



TEST CERTIFICATE FOR HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL

Test Certificate No.: 7105939107

Date : 27.08.2023
 Product : Hot Rolled Coils
 SO No. : 402012028
 SO Date : 14.08.2023

We certified that the material described below fully conforms to IS 2062:2011. Chemical composition and Mechanical properties of the product, as tested in accordance with the Scheme of Testing and Inspection contained in the BIS Certification Marks Licence No.CM/L-7189081, are as indicated below against each order No.
 (PLEASE REFER TO IS 2062:2011 FOR DETAILS OF SPECIFICATION REQUIREMENTS)

Specification : IS 2062:2011 E250BR					Chemical Composition																			
Specification Requirements					C %	Mn %	S %	P %	Si %	Al %	N ppm	B ppm	Nb %	V %	Ti %	Cr %	Mo %	Ni %	Cu %	MAE %	C Eq%	Killing		
Min										0.020										0				
Max					0.220	1.500	0.045	0.045	0.400		120										0			
Cast / Heat No.	Coil No. / Packet No.	Nominal Size (mm) T X W X L	Pcs	Qty. MT	Test Results																			
B019629	0223103477	9.80 x 1500 x C		30.378	0.1630	0.656	0.0040	0.009	0.056	0.045	42.0		0.001	0.001	0.002				0.005	0.004	0.2727			
Total weight in Metric Tonnes				30.378	Grand total of coils / packets							1												
Specification : IS 2062:2011 E250BR					Mechanical Properties																			
Specification Requirements					Tensile direction	YS MPa	UTS MPa	GL mm	EI %	YS/UTS ratio	Bend direction	Bend dia. mm	Bend result	CVN Impact direction	CVN Impact temp. °C	CVN Impact avg.energy J	Hardness HV ₄₀	Hardness HRb	GS No.	IR %	HER %	ECV mm	SET	
Min					T	250.0	410.0		23.0		T													
Max																								
Cast / Heat No.	Coil No. / Packet No.	Nominal Size (mm) T X W X L	Pcs	Qty. MT	Test Results																			
B019629	0223103477	9.8 x 1500 x C		30.378	T	353.00	453.00	5.65SR	31.00	0.779	T	2.0t	Ok											

This is to certify that the above mentioned products produced and supplied by JSW Steel Ltd, Dolvi works do not contain any radioactive element higher than the natural level. The product or packing material does not contain any hazardous substances as per RoHS norms

Billing Doc No. :7105939107 Invoice No. :23DO2700147648 Mode of transport :Rail Vehicle No. :	Process Route : BOF-ARS-LHF-CCM-HSM Fully killed steel Legends : BOF = Basic Oxygen Furnace, ARS = Argon Rinsing station LHF =Ladle Heating Furnace CCM = Continuous Casting Machine,RH = RH Degasser,HSM = Hot Strip Mill T x W x L = Thickness x Width x Length Chemical analysis = Ladle sample analysis, 1 MPa = 1N/mm ² GL = Gauge Length,YS = Yield Strength,UTS = Ultimate Tensile Strength ,EI= Total elongation on standard GL, CVN = Charpy V-notch, L = Longitudinal, T = Transverse. °C = Degree Centigrade, GS = ASTM Grain Size, IR = Inclusion Rating, ECV = Erichsen Cupping Value, SET = Strainage Embrittlement Test, MAE = Micro Alloying Elements, C Eq%= Carbon Equivalent = [C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15], HER = Hole Expansion Ratio,RoHS = Restriction of Hazardous Substances The material supplied conforms to the specified dimensions and tolerances We certify that material comply the certification as per EN 10204:2004 type 3.1.	 Pankaj Khasne Deputy General Manager Quality and System For JSW Steel Ltd.
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TEST CERTIFICATE FOR HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL

Test Certificate No.: 7105905767

Date : 22.08.2023
 Product : Hot Rolled Coils
 SO No. : 402012028
 SO Date : 14.08.2023

We certified that the material described below fully conforms to IS 2062:2011. Chemical composition and Mechanical properties of the product, as tested in accordance with the Scheme of Testing and Inspection contained in the BIS Certification Marks Licence No.CML-7189081, are as indicated below against each order No.
 (PLEASE REFER TO IS 2062:2011 FOR DETAILS OF SPECIFICATION REQUIREMENTS)

Specification : IS 2062:2011 E250BR					Chemical Composition																									
Specification Requirements					Min	C %	Mn %	S %	P %	Si %	Al %	N ppm	B ppm	Nb %	V %	Ti %	Cr %	Mo %	Ni %	Cu %	MAE %	C Eq%	Killing							
					Max	0.220	1.500	0.045	0.045	0.400		120									0									
Cast / Heat No.	Coil No. / Packet No.	Nominal Size (mm) T X W X L	Pcs	Qty. MT	Test Results																									
B019635	Q223103475	9.80 x 1500 x C		29.748	0.1550	0.694	0.0060	0.019	0.052	0.048	37.0									0.002	0.001					0.006	0.003	0.2711		
Total weight in Metric Tonnes				29.748	Grand total of coils / packets				1																					
Specification : IS 2062:2011 E250BR					Mechanical Properties																									
Specification Requirements					Min	Tensile direction	YS MPa	UTS MPa	GL mm	EI %	YS/UTS ratio	Bend direction	Bend dia., mm	Bend result	CVN Impact direction	CVN Impact temp., °C	CVN Impact avg.energy J	Hardness HV ₁₀	Hardness HRb	GS No.	IR	HER %	ECV mm	SET						
					Max	T	250.0	410.0		23.0		T																		
Cast / Heat No.	Coil No. / Packet No.	Nominal Size (mm) T X W X L	Pcs	Qty. MT	Test Results																									
B019635	Q223103475	9.8 x 1500 x C		29.748	T	358.90	481.80	5.65SR	30.00	0.745	T	2.0t	Ok		20.00	78.000														

This is to certify that the above mentioned products produced and supplied by JSW Steel Ltd, Dolvi works do not contain any radioactive element higher than the natural level. The product or packing material does not contain any hazardous substances as per RoHS norms

Billing Doc No. :7105905767 Invoice No. :23DO2700147651 Mode of transport :Rail Vehicle No. :	Process Route : CONARC-LHF-CSP. Fully killed steel Legends : CONARC = ConArc Furnance,LHF = Laddle Heating Furance, CSP =Compact Strip Production T x W x L = Thickness x Width x Length Chemical analysis = Laddle sample analysis, 1 MPa = 1N/mm2 GL = Gauge Length,YS = Yield Strength,UTS = Ultimate Tensile Strength, EI = Total elongation on standard GL, CVN = Charpy V-notch, L = Longitudinal, T = Transverse. °C = Degree Centigrade, GS = ASTM Grain Size, IR = Inclusion Rating, ECV = Erichsen Cupping Value, SET = Strainag Embrittlement Test, MAE = Micro Alloying Elements, C Eq% = Carbon Equivalent=[C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15] HER = Hole Expansion Ratio, RoHS = Restriction of Hazardous Substances The material supplied conforms to the specified dimensions and tolerances. We certify that material comply the certification as per EN 10204:2004 type 3.1.	 Pankaj Khasne Deputy General Manager Quality and System For JSW Steel Ltd.
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TEST CERTIFICATE FOR HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL


Test Certificate No.: 7105933501

Date : 27.08.2023
 Product : Hot Rolled Coils
 SO No. : 402012028
 SO Date : 14.08.2023

We certified that the material described below fully conforms to IS 2062:2011. Chemical composition and Mechanical properties of the product, as tested in accordance with the Scheme of Testing and Inspection contained in the BIS Certification Marks Licence No.CML-7189081, are as indicated below against each order No.
 (PLEASE REFER TO IS 2062:2011 FOR DETAILS OF SPECIFICATION REQUIREMENTS)

Specification : IS 2062:2011 E250BR					Chemical Composition																						
Specification Requirements					C %	Mn %	S %	P %	Si %	Al %	N ppm	B ppm	Nb %	V %	Ti %	Cr %	Mo %	Ni %	Cu %	MAE %	C Eq%	Killing					
Min										0.020										0							
Max					0.220	1.500	0.045	0.045	0.400		120									0							
Cast / Heat No.	Coil No. / Packet No.	Nominal Size (mm) T X W X L	Pcs	Qty. MT	Test Results																						
B019635	0223103480	9.80 x 1500 x C		30.146	0.1580	0.657	0.0110	0.014	0.065	0.046	40.0			0.001	0.002				0.006	0.003	0.2679						
Total weight in Metric Tonnes				30.146	Grand total of coils / packets							1															
Specification : IS 2062:2011 E250BR					Mechanical Properties																						
Specification Requirements					Tensile direction	YS MPa	UTS MPa	GL mm	EI %	YS/UTS ratio	Bend direction	Bend dia., mm	Bend result	CVN Impact direction	CVN Impact temp., °C	CVN Impact avg.energy J	Hardness HV ₁₀	Hardness HRb	GS No.	IR %	HER %	ECV mm	SET				
Min					T	250.0	410.0		23.0		T																
Max																											
Cast / Heat No.	Coil No. / Packet No.	Nominal Size (mm) T X W X L	Pcs	Qty. MT	Test Results																						
B019635	0223103480	9.8 x 1500 x C		30.146	T	382.00	477.00	5.65SR	29.00	0.801	T	2.0t	Ok		20.00	75.000											

This is to certify that the above mentioned products produced and supplied by JSW Steel Ltd, Dolvi works do not contain any radioactive element higher than the natural level. The product or packing material does not contain any hazardous substances as per RoHS norms

Billing Doc No. :7105933501 Invoice No. :23DO2700147652 Mode of transport :Rail Vehicle No. :	Process Route : BOF-ARS-LHF-CCM-HSM Fully killed steel Legends : BOF = Basic Oxygen Furnace, ARS = Argon Rinsing station LHF =Ladle Heating Furnace CCM = Continuous Casting Machine,RH = RH Degasser,HSM = Hot Strip Mill T x W x L = Thickness x Width x Length Chemical analysis = Laddle sample analysis, 1 MPa = 1N/mm2 GL = Gauge Length,YS = Yield Strength,UTS = Ultimate Tensile Strength ,EI= Total elongation on standard GL, CVN = Charpy V-notch, L = Longitudinal, T = Transverse. °C = Degree Centigrade, GS = ASTM Grain Size, IR = Inclusion Rating, ECV = Erichsen Cupping Value, SET = Strainage Embrittlement Test, MAE = Micro Alloying Elements, C Eq%= Carbon Equivalent = [C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15], HER = Hole Expansion Ratio,RoHS = Restriction of Hazardous Substances The material supplied conforms to the specified dimensions and tolerances We certify that material comply the certification as per EN 10204:2004 type 3.1.	 Pankaj Khasne Deputy General Manager Quality and System For JSW Steel Ltd.
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