladle Heating Furnace
CCM = Continuous Casting Machine, HSM = Hot Strip Mill
T x W x L = Thickness X Width X Length

1Mpa=1N/mm²
YS = Yield Strength
UTS = Ultimate Tensile Strength
EL = %Elongation on standard gauge length 5.65√A0 for > 3.0mm and 80 mm GL for < 3.0 mm nominal thickness.
CE=[C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15]

Chemistry = Ladle sample analysis.
Tensile Test Piece: Transverse
Test Temperature: Ambient (25°C ±2°)

Certified By
Authorized signatory
(HSM Technology Excellence)
For JSW Steel Ltd.

