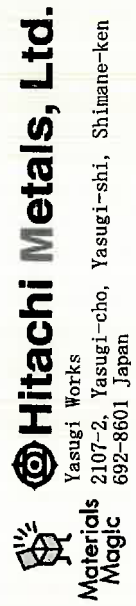


Customer: HITACHI METALS (INDIA) PRIVATE LIMITED.  
NON EOU UNIT



**TEST CERTIFICATE**

CASE No.: 255 HITACHI

Order No.: 100011690(002) Report No.: 280-0621-90 Date: Oct. 07, 2022 Page: 1/1  
 Material: HPM38 Heat No.: C5236C8  
 Condition: Heat Treated Size: R16(+0.6-0.0)X2000-4500  
Quantity (pcs.): 67

1) Chemical Composition %									
Elements	C	SI	MN	CR	MO				
Spec.	-	-	-	-	-				
Ladle	0.38	0.39	0.35	13.31	0.61				

2) Hardness (As Shipped)									
		Spec.		Result					
Item	Test Piece	TP No.	HRC	TP No.	Result				
		29-33	HRC		30.8				

3) Macrostructure									
		Spec.		Result					
Item	Evaluation	TP No.	GOOD	TP No.	Result				
		GOOD	GOOD		GOOD				

4) Microstructure									
		Spec.		Result					
Item	Evaluation	TP No.	GOOD	TP No.	Result				
		GOOD	GOOD		GOOD				

Mass (kg) : 465  
 Our Ref No.: 59-153-68GD-02

For Hitachi Metals (India) Private Limited  
*Romy*  
 Authorised Signatory

Inspection Item	Dimensional Inspection	:GOOD
Visual Inspection	Ultrasonic Inspection	:GOOD
Material Check		:GOOD

Conforms To All Drawing and/or Specification Requirements.  
 We hereby certify that the material described herein has been made and tested in accordance with the requirements of the purchase specification with satisfactory results.

*A. Tabatake*

**TEST CERTIFICATE**

CASE No.: 150  
Order No.: 100011741 (002)  
Material: DAC-EX  
Condition: Annealed

Report No.: 279-1205-90  
Heat No.: C5805  
Date: Sep. 22, 2022  
Page: 1/1

Size: MR428 (+3-0) X2000-4500  
Quantity (pcs.): 1  
Our Ref No.: 59-153-6TE4-02  
Mass (kg): 3268  
3) Hardness (As Shipped)

1) Chemical Composition %										
Elements	C	SI	MN	CR	MO	V				Result
Spec.	-	-	-	-	-	-				-
Ladle	0.39	0.94	0.43	5.11	1.28	0.84				179

2) Heat Treatment									
Test Piece (HT1)									
Item	Spec.	TP No.	Result						
Q. 1030° C X 15min. AQ	-	-	-						
T. 600° C X 60min. AC	-	-	-						

3) Hardness After Heat Treatment (HT1)									
Item	Spec.	TP No.	Result						
Test Piece	-	-	-						
Test Piece	-	-	-						

For Hitachi Metals (India) Private Limited

*Rony*  
Authorized Signatory

Inspection Item	Dimensional Inspection	:GOOD
Visual Inspection	Ultrasonic Inspection	:GOOD
Material Check		:GOOD

Conforms To All Drawing and/or Specification Requirements.  
We hereby certify that the material described herein has been made and tested in accordance with the requirements of the purchase specification with satisfactory results.

*H. Tabatake*

**TEST CERTIFICATE**

**HITACHI**

CASE No.: 153

Order No.: 100011741 (002) Report No.: 279-1318-70 Heat No.: C5805 Date: Sep. 26, 2022 Page: 1/1

Material: DAC-EX Size: MR428 (+3-0) X2000-4500

Condition: Annealed Quantity (pcs.): 1

1) Chemical Composition %									
Elements	C	SI	MN	CR	MO	V			
Spec.	-	-	-	-	-	-			
Ladle	0.39	0.94	0.43	5.11	1.28	0.84			
4) Microstructure									
	Spec.	Result			Spec.	Result			
Item	TP No. →	-	Item	TP No. →	-	Item	TP No. →		
Evaluation	GOOD	GOOD	Evaluation	GOOD	GOOD	Evaluation	GOOD		
5) Decarburization									
Item	TP No. →	GOOD	Item	TP No. →	GOOD	Item	TP No. →		
Evaluation	GOOD	GOOD	Evaluation	GOOD	GOOD	Evaluation	GOOD		
2) Heat Treatment									
Test Piece (HT1)			Test Piece (HT1)			Test Piece (HT1)			Result
Q. 1030° C X 15min. AQ			Q. 1030° C X 15min. AQ			Q. 1030° C X 15min. AQ			TP No. →
T. 600° C X 60min. AC			T. 600° C X 60min. AC			T. 600° C X 60min. AC			183
3) Hardness (As Shipped)									
Item	Spec.			Item	Spec.			Item	Spec.
Test Piece	MAX229 HBW			Test Piece	MAX229 HBW			Test Piece	MIN50 HRC
51.5				51.5				51.5	

For Hitachi Metals (India) Private Limited

*Remy*  
Authorised Signatory

Inspection Item	Dimensional Inspection	:GOOD
Visual Inspection	Ultrasonic Inspection	:GOOD
Material Check		:GOOD

Conforms To All Drawing and/or Specification Requirements.  
We hereby certify that the material described herein has been made and tested in accordance with the requirements of the purchase specification with satisfactory results.

*H. Tabatake*

QUALITY ASSURANCE DEPARTMENT

**TEST CERTIFICATE**

CASE No.: 152      Report No.: 279-1228-60      Heat No.: C5805      Date: Sep. 29, 2022      Page: 1/1  
 Order No.: 100011741 (002)      Size: MR428 (+3-0) X2000-4500  
 Material: DAC-EX      Quantity (pcs.): 1

**HITACHI**

Condition: Annealed		Mass (kg): 3314	
Our Ref No.: 59-153-6TE4-02		3) Hardness (As Shipped)	
1) Chemical Composition %		7) Hardness After Heat Treatment (HT1)	
Elements	C	Spec.	Spec.
Spec.	-	TP No. →	TP No. →
Ladle	0.39	Test Piece	MAX229 HBW 183
4) Macrostructure		5) Decarburization	
SI	0.94	CR	5.11
MN	0.43	MO	1.28
V	-	CR	5.11
MO	-	TP No. →	TP No. →
CR	-	Spec.	GOOD
2) Heat Treatment	Q. 1030° C X 15min. AQ	Item	GOOD
Test Piece (HT1)	T. 600° C X 60min. AC	Evaluation	GOOD
Item	Result	Item	Result
Spec.	GOOD	Spec.	GOOD
TP No. →	GOOD	TP No. →	MIN50 HRC
Item	GOOD	Item	51.3
Evaluation	GOOD	Test Piece	51.3

For Hitachi Metals (India) Private Limited  
*Romy*  
 Authorised Signatory

Inspection Item	Dimensional Inspection	:GOOD
Visual Inspection	Ultrasonic Inspection	:GOOD
Material Check		:GOOD

Conforms To All Drawing and/or Specification Requirements.  
 We hereby certify that the material described herein has been  
 made and tested in accordance with the requirements of  
 the purchase specification with satisfactory results.

*H. Takatsunaka*  
 QUALITY ASSURANCE DEPARTMENT

**TEST CERTIFICATE**

**HITACHI**

CASE No.: 151

Order No.: 100011741(002) Report No.: 279-1228-00 Heat No.: C5805 Date: Sep. 29, 2022 Page: 1/1  
 Material: DAC-EX Size: MR428 (+3-0) X2000-4500  
 Condition: Annealed Quantity (pcs.): 1

1) Chemical Composition %									
Elements	C	SI	MN	CR	MO	V			
Spec.	-	-	-	-	-	-			
Ladle	0.39	0.94	0.43	5.11	1.28	0.84			
4) Macrostructure									
Item	Spec.	Result							
TP No. →	GOOD	GOOD							
Evaluation	GOOD	GOOD							
5) Microstructure									
Item	Spec.	Result							
TP No. →	GOOD	GOOD							
Evaluation	GOOD	GOOD							
2) Heat Treatment									
Test Piece (HT1)									
Q. 1030° C X 15min. AQ									
T. 600° C X 60min. AC									
6) Decarburization									
Item	Spec.	Result							
TP No. →	GOOD	GOOD							
Evaluation	GOOD	GOOD							
7) Hardness After Heat Treatment (HT1)									
Item	Spec.	Result							
TP No. →	MIN50 HRC	52.1							
Test Piece	MIN50 HRC	52.1							

Mass (kg): 3444  
 Our Ref No.: 59-153-6TF4-02  
 3) Hardness (As Shipped)

For Hitachi Metals (India) Private Limited

*Rony*  
 Authorised Signatory

Conforms To All Drawing and/or Specification Requirements.  
 We hereby certify that the material described herein has been made and tested in accordance with the requirements of the purchase specification with satisfactory results.

Inspection Item	Dimensional Inspection	:GOOD
Visual Inspection	Ultrasonic Inspection	:GOOD
Material Check		:GOOD

*H. Tabataken*



**TEST CERTIFICATE**

CASE No.: 158 HITACHI  
Order No.: 100011741(002) Date: Sep. 29, 2022 Page: 1/1  
Report No.: 279-1516-40  
Material: DAC-EX Heat No.: C5805  
Condition: Annealed Size: MR428 (+3-0) X2000-4500  
Quantity (pcs.): 1 Mass (kg): 3308  
Our Ref No.: 59-153-GTE4-02  
3) Hardness (As Shipped)

1) Chemical Composition %										
Elements	C	SI	MN	CR	MO	V				Result
Spec.	-	-	-	-	-	-				-
Ladle	0.39	0.94	0.43	5.11	1.28	0.84				-
4) Macrostructure										
Item	Spec.	Result								Result
TP No. →	GOOD	GOOD								GOOD
Evaluation										GOOD
5) Microstructure										
Item	Spec.	Result								Result
TP No. →	GOOD	GOOD								GOOD
Evaluation										GOOD
2) Heat Treatment										
Test Piece	HTI									Result
Q. 1030° C X 15min. AQ										-
T. 600° C X 60min. AC										-
6) Decarburization										
Item	Spec.	Result								Result
TP No. →	GOOD	GOOD								GOOD
Evaluation										GOOD
7) Hardness After Heat Treatment (HTI)										
Item	Spec.	Result								Result
TP No. →	MAX229 HBW	183								183
Test Piece										MINEO HRC
Evaluation										51.1

For Hitachi Metals (India) Private Limited

*Rony*  
Authorized Signatory

Conforms To All Drawing and/or Specification Requirements.  
We hereby certify that the material described herein has been made and tested in accordance with the requirements of the purchase specification with satisfactory results.

Inspection Item	Dimensional Inspection	:GOOD
Visual Inspection	Ultrasonic Inspection	:GOOD
Material Check		:GOOD

*H. Takasuzuka*  
QUALITY ASSURANCE DEPARTMENT

**TEST CERTIFICATE**

CASE No.: 157 HITACHI  
Order No.: 100011741(002) Page: 1/1  
Report No.: 279-1419-00  
Material: DAC-EX  
Condition: Annealed  
Heat No.: C5805  
Date: Sep. 29, 2022  
Size: MR428(+3-0) X2000-4500  
Quantity (pcs.): 1  
Mass (kg): 3434  
Our Ref No.: 59-153-6TE4-02

1) Chemical Composition %											
Elements	C	SI	MN	CR	MO	V				Spec.	Result
Spec.	-	-	-	-	-	-				TP No. →	-
Ladle	0.39	0.94	0.43	5.11	1.28	0.84				TP No. →	-
4) Macrostructure											
Item	Spec.	Result								Spec.	Result
Item	TP No. →	-								TP No. →	-
Evaluation	GOOD	GOOD								TP No. →	-
5) Microstructure											
Item	Spec.	Result								Spec.	Result
Item	TP No. →	-								TP No. →	-
Evaluation	GOOD	GOOD								TP No. →	-
2) Heat Treatment											
Test Piece	HT1										
Q. 1030° C X 15min. AQ											
T. 600° C X 60min. AC											
6) Decarburization											
Item	Spec.	Result								Spec.	Result
Item	TP No. →	-								TP No. →	-
Evaluation	GOOD	GOOD								TP No. →	-
7) Hardness After Heat Treatment (HT1)											
Test Piece	Spec.	Result								Spec.	Result
Test Piece	MAY229 HBW	187								TP No. →	-
Evaluation	GOOD	GOOD								TP No. →	-

For Hitachi Metals (India) Private Limited

*Romy*  
Authorised Signatory

Conforms To All Drawing and/or Specification Requirements.  
We hereby certify that the material described herein has been made and tested in accordance with the requirements of the purchase specification with satisfactory results.

*H. Taketsumoto*  
QUALITY ASSURANCE DEPARTMENT

Inspection Item	Dimensional Inspection	: GOOD
Visual Inspection	Ultrasonic Inspection	: GOOD
Material Check		: GOOD