

Letter No AA/HW/DPJ/M-P/2357/2021-22/507

Date : 22<sup>th</sup> October 2021

To

**The Authorised Representative**

DPJ Pollachi HAM Project Private Limited

Anthiyur, Pollachi (Tk), Coimbatore (Dt)-642 102

Sub: Independent Engineer Services for Four laning of Madathukulam to Pollachi  
section of NH-209 (New NH-83) from Design Km 74.380 to Km 116.950 (Length-  
50.078 Km) under Bharatmala Pariyojana Phase – I under the category of  
Residual works of NHDP on HAM in the state of Tamilnadu – **Source Approval of M/s.  
Ameenji Rubber Pvt. Ltd., Hyderabad for supply of Elastomeric Bearings for  
Bridge Works -Reg**

Ref : 1. Your Letter No. DPJ/HAM/Pollachi/IE/2021-22/672, dated 15.09.2021  
2. Our Letter No AA/HW/DPJ/M-P/2357/2021-22/428, dated 30.08.2021  
3. Your Letter No. DPJ/HAM/Pollachi/IE/2021-22/636, dated 24.08.2021  
4. Our Letter No AA/HW/DPJ/M-P/2357/2021-22/377, dated 31.07.2021  
5. Your Letter No. DPJ/HAM/Pollachi/IE/2021-22/556, dated 13.07.2021  
6. Concession Agreement dated 05.12.2019

Dear Sir,

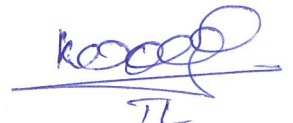
This is with reference to your letter nos.(1) & (3), regarding the submission of  
credentials of M/S. Ameenji Rubber Pvt. Ltd., for Source approval to supply Elastomeric  
Bearings for Bridge works.

The joint factory inspection conducted by IE's representative Mr. K.C. Sathya Murthy (Bridge  
Engineer) along with your AGM cum Bridge Engineer Mr. R. Seshu Sekhar on 22.09.2021.

During the Factory Inspection/visit, following manufacturing facilities/tests are witnessed:

1. In-house Quality Control System
2. Routine Tests on Bearings as per MORT&H CI. 2005 are conducted/witnessed at the  
Factory QC laboratory and Test reports (Third party test reports of Rubber sample, Mild steel  
etc along with in house test reports of manufacture) are enclosed in Annexure-I.

and found satisfactory.

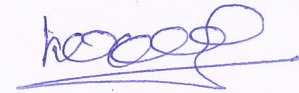


Herewith we are approving the source M/S. Ameenji Rubber Pvt. Ltd., Hyderabad for procuring the Elastomeric Bearings for Bridge works as per the approved Drawings (specifications & Sizes), with the following conditions:

- a. Manufacturer's Test Certificate should be procured for each consignment/lot and submit to IE for review.
- b. Each Consignment shall be certified and marked by the Manufacturer as per Cl. 2005.5 & 2005.6 of MORT&H Specifications and Standards.
- c. After delivery of 1<sup>st</sup> lot of Bearings at the site, random samples (1% or minimum one number of each type) should be sent to third party laboratory (NABL Accredited), to check / ascertain its properties confirming to IS Specifications and Standards as per Clause 7.12.5 of Four laning Manual (IRC:SP-84-2014) and as per Clause 2005.4 of MORT&H Specifications.

Thanking you assuring you the best of our services at all times.

**For Aarvee Associates Architects Engineers & Consultants Pvt. Ltd.,**



**K.V. Narayana Reddy**  
Team Leader



**Encl.**

1. Test Reports are attached in Annexure A. *-(Page : 1-16)*
2. Photographs are attached in Annexure B. *-(Page : 17-18)*

**Copy to:**

1. The Project Director, NHAI, PIU, Dindigul.
2. The Engineer, Aarvee Associates Architects Engineers & Consultants Pvt.Ltd.,

Hyderabad.





# AMEENJI RUBBER PVT. LTD. (QC LAB)



Plot No.P-9/18/1, Road No.8 IDA, Nacharam, Hyderabad – 500076.

ISO 9001:2015

OHSAS 18001:2007

## JOINT TEST REPORT

### DIMENSION & LOAD TEST REPORT

Format No : ARPL/LAB/FM/41

Date of Inspecon :	22.09.2021			
Customer Name & Address:	M/s D P JAIN & CO INFRASTRUCTURE PVT LTD. Tirupur ,Tamilnadu-642122. .			
Ref & Date	PORMDPO/00859/21-22P      &      21.07.2021			
Material Description/ Sample Idetification:	450x300x65mm	48 nos	450x350x73mm	12 nos
	350x275x64mm	16 nos	300x280x64mm	16 nos
	420x280x65mm	12 nos		
Sample Idetification:	Elastomeric Bearings		Lot No.EB/08-21	
Material Specification:	IRC:83-2018 (Part II)			

### TEST RESULTS

S.No.	Parameter	Clause No.	Permissible Limits	Test Method/ Spec. Ref.	Result
II.Tests carried out on Complete Bearings					
1	Length of Bearing	Table5, Cl.6.9	L -0 mm, +6 mm	IRC: 83 (Part II) /2018	Checked and found ok, Dimensions are with in the tolerences. Report Enclosed.
2	Width of Bearing	Table5, Cl.6.9	W -0 mm, +6 mm	IRC: 83 (Part II) /2018	
3	Thickness of Bearing	Table5, Cl.6.9	T -0, +5%	IRC: 83 (Part II) /2018	
4	Visual Examination	Cl.7.9.1.1	-	IRC: 83 (Part II) /2018	
5	Shear Modulus/ Shear Bond Test	Cl. C.2	0.9 ± 0.15 Mpa	IRC: 83 (Part II) /2018	Tested & Found Ok, Report Enclosed.
6	Compressive Stiffness/ Elastic Modulus Test	Cl. C.3	Refer Encl.	IRC: 83 (Part II) /2018	Tested & Found Ok, Report Enclosed.

### TEST RESULTS

S.No.	Parameter	Clause No.	Permissible Limits	Test Method/ Spec. Ref.	Result
1	Physical Properties (Before Ageing) :				
1.1	Hardness	Table1 &2, Cl.4.2	60 ± 5 IRHD	IS:3400 (Part II& XXIII)	59,61,60 IRHD
1.2	Tensile Strength	Table1, Cl.4.2	16 MPa (min)	IS:3400 (Part I)	21.55 Mpa
1.3	Elongation at break	Table1, Cl.4.2	425% (min)	IS:3400 (Part I)	475%
2	Tear Resistance	Table1, Cl.4.2	10KN/m (Min)	IS:3400 (Part XVII)	56.47 KN/m
3	Adhesion Strength	Table1, Cl.4.2.3	7KN/m (Min)	IS:3400 (Part XIV)	11.648 KN/m
4	Composition/ Chemical Analysis:				
*4.1	Polymer Identification	Cl. 4.1	Natural Rubber(NR)/ Chloroprene (CR)	IS:3400 (Part XXII)	Chloroprene (CR)
4.2	Ash Content	Cl. 4.1.4	5% (Max)	IS:3400 (Part XXII)	4.118%

Note: 1)Warranty is Subjected to the Bearing Installation as per IRC: 83 (P-II) or Cl. No. 2005.7 of MORTH.

2) Physical Properties and Chemical Analysis carried out on Test Pieces moulded with identical compound and identical vulcanizing conditions as used in the manufacturing of the Elastomeric Bearings.

Tested By

Witnessed By

Witnessed By

Verified By

K.C.SATHIYA MURTHI  
22/09/2021

Routh Seshu Sekhar

Manager (Quality)  
AMEENJI RUBBER  
Plot No. P-9/18, Road N  
IDA Nacharam, Hyderabad

Rev No. 01



K.C.SATHIYA MURTHI  
Bridge Engineer  
Aarvee Associates

AGM(P)  
Dp Jain Infra Pvt LTd



# ELASTIC MODULUS/ COMPRESSIVE STIFFNESS TEST



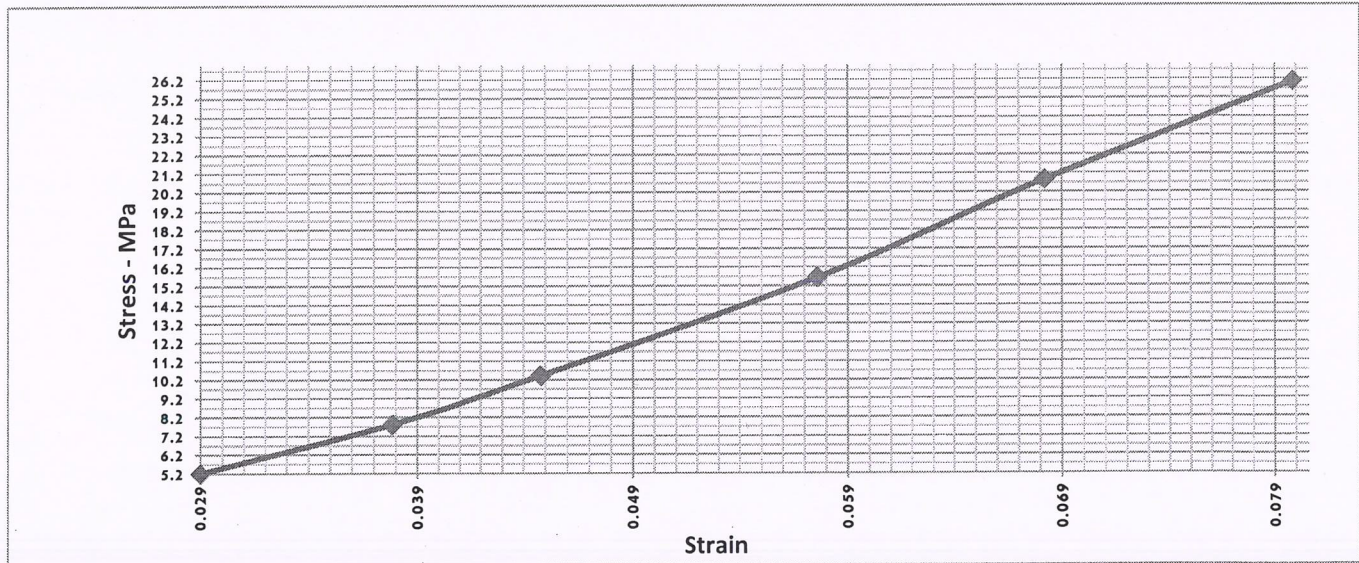
Lot No.EB/08-21

Date: 22.09.2021

Test Location: P 9/18, Road No. 8, I.D.A Nacharam, Hyderabad-500 076, Telangana State, India.

ELASTOMERIC BEARING SIZE (mm):	a	b	thick.	450	300	65
STEEL LAMINATE SIZE (mm)	a'	b'	thick.	438	288	3
EFFECTIVE BEARING AREA =L x W of Steel Laminate	A1			126144 mm <sup>2</sup>		
No. of STEEL LAMINATES	n			5 nos		
INTERNAL ELASTOMER LAYER THICKNESS (mm)	te			10 mm		
No. of INTERNAL ELASTOMER LAYERS				4 nos		
TOP/ BOTTOM ELASTOMER LAYER THICKNESS (mm)				5 mm		
SIDE COVER THICKNESS (mm)				6 mm		
TOTAL ELASTOMER THICKNESS (mm)	TET			50 mm		
SHAPE FACTOR =A1/{2(a'+b').te} (here te - internal elastomer thick.)	S			8.69		
Max.Test Loading = Fz, Test = 5.G.S.A1/1.5 (G is Shear Modulus) =	0.9			3288575 N = Kgs. 335227		

	Load in Kgs	Req.Pressure applied Kg/Cm2	Stress Mpa	Observed deflection in mm				Deflection Avg.	Strain D/(TET)
% F	F	F/ Ram Area (2025.84 Cm2)	F/Bearing Area	D1	D2	D3	D4	Avg. D	D/TET
20	67045	33	5.214	1.60	1.67	1.32	1.25	1.46	0.0292
30	100568	50	7.821	2.02	2.14	1.80	1.65	1.90	0.0381
40	134091	66	10.428	2.35	2.51	2.17	1.97	2.25	0.0450
60	201136	99	15.642	2.95	3.18	2.85	2.58	2.89	0.0578
80	268182	132	20.856	3.45	3.72	3.43	3.08	3.42	0.0684
100	335227	165	26.070	4.00	4.26	4.05	3.70	4.00	0.0801



@100%                      @30%  
 Stress = 26.07                      -                      7.82                      =                      18.25  
 Strain = 0.080                      -                      0.0381                      =                      0.0420  
 Compressive Stiffness, Ea(Mpa) =                      Stress/Strain =                      434.50

Value Specified as per IRC:83-2018 Pt.II Clause C.3.4.2                      377.66 ± 20% = (                      302.13                      to                      453.192                      )

**Result: No discernible defect is found by visual Examination. Result found Satisfactory**

Tested By

*[Signature]*

Witnessed By

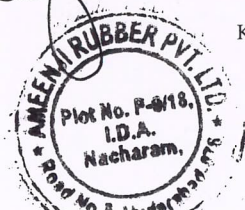
*[Signature]*

K.C.SATHIYA MURTHI  
Bridge Engineer  
Aarvee Associates

Witnessed By

*[Signature]*

Routh Seshu Sekhar  
AGM(P)  
Dp Jain Infra Pvt Ltd





# SHEAR MODULUS/ SHEAR BOND TEST



Lot No.EB/08-21

Date: 22.09.2021

Test Location: P 9/18, Road No. 8, I.D.A Nacharam, Hyderabad-500 076, Telangana State, India.

ELASTOMERIC BEARING SIZE:

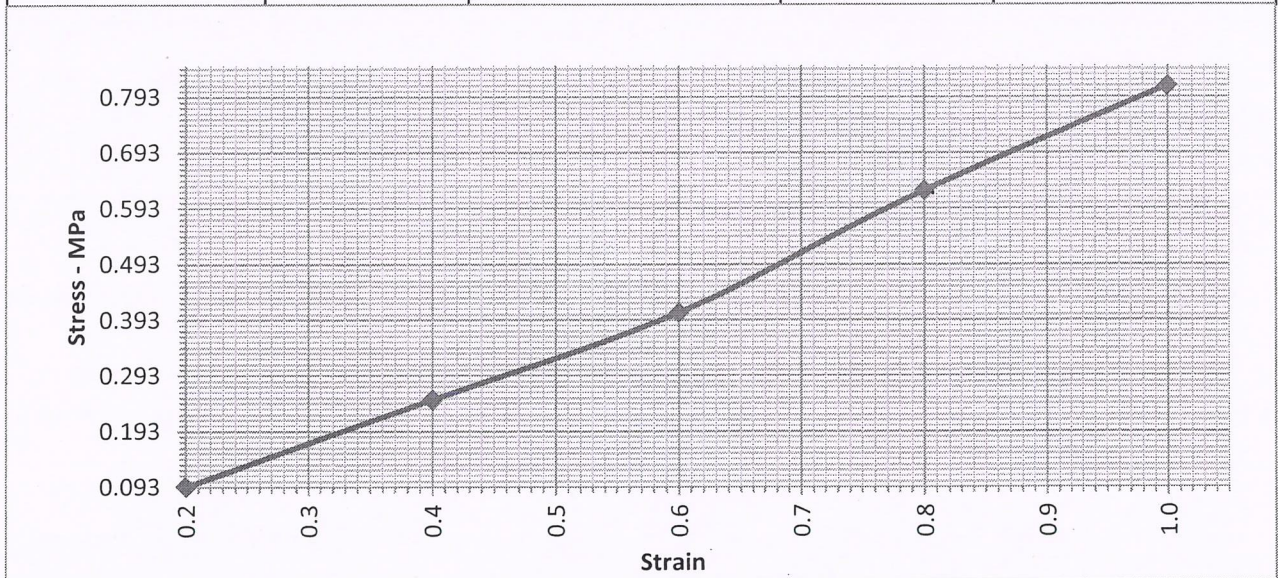
450

300

65

EFFECTIVE BEARING AREA (mm <sup>2</sup> )	126144
HORIZONTAL CYLINDER AREA (cm <sup>2</sup> )	804.57
TOTAL ELASTOMER THICKNESS (mm)	50

Strain (S)	Deflection (SxTRT) (mm)	Pressure (P) (Kg/cm <sup>2</sup> )	Load (F) on Bearing (Kgs) P*HCA	Stress Mpa $F*9.81/(A1*2)$
0.2	10.0	3.0	2413.7	0.0939
0.4	20.0	8.0	6436.6	0.2503
0.6	30.0	13.0	10459.4	0.4067
0.8	40.0	20.0	16091.4	0.6257
1.0	50.0	26.0	20918.9	0.8134



Stress = 0.6257 - 0.0939 = 0.5318

Strain = 0.800 - 0.200 = 0.60

SHEAR MODULUS (G) = Stress/Strain = 0.8864

SHEAR MODULUS PERMISSIBLE LIMITS as per IRC:83-2018 Pt.II Clause 4.2.2, Table 2

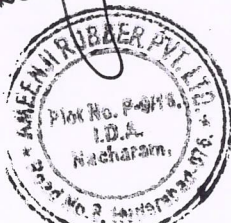
0.9 ± 0.15 Mpa

SHEAR BOND TESTED & VISUALLY EXAMINED AS PER IRC:83-2018 Pt.II Clause C.4

**Result: Horizontal Load applied up to 2Te (i.e. Strain 2), No evidence of Peeling or Separation between Rubber & Steel Laminates, No sign of Bond failure, Result found Satisfactory.**

Tested By

*[Signature]*



Witnessed By


*[Signature]*

K.C.SATHIYA MURTHI  
Bridge Engineer  
Aarvee Associates  
22/09/2021

Witnessed By

*[Signature]*

Routh Seshu Sekhar  
AGM(P)  
Dp Jain Infra Pvt Ltd

	<b>AMEENJI RUBBER PRIVATE LIMITED</b>	
	Place of Inspection: Plot No:9/18/1 ,Road No.8 IDA Nacharam, Hyderabad-500076.	
	<b>DIMENSIONS REPORT</b>	

**ELASTOMERIC BEARING SIZE:**      **450x300x65mm**      **Lot No.EB/08-21**      **22.09.2021**

Bearing Sl.No.	Length	Width	Thickness	Visual	Sign	
4	453	302	66	ok		
2	454	304	66	ok		
8	453	303	65	ok		
1	453	304	66	ok		
3	452	302	67	ok		
30	453	303	66	ok		
36	453	302	66	ok		

Note: Dimensions tolerances per the Table 5 of IRC 83-2018 (Part-II)

\* Indicates the Bearing used for Compressive Stiffness test, Shear Modulus & Shear Bond Tests.

Checked By



K.C.K. BB/IE  
Aarvee Associates

~~DP Jain~~ DP Jain Ltd.



# AMEENJI RUBBER PVT. LTD.

(QC LAB)

NABL ACCREDITED LABORATORY AS PER ISO/IEC 17025:2017

Plot No.P-9/18/1, Road No.8 IDA, Nacharam, Hyderabad – 500076.

AMEENJI ®

ISO 9001:2015

OHSAS 18001:2007

ULR : TC878021000000023P

## TEST REPORT MECHANICAL & CHEMICAL

Format No : ARPL/LAB/FM/41

Work Order No.:	ARPLQL/21/0023-1	Date of Sample Received :	22.09.21	
Test Report No.:	Mech-0110-Age-1 , Mech-0111-C-1,Mech-0112-Ad-1, Mech-0113-ozone-1, CH-013-ASH-1,Mech-0114-Tear-1.	Test Report Date :	27.09.21	
Customer Name & Address :	M/s D P JAIN & CO INFRASTRUCTURE PVT LTD. Tirupur ,Tamilnadu-642122.			
Material Description/ Sample Idetification: & QTY	450x300x65mm	48 nos	450x350x73mm	12 nos
	350x275x64mm	16 nos	300x280x64mm	16 nos
	420x280x65mm	12 nos		
	(Test Slab 150x150x2mm thk.- 6 nos & Rubber buttons 3 nos & 25 mm width strip)			
Sample Idetification:	Elastomeric Bearings	Lot No.EB/08-21		
Material Specification:	IRC:83-2018 (Part II)			
Ref . No. :	REQUEST FORM	Ref. Date :	22.09.21	
Location of Test Performed:	LAB PERMISES		Env.Conditions During Testing : At Room Temp.	

### TEST RESULTS

S.No.	Parameter	Clause No.	Permissible Limits	Test Method/ Spec. Ref.	Result
1	Compression Set (24h, 100deg.C) Samples conditioned on 22.09.21 & Tested on date: 23.09.21				
	Compression Set (24h, 100deg.C)	TableI, Cl.4.2	15% (Max)	IS:3400 (Part X)	7.18%
2	Physical Properties (After Ageing 72h, 100deg.C):Samples conditioned on 22.09.21 & Tested on date: 26.09.21				
2.1	Change in Hardness	TableI, Cl.4.2	±5 IRHD (Max)	IS:3400 (Part IV)	+2 IRHD
2.2	Change in Tensile Strength	TableI, Cl.4.2	±15% (Max)	IS:3400 (Part IV)	-6.66%
2.3	Change in Elongation	TableI, Cl.4.2	±25% (Max)	IS:3400 (Part IV)	-11.60%
3	Samples conditioned on 22.09.21 & Tested on date: 26.09.21				
	Ozone Resistance	TableI, Cl.4.2	No Cracks	IS:3400 (Part XX)	No Cracks
4	Composition/ Chemical Analysis:				
*4.1	Polymer Content	Cl. 4.1	60% (Min)	IS:3400 (Part XXII)	64.22%

**Remarks : The Test Results confirms to as per IRC-83 PART-2-2018 Specification**

Note : 1. The contents of the report shall not reproduced either in full or in part without prior written consent of the issuing authority.

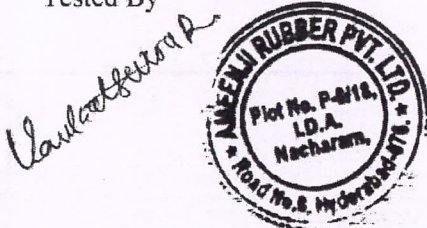
2. The results relate only to the items tested.

3. Sampling is not done by Laboratory .

4. \* Parameter does not come under NABL Scope

Tested By

Authorised Sign.



*[Signature]*  
Manager (Quality Control)  
AMEENJI RUBBER PVT. LTD.  
Plot No.P-9/18, Road No.8,  
IDA Nacharam, Hyd-76.





# AMEENJI RUBBER PVT. LTD.

Certified, CE Certified, ISO45001:2018 Certified & NABL ACCREDITED  
LABORATORY AS PER ISO/IEC 17025:2017

Plot No.P-9/18/1, Road No.8 IDA, Nacharam, Hyderabad – 500076.India

## Test Report

### POLYMER CONTENT TEST

Test Method: BY ASTM D 297

a. Acetone Extraction (%)

b. Total Carbon black Content (%)

c. Ash Content (%)

Total Polymer Content (%) =  $100 - (a+b+c)$

Product: Elastomeric Bearing,

Lot No.:

EB/09-21

Test Started on: 22-09-2021

Date: 23-09-2021

a. Acetone Extraction (%)

#### Observation

1	Wt. of Filter paper	0.583	grams
2	Wt. of the sample + Filter paper	1.896	grams
3	Wt. of the sample taken (2 - 1)	1.313	grams
4	Wt. of the extracted sample	1.208	grams
5	Difference in wt. (3 - 4)	0.105	grams
Acetone extraction(%) = $\frac{\text{Difference in wt.} \times 100}{\text{Wt. of sample taken}}$		7.997	%

b. Total Carbon black Content (%)

#### Observation

1	Wt. Acetone extracted sample	0.553	grams
2	Wt. of Actual Sample	0.597	grams
3	Wt. of Gooch crucible after drying at 110°C	27.783	grams
4	Wt. of Crushible after crush	27.646	grams
5	Difference in wt. (3 - 4)	0.137	grams
Carbon Black (%) = $\frac{\text{Difference in wt.} \times 100}{\text{Wt. of sample taken}}$		22.939	%

c. Ash Content (%)

#### Observation

1	Wt. of Empty Crushible	22.819	grams
2	Wt. of the sample + Crushible	23.828	grams
3	Wt. of the sample taken (2 - 1)	1.009	grams
4	Wt. of the Crushible + Ash	22.858	grams
5	Difference in wt. (4 - 1)	0.039	grams
Ash extraction(%) = $\frac{\text{Wt. of Ash} \times 100}{\text{Wt. of Difference (3 - 5)}}$		3.865	%

Result:

Total Polymer Content (%) =  $100 - (A+B+C) =$

34.802 =

65.198 %

Polymer Identification in ASTM Solution II

Polychloroprene Rubber

CR



Manager (Quality Control)  
AMEENJI RUBBER PVT. LTD.  
Plot No. P-9/18, Road No. 8,  
IDA Nacharam, Hyd-76.



Sanray Laboratories Pvt Ltd.  
Plot No. 48, Sy No.302/3  
EC Extension, ECIL 'X' Roads  
Kushaiguda, Hyderabad - 500 062  
Telangana.



**SANRAY<sup>+</sup>**  
It adds Value

## TEST REPORT

Page : 1 of 1

Issued To, **M/s. Ameenji Rubber Pvd.Ltd.**  
Address : Corp Office : 5-5-65/1/A,F-14, S.A.Trade Center  
First Floor, Ranigunj, Secunderabad-500003  
Telangana  
Contact Person:Mr.Laxminarayana  
Phone: 9676999812  
Report No. : STL/210824006328  
Date of Receipt : 19-08-2021  
Date of Start : 23-08-2021  
Date of completion : 23-08-2021  
Report Date : 24-08-2021

Customer Ref. No. : Requisition

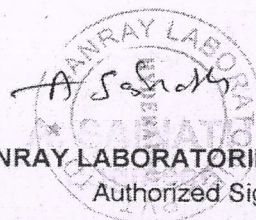
Sample Details : **Rubber Sample**  
Sample Description : **Elastomeric Bearing Confirms to IRC 83: Pt-II, Lot No.: EB/08-21**

Sample Qty. : 01 No  
Tests Required : Polymer Content by TGA

S.No.	TestParameters	Units	Results	Test Method
1	Polymer content by TGA	%	65.88	ASTM E1131

NA: Not Applicable

**\*\*End of Report\*\***



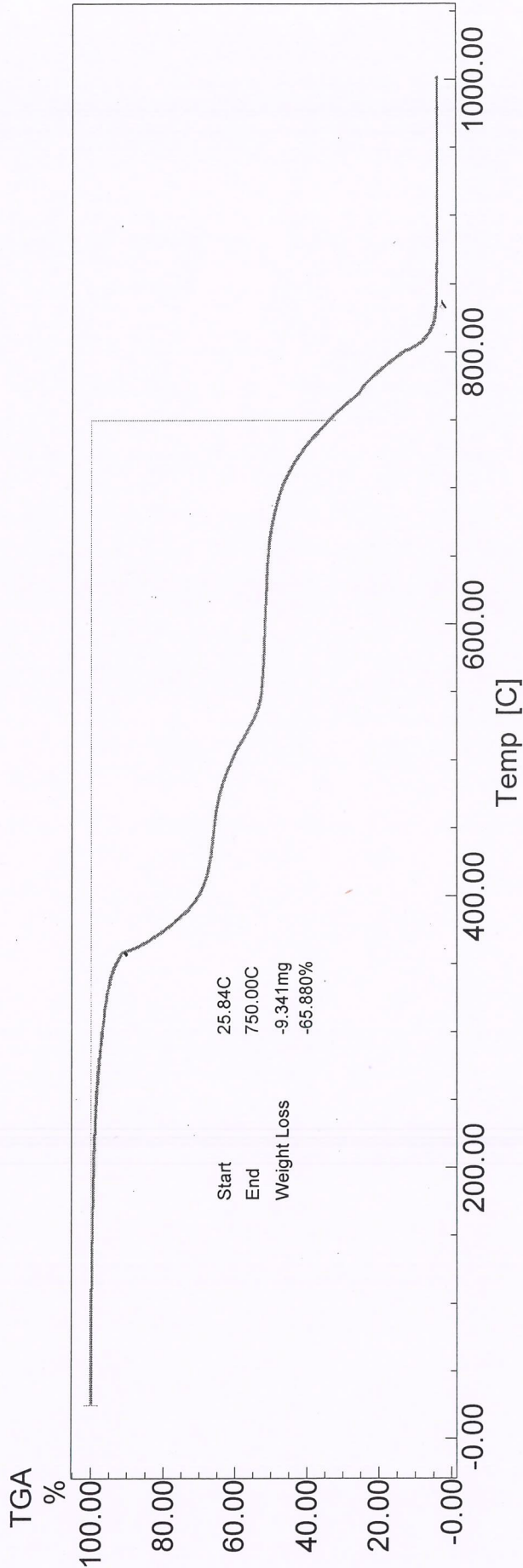
For **SANRAY LABORATORIES PRIVATE LIMITED**  
Authorized Signatory

**REMARKS** The sample is submitted by the customer.  
The results printed on the report are limited only to the sample submitted.  
The report cannot be used for any legal purpose.

\*IBR Approved Laboratory

E-mail: [info@sanraylabs.com](mailto:info@sanraylabs.com) Phone : +91-40-67726729  
[www.sanraylabs.com](http://www.sanraylabs.com) Toll Free : 1-800-419-6729

STL/QF/5.10/A/TR3 REV 01 FEB'18



File Name: 316486-RUBBER 2021-03-06.tad

Detector: DTG-60

Serial No: C30565500779TK

Acquisition Date: 21/08/23

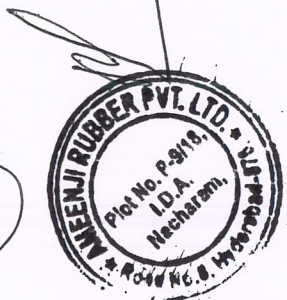
Acquisition Time: 16:08:38(+0530)

Sample Name: 316486-RUBBER

Sample Weight: 14.008[mg]

Operator: LAKSHMI

[Temp Program]				Gas
Temp Rate [C/min]	Hold Temp [C]	Hold Time [min]		
10.00	325.0	0	Nitrogen	
10.00	550.0	0	Nitrogen	
10.00	600.0	0	Oxygen	
10.00	1000.0	0	Oxygen	



Analysed by: LB  
Date:





**Sanray Laboratories Pvt Ltd.**  
Plot No. 48, Sy. No. 302/3,  
EC Extension, ECIL 'X' Roads,  
Kushaiguda, Hyderabad - 500 062  
Telangana.



Certificate No: TC - 7379

**SANRAY<sup>+</sup>**  
It adds Value

**TEST REPORT**

Page 1 of 1

Issued To, : M/S.Ameenji Rubber Pvt. Ltd.  
Address : Corp Office : 5-5-65/1/A,F-14 S.A. Trade Center  
First Floor, Ranigunj, Secunderabad-500003  
Telangana  
Contact Person :Mr. Lakshmi Narayana  
Phone : 9676999812  
E-Mail : qc@ameenji.net  
Customer Ref. No. : Letter,Dt:24/03/2021  
Sample Details : Mild Steel 3mm Thick  
Sample Description: Cast No:T35358/Tata

ULR : TC737921000000822F  
Report No. : STL/210327005654  
Date of Receipt : 27/03/2021  
Date of Start : 05/04/2021  
Date of Completion: 05/04/2021  
Report Date : 10/04/2021

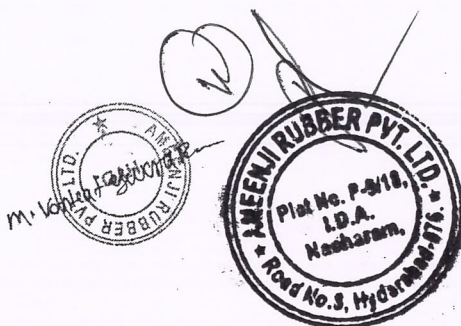
Sample Qty. : 01No  
Tests Required : Chemical Composition

**Test Result**

S.No.	Test Parameters	Test Method	Units	Specifications as per IS 2062:2011(Gr.E250BR)	Results
<b>Chemical Testing</b>					
<b>Metals and Alloys</b>					
1	Carbon as C	IS 8811:1998 (RA:2018)	% by mass	0.22 max	0.133
2	Manganese as Mn	IS 8811:1998 (RA:2018)	% by mass	1.50 max	0.514
3	Phosphorus as P	IS 8811:1998 (RA:2018)	% by mass	0.045 max	0.017
4	Sulphur as S	IS 8811:1998 (RA:2018)	% by mass	0.045 max	0.012
5	Silicon as Si	IS 8811:1998 (RA:2018)	% by mass	0.40 max	0.0861

Observation: The above Chemical Composition is meeting to IS 2062:2011(Gr.E250BR) material.  
The value of the carbon equivalent CE is 0.223

**\*\*End of Report\*\***



For SANRAY LABORATORIES PRIVATE LIMITED  
Authorized Signatory

**REMARKS** The sample is submitted by the customer.  
The results printed on the report are limited only to the sample submitted.  
The report cannot be used for any legal purpose.

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Page19

E-mail: info@sanraylabs.com Phone : +91-40-4855 5855  
www.sanraylabs.com

STL/QF/7.8/A/TR3 REV 00 FEB'20

Page19



Sanray Laboratories Pvt Ltd.  
Plot No. 48, Sy. No. 302/3,  
EC Extension, ECIL 'X' Roads,  
Kushaiguda, Hyderabad - 500 062  
Telangana.



Certificate No: TC- 7379

**SANRAY<sup>+</sup>**  
It adds Value

**TEST REPORT**

Page : 1 of 1

Issued To, : M/S.Ameenji Rubber Pvt. Ltd.  
Address : Corp Office : 5-5-65/1/A,F-14 S.A. Trade Center  
First Floor, Ranigunj, Secunderabad-500003  
Telangana  
Contact Person :Mr. Lakshmi Narayana  
Phone : 9676999812  
E-Mail : qc@ameenji.net

Customer Ref. No. : Letter,Dt:24/03/2021

Sample Details : Mild Steel 3mm

Sample Description: Cast No:T35358/TATA

ULR : TC737921000000817F

Report No. : STL/210327005636

Date of Receipt : 27/03/2021

Date of Start : 02/04/2021

Date of Completion: 02/04/2021

Report Date : 10/04/2021

Sample Qty. : 01No

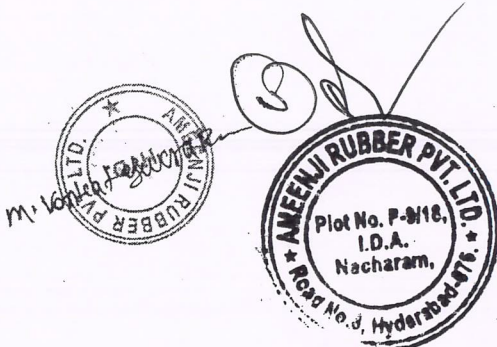
Tests Required : Mechanical Testing

**Test Result**

S.No.	Test Parameters	Test Method	Units	Specifications as per IS 2062 Gr.E250 BR	Results
<b>Mechanical Testing</b>					
<b>Mechanical Properties of Metals</b>					
1	Tensile Strength	IS 1608(Part-1)-2018	MPa	410 min	451.33
2	Yield stress	IS 1608(Part-1)-2018	MPa	250 min	274.88
3	Elongation	IS 1608(Part-1)-2018	%	23 min	26.54

Observation : The above Mechanical properties are Meeting to the IS 2062 Gr.E250 BR Material.

\*\*End of Report\*\*



For SANRAY LABORATORIES PRIVATE LIMITED

Authorized Signatory

**REMARKS**

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Plot No. 48, Sy. No. 302/3,  
EC Extension, ECIL 'X' Roads,  
Kushaiguda, Hyderabad - 500 062  
Telangana.



Certificate No: TC - 7379

**SANRAY<sup>+</sup>**  
It adds Value

**TEST REPORT**

Page : 1 of 1

Issued To, : M/S.Ameenji Rubber Pvt. Ltd.  
Address : Corp Office : 5-5-65/1/A,F-14 S.A. Trade Center  
First Floor, Ranigunj, Secunderabad-500003  
Telangana  
Contact Person : Mr. Lakshmi Narayana  
Phone : 9676999812  
E-Mail : qc@ameenji.net

Customer Ref. No. : Letter, Dt: 24/03/2021

Sample Details : Mild Steel 4mm Thick

Sample Description: Cast No: A03268/JINDAL

Sample Qty. : 01 No

Tests Required : Mechanical Testing

ULR : TC737921000000816F

Report No. : STL/210327005635

Date of Receipt : 27/03/2021

Date of Start : 02/04/2021

Date of Completion: 02/04/2021

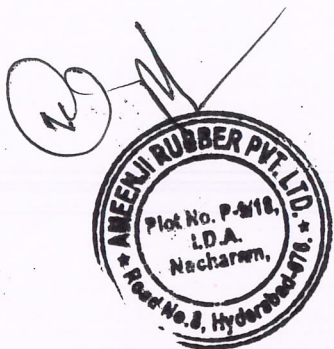
Report Date : 10/04/2021

**Test Result**

S.No.	Test Parameters	Test Method	Units	Specifications as per IS 2062 Gr.E250 BR	Results
<b>Mechanical Testing</b>					
<b>Mechanical Properties of Metals</b>					
1	Tensile Strength	IS 1608(Part-1)-2018	MPa	410 min	512.13
2	Yield stress	IS 1608(Part-1)-2018	MPa	250 min	309.69
3	Elongation	IS 1608(Part-1)-2018	%	23 min	27.88

Observation : The above Mechanical Properties are Meeting to the IS 2062 Gr.E250 BR Material.

\*\*End of Report\*\*



For SANRAY LABORATORIES PRIVATE LIMITED  
Authorized Signatory

REMARKS : The sample is submitted by the customer.  
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Plot No. 48, Sy. No. 302/3,  
EC Extension, ECIL 'X' Roads,  
Kushaiguda, Hyderabad - 500 062  
Telangana.



Certificate No: TC - 7379

## TEST REPORT

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It adds Value

Page . 1 of 1

Issued To, : M/S.Ameenji Rubber Pvt. Ltd.  
Address : Corp Office : 5-5-65/1/A,F-14 S.A. Trade Center  
First Floor, Ranigunj, Secunderabad-500003  
Telangana  
Contact Person : Mr. Lakshmi Narayana  
Phone : 9676999812  
E-Mail : qc@ameenji.net  
Letter, Dt: 24/03/2021  
Customer Ref. No.  
Sample Details : Mild Steel 4mm Thick  
Sample Description: Cast No: A03268/Jindal

ULR : TC737921000000835F

Report No. : STL/210327005653  
Date of Receipt : 27/03/2021  
Date of Start : 07/04/2021  
Date of Completion: 07/04/2021  
Report Date : 10/04/2021

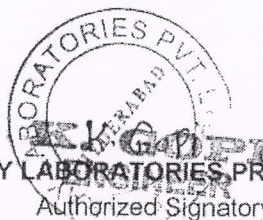
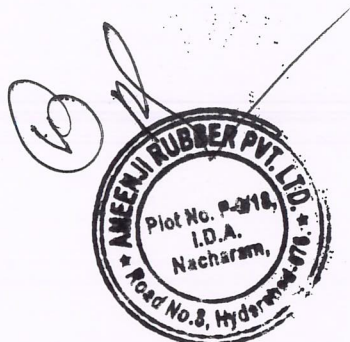
Sample Qty. : 01No  
Tests Required : Chemical Composition

### Test Result

S.No.	Test Parameters	Test Method	Units	Specifications as per IS 2062:2011(E250BR)	Results
Chemical Testing					
Metals and Alloys					
1	Carbon as C	IS 8811:1998 (RA:2018)	% by mass	0.22 max	0.152
2	Manganese as Mn	IS 8811:1998 (RA:2018)	% by mass	1.50 max	0.818
3	Phosphorus as P	IS 8811:1998 (RA:2018)	% by mass	0.045 max	0.016
4	Sulphur as S	IS 8811:1998 (RA:2018)	% by mass	0.045 max	0.015
5	Silicon as Si	IS 8811:1998 (RA:2018)	% by mass	0.40 max	0.208

Observation: The above Chemical Composition is meeting to IS 2062:2011(Gr.E250BR) material.  
The value of the carbon equivalent CE is 0.371

\*\*End of Report\*\*



For SANRAY LABORATORIES PRIVATE LIMITED  
Authorized Signatory

REMARKS The sample is submitted by the customer.  
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The report cannot be used for any legal purpose.

\*IBR Approved Laboratory



TOSOH CORPORATION

31-890000899627-005A

3-8-2, Shiba Minato-ku Tokyo 105-8623 JAPAN  
Tel: 03-5427-5146 Fax: 03-5427-5210

Date: January 27, 2021

To whom it may concern:

Certificate of Quality

This is to certify that we have performed the analysis of the product below:

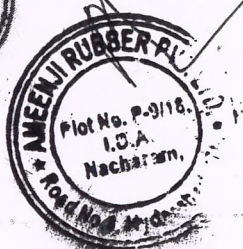
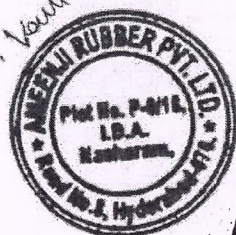
Commodity : Chloroprene rubber  
Grade : B-30  
Brand Name : SKYPRENE  
Lot No. : 21007

	Unit	Specification	Result of Analysis
Appearance		: White or pale yellow	On standards
Raw rubber Mooney viscosity	ML(1+4)100°C	: 45 <= ~ <= 53	48
Volatile Matter	%	: max. 1.0	0.1
300% tensile stress	MPa	:	15.9
Tensile strength	MPa	:	23.3
Elongation	%	:	400
Hardness (DUROMETER-A)		:	65

Remarks:

Compound properties are obtained with Tosoh method.

This certificate is issued electronically and it is valid without a signature.



K. Kuma  
Quality Manager  
Nanyo Complex

**Joint Factory Inspection Report of M/s Ameenji Rubber Private Limited for bearings :**

**Factory Visit** : M/s Ameenji Rubber Private Limited  
**Factory Visit conducted by** :1. K.C.Sathiya Murthi Bridge Engineer,Aarvee associates  
2. R. Seshu sekar, AGM structures , D.P.Jain  
**Date of Factory Visit** : 22-09-2021  
**Material** : Elastomeric Bridge Bearings  
**Codes** : IRC:83 (Part II)-2018,IS:3400,ASTM D 297  
MORTH Clause. 2005

**Bearings for Following Structures:**

S No	Chainage	Nos
<b>I. 450x300x65mm</b>		
a	Flyover @ Km. 86+425	12 Nos
b	Flyover @ Km. 95+920	12 Nos
c	Flyover @ Km. 105+160	12 Nos
d	Flyover @ Km. 112+274	12 Nos
	<b>Total</b>	<b>48 Nos</b>
<b>II. 300x280x64mm</b>		
a	MNB @ Km. 78+122	16 Nos
<b>III. 420x280x65mm</b>		
a	MNB Cum VUP @ Km. 87+210 (VUP)	12 Nos
<b>IV. 450x350x73mm</b>		
a	MNB Cum VUP @ Km. 87+210 (MNB)	12 Nos

**The following Tests are conducted as per MORT&H, CI. 2005 :**

<b>Tests on Completed Bearings</b>				
Sl no.	Test	Test Method	Test Reports	Photographs
1.	Visual Examination	IRC:83 (Part II)/2018	Attached	Attached
2	Dimension Check	IRC:83 (Part II)/2018	Attached	Attached
3	Shear Modulus/Shear	IRC:83 (Part II)/2018	Attached	Attached

K.C.S.

B.E. J.E.





	bond test			
4	Compressive stiffness/Elastic Modulus Test	IRC:83 (Part II)/2018	Attached	Attached

## II. Elastomer Test :

SI no.	Parameter	Test Method	Test Reports	Photographs
1	Physical properties			
	a) Hardness	IS:3400 (Part II & XXIII)	Attached	Attached
	b) Tensile strength	IS:3400 (Part I)	Attached	Attached
	c) Elongation at break	IS:3400 (Part I)	Attached	Attached
2	Tear Resistance	IS:3400 (Part XVII)	Attached	Attached
3	Elongation at break	IS:3400 (Part XIV)	Attached	Attached
4	Chemical Analysis		Attached	Attached
	a) Polymer Identification	IS:3400 (Part XXII)	Attached	Attached
	b) Ash Content	IS:3400 (Part XXII)	Attached	Attached

## II. Elastomer Mechanical and chemical test :

The following tests are conducted on 22.09.2021 and Tests are tested on 24 Hour and 96 Hour .

Reports are received from the Agency

SI no.	Parameter	Test Method	Test Reports	Photographs
1.	Compression set	IS:3400 (Part X)	Attached	Attached
2	Physical properties			
	a) Change in hardness	IS:3400 (Part IV)	Attached	Attached



	b).Change in tensile strength	IS:3400 (Part IV)	Attached	Attached
	c)Change in Elongation	IS:3400 (Part IV)	Attached	Attached
3.	Ozone Resistance	IS:3400 (Part XX)	Attached	Attached
4	Composition/Chemical Analysis			
	a)Polymer content	ASTM D 297	Attached	Attached





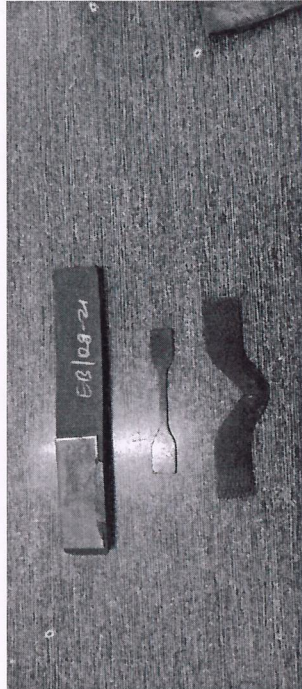

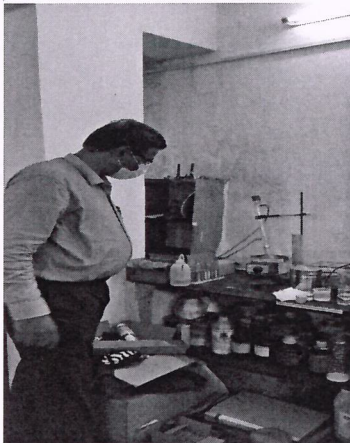



## ANNEXURE B

In-house Tests conducted on Elastomeric Bearings during Factory Inspection conducted by  
IE Representative. K.C.Sathiya Murthi Bridge Engineer , Aarvee associates

Concessionaire Representative. Seshu sekar, AGM structures , D.P.Jain

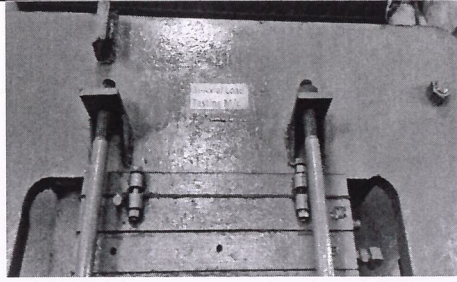
### PHOTOGRAPH OF M/S AMEENJI RUBBER PT LTD.

<p>PHOTOGRAPH</p>  <p>Tensile strength</p>	<p>PHOTOGRAPH</p>  <p>Elongation at Break</p>	<p>PHOTOGRAPH</p>  <p>Test Sample</p>
 <p>Tear Resistance</p>	 <p>Polymer content test</p>	 <p>Adhesion Test</p>

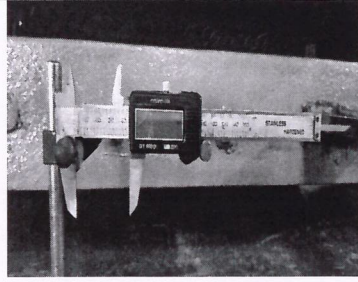


K.C.S. Murthi  
B.E.T.E

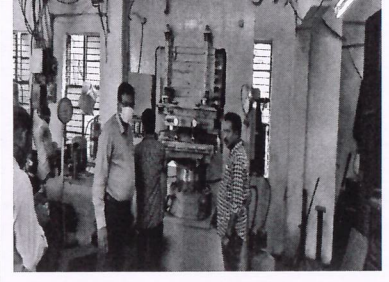




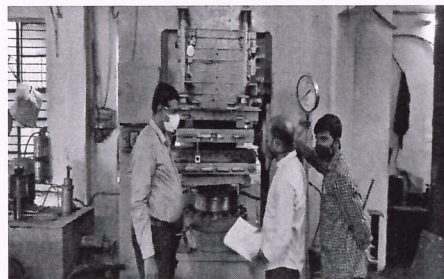
Bi-Axial Load testing Machine



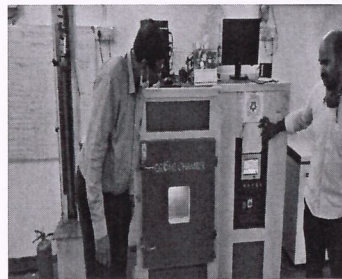
Compressive stiffness/Elastic Modulus Test



Shear Modulus/ shear bond Test



Compressive stiffness/Elastic Modulus Test



Ozone Resistance Test



Ozone Resistance Test



Compression set



Hardness Test



Factory Visit

