TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750189 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

o. : 3559893 **:** H T_R LLED_ IL PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
01 K400990380 K400990380 A176055 28.250 1		0.1360	0.8350	0.0086	0.0140	0.0070	0.0500	35	0.2832	0.0270	0.0090	0.0010	0.0010	0.0250	0.0010	0.0010		0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS MPa	EL %	CIM J	CIMT ℃	YS MPa	BND_2T
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
01 K400990380 K400990380 A176055 28.250 1		432	30	174.0000	27.00	281	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

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Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750189 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

MATERIAL No. : 3559893 **PRODUCT:** HOT_ROLLED_COILS

PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
02 K400990360 K400990360 A276061 27.990 1		0.1350	0.8020	0.0042	0.0160	0.0250	0.0520	47	0.2768	0.0260	0.0110	0.0010	0.0010	0.0270	0.0010	0.0010	23.0000	0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

		UTS	EL	CIM	CIMT	YS	BND_2T
		MPa	%	J	℃	MPa	
Section (TxWxL): 12.000x1800.000mm							
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
02 K400990360 K400990360 A276061 27.990 1		446	31	154.0000	27.00	308	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

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Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750195 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

o. : 3559893 **:** HOT_ROLLED_COILS PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
01 K401000281 K401000281 A276050 28.120 1		0.1440	0.8650	0.0051	0.0190	0.0100	0.0380	35	0.2965	0.0270	0.0120	0.0010	0.0010	0.0260	0.0010	0.0010		0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS	EL	CIM	CIMT	YS	BND_2T
		MPa	%	J	℃	MPa	
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
01 K401000281 K401000281 A276050 28.120 1		435	33	171.0000	27.00	290	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

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Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750195 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

MATERIAL No. : 3559893 **PRODUCT:** HOT_ROLLED_COILS PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
02 K400990270 K400990270 A176053 28.090 1		0.1410	0.8400	0.0058	0.0170	0.0070	0.0500	28	0.2899	0.0300	0.0110	0.0010	0.0010	0.0260	0.0010	0.0010		0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS	EL	CIM	CIMT	YS	BND_2T
		MPa	%	J	℃	MPa	
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
02 K400990270 K400990270 A176053 28.090 1		450	27	158.0000	27.00	293	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

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Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750200 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

o. : 3559893 **:** HOT_ROLLED_COILS PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
01 K401000331 K401000331 A276052 28.260 1		0.1340	0.8200	0.0050	0.0150	0.0090	0.0470	34	0.2796	0.0300	0.0120	0.0010	0.0010	0.0260	0.0010	0.0010		0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS	EL	CIM	CIMT	YS	BND_2T
		MPa	%	J	℃	MPa	
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
01 K401000331 K401000331 A276052 28.260 1		438	27	168.0000	27.00	296	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

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Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750200 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

o. : 3559893 **:** HOT_ROLLED_COILS PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
02 K400990261 K400990261 A176049 27.960 1		0.1380	0.8200	0.0076	0.0160	0.0080	0.0600	34	0.2819	0.0220	0.0100	0.0010	0.0010	0.0270	0.0010	0.0010		0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS MPa	EL %	CIM J	CIMT ℃	YS MPa	BND_2T
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
02 K400990261 K400990261 A176049 27.960 1		445	30	181.0000	27.00	299	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750205 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

MATERIAL No. : 3559893 **PRODUCT:** HOT_ROLLED_COILS

PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
01 K400990400 K400990400 A176051 28.230 1		0.1380	0.8100	0.0060	0.0140	0.0060	0.0430	30	0.2812	0.0270	0.0100	0.0010	0.0010	0.0260	0.0010	0.0010		0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS	EL	CIM	CIMT	YS	BND_2T
		MPa	%	J	℃	MPa	
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
01 K400990400 K400990400 A176051 28.230 1		440	26	168.0000	27.00	290	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750205 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

MATERIAL No. : 3559893 **PRODUCT:** HOT_ROLLED_COILS

PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
02 K400990390 K400990390 A276054 28.480 1		0.1360	0.8300	0.0047	0.0120	0.0090	0.0440	46	0.2823	0.0260	0.0100	0.0010	0.0010	0.0250	0.0010	0.0010	29.0000	0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS MPa	EL %	CIM J	CIMT ℃	YS MPa	BND_2T
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
02 K400990390 K400990390 A276054 28.480 1		447	29	176.0000	27.00	298	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750209 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

MATERIAL No. : 3559893 **PRODUCT:** HOT_ROLLED_COILS

PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
01 K401000290 K401000290 A176051 28.240 1		0.1380	0.8100	0.0060	0.0140	0.0060	0.0430	30	0.2812	0.0270	0.0100	0.0010	0.0010	0.0260	0.0010	0.0010		0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS	EL	CIM	CIMT	YS	BND_2T
		MPa	%	J	℃	MPa	
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
01 K401000290 K401000290 A176051 28.240 1		440	26	168.0000	27.00	290	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750209 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

o. : 3559893 **:** HOT_ROLLED_COILS PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
02 K401000341 K401000341 A276063 27.660 1		0.1460	0.8450	0.0045	0.0120	0.0130	0.0580	55	0.2958	0.0280	0.0170	0.0010	0.0010	0.0270	0.0010	0.0010	28.0000	0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

		UTS	EL	CIM	CIMT	YS	BND_2T
		MPa	%	J	℃	MPa	
Section (TxWxL): 12.000x1800.000mm							
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
02 K401000341 K401000341 A276063 27.660 1		467	30	163.0000	27.00	328	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750214 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

o. : **:** PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
01 K401000321 K401000321 A176062 27.780 1		0.1300	0.8200	0.0103	0.0120	0.0100	0.0600	31	0.2745	0.0240	0.0130	0.0010	0.0010	0.0270	0.0010	0.0010		0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS	EL	CIM	CIMT	YS	BND_2T
		MPa	%	J	℃	MPa	
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
01 K401000321 K401000321 A176062 27.780 1		442	28	154.0000	27.00	296	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750214 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

o. : 3559893 **:** HOT_ROLLED_COILS PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
02 K400990240 K400990240 A176053 28.320 1		0.1410	0.8400	0.0058	0.0170	0.0070	0.0500	28	0.2899	0.0300	0.0110	0.0010	0.0010	0.0260	0.0010	0.0010		0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS	EL	CIM	CIMT	YS	BND_2T
		MPa	%	J	℃	MPa	
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
02 K400990240 K400990240 A176053 28.320 1		450	27	158.0000	27.00	293	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750221 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

O. : 3559893 **:** HOT_ROLLED_COILS PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
01 K400970420 K400970420 A176055 28.260 1		0.1360	0.8350	0.0086	0.0140	0.0070	0.0500	35	0.2832	0.0270	0.0090	0.0010	0.0010	0.0250	0.0010	0.0010		0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS MPa	EL %	CIM J	CIMT ℃	YS MPa	BND_2T
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
01 K400970420 K400970420 A176055 28.260 1		432	30	174.0000	27.00	281	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

05.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750221 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

o. : 3559893 **:** HOT_ROLLED_COILS PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
02 K401070311 K401070311 A176049 27.980 1		0.1380	0.8200	0.0076	0.0160	0.0080	0.0600	34	0.2819	0.0220	0.0100	0.0010	0.0010	0.0270	0.0010	0.0010		0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS MPa	EL %	CIM J	CIMT ℃	YS MPa	BND_2T
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
02 K401070311 K401070311 A176049 27.980 1		449	31	181.0000	27.00	307	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

05.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750223 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

MATERIAL No. : 3559893 **PRODUCT:** HOT_ROLLED_COILS

PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
01 K400990280 K400990280 A176053 28.230 1		0.1410	0.8400	0.0058	0.0170	0.0070	0.0500	28	0.2899	0.0300	0.0110	0.0010	0.0010	0.0260	0.0010	0.0010		0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS	EL	CIM	CIMT	YS	BND_2T
		MPa	%	J	℃	MPa	
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
01 K400990280 K400990280 A176053 28.230 1		450	27	158.0000	27.00	293	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750223 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

MATERIAL No. : 3559893 **PRODUCT:** HOT_ROLLED_COILS

PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
02 K401000270 K401000270 A176051 28.270 1		0.1380	0.8100	0.0060	0.0140	0.0060	0.0430	30	0.2812	0.0270	0.0100	0.0010	0.0010	0.0260	0.0010	0.0010		0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS MPa	EL %	CIM J	CIMT ℃	YS MPa	BND_2T
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
02 K401000270 K401000270 A176051 28.270 1		440	26	168.0000	27.00	290	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750227 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

MATERIAL No. : 3559893 **PRODUCT:** HOT_ROLLED_COILS PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
01 K400990430 K400990430 A276054 28.340 1		0.1360	0.8300	0.0047	0.0120	0.0090	0.0440	46	0.2823	0.0260	0.0100	0.0010	0.0010	0.0250	0.0010	0.0010	29.0000	0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

		UTS	EL	CIM	CIMT	YS	BND_2T
		MPa	%	J	℃	MPa	
Section (TxWxL): 12.000x1800.000mm							
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
01 K400990430 K400990430 A276054 28.340 1		447	29	176.0000	27.00	298	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750227 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

MATERIAL No. : 3559893 **PRODUCT:** HOT_ROLLED_COILS

PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
02 K401000351 K401000351 A176060 28.230 1		0.1420	0.8590	0.0050	0.0210	0.0120	0.0500	31	0.2940	0.0290	0.0130	0.0010	0.0010	0.0270	0.0010	0.0010		0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS MPa	EL %	CIM J	CIMT ℃	YS MPa	BND_2T
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
02 K401000351 K401000351 A176060 28.230 1		451	32	165.0000	27.00	304	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750229 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

MATERIAL No. : 3559893 **PRODUCT:** HOT_ROLLED_COILS

PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
01 K400970380 K400970380 A176058 28.170 1		0.1350	0.8450	0.0033	0.0240	0.0200	0.0600	53	0.2852	0.0330	0.0120	0.0010	0.0010	0.0240	0.0010	0.0010	32.0000	0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS MPa	EL %	CIM J	CIMT ℃	YS MPa	BND_2T
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
01 K400970380 K400970380 A176058 28.170 1		466	28	167.0000	27.00	331	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

04.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750229 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

o. : 55 **:** _ _ PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
02 K400950780 K400950780 A176060 28.320 1		0.1420	0.8590	0.0050	0.0210	0.0120	0.0500	31	0.2940	0.0290	0.0130	0.0010	0.0010	0.0270	0.0010	0.0010		0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS MPa	EL %	CIM J	CIMT ℃	YS MPa	BND_2T
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
02 K400950780 K400950780 A176060 28.320 1		443	32	165.0000	27.00	293	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

04.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750232 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

o. : 3559893 **:** HOT_ROLLED_COILS PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
01 K400990250 K400990250 A176053 28.140 1		0.1410	0.8400	0.0058	0.0170	0.0070	0.0500	28	0.2899	0.0300	0.0110	0.0010	0.0010	0.0260	0.0010	0.0010		0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS	EL	CIM	CIMT	YS	BND_2T
		MPa	%	J	℃	MPa	
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
01 K400990250 K400990250 A176053 28.140 1		450	27	158.0000	27.00	293	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

04.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750232 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

MATERIAL No. : 3559893 **PRODUCT:** HOT_ROLLED_COILS

PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
02 K400950280 K400950280 A276050 28.220 1		0.1440	0.8650	0.0051	0.0190	0.0100	0.0380	35	0.2965	0.0270	0.0120	0.0010	0.0010	0.0260	0.0010	0.0010		0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS	EL	CIM	CIMT	YS	BND_2T
		MPa	%	J	℃	MPa	
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
02 K400950280 K400950280 A276050 28.220 1		461	28	171.0000	27.00	304	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

04.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750237 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

MATERIAL No. : 3559893 **PRODUCT:** HOT_ROLLED_COILS

PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
01 K400960270 K400960270 A276054 28.280 1		0.1360	0.8300	0.0047	0.0120	0.0090	0.0440	46	0.2823	0.0260	0.0100	0.0010	0.0010	0.0250	0.0010	0.0010	29.0000	0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

		UTS	EL	CIM	CIMT	YS	BND_2T
		MPa	%	J	℃	MPa	
Section (TxWxL): 12.000x1800.000mm							
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
01 K400960270 K400960270 A276054 28.280 1		447	29	176.0000	27.00	298	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

04.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
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Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750239 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

MATERIAL No. : 3559893 **PRODUCT:** HOT_ROLLED_COILS

PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
01 K400960250 K400960250 A176062 28.140 1		0.1300	0.8200	0.0103	0.0120	0.0100	0.0600	31	0.2745	0.0240	0.0130	0.0010	0.0010	0.0270	0.0010	0.0010		0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS	EL	CIM	CIMT	YS	BND_2T
		MPa	%	J	℃	MPa	
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
01 K400960250 K400960250 A176062 28.140 1		442	28	154.0000	27.00	298	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

04.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750243 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

MATERIAL No. : 3559893 **PRODUCT:** HOT_ROLLED_COILS

PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
01 K400960230 K400960230 A176058 28.110 1		0.1350	0.8450	0.0033	0.0240	0.0200	0.0600	53	0.2852	0.0330	0.0120	0.0010	0.0010	0.0240	0.0010	0.0010	32.0000	0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

		UTS	EL	CIM	CIMT	YS	BND_2T
		MPa	%	J	℃	MPa	
Section (TxWxL): 12.000x1800.000mm							
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
01 K400960230 K400960230 A176058 28.110 1		466	28	167.0000	27.00	331	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

04.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750243 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

o. : 3559893 **:** HOT_ROLLED_COILS PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
02 K400950770 K400950770 A276059 28.240 1		0.1350	0.8220	0.0087	0.0190	0.0130	0.0660	43	0.2811	0.0310	0.0130	0.0010	0.0010	0.0250	0.0010	0.0010		0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS MPa	EL %	CIM J	CIMT ℃	YS MPa	BND_2T
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
02 K400950770 K400950770 A276059 28.240 1		445	30	167.0000	27.00	301	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

04.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750251 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

MATERIAL No. : 3559893 **PRODUCT:** HOT_ROLLED_COILS

PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
01 K400990340 K400990340 A276061 27.810 1		0.1350	0.8020	0.0042	0.0160	0.0250	0.0520	47	0.2768	0.0260	0.0110	0.0010	0.0010	0.0270	0.0010	0.0010	23.0000	0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS MPa	EL %	CIM J	CIMT ℃	YS MPa	BND_2T
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
01 K400990340 K400990340 A276061 27.810 1		446	31	154.0000	27.00	308	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750251 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
02 K400990370 K400990370 A276061 27.760 1		0.1350	0.8020	0.0042	0.0160	0.0250	0.0520	47	0.2768	0.0260	0.0110	0.0010	0.0010	0.0270	0.0010	0.0010	23.0000	0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS MPa	EL %	CIM J	CIMT ℃	YS MPa	BND_2T
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
02 K400990370 K400990370 A276061 27.760 1		446	31	154.0000	27.00	308	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750253 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

MATERIAL No. : 3559893 **PRODUCT:** HOT_ROLLED_COILS

PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
01 K400990350 K400990350 A276059 28.290 1		0.1350	0.8220	0.0087	0.0190	0.0130	0.0660	43	0.2811	0.0310	0.0130	0.0010	0.0010	0.0250	0.0010	0.0010		0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS	EL	CIM	CIMT	YS	BND_2T
		MPa	%	J	℃	MPa	
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
01 K400990350 K400990350 A276059 28.290 1		445	30	167.0000	27.00	301	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

IS 2062

CM/L-5200040167

Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750253 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

MATERIAL No. : 3559893 **PR DU T:** HOT_ROLLED_COILS PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
02 K400990420 K400990420 A276054 28.670 1		0.1360	0.8300	0.0047	0.0120	0.0090	0.0440	46	0.2823	0.0260	0.0100	0.0010	0.0010	0.0250	0.0010	0.0010	29.0000	0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS MPa	EL %	CIM J	CIMT ℃	YS MPa	BND_2T
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
02 K400990420 K400990420 A276054 28.670 1		447	29	176.0000	27.00	298	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750476 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

MATERIAL No. : 3559893 **PRODUCT:** HOT_ROLLED_COILS

PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
01 K400990320 K400990320 A176058 28.220 1		0.1350	0.8450	0.0033	0.0240	0.0200	0.0600	53	0.2852	0.0330	0.0120	0.0010	0.0010	0.0240	0.0010	0.0010	32.0000	0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS MPa	EL %	CIM J	CIMT ℃	YS MPa	BND_2T
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
01 K400990320 K400990320 A176058 28.220 1		466	28	167.0000	27.00	331	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750476 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

o. : 3559893 **:** HOT_ROLLED_COILS PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
02 K400990290 K400990290 A176053 28.260 1		0.1410	0.8400	0.0058	0.0170	0.0070	0.0500	28	0.2899	0.0300	0.0110	0.0010	0.0010	0.0260	0.0010	0.0010		0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS	EL	CIM	CIMT	YS	BND_2T
		MPa	%	J	℃	MPa	
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
02 K400990290 K400990290 A176053 28.260 1		450	27	158.0000	27.00	293	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750479 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

o. : **:** PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
01 K400990300 K400990300 A176049 28.390 1		0.1380	0.8200	0.0076	0.0160	0.0080	0.0600	34	0.2819	0.0220	0.0100	0.0010	0.0010	0.0270	0.0010	0.0010		0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS MPa	EL %	CIM J	CIMT ℃	YS MPa	BND_2T
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
01 K400990300 K400990300 A176049 28.390 1		445	30	181.0000	27.00	299	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750479 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

MATERIAL No. : 3559893 **PRODUCT:** HOT_ROLLED_COILS

PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
02 K400990310 K400990310 A176049 28.240 1		0.1380	0.8200	0.0076	0.0160	0.0080	0.0600	34	0.2819	0.0220	0.0100	0.0010	0.0010	0.0270	0.0010	0.0010		0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS MPa	EL %	CIM J	CIMT ℃	YS MPa	BND_2T
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
02 K400990310 K400990310 A176049 28.240 1		445	30	181.0000	27.00	299	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750492 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

MATERIAL No. : 3559893 **PRODUCT:** HOT_ROLLED_COILS

PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
01 K401000310 K401000310 A176060 28.490 1		0.1420	0.8590	0.0050	0.0210	0.0120	0.0500	31	0.2940	0.0290	0.0130	0.0010	0.0010	0.0270	0.0010	0.0010		0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS MPa	EL %	CIM J	CIMT ℃	YS MPa	BND_2T
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
01 K401000310 K401000310 A176060 28.490 1		443	32	165.0000	27.00	293	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750513 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

MATERIAL No. : 3559893 **PRODUCT:** HOT_ROLLED_COILS PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
01 K400990330 K400990330 A276050 28.280 1		0.1440	0.8650	0.0051	0.0190	0.0100	0.0380	35	0.2965	0.0270	0.0120	0.0010	0.0010	0.0260	0.0010	0.0010		0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS	EL	CIM	CIMT	YS	BND_2T
		MPa	%	J	℃	MPa	
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
01 K400990330 K400990330 A276050 28.280 1		461	28	171.0000	27.00	304	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750528 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

MATERIAL No. : 3559893 **PRODUCT:** HOT_ROLLED_COILS

PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
01 K400990410 K400990410 A176049 28.530 1		0.1380	0.8200	0.0076	0.0160	0.0080	0.0600	34	0.2819	0.0220	0.0100	0.0010	0.0010	0.0270	0.0010	0.0010		0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS MPa	EL %	CIM J	CIMT ℃	YS MPa	BND_2T
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
01 K400990410 K400990410 A176049 28.530 1		445	30	181.0000	27.00	299	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

*For further details please visit www.bis.gov.in

Killing type:Steel is fully Aluminium killed
Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

Sample Location:1/4TH OF WIDTH
Tensile & Bend Test Method:IS:1608 & IS:1599
Steel Type:FINE GRAIN STEEL

Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED

TATA STEEL
Tata Steel Limited
Kalinga Nagar Industrial Complex , Duburi , Jajpur, Odisha 755026
Corporate Identity Number: L27100MH1907PLC000260.Website www.tatasteel.com

IS 2062
CM/L-5200040167

TEST CERTIFICATE

TEST CERTIFICATE NO. : 905750534 **DESPATCH DATE:** 17.04.2024 **TEST CERTIFICATE TO:**

[redacted]

MATERIAL No. : 3559893 **PRODUCT:** HOT_ROLLED_COILS

PITHAMPUR (M.P.) 454775

We hereby certify that the above mentioned material is tested in accordance with scheme of testing and inspection contained in BIS certification marks License no. CM/L-5200040167 are as indicated against each section (Please refer to IS 2062 E250 GRADE BR(HOT ROLLED MEDIUM AND HIGH TENSILE STRUCTURAL STEEL:2011)* for details of specification requirements). Legal sanction can be imposed on forging. Improper use of product can cause safety issues. To validate test certificate, Scan QR Code.

TDC No: HH50 Q Code:THH050
Grade: IS 2062 E250 BR
Section(TxWxL): 12.000x1800.000mm

Chemical Analysis, Specifications and Other Information

		C	Mn	S	P	Si	Al	N	C Eq	Cr	Cu	Mo	Nb	Ni	Ti	V	Ca	MA
		%	%	%	%	%	%	PPM	%	%	%	%	%	%	%	%	PPM	%
Specification Requirements as per TDC No HH50	Min						0.0200											
	Max	0.2000	1.3000	0.0300	0.0300	0.1000		120	0.4100								60.0000	0.2000
Itm Batch No. Mother Coil Cast No. Tonnage Pcs.	Test Results																	
01 K401000300 K401000300 A276061 28.080 1		0.1350	0.8020	0.0042	0.0160	0.0250	0.0520	47	0.2768	0.0260	0.0110	0.0010	0.0010	0.0270	0.0010	0.0010	23.0000	0.0030

TDC No: HH50

Mechanical Analysis, Specifications and Other Information

Section (TxWxL): 12.000x1800.000mm

		UTS MPa	EL %	CIM J	CIMT ℃	YS MPa	BND_2T
Speciifcation Requirements as per TDC No. HH50	Min	410	23		27.00	250	
	Max						
Itm Batch No. Mother Coil Cast No. Tonnage	Test Results						
01 K401000300 K401000300 A276061 28.080 1		446	31	154.0000	27.00	308	OK

Process Route-HMDS>BOF>CASOB/LF>CC>HSM
Test Certificate as per EN10204 TYPE 3.1

1 MPa = 1 N/mm2 GL=5.65SQA
YS = Yield Strength UTS = Ultimate Tensile Strength
Charpy Impact (CIM) test direction Longitudinal

El= % elongation Chemical Analyses: Ladle Sample
TxWxL = Thickness x Width X Length
CE (Carbon Equivalent) = (C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15)

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Material is ROHS Compliant
Tensile & Bend Test transverse to rolling direction

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Tensile & Bend Test Method:IS:1608 & IS:1599
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Micro alloying elements (MA) : Nb+V+Ti
Material clearance date

08.04.2024 Chemical Test Method IS 228
This TC is electronically generated
Supply Condition:AS ROLLED& MILL

Angle Bend:180°
Y_S Determination:LYS METHOD
Gauge Width:12.5mm

Signature Not Verified
Digitally signed by R SUNDARA BHARATHY.
Date: 2024.04.19 17:01:33 IST
Location: Kalinganagar

Head Quality Assurance
TATA STEEL LIMITED