



# Consultancy work for Academic year 2020-2021

Sr. No	Name of Company	Test Required	No. of Samples	Date	Amount
1	Prashant Enterprises	Micro Structural Analysis of Nodular Cast Iron	1	10-12-2020	1000
2	Yashoda Iron Industries	Microstructural Analysis of Graphite in Cast Iron	1	10-12-2020	1000
3	Padmavati Auto Components	Micro Structural Analysis of Nodular Cast Iron	2	15-12-2020	2000
4	Padmavati Auto Components	Micro Structural Analysis of Nodular Cast Iron	2	15-12-2020	2000
5	Baramati Engineering Pvt. Ltd.	Grain Size Measurement	2	19-12-2020	2000
6	Manugraph India Ltd.	Micro Structural Analysis	1	29-12-2020	1000
7	Babasaheb Industries	Micro structural Analysis of Graphite in Cast Iron	1	05-01-2021	1000
8	Siddhivinayak Founders	Volume Fraction of phases	1	08-01-2021	1450
9	IndraniTechnocrafts	Micro Structural Analysis	1	11-01-2021	1000
10	Maurya Industries	Micro Structural Analysis of Nodular Cast Iron	1	19-01-2021	1000
11	Yashoda Iron Industries	Volume Fraction of phases	1	21-01-2021	1450
12	Prashant Enterprises	Micro Structural Analysis of Nodular Cast Iron	1	28-01-2021	1000
13	Perfect Pins	Micro Structural Analysis	2	04-02-2021	2000
14	Baramati Engineering Pvt. Ltd.	Grain Size Measurement	1	06-02-2021	1000





		Total Amount		St. N1	29800
24	Dattachaya Chains Pvt. Ltd.	Micro Structural Analysis	1	19-03-2021	1000
23	Unique Auto Assemblies Pvt. Ltd.	Micro Structural Analysis	2	15-03-2021	2000
22	Baramati Engineering Pvt. Ltd.	Grain Size Measurement	. 1	12-03-2021	1000
21	Babasaheb Industries	Volume Fraction of phases	1	03-03-2021	1450
20	Siddhivinayak Founders	Microstructural Analysis of Graphite in Cast Iron	( <b>1</b> ;	22-02-2021	1000
19	Manugraph India Ltd.	Micro Structural Analysis	1.	22-02-2021	1000
18	Unique Auto Assemblies Pvt. Ltd.	Volume Fraction of phases	- 1	17-02-2021	1450
17	Unique Auto Assemblies Pvt. Ltd.	Micro structural Analysis of Graphite in Cast Iron	1	09-02-2021	1000
16	Padmavati Auto Components	Micro Structural Analysis of Nodular Cast Iron	1	09-02-2021	1000

Consultancy Amount Distributio				
To Department	11920/-			
To College	17880/-			



Notal Officer

B.Voc. & Community College Unit

Vivekanand College, Kolhabur



# **METASIS LAB**

Chemical, Physical, Metallurgical Testing of Metals, Noise, Vibration, Surface Roughness, Salt Spray, PMI. Test, Lux Measurement

B-13, Opp. Kolhapur Axle Ltd., MIDC Shiroli, Kolhapur - 416122. **Cell: +9922437590, 7721995959,** Email: kolhapurmetasys@gmail.com, metasyslab@rediffmail.com, Website: www.metaltestinglab.net

		IN\	/OICE		9
The Prin	cipal	2.	INVOICE NO.	102	DATE - 30.10.2021
	and College	: :	T.C. No As per report		DATE -
	Park , Kolhapur		CH. NO:		DATE -
5			P.O.NO:-		DATE -
Sr. No.	Description		Qty in Nos.	Rate	* Amount
1	Microstructure Analysis		4	500	2000
2	Microhardness Test	₩	6	500	3000
		180			
, n					
	• <sub>2.</sub>	fi:			_
× .		R:			
*	*				
			/2		Xt
	41		Total		5000.00
	-	* * *	CGST @ 9 %		450.00
		4	SGST @ 9 %		450.00
	<b>SAC CODE</b> - 998346				
GSTIN -	27APEPS8440R3ZX	84	Total Amount		5900
Amount	: <b>In Words:-</b> Five Thousar	nd Nine Hund	red Only	100	
	- APEPS8440R	-	asis Lab	30	¥.
	* .	1	asis Lab		
Subject t	o Kolhapur Jurisdiction Only	Authori	sed Signature		W



# **METASIS LAB**

Chemical, Physical, Metallurgical Testing of Metals, Noise, Vibration, Surface Roughness, Salt Spray, PMI. Test, Lux Measurement

B-13, Opp. Kolhapur Axle Ltd., MIDC Shiroli, Kolhapur - 416122. Cell: +9922437590, 7721995959, Email: kolhapurmetasys@gmail.com, metasyslab@rediffmail.com, Website: www.metaltestinglab.net

INVOICE NO. T.C. No As per CH. NO: P.O.NO:-  Qty in Nos.  5 3 1 300 1	552 report  Rate  500 500 10 300	DATE - 30.11.2021  DATE -  DATE -  DATE -  Amount  2500  1500  500  3000
CH. NO: P.O.NO:-  Qty in Nos.  5 3 1 300	<b>Rate</b> 500 500 500 10	DATE -  DATE -  Amount  2500 1500 500
P.O.NO:-  Qty in Nos.  5 3 1 300	500 500 500 10	DATE -  Amount  2500  1500  500
9 Qty in Nos.  5 3 1 1 300	500 500 500 10	2500 1500 500
5 3 1 300	500 500 500 10	2500 1500 500
3 1 300	500 500 10	1500 500
1 300	500 10	500
300	10	1
1		3000
: <b>1</b> *	300	
	300	300
1	1450	1450
Total		9250.00
CGST @ 9 %		832.50
SGST @ 9 %		832.50
Total Amount		10915
ed Fifteen Only	Jar	
W D	New York	
	Total CGST @ 9 % SGST @ 9 %  Total Amount	Total CGST @ 9 % SGST @ 9 %  Total Amount  red Fifteen Only asis Lab



Gat No. 194, Hanuman nagar, Shiye, MIDC Shiroli, Kolhapur. 416 122 Email: atlantametalab@gmail.com Cell: +91-8421246069 +91-9595401694

- Metallurgical Testing
- Failure Analysis
- ♣ Heat Treat Process Analysis
- Material Solutions
- Metallurgical Consulting

Date: 05/12/2020

To,

Nodal Officer

Department of Foundry Technology,

Vivekanand College (Autonomous),

Kolhapur.

Subject: To provide collaborated testing and consultancy services.

Respected sir,

We have metallurgical testing and consultancy setup in MIDC Shiroli, Kolhapur. We are collaborated with your Foundry Technology department. We have requirement of metallurgical testing at your end.

As department of Foundry technology has established a testing setup which is very useful for industrial purpose, we are requesting you to provide necessary support regarding the same. We are attaching a list of samples and details of test requirements along with this letter.

Thanking you,

Yours Sincerely,

Director

Atlanta Metallurgical Services



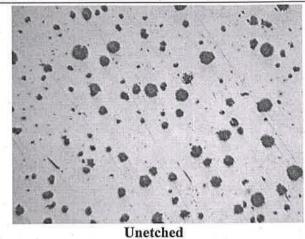


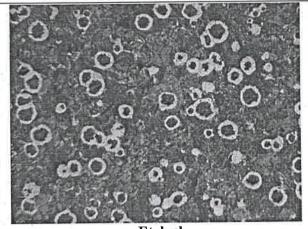
	+Test Repor	rt- Micro Structural Anal	ysis of Nod	ular Cast Iron		
Lab ID- M 2773	3	Test Certificate No 2018011951 Date- 10/12/2			ite- 10/12/2020	
		Prashant Enterprises				
Custome	r Name	MIDC Shiroli, Kolhapur.				
Date of Samp	ole Received	Date of Test Completion	Sample Name			
08/12/	2020	10/12/2020		AT-50 (18ID) Ge	ar	
Challan Date	Challan No.	Test Method	Part No	Heat No	Grade	
10/12/2020	1270	ASTM-E-2567-16a ASTM-E-1245;2016	9. <b>10</b>	PE-122-08-A-19	SG-500/7	
		ASTM-E-1245;2016				

#### **Test Results**

Etchant- 4% Nital

Etching Condition- Immersion-Etching





Etched

Total Magnification	-100X
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Specimen Dimension-	Sample Cut Piece
	Regular spheroidal Graphite is present in the structure.
Observation (Etched)	Pearlitic matrix is observed with following percentage of Ferrite and Pearlite.

Graphite Analy	sis (Unetched Area)	Phase Ar	nalysis (Etched Area)
Frame Area (mm²)	0.959 mm <sup>2</sup>	Pearlite (%)	84.20
Nodularity (%)	94%	Ferrite (%)	15.80
Nodule Count/mm <sup>2</sup>	145	Carbide (%)	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1

Tested By-

For VCK FoundryTechnology

End of Report----

Authorized Signatory

B.Voc. & Community College Unit.
Vivekanand College Kolhapur

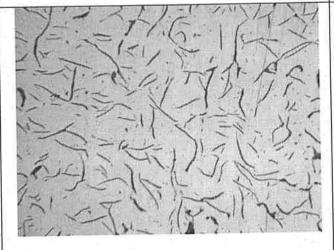


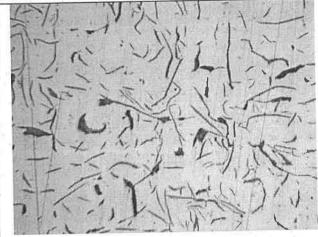


	Test Repor	t- Microstructural Anal	ysis of Graphi	te in Cast Iron		
Lab ID- M 2768		Test Certificate No2	01901194	Date- 10/12/202		
		Yashoda Iron Industries	3			
Customer	Name	Plot No 2/3, Shiroli M	IIDC, Kolhapur			
Date of Sampl	e Received	Date of Test	W 17 A 2 -	Sample Name		
		Completion				
07/12/2	.020	10/12/2020	Escort Bearing Cap			
Challan Date	Challan	Test Method	Part No	Heat No	Grade	
10/10/2020	No.	IS-7754:2018		**	FG 260	
10/12/2020	39	ASTM-E-562:2011		12		

## Etchant- Unetched







# Total Magnification-100X

Predominantly Form I-Distribution A type of Graphite flakes are observed along with some amount of Form I-Distribution B type.

Sample-1 Average			ASTM	Class	
		3-5			
Graphite type distribution Type A(%)		Type B(%)	Type C(%)	Type D(%)	Type E(%)
Average	90 to 92	8 to 10	=	2 2	7.





Tested By
For VCK Foundry Technology

Authorized Signatory

End of Report-

B.Voc. & Community College Unit. Vivekanand College, Kolhapur

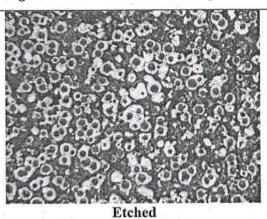




Lab ID- M 2769		Test Certificate No2015011943 Date- 15/1			<b>- 15</b> /12/2020	
		Padmavati Auto Components				
Customer Name		2498, Vivekanand Nagar, Korochi, Hatkanangle, Kolhapur.				
Date of Samp	le Received	Date of Test Completion	ı S	Sample Name		
14/12/2020		15/12/2020		R.A. Support		
Challan Date	Challan No.	Test Method	Part No	Heat No	Grade	
15/12/2020	117	ASTM-E-2567-16a ASTM-E-562:2011 ASTM-E-1245:2016	R 542513	256	<del>1</del>	
	17.2	Test Resul	ts	*		
Etchant- 4% Ni	tal		ching Condition- Im	mersion-Etching	3	

Unetched





	Total Ma	gnification-100X						
Specimen Dimension-	Sample Cut Piece							
Observation (Unetched)		Regular spheroidal Graphite is present in the structure.						
Observation (Etched)	Pearlitic matrix is obser	ved with following pe	rcentage of	of Ferrite and Pearlite				
Graphite Analysis (Unetched Area)		PI	Phase Analysis (Etched Area)					
Frame Area (mm²)	0.959 mm <sup>2</sup>	Pearlite (%)	54.40	Cementite (%)	n 7			
Nodularity (%)	94%	Ferrite (%)	45.60	Ledeburite (%)				
Nodule Count/mm <sup>2</sup>	262							

Tested By-

For VCK Foundry Technology

**Authorized Signatory** 

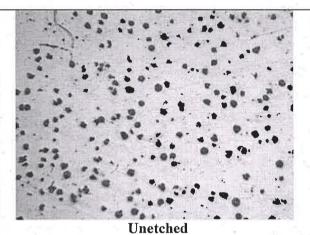
-End of Report---

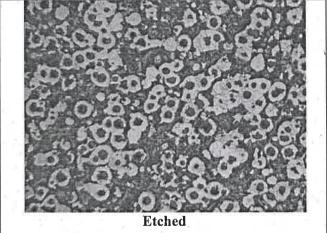
Losef Chicer B.Voc. & Community College Unit. Mivekedand College, Kolhapur





	1	<b>- 15</b> /12/2020			
Padmavati Auto Components					
ochi, Hatkanang	le, Kolhapur.				
Sample Name					
R.A. Support					
Part No	Heat No	Grade			
R 542513	278				
	Sa F	R.A. Support  Part No Heat No			





Total	Magr	ification	1-100X

Specimen Dimension-	Sample Cut Piece					
Observation (Unetched)	Regular spheroidal Graphite	is present in the structure.				
Observation (Etched)	Observation (Etched) Pearlitic matrix is observed with following percentage of Ferrite and Pearlite					
Graphite Analys	is (Unetched Area)	Phase Analysis (Etched Area)				

Graphite Analysis (Unetched Area)		Phase Analysis (Etched Area)				
Frame Area (mm²)	0.959 mm <sup>2</sup>	Pearlite (%)	59.80	Cementite (%)	- 1-	
Nodularity (%)	95%	Ferrite (%)	40.20	Ledeburite (%)	* * * * * * * * * * * * * * * * * * * *	
Nodule Count/mm <sup>2</sup>	233					

Tested By-

For VCK Foundry Technology

**Authorized Signatory** 

-End of Report-

Nodal Officer



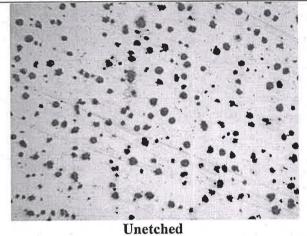


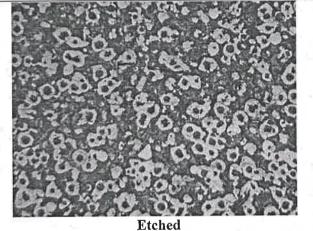
Lab ID- M 277		Test Certificate No20	017011956	Date	e- 15/12/2020		
		Padmavati Auto Components					
Custome	r Name	2498, Vivekanand Nagar, Ko	rochi, Hatkanang	gle, Kolhapur.			
Date of Sample Received Date of Test Completion Sample Nam				ample Name			
14/12/2020 15/12/2020 R.A		R.A. Support	.A. Support				
Challan Date	Challan No.	Test Method	Part No	Heat No	Grade		
14/12/2020	118	ASTM-E-2567-16a ASTM-E-562:2011 ASTM-E-1245:2016	R 542513	264	-		

### Test Results

Etchant- 4% Nital

Etching Condition-Immersion-Etching





Etche

	Total M	agnification-100X					
Specimen Dimension-	Sample Cut Piece			1.4 ×			
Observation (Unetched)	Regular spheroidal Graphite is present in the structure.						
Observation (Etched)	Pearlitic matrix is observed with following percentage of Ferrite and Pearlite.						
Graphite Analys	P	Phase Analysis (Etched Area)					
Frame Area (mm²)	0.959 mm <sup>2</sup>	Pearlite (%)	61.30	Cementite (%)	-		
Nodularity (%)	96%	Ferrite (%)	38.70	Ledeburite (%)	le c		
Nodule Count/mm <sup>2</sup>	236	5,50	-1	,			

Tested By-

For VCK Foundry Technology

Authorized Signatory

-End of Report-----



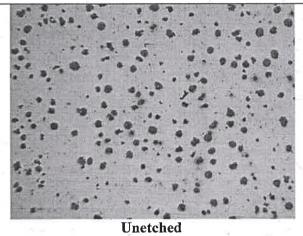


Test Repor	t- Micro Structural Analys	is of Nodular (	Cast Iron			
Lab ID- M 2778 Test Certificate No18011950				Date- 15/12/2020		
	Padmavati Auto Components					
r Name	2498, Vivekanand Nagar, Ko	rochi, Hatkanang	le, Kolhapur.			
le Received	Date of Test Completion	Sample Name				
2020	15/12/2020	15/12/2020 R.A. Support				
Challan No.	Test Method	Part No	Heat No	Grade		
127	ASTM-E-2567-16a ASTM-E-562:2011 ASTM-E-1245:2016	R 542513	286	*** ***		
	r Name  le Received  2020  Challan No.	Test Certificate No Padmavati Auto Components 2498, Vivekanand Nagar, Ko  Date of Test Completion  15/12/2020  Challan No. Test Method  ASTM-E-2567-16a ASTM-E-562:2011	Test Certificate No18011950     Padmavati Auto Components     2498, Vivekanand Nagar, Korochi, Hatkanang     Sole Received   Date of Test Completion   Sole     2020   15/12/2020     Challan No.   Test Method   Part No     127   ASTM-E-2567-16a   R 542513     ASTM-E-562:2011   R 542513     ASTM-E-562:2011	Padmavati Auto Components  2498, Vivekanand Nagar, Korochi, Hatkanangle, Kolhapur.  Date of Test Completion  Sample Name  2020  15/12/2020  R.A. Support  Challan No.  Test Method  Part No  Heat No  127  ASTM-E-2567-16a ASTM-E-562:2011  R 542513  286		

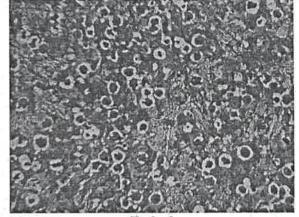
Test Results

Etchant- 4% Nital

Etching Condition-Immersion-Etching







Etched

3 1 2 V 1 1 1	Total M	agnification-100X							
Specimen Dimension-	Sample Cut Piece								
Observation (Unetched)	Regular spheroidal Gra	Regular spheroidal Graphite is present in the structure.							
Observation (Etched)	Pearlitic matrix is obse	Pearlitic matrix is observed with following percentage of Ferrite and Pearlite.							
Graphite Analysis (Unetched Area)		Pi	Phase Analysis (Etched Area)						
Frame Area (mm²)	0.959 mm <sup>2</sup>	Pearlite (%)	72.30	Cementite (%)	4.60				
Nodularity (%)	94%	Ferrite (%)	17.30	Ledeburite (%)	5.80				
Nodule Count/mm <sup>2</sup>	218								

**Tested By** 

For VCK Foundry Technology

Authorized Signatory

-End of Report-

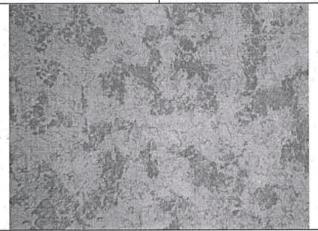
B.Voc. & Community College Unit.
Vivekanand College, Kolhapur





	Tes	t Report- Grain S	ize Meas					
<b>Lab ID-</b> M 2767		Test Certificate No201501194			Date- 19/12/2020			
		Baramati Engineering Pvt. Ltd.						
Custome	er Name	C-8-11,24; Baramati Co-Op. Ind. Estate			e, Bhigwan Road	l, Bara	mati.	
Date of Sample Received		Date of Test Completion		Sample Name				
15/12/2020		12/12/2020		20X150-Lower Cap-O. D. Face				
Challan Date	Challan No.	Test Metho	d Heat N		lo. Heat Lot	No.	Grade	
12/12/2020	01	ASTM-E-112:2013		B-992	0 N-608 T-609		ASTM A216 WCG	
Qualifying Heat Nos.	B-9923,B-9912,B-9918	B-9913,B-9923	B-9951,	B-9923	B-9948,B-9925,B	-9951	B-9918,B-9913	
Qualifying Part	20"#150-Lower Cap	20"#150-Upper Cap	12"#300-0	Jpper Cap	12"#300-Lower Cap		12"#300-Plug	
		Test Det	ails					

Etching Condition-Immersion-Etching Etchant- 4% Nital



**Total Magnification-100X** Specimen Dimension-Replica-O.D. Face Equiaxed-Ferrito-Pearlitic-Type-A Grains, No Widmanstatten Ferrite. Type of Grain Determined-Manual Comparison Method Grain Size Analysis Method-8.0-8.5 ASTM Grain Size No.-

Tested By-

For VCK Foundry Technology

**Authorized Signatory** 

End of Report-





		Test Re	eport- Grai	n Size Meas	surement			v		
Lab ID- M 2800 Test Certificate No202001199					001199		Date	<b>- 19</b> /12/2020		
Baramati Engineering Pvt. Ltd						1				
Custome	r Name	C-8-	C-8-11,24; Baramati Co-Op. Ind. Estate, Bhigwan Road, Baramati.							
Date of Samp	le Received	Da	te of Test Co	ompletion		Sampl	e Name	. ,		
15/12/	2020		19/12/20	)20	4	X600-GTV	Body-L-S	Side		
Challan Date	Challan N	lo.	Test Met	hod	Heat No.	Heat L	ot No.	Grade		
15/12/2020	01		ASTM-E-11	2:2013	B-9919	N-6		ASTM A216 WCC		
Qualifying Heat Nos.	B9948	B9925	B9917	B9925,B9951	B9916	B9951	B-9951	B9925		
Qualifying Part	8X600-GTV Body	12X300- Plug	4X600-GTV Body	20X150- Lower Cap	2X600-PV Body	20X150- Upper Cap	12X300- Upper Cap	12X300- Lower Cap		
			Test	Details						
Etchant- 4% Nital				Etching Co	ndition- Im	mersion-Etc	ching			
			Total Magr	nification-100	N.					
		D 11 T			JA					
Specimen Dimens	ion-	Replica-L-		1,11				8		
Type of Grain De	termined-	Equiaxed-	Ferrito-Pearl	itic-Grains ar	e observed,	No Widma	nstatten Fe	errite.		
Grain Size Analys	n Size Analysis Method- Manual Comparison Method									

Tested By-

ASTM Grain Size No.-

8.0-8.5

For VCK Foundry Technology

**Authorized Signatory** 

-End of Report-

Nodal Officer

B.Voc. & Community College Unit.

Vivekanand College, Kolhapur

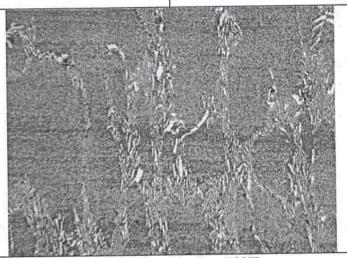




	Test Report- Micro Struc	ctural Analysis				
Test Certificate No20011914 Da			Date- 29/12/2020			
	Manugraph India Ltd.					
	Unit No2, Kodoli, Panhala, l	Kolhapur.				
ived	Date of Test Completion	Sample Name				
1	29/12/2020	Test Piece-D3-Tool Steel		el		
an No.	Test Method	Heat Code	Qty.	Grade		
098	ASTM-E-1245:2016 ASTM-E-562:2011		E	AISI-D-3		
	an No.	Test Certificate No  Manugraph India Ltd.  Unit No2, Kodoli, Panhala, I  vived Date of Test Completion  29/12/2020  an No. Test Method  7098 ASTM-E-1245:2016	Manugraph India Ltd. Unit No2, Kodoli, Panhala, Kolhapur.  ived Date of Test Completion Sar  29/12/2020 Test Piece an No. Test Method Heat Code  O98 ASTM-E-1245:2016	Test Certificate No20011914  Manugraph India Ltd.  Unit No2, Kodoli, Panhala, Kolhapur.  Eived Date of Test Completion Sample Name  29/12/2020 Test Piece-D3-Tool Ste an No. Test Method Heat Code Qty.  2098 ASTM-E-1245:2016 -		

Etchant- 4% Nital

Etching Condition-Immersion-Etching



#### Total Magnification-100X

Specimen Dimension-	Sample Cut Piece		
Type of Structure Observed-	Un-dissolved, medium coarse Carbides are observed in the matrix of Tempered Martensite with a small amount of Retained Austenite.		
Area Fraction-Case Region	Tempered Martensite (%)	Retained Austenite (%)	Carbides (%)
	85.50	2.20	12.30

Tested By-

For VCK Foundry Technology

**Authorized Signatory** 

End of Report-

Nodal Officer B.Voc. & Community College Unit. Vivekanand College, Kolhapur





Tested By-

For VCK Foundry Technology

**Authorized Signatory** 

-End of Report--

Nodal Officer

B.Voc. & Community College Unit.

Vivekanard College, Kolhapur



Gat No. 194, Hanuman nagar, Shiye, MIDC Shiroli, Kolhapur. 416 122 Email: atlantametalab@gmail.com Cell: +91-8421246069 +91-9595401694

- Metallurgical Testing
- **●** Failure Analysis
- Heat Treat Process Analysis
- **Material Solutions**
- Metallurgical Consulting

Date: 04/01/2020

To,

Nodal Officer

Department of Foundry Technology,

Vivekanand College (Autonomous),

Kolhapur.

Subject: To provide collaborated testing and consultancy services.

Respected sir,

We have metallurgical testing and consultancy setup in MIDC Shiroli, Kolhapur. We are collaborated with your Foundry Technology department. We have requirement of metallurgical testing at your end.

As department of Foundry technology has established a testing setup which is very useful for industrial purpose, we are requesting you to provide necessary support regarding the same. We are attaching a list of samples and details of test requirements along with this letter.

Thanking you,

Yours Sincerely,

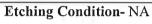
Atlanta Metallurgical Services

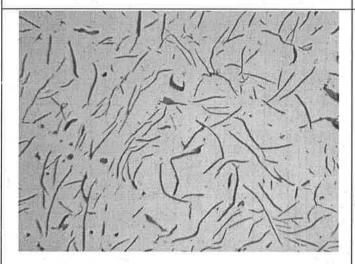


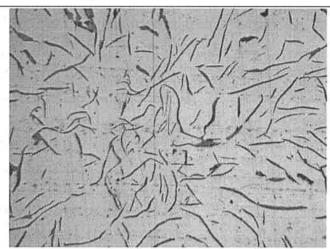


	Test Repo	rt- Microstructural Analysi	s of Graphite	in Cast Iron		
Lab ID- M 2780		Test Certificate No2118011963 Date- 05/01/202				
Customer Name		Babasaheb Industries				
Custome	r Name	B-78, Tasawade MIDC, Sa	tara			
Date of Samp	le Received	Date of Test Completion	Sample Name			
04/01/	2021	05/01/2021	Cover for Oil		il	
Challan Date	Challan No.	Test Method	Part No	Heat No	Grade	
04/01/2021	599	IS-7754:2018 ASTM-E-562:2011	59/774	19A11C		

### Etchant- Unetched







## Total Magnification-100X

Observation-Predominantly A types of Graphite flakes are observed with some B type are observed.

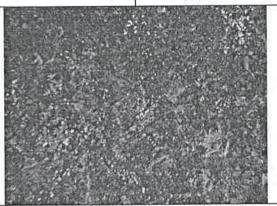
Sample-1		ASTM Class			
Average		2-5			
Graphite type distribution	Type A(%)	Type B(%)	Type C(%)	Type D(%)	Type E(%)
Average 92 to 94		6 to 8	1 1 1	75	
	8			Continued o	n next nag





	i est iteport. Totalite i i	attion of pile				
	Test Certificate No210	108011953 Date- 08/01				
		Siddhivinayak Founders				
· Name	MIDCGokulShirgaon, K	olhapur	33"			
le Received	Date of Test Completion	Sample Name				
2021	08/01/2021	Sample 1 (4029,4030,1067,29906,29905,2747,29822,29810		747,29822,29810,HSG		
			Phoenix)			
Challan No.	Test Method	Part No	Heat No	Grade		
132	ASTM-E-1245:2016 ASTM-E-562:2011		1A	1 10 1022		
֡	Challan No.	Test Certificate No210 Siddhivinayak Founders MIDCGokulShirgaon, Kore Received Date of Test Completion 08/01/2021  Challan No. Test Method ASTM-E-1245:2016	Test Certificate No2108011953	Name   Siddhivinayak Founders		

Etchant- 4% Nital Etching Condition- Immersion-Etching



Total Magnification-100X

Ternary Phosphorus Eutectic is observed in Pearliticmatrix with following percentages.

Sample-1	Frame Area(mm)	Pearlite (%)	Ferrite (%)	Steadite (%)
Average	0.936	95.55	1.20	3.25

Tested By-

For VCK Foundry Technology

**Authorized Signatory** 

----End of Report-

Nodal Officer

B.Voc. & Community College Unit

Vivekanand College, Kolhapur

Page 1 of 1





	1	est Report-Micro	Structur	al Analysis	2 1 2	
<b>Lab ID-</b> M 2787		Test Certifica	te No21	20011913	Date- 11/01/202	
		Indrani Technocra	Indrani Technocrafts			
Custome	er Name	Shiroli MIDC, Ko	lhapur		-×+-	
Date of Sam	ple Received	Date of Test Com			Sample Name	
	10/01/2021 11/01/2021 Tool			Engg-B-26-B		
Challan Date	Challan No.	Test Method	d	Heat Code	Qty.	Grade
10/01/2021	308	ASTM-E-1245:2	2016	1	_	B-26
	N 81	ASM-Handbook-				
		Test D	etails			
Etchant- 4% Nit	al		Etching	Condition- Imm	ersion-Etchin	Q
K MORNING TO SALES OUR ACCUST VINO	POSESTERNE TOTAL EXPENDED TO THE SECTION OF THE SEC		25 (27)	STATE OF THE PARTY	THE PARTY OF THE P	
Case regio	n-Total Magnif	ication-100X	Co	re Region-Tota	l Magnificatio	on-200X
		ication-100X Sample Cut Piece	Co	re Region-Tota	Magnification	on-200X
Specimen Dimer	nsion-		- 5	5		on-200X
Case region Specimen Dimento Type of Structure	nsion-	Sample Cut Piece	burization	was not observe	ed.	on-200X

-End of Report-

Nodal Officer

B.Voc. & Community College Unit

Vivekanand College, Kolhapur

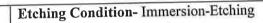


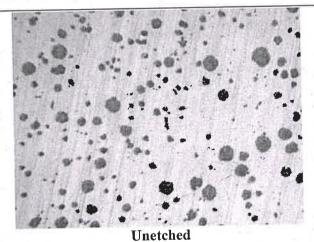


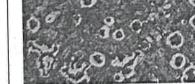
Lab ID- M 2775		Test Certificate No 2117011954		Date- 19/01/202	
S VERNER DE LA COMPANION DE LA		Maurya Industries			
Custome	r Name	A-12, MIDC GokulShirgaon, F	Colhapur		
Date of Samp	le Received	Date of Test Completion	Sample Name  Manual Slack Adjuster		
17/01/		19/01/2021			01/2021 Manual Slack Adjuste
Challan Date	Challan No.	Test Method	Part No	Heat No	Grade
17/01/2021	278	ASTM-E-2567-16a ASTM-E-1245:2016	Z-089389	EL-12	SG-600/3

### **Test Results**

Etchant- 4% Nital







Etched

Total	Magn	ificatio	n-16	)0X
1 Otai	MATURE	THOUGH	/AL A.	, VI

Specimen Dimension-	Sample Cut Piece					
Observation (Unetched)		Regular Spheroidal Graphite is observed in the structure.				
Observation (Etched)	Pearlitic matrix is obs	Pearlitic matrix is observed with following percentage of Ferrite and Pearlite.				
GraphiteAnalysis (Unetched Area)		Phase Analysis (Etched Area)				
Frame Area (mm²)	0.959 mm <sup>2</sup>	Pearlite (%)	85.10			
Nodularity (%)	92%	Ferrite (%)	14.90			
Nodule Count/mm <sup>2</sup>	178	Other (%)	8 71			

Tested By-

For VCK Foundry Technology

Authorized Signatory

-End of Report---

Nodal Officer

B.Voc. & Community College Unit,
Vivekanand College, Kolhapur

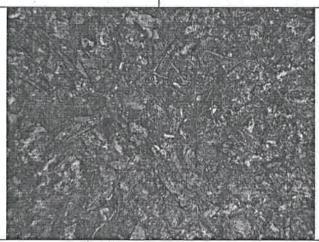




	T4 C4 C4-N- 011				
	Test Certificate No211901194			Date- 21/01/202	
n o	Yashoda Iron Industries			į , , a	
	Plot No 2/3, Shiroli MII	OC, Kolhapur			
ceived	Date of Test Completion	Sample Name			
	21/01/2021	Escort Bearing Cap		Cap	
allan No.	Test Method	Part No	Heat No	Grade	
39	ASTM-E-1245:2016		22 7 7	FG 260	
	ıllan No.	Plot No 2/3, Shiroli MII ceived Date of Test Completion 21/01/2021 allan No. Test Method	Plot No 2/3, Shiroli MIDC, Kolhapur ceived Date of Test Completion 21/01/2021  allan No. Test Method Part No	Plot No 2/3, Shiroli MIDC, Kolhapur  ceived Date of Test Completion Sample Name  21/01/2021 Escort Bearing Completion Part No Heat No	

Etchant- 4% Nital

**Etching Condition-** Immersion-Etching



**Total Magnification-100X** 

Pearlitic matrix is observed with following percentage of Ferrite and Pearlite.

Ternary Phosphorus Eutectic is observed in Pearlitic matrix with following percentages.

Sample-1	Frame Area(mm)	Pearlite (%)	Ferrite (%)	Steadite (%)
Average	0.936	98.60	1.40	-

Tested By-

For VCK Foundry Technology

-End of Report-

Nodal Officer

B.Voc. & Community College Unit. Vivekanand College, Kolhapur

**Authorized Signatory** 



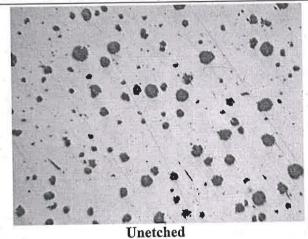


Lab ID- M 2773		Test Certificate No2118011951 Date- 28/01/20			e <b>- 28</b> /01/202
		Prashant Enterprises	100		
Custome	r Name	MIDC Shiroli, Kolhapur.			
Date of Samp	ole Received	Date of Test Completion	Sample Name		
27/01/	2021	28/01/2021	AT-50 (18ID) Gear		r
Challan Date	Challan No.	Test Method	Part No	Heat No	Grade
27/01/2021	1270	ASTM-E-2567-16a ASTM-E-1245:2016	<u></u>	PE-122-08-A-19	SG-500/7

Test Results

Etchant- 4% Nital

Etching Condition-Immersion-Etching







**Etched** 

## Total Magnification-100X

Specimen Dimension-	Sample Cut Piece					
Observation (Unetched)	Regular spheroidal Grap	Regular spheroidal Graphite is present in the structure.				
Observation (Etched)	Pearlitic matrix is obser	Pearlitic matrix is observed with following percentage of Ferrite and Pearlite.				
Graphite Analys	is (Unetched Area)	Phase Analysis (Etched Area)				
Frame Area (mm²)	0.959 mm <sup>2</sup>	Pearlite (%)	84.20			
Nodularity (%)	94%	Ferrite (%)	15.80			
Nodule Count/mm <sup>2</sup>	145	Carbide (%)				

Tested By-

For VCK FoundryTechnology

**Authorized Signatory** 

-End of Report----

Modal Officer

B.Voc. & Community College Unit.

Vivekanand College, Kolhapur





Lab ID- M 2771 Tes		Test Certific	Test Certificate No2117011956			Date- 09/02/2021	
		Padmavati Auto Co	omponents				
Customer Name		2498, Vivekanand	Nagar, Korochi, Ha	tkanangle	e, Kolhapur.		
Date of Samp	le Received	Date of Test Completion			mple Name		
08/02/2		09/02/2021		R.A. Support			
Challan Date	Challan No.	Test Metho	d Par	No	Heat No	Grade	
08/02/2021	118	ASTM-E-2567-1 ASTM-E-562:20 ASTM-E-1245:20	11	2513	264	<b>ff.</b>	
	1	Test	t Results				
Etchant- 4% Ni	tal	V 1	Etching Cond	tion- Imr	nersion-Etchin	g	
						9 6 200	
	Unetche	d			Etched		
	Unetche		gnification-100X		Etched		
Specimen Dimer	nsion- S	Total Mag			Etched		
Specimen Dimer Observation (Un	nsion- S	Total Mag ample Cut Piece Legular spheroidal Grap	hite is present in the	structure.		aulito.	
Observation (Un	nsion- S netched) R tched) P	Total Mag ample Cut Piece Legular spheroidal Grap rearlitic matrix is observe	hite is present in the	structure.	of Ferrite and Pe		
Observation (Un	nsion- S netched) R tched) P	Total Mag ample Cut Piece Legular spheroidal Grap Pearlitic matrix is observed Inetched Area)	hite is present in the yed with following po	structure. ercentage c	of Ferrite and Per	ea)	
Observation (Un	nsion- S netched) R tched) P	Total Mag ample Cut Piece Legular spheroidal Grap rearlitic matrix is observe	hite is present in the yed with following por P	structure. ercentage c hase Anal	of Ferrite and Per ysis (Etched Ar   Cementite (%	rea)	
Observation (United Street Observation (English Graph	nsion- S netched) R tched) P hite Analysis (U m²) 0	Total Mag ample Cut Piece Legular spheroidal Grap Pearlitic matrix is observed Inetched Area)	hite is present in the yed with following po	structure. ercentage c	of Ferrite and Per	rea)	

-End of Report---

Nodal Officer

B.Voc. & Community College Unit.

Vivekanand College, Kolhapur

Authorized Signatory



Gat No. 194, Hanuman nagar, Shiye, MIDC Shiroli, Kolhapur. 416 122 Email : atlantametalab@gmail.com Cell: +91-8421246069 +91-9595401694

- Metallurgical Testing
- **●** Failure Analysis
- ♠ Heat Treat Process Analysis
- **n** Material Solutions
- Metallurgical Consulting

Date: 03/02/2020

To,

Nodal Officer

Department of Foundry Technology,

Vivekanand College (Autonomous),

Kolhapur.

Subject: To provide collaborated testing and consultancy services.

Respected sir,

We have metallurgical testing and consultancy setup in MIDC Shiroli, Kolhapur. We are collaborated with your Foundry Technology department. We have requirement of metallurgical testing at your end.

As department of Foundry technology has established a testing setup which is very useful for industrial purpose, we are requesting you to provide necessary support regarding the same. We are attaching a list of samples and details of test requirements along with this letter.

Thanking you,

Yours Sincerely,

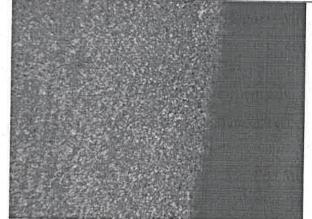
Atlanta Metallurgical Services

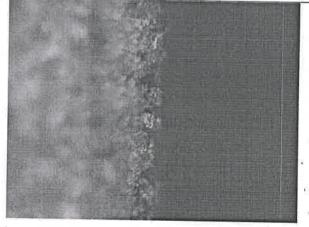




	7	Test Report- Micro Structu	ral Analysis		
<b>Lab ID-</b> M 2783	- Y,	Test Certificate No2	11901191	D	ate- 04/02/2021
Customer Name		Perfect Pins			
Custom	er name	D-3, MIDC Shiroli, Kolhapu	ır.		
Date of Sam	ple Received	Date of Test Completion	Sample Name Telcon Pin-X-966		e
02/02	/2021	04/02/2021			66
Challan Date	Challan No.	Test Method	Heat Code	Qty.	Grade
02/02/2021	73	ASTM-E-1245:2016	7		
		ASTM-E-562:2011			1. 3.
		Toot Details			

Etchant- 4% Nital Etching Condition- Immersion-Etching





Case region-Total Magnification-100X		Case Region-Total Magnification-500X		
Specimen Dimension-	Sample Cut Piece			
Type of Structure Observed	In case region, Tempered and less than 10% Retained			
Grain Boundary Oxidation was observed (Avg15 μm) in th				
Area Fraction-Case Region	Tempered Martensite (%)	Retained Austenite (%)	Carbides (%)	
	92.95	5.20	1.85	

Tested By-

For VCK Foundry Technology

**Authorized Signatory** 

--End of Report-

Nodal Officer

B.Voc. & Community College Unit.

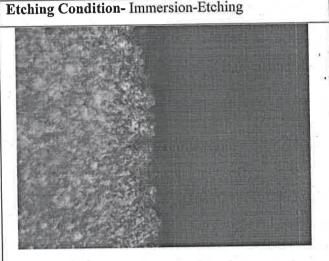
Vivekanand College, Kolhanur





			1	TD.	4 04/02/202
Lab ID- M 2784		Test Certificate No21	11901192	- Da	ite- 04/02/202
	1177	Perfect Pins			
Custome	er Name	D-3, MIDC Shiroli, Kolhapu	r,		
Date of Sam	ple Received	Date of Test Completion	Sample Name Telcon Pin-T-102		
02/02	/2021	04/02/2021			02
Challan Date	Challan No.	Test Method	Heat Code	Qty.	Grade
02/02/2021	73	ASTM-E-1245:2016		7	
		ASTM-E-562:2011			
		Test Details		500	

Etchant- 4% Nital



Case region-Total Magnification-100X		Case Region-Total Magnif	fication-500X
Specimen Dimension-	Sample Cut Piece		The second second
Type of Structure Observed	and less than 10% Retained	Martensite is observed some Austenite. was observed (Avg20 μm)	
Area Fraction-Case Region	Tempered Martensite (%)	Retained Austenite (%)	Carbides (%)
	90.60	7.10	2.30
A STATE OF THE STA		E MOZE-	J. Toohnologi

Tested By-

For VCK Foundry Technology

**Authorized Signatory** 

-End of Report--

Nodal Officer

Page 1 of 1

B.Voc. & Community College Unit. Vivekanand College, Kolhapur

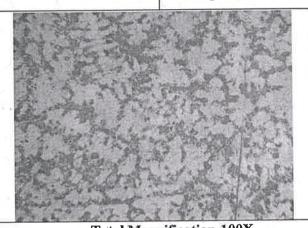




		Test Re	port- Grai	n Size Meas	surement			
Lab ID- M 2800			Test Certific	cate No212	001199		Date-	06/02/2021
V I V		Bara	mati Enginee	ring Pvt. Ltd	•			
Custome	r Name	C-8-	11,24; Baran	nati Co-Op. In	nd. Estate, B	higwan Roa	id, Barama	ti.
Date of Sam	ole Received	Da	te of Test Co	ompletion		Sample	e Name	
04/02/	2021		06/02/20	)21	4X600-GTV Body-L-Side			ide
Challan Date	Challan N	lo.	Test Met	hod	Heat No.	Heat L	ot No.	Grade
04/02/2021	02		ASTM-E-11	2:2013	B-9919	N-6 T-6		ASTM A216 WCC ·
Qualifying Heat Nos.	B9948	B9925	B9917	B9925,B9951	B9916	B9951	B-9951	B9925
Qualifying Part	8X600-GTV Body	12X300- Plug	4X600-GTV Body	20X150- Lower Cap	2X600-PV Body	20X150- Upper Cap	12X300- Upper Cap	12X300- Lower Cap
7 1 10			Test	Details				

Etchant- 4% Nital

Etching Condition- Immersion-Etching



Total Magnification-100X

Specimen DimensionReplica-L-Side

Type of Grain DeterminedEquiaxed-Ferrito-Pearlitic-Grains are observed, No Widmanstatten Ferrite.

Grain Size Analysis MethodManual Comparison Method

ASTM Grain Size No.
8.0-8.5

Tested By-

For VCK Foundry Technology

Authorized Signatory

-End of Report-

Nodal Officer

B.Voc. & Community College Unit.

Vivekanand College, Kolhapur





	${ m T}\epsilon$	est Report- Micro	Structur	al Analysis		
Lab ID- M 2739		Test Certificate No211001198 Date- 09/02/20				
Customer Name		Unique Auto Assemblies Pvt. Ltd. (Unit-I)				
		Plot no95,96; Ich	nalkaranji l	Ind. Co-Op Estate	e, Shahapur,	Ichalkaranji.
Date of Sam	ple Received	Date of Test Completion		Sa	ample Name	
09/02		09/02/202	1	S. Lever-850	CD-Western	Miniforge
Te .	1.0	· ·	9-1		22, Date-04/	
Challan Date	Challan No.	Test Metho	od	Batch Code	Qty.	Grade
09/02/2021	10164	ASTM-E-1245:	:2016		1	-
		IS-4748:2009-Re	e2017			
		Test D	etails			
Etchant- 4% Nit	al	E	Etching Co	ondition- Immers	ion-Etching	
		Total Magnit	ication-1	10 X		
Specimen Dime	nsion	Total Magnif	ication-10	00X		
		Sample Cut Piece	ication-1	00X		
ASTM Grain Si	ze No	Sample Cut Piece 7.5-8.5	1, 11		d	
Specimen Dimer ASTM Grain Si Type of Structu	ze No	Sample Cut Piece	Pearlitic-st	ructure is observe		
ASTM Grain Si	ze No re Observed-	Sample Cut Piece 7.5-8.5 Equiaxed-Ferrito-P	Pearlitic-st	ructure is observe		· Phases (%)

-End of Report-----

Nodal Officer

B.Voc. & Community College Unit.

Vivekanand College, Kolhanur

**Authorized Signatory** 





		Test Report- Volume Fi	action of phases		
Lab ID- M 279	95	Test Certificate No2	120011931	D	ate- 17/02/202
		Unique Auto Assemblies Pvt.	Ltd. (Unit-I)		
Customer Name Plot no95,96; Ichalkaranji Ind. Co-Op Estate, Shahapur, Ichalkaranji Ind. Co-Op Estate, Ichalkaranji Ind. Ichalkaranji Ind. Ichalkaranji I			hahapur, Ichalkara	caranji.	
Date of Samp	ole Received	Date of Test Completion			
15/02	/2021	17/02/2021			
Challan Date	Challan No.	Test Method	Heat Code	Qty.	Grade
15/02/2021	10169	ASTM-E-1245:2016 ASTM-E-562:2011	nate .		FG-260
		Test Deta	ils	<del>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</del>	
Etchant- 4% N	Vital	Etc	ching Condition- I	mmersion-Etching	
Etchant- 4% N	Vital	Etc	ching Condition- I	mmersion-Etching	
		Total Magnifica	tion-100X		
			tion-100X		
Observation-		Total Magnifica	tion-100X		

--End of Report-

Nodal Officer

Authorized Signatory

For VCK Foundry Technology

B.Voc. & Community College Unit.
Vivakanand College, Kolhapun

Tested By-

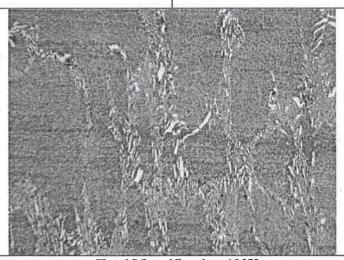




	- 10	Test Report- Micro Stru	ctural Analysis		
<b>Lab ID-</b> M 278	1	Test Certificate No.	<b>-21</b> 20011914	Da	ate- 22/02/2021
7		Manugraph India Ltd.		-/	
Custome	r Name	Unit No2, Kodoli, Panhala,	Kolhapur.	. 8	
Date of Samp	ole Received	Date of Test Completion	Sar	nple Name	
20/02/	2021	22/02/2021 Test Piece-D3-Too	ce-D3-Tool Ste	el	
Challan Date	Challan No.	Test Method	Heat Code	Qty.	Grade
20/02/2021	117098	ASTM-E-1245:2016	240	×	AISI-D-3
	2	ASTM-E-562:2011		110	
		Test Detail	£		1

Etchant- 4% Nital

Etching Condition-Immersion-Etching



Total	Magn	ificati	ion-1	00X
				~ ~

	3		-1		
Specimen Dimension-	Sample Cut Piece		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Type of Structure Observed-	Un-dissolved, medium coarse Carbides are observed in the matrix Tempered Martensite with a small amount of Retained Austenite.				
Area Fraction-Case Region	Tempered Martensite (%) 85.50	Retained Austenite (%) 2.20	Carbides (%)		

Tested By-

For VCK Foundry Technology

**Authorized Signatory** 

-End of Report-

Nodal Officer

B.Voc. & Community College Unit.

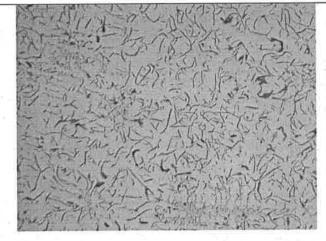
Vivekanand College. Kolhapur

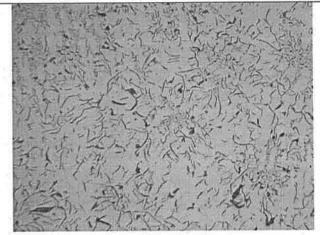




	Test Repor	t- Microstructural Ana	lysis of Graphit	te in Cast Iron	
Lab ID- M 2742		Test Certificate No	08011953	1	Date- 22/02/2021
75	NT.	Siddhivinayak Founder	S		
Custome	r Name	MIDC GokulShirgaon,	Kolhapur	A A	
Date of Samp	le Received	Date of Test		Sample Name	81
		Completion			
20/02/	2021	22/02/2021		Sample 1	
			(4029,4030,1067	,29906,29905,2747,2	29822,29810,HSG-
				Phoenix)	v g
Challan Date	Challan No.	Test Method	Part No	Heat No	Grade
20/02/2021	132	IS-7754:2018 ASTM-E-562:2011	A 72 1 880	1A	

# Etchant- Unetched Etching Condition- NA





# Total Magnification-100X

Observation-Predominantly A type of Graphite flakes are observed with some B, Dtype are observed.

		ASTM	Class	
10.7		4-	7	
Type A(%)	Type B(%)	Type C(%)	Type D(%)	Type E(%)
80 to 84	14 to 16	-	2 to 4	
			4- Type A(%) Type B(%) Type C(%)	





Tested By-

For VCK Foundry Technology .

**Authorized Signatory** 

-End of Report-----

Nodal Officer

B.Voc. & Community College Unit. Vivekanand College, Kolhapur

Gat No. 194, Hanuman nagar, Shiye, MIDC Shiroli, Kolhapur. 418 122 Email: atlantametalab@gmail.com Cell: +91-8421246069 +91-9595401694

- Metallurgical Testing
- Failure Analysis
- # Heat Treat Process Analysis
- Material Solutions
- Metallurgical Consulting

Date: 03/03/2021

To,

Nodal Officer

Department of Foundry Technology,

Vivekanand College (Autonomous),

Kolhapur.

Subject: To provide collaborated testing and consultancy services.

Respected sir,

We have metallurgical testing and consultancy setup in MIDC Shiroli, Kolhapur. We are collaborated with your Foundry Technology department. We have requirement of metallurgical testing at your end.

As department of Foundry technology has established a testing setup which is very useful for industrial purpose, we are requesting you to provide necessary support regarding the same. We are attaching a list of samples and details of test requirements along with this letter.

Thanking you,

Yours Sincerely,

Director

Atlanta Metallurgical Services





		Test Report-Volume Frac	tion of phases		
Lab ID- M 2780		Test Certificate No2	2118011963	D	ate- 03/03/2021
Custome	or Nama	Babasaheb Industries			
Custome	a Name	B-78, Tasawade MIDC, Sat	ara		
Date of Sam	ole Received	Date of Test Completion		Sample Name	
02/03/	2021	03/03/2021		Cover for Oil	
Challan Date	Challan No.	Test Method	Part No	Heat No	Grade
02/03/2021	615	ASTM-E-1245:2016 ASTM-E-562:2011	59/774	19A17C	1 700

Etchant- 4% Nital

Etching Condition-Immersion-Etching



Total Magnification-100X

Observation- Pearlitic matrix is observed with following percentage of Ferrite and Pearlite.

Sample-1	Frame Area(mm)	Pearlite (%)	Ferrite (%)	Steadite (%)
Average	0.936	98.90	1.10	

Tested By-

For VCK Foundry Technology

-End of Report----

Authorized Signatory

Nodal Officer

B.Voc. & Community College Unit.

Vivekanand College, Kolhapur





	Test I	Report- Gra	in Size Mea	surement	14		
		Test Certific	cate No2120	0011911		Date	<b>- 12</b> /03/202
v Nome	Bar	amati Engine	ering Pvt. Ltd	i.			
a name	C-8	-11,24; Barar	nati Co-Op. I	nd. Estate, E	higwan Ro	ad, Barama	ıti.
ole Received	Da	ate of Test C	ompletion		Sampl	e Name	
2021		12/03/2	021	4	X600-GTV	Body-R-S	ide
Challan N	Vo.	Test Me	thod	Heat No.	Heat L	ot No.	Grade
07		ASTM-E-11	2:2013	B-9919	1 1	1000	ASTM A216 WCC
B9948	B9925	B9917	B9925,B9951	B9916	B9951	B-9951	B9925
8X600-GTV Body	12X300- Plug	4X600-GTV Body	20X150- Lower Cap	2X600-PV Body	20X150- Upper Cap	12X300- Upper Cap	12X300- Lower Cap
	B9948 8X600-GTV	Bar   C-8	Test Certific	Test Certificate No2126   Baramati Engineering Pvt. Ltd.	C-8-11,24; Baramati Co-Op. Ind. Estate, Eple Received  Date of Test Completion    2021	Test Certificate No2120011911	Date   Parameti Engineering Pvt. Ltd.

Etchant- 4% Nital

**Etching Condition-** Immersion-Etching



Total Magnification-100X

Specimen Dimension-	Replica-R-Side
Type of Grain Determined-	Equiaxed-Ferrito-Pearlitic-Type-A Grains, No Widmanstatten Ferrite.
Grain Size Analysis Method-	Manual Comparison Method
ASTM Grain Size No	8.0-8.5

Tested By-

For VCK Foundry Technology

**Authorized Signatory** 

End of Report-

**Nodal Officer** 

B.Voc. & Community College Unit. Vivekanand College, Kolhapur





	To	est Report- Micro S	Structur	al Analysis				
<b>Lab ID-</b> M 2739	4	Test Certifi	cate No	1001198	Date	e <b>- 15</b> /03/202		
		Unique Auto Assemblies Pvt. Ltd. (Unit-I)						
Custom	er Name	Plot no95,96; Ich	alkaranji l	Ind. Co-Op Estate	e, Shahapur, Io	chalkaranji.		
Date of Sam	ple Received	Date of Test Com	pletion	Sample Name				
12/03	/2021	15/03/2021		S. Lever-85	CD-Western I	Miniforge		
				(Inv. No4	122, Date-04/0	1/2019)		
Challan Date	Challan No.	Test Metho	d	Batch Code	Qty.	Grade		
12/03/2021	10164	ASTM-E-1245:2	2016	-		-		
		IS-4748:2009-Re.	-2017					
		Test Do	etails					
Etchant- 4% Nit	al	Eı	tching Co	ondition- Immers	sion-Etching			
		Total Magnific	cation-10	0X				
Specimen Dimen	sion-	Sample Cut Piece	717					
ASTM Grain Siz	ze No	7.5-8.5		45				
Type of Structur	e Observed-	Equiaxed-Ferrito-Pe	arlitic-str	ucture is observed	d.			
	2	Decarburization is no	ot observe	ed in the sample.				
Area Fraction-		Ferrite (%)		Pearlite (%)	Other F	hases (%)		
- E		39.90		60.10		Nil		
Tes	sted By-	7.71	)	For VCK	Foundry Tec	hnology		
6	Variat .				Josh	· ·		

--End of Report--





	Te	est Report-Micro Structu	ıral Analysis			
Lab ID- M 2789		Test Certificate No	<b>21</b> 20011923	Da	ate- 15/03/202	
<b>G</b> .		Unique Auto Assemblies I	Pvt. Ltd. (Unit-I)			
Custom	er Name	Plot no95,96; Ichalkaranj	i Ind. Co-Op Estate	e, Shahapur,	, Ichalkaranji.	
Date of Sam	ple Received	Date of Test Completion		ample Nam		
12/03	3/2021	15/09/2021		Shifter Finger-GB60-Smith & Founder (Inv. No557, Date-12/01/2019)		
Challan Date	Challan No.	Test Method	Batch Code	Qty.	Grade	
12/03/2021	10169	ASTM-E-1245:2016 IS-4748:2009-Re2017	-	192	16Mn5Cr2	
		Test Details				
Etchant- 4% Nit	al	Etching (	Condition- Immers	ion-Etching		
		Total Magnification-1	00X			
Specimen Dimen	sion-	Total Magnification-1	00X			
			00X			
Specimen Dimen ASTM Grain Siz	e No	Sample Cut Piece	ructure is observed	1.		
ASTM Grain Siz	e No	Sample Cut Piece 7.0-8.0 Equiaxed-Ferrito-Pearlitic-st	ructure is observed		Phases (%)	
ASTM Grain Siz	e No	Sample Cut Piece 7.0-8.0 Equiaxed-Ferrito-Pearlitic-st Decarburization is not observ	ructure is observed ved in the sample.		Phases (%)	

-End of Report----

Nodal Officer

B.Voc. & Community College Unit.

Vivekanand College, Kolhabur





		Test Report- Micro Struc	ctural Analysis		
Lab ID- M 130	21	Test Certificate No21		Dat	te- 19/03/20
C	•	Dattachaya Chains Pvt. Ltd.		1000	27 222223
Custome	r Name	D-12/2, MIDC GokulShirgao	n, Kolhapur.		_
Date of Samp	le Received	Date of Test Completion		ple Name	
17/03/	2021	19/03/2021		l-Patti-Sample	-R
Challan Date	Challan No.	Test Method	Heat No	Qty.	Grade
17/03/2021	D54	ASTM-E-1245:2016		Qij.	Grade
- , 15		IS-4748:2009		-	
		Test Details			-
Etchant- 4% Ni	tal	Etchin	g Condition- Immer	sion Etahina	
necimen Dimar	osion	Total Magnification	-100X		
		Sample Cut Piece	-100X		
STM Grain Siz	ze No	Sample Cut Piece 7.0-7.5			
STM Grain Siz	ze No	Sample Cut Piece 7.0-7.5 Equiaxed-Ferrito-Pearl	itic-structure is obser		
STM Grain Siz	ze No	Sample Cut Piece 7.0-7.5  Equiaxed-Ferrito-Pearl Decarburization is not of	itic-structure is obserobserved in the sampl		
STM Grain Siz	ze No	Sample Cut Piece 7.0-7.5  Equiaxed-Ferrito-Pearl Decarburization is not of Ferrite (%)	itic-structure is obserobserved in the sampl Pearlite (%)	lė.	hases (%)
STM Grain Siz ype of Structur rea Fraction-	ze No	Sample Cut Piece 7.0-7.5  Equiaxed-Ferrito-Pearl Decarburization is not of	itic-structure is obserobserved in the sampl	Other P	hases (%)
STM Grain Siz ype of Structur rea Fraction-	ze No	Sample Cut Piece 7.0-7.5  Equiaxed-Ferrito-Pearl Decarburization is not of Ferrite (%)	itic-structure is observed in the sample Pearlite (%) 64.30	Other P	Nil
pecimen Dimer STM Grain Siz ype of Structur rea Fraction-	ze No	Sample Cut Piece 7.0-7.5  Equiaxed-Ferrito-Pearl Decarburization is not of Ferrite (%)	itic-structure is observed in the sample Pearlite (%) 64.30	Other P	Nil

----End of Report---

Nodal Officer

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Vivekanand College, Kolhapur