

THIRD PARTY TEST CERTIFICATES

TEST REPORT**Description of sample:** GFRP Bar 40mm,**Sample No:-** 01,**Customer ID:** AIIPL/WB/2021/505,**Letter Dated:-** 24.12.2021

Issued to

M/S ARC Insulation & Insulators Pvt. Ltd.,
375, Prince Anwar Sha Road,
Kolkata- 700068.

Report No: MCBTL-12D00214598**Date of Report:** 25.12.2021**Date of Testing:** 24.12.2021**Date of Receipt:** 23.12.2021

Sl. No	Parameters	Test Results	Method of test w.r.t. IS:
1.	Dia of Specimen, mm	40.00	Measurement
2.	Breaking Load, kN	820	1608(P-1):2018
3.	Tensile Strength, N/mm ²	652.3	

End of Test Report

TEST REPORT

Description of sample: GFRP Bar 40mm,
Sample No:- 02,
Customer ID: AIPL/WB/2021/505,
Letter Dated:- 24.12.2021
Issued to

M/S ARC Insulation & Insulators Pvt. Ltd.,
375, Prince Anwar Sha Road,
Kolkata- 700068.

Report No: MCBTL-12D00214599
Date of Report: 25.12.2021
Date of Testing: 24.12.2021
Date of Receipt: 23.12.2021

Sl. No	Parameters	Test Results	Method of test w.r.t. IS:
1.	Dia of Specimen, mm	40.00	Measurement
2.	Breaking Load, kN	760	1608(P-1):2018
3.	Tensile Strength, N/mm ²	604.6	

End of Test Report





DIVINE METALLURGICAL SERVICES PVT. LTD.

Testing House of Metals & Alloys.
(ACCREDITED BY NABL - ISO 17025)

Plot No. 14, Gopal Industrial Estate
Opp. Vallabh Nagar,
Odhav,
Ahmedabad-382 415.

Phone : 079-22891013 Mo. : 9227220993
Telefax : 079-22892804
Email : divinelab_nhp@rediffmail.com
Web site : www.divinelaboratory.com

Mechanical Testing

Report No : T53704

Date : 21/12/2017

To, Larsen & Toubro Limited.(Heavy Civil Infrastructure IC) Amit Corporation Housing Society Ltd.,Popular House Building 2nd Floor,201,Above ICICI Bank,Opp.Sales India,Ashram Road, Ahmedabad.380009			
Test :	Tensile		
Test Method:	ASTM D7205		
Test Performance At:	Divine Metallurgical Services P. Ltd.		
Instrument Used :	MCS Make Universal Testing Machine, UTE-150, Due Date of Calibrated 10.07.2018		
Customer Ref No. :	Ref:L&T/AMD/UG2/MT/2017/073, Date:20.12.2017		
Condition of Sample :	Dia16mm GFRP Bar (Source:ARC insulation & Insulators Pvt.Ltd.)		
Nature Of Sample :	Test Piece GFRP Bar	Stamped as : -	
Specification :	ASTM D7205		
Date Of Testing :	21/12/2017	Sample Drawn By : Party	
Project:MEGA-UG2 Package-L&T(A'Bad-Metro), Client:Metro-Link Express for Gandhinagar and A'Bad (MEGA) Co.Ltd.Consultant:MEGA-GEC(A Consortium of SYSTRA-RITES-OCG-AECOM), Sampling Location:Kalapur Launching Shaft Sample ID:L&T/MEGA/GFRP/01, Batch No.180917R16			
Section Dimension (in mm)	S.NO.1 Dia16	Min	Max
Area (in mm ²)	200.960		
Ultimate Load (in kN)	181.350		
UTS (in N/mm ²)	902.418	630.000	
Remarks:	The Result meets as per Customer Requirement.		
Witnessed By/ N.B. :	Mr.Avinash Pandey from "L&T" , Mr.Bhaskar S.Rautela from "MEGA-GEC"		

Tested By :

(Under NABL)
Condition Of Reporting :

1. Sample must be drawn by the party. The result relate only to the sample submitted by the party.
2. Any part or parts of the Test Report shall not be reproduced, for this, the written request to the laboratory is mandatory for the Customer.
3. Samples are store for fifteen days from the date of receipt.

Authorized Signatory

BHASKAR S RAUTELA
SECTION ENGR / GEC / UG



For Reference Only



DIVINE METALLURGICAL SERVICES PVT. LTD.

Testing House of Metals & Alloys.
(ACCREDITED BY NABL - ISO 17025)

Plot No. 14, Gopal Industrial Estate
Opp. Vallabh Nagar,
Odhav,
Ahmedabad-382 415.

Phone : 079-22891013 Mo. : 9227220993
Telefax : 079-22892804
Email : divinelab_nhp@rediffmail.com
Web site : www.divinelaboratory.com

Mechanical Testing

Report No : T53704A

Date : 21/12/2017

To, Larsen & Toubro Limited (Heavy Civil Infrastructure IC) Amit Corporation Housing Society Ltd., Popular House Building 2nd Floor, 201, Above ICICI Bank, Opp. Sales India, Ashram Road Ahmedabad 380009			
Test :	Tensile		
Test Method:	ASTM D7205		
Test Performance At:	Divine Metallurgical Services P. Ltd.		
Instrument Used :	MCS Make Universal Testing Machine, UTE-150, Due Date of Calibrated 10.07.2018		
Customer Ref No. :	Ref:L&T/AMD/UG2/MT/2017/073.Date:20.12.2017		
Condition of Sample :	Dia16mm GFRP Bar (Source:ARC insulation & Insulators Pvt. l td.)		
Nature Of Sample :	Test Piece of GFRP Bar	Stamped as :-	
Specification :	ASTM D7205		
Date Of Testing :	21/12/2017	Sample Drawn By : Party	
Project:MEGA-UG2 Package-L&T(A'Bad-Metro),Client:Metro-Link Express for Gandhinagar and A'Bad.(MEGA) Co.Ltd,Consultant:MEGA-GEC(A Consortium of SYSTRA-RITES-OCG-AECOM),Sampling Location:Kalupur Launching Shaft,Sample ID:L&T/MEGA/GFRP/01,Batch No.180917R16			
Section Dimension (in mm)	S.NO.2 Dia16	Min	Max
Area (in mm ²)	200.960		
Ultimate Load (in kn)	190.050		
UTS (in N/mm ²)	945.711	630.000	
Remarks:	The Result meets as per Customer Requirement.		
Witnessed By/ N.B. :	Mr.Avinash Pandey from "L&T" , Mr.Bhaskar S.Rautela from "MEGA-GEC"		

Tested By
(Under NABL)
Condition Of Reporting :

[Signatures]
BHASKAR S RAUTELA
SECTION ENGR / GEO / UC

Authorized Signatory

1. Sample must be drawn by the party. The result relate only to the sample submitted to the laboratory.
2. Any part or parts of the Test Report shall not be reproduced. for this , the written request to DLS is mandatory to the Customer.
3. Samples are store for fifteen days from the date of receipt.



For Authorized Only



DIVINE METALLURGICAL SERVICES PVT. LTD.

Testing House of Metals & Alloys.
(ACCREDITED By NABL - ISO 17025)

Plot No. 14, Gopal Industrial Estate
Opp. Vallabh Nagar,
Odhav,
Ahmedabad-382 415.

Phone : 079-22891013 Mo. : 9227220993
Telefax : 079-22892804
Email : divinelab_nhp@rediffmail.com
Web site : www.divinelaboratory.com

Mechanical Testing

Report No : T53705

Date : 21/12/2017

To, Larsen & Toubro Limited.(Heavy Civil Infrastructure IC) Amit Corporation Housing Society Ltd., Popular House Building 2nd Floor, 201, Above ICICI Bank, Opp. Sales India, Ashram Road, Ahmedabad, 380009			
Test :	Tensile		
Test Method:	ASTM D7205		
Test Performance At:	Divine Metallurgical Services P. Ltd.		
Instrument Used:	MCS Make Universal Testing Machine, UTE-150, Due Date of Calibrated 10.07.2018		
Customer Ref No. :	Ref:L&T/AMD/UG2/MT/2017/073, Date:20.12.2017		
Condition of Sample :	Dia28mm GFRP Bar (Source:ARC insulation & Insulators Pvt.Ltd.)		
Nature Of Sample :	Test Piece of GFRP Bar	Stamped as : -	
Specification :	ASTM D7205		
Date Of Testing :	21/12/2017	Sample Drawn By : Party	
Project:MEGA-UG2 Package-L&T(A'Bad-Metro), Client:Metro-Link Express for Gandhinagar and A'Bad.(MEGA) Co.Ltd.Consultant.MEGA-GEC(A Consortium of SYSTRA-RITES-OCG-AECOM), Sampling Location:Kalupur Launching Shaft, Sample ID:L&T/MEGA/GFRP/02 Batch No.180917R28			
Section Dimension (in mm)	S.NO.1 Dia28	Min	Max
Area (in mm ²)	615.200		
Ultimate Load (in kn)	427.200		
UTS (in N/mm ²)	694.408	595.000	
Remarks:	The Result meets as per Customer Requirement.		
Witnessed By/ N.B. :	Mr.Avinash Pandey from "L&T" , Mr.Bhaskar S.Rautela from "MEGA-GEC"		

Tested By
(Under NABL)
Condition Of Reporting :

[Signature]

[Signature]
BHASKAR S RAUTELA
SECTION ENGR / GEC / UG

Authorized Signatory



1. Sample must be drawn by the party. The result relate only to the sample submitted by the party.
2. Any part or parts of the Test Report shall not be reproduced, for this, the written request to DLS is mandatory for the Customer.
3. Samples are store for fifteen days from the date of receipt.

For Reference Only



DIVINE METALLURGICAL SERVICES PVT. LTD.

Testing House of Metals & Alloys.
(ACCREDITED BY NABL - ISO 17025)

Plot No. 14, Gopal Industrial Estate
Opp. Vallabh Nagar,
Odhav,
Ahmedabad-382 415.

Phone : 079-22891013 Mo. : 9227220993
Telefax : 079-22892804
Email : divinelab_nhp@rediffmail.com
Web site : www.divinelaboratory.com

Mechanical Testing

Report No : T53705A

Date : 21/12/2017

To, Larsen & Toubro Limited (Heavy Civil Infrastructure IC) Amit Corporation Housing Society Ltd., Popular House Building 2nd Floor, 201, Above ICICI Bank, Opp. Sales India Ashram Road, Ahmedabad.380009			
Test :	Tensile		
Test Method:	ASTM D7205		
Test Performance At:	Divine Metallurgical Services P. Ltd.		
Instrument Used :	MCS Make Universal Testing Machine, UTE-150, Due Date of Calibrated 10.07.2018		
Customer Ref No. :	Ref:L&T/AMD/UG2/MT/2017/073 Date:20.12.2017		
Condition of Sample :	Dia 28mm GFRP Bar (Source:ARC insulation & Insulators Pvt.Ltd.)		
Nature Of Sample :	Test Piece of GFRP Bar	Stamped as : -	
Specification :	ASTM D7205		
Date Of Testing :	21/12/2017	Sample Drawn By : Party	
Project:MEGA-UG2 Package-L&T(A'Bad Metro), Client:Metro-Link Express for Gandhinagar and A'Bad.(MEGA) Co.Ltd, Consultant:MEGA-GEC(A Consortium of SYSTRA-RITES-OCG-AECOM), Sampling Location:Kalupur Launching Shaft, Sample ID:L&T/MEGA/GFRP/02, Batch No.180917R28			
Section Dimension (in mm)	S.NO.2 Dia28	Min	Max
Area (in mm ²)	615.200		
Ultimate Load (in kn)	418.200		
UTS (in N/mm ²)	679.779	595.000	
Remarks:	The Result meets as per Customer Requirement.		
Witnessed By/ N.B. :	Mr.Avinash Pandey from "L&T" , Mr Bhaskar S.Rautela from "MEGA-GEC"		

Tested By

(Under NABL)
Condition Of Reporting :

Authorized Signatory

1. Sample must be drawn by the party. The result relate only to the sample submitted by the party.
2. Any part or parts of the Test Report shall not be reproduced, for this , the written request to DLS is mandatory for the Customer.
3. Samples are store for fifteen days from the date of receipt.

SECTION ENGR / GEC / UG



For Reference Only



DIVINE METALLURGICAL SERVICES PVT. LTD.

Testing House of Metals & Alloys.
(ACCREDITED By NABL - ISO 17025)

Plot No. 14, Gopal Industrial Estate
Opp. Vallabh Nagar,
Odhav,
Ahmedabad-382 415.

Phone : 079-22891013 Mo. : 9227220993
Telefax : 079-22892804
Email : divinelaab_nhp@rediffmail.com
Web site : www.divinelaboratory.com

Mechanical Testing

Report No : T53706

Date : 21/12/2017

To, Larsen & Toubro Limited.(Heavy Civil Infrastructure IC) Amit Corporation Housing Society Ltd., Popular House Building 2nd Floor, 201, Above ICICI Bank, Opp. Sales India, Ashram Road, Ahmedabad.380009			
Test :	Tensile		
Test Method:	ASTM D7205		
Test Performance At:	Divine Metallurgical Services P. Ltd.		
Instrument Used :	MCS Make Universal Testing Machine, UTE-150, Due Date of Calibrated 10.07.2018		
Customer Ref No. :	Ref:L&T/AMD/UG2/MT/2017/073, Date:20.12.2017		
Condition of Sample :	Dia32mm GFRP Bar (Source:ARC insulation & Insulators Pvt Ltd.)		
Nature Of Sample :	Test Piece of GFRP Bar	Stamped as : -	
Specification :	ASTM D7205		
Date Of Testing :	21/12/2017	Sample Drawn By : Party	
Project:MEGA-UG2 Package-L&T(A'Bad-Metro), Client:Metro-Link Express for Gandhinagar and A'Bad.(MEGA) Co.Ltd.Consultant:MEGA-GEC(A Consortium of SYSTRA-RITES-OCG-AECOM), Sampling Location:Kalupur Launching Shaft, Sample ID:L&T/MEGA/GFRP/03, Batch No.180917R32			
Section Dimension (in mm)	S.NO.1 Dia32	Min	Max
Area (in mm ²)	818.999		
Ultimate Load (in kn)	568.950		
UTS (in N/mm ²)	694.689	500.000	
Remarks:	The Result meets as per Customer Requirement.		
Witnessed By/ N.B. :	Mr.Avinash Pandey from "L&T" , Mr.Bhaskar S.Rautela from "MEGA-GEC"		

Tested By:
(Under NABL)
Condition Of Reporting :

1. Sample must be drawn by the party. The result relate only to the sample submitted by the party.
2. Any part or parts of the Test Report, shall not be reproduced, for this, the written request to DLS is mandatory for the Customer.
3. Samples are store for fifteen days from the date of receipt.

Authorized Signatory

BHASKAR S RAUTELA
SECTION ENGR / GEC / UG



For Reference Only



DIVINE METALLURGICAL SERVICES PVT. LTD.

Testing House of Metals & Alloys.
(ACCREDITED By NABL - ISO 17025)

Plot No. 14, Gopal Industrial Estate
Opp. Vallabh Nagar,
Odhav,
Ahmedabad-382 415.

Phone : 079-22891013 Mo. : 9227220993
Telefax : 079-22892804
Email : divinelab_nhp@rediffmail.com
Web site : www.divinelaboratory.com

Mechanical Testing

Report No : T53706A

Date : 21/12/2017

To, Larsen & Toubro Limited.(Heavy Civil Infrastructure IC) Amit Corporation Housing Society Ltd.,Popular House Building 2nd Floor,201,Above ICICI Bank Opp.Sales India,Ashram Road, Ahmedabad.380009			
Test :	Tensile		
Test Method:	ASTM D7205		
Test Performance At:	Divine Metallurgical Services P. Ltd.		
Instrument Used :	MCS Make Universal Testing Machine. UTE-150, Due Date of Calibrated 10.07.2018		
Customer Ref No. :	Ref:L&T/AMD/UG2/M1/2017/073, Date:20.12.2017		
Condition of Sample :	Dia32mm GFRP Bar (Source:ARC insulation & Insulators Pvt.Ltd.)		
Nature Of Sample :	Test Piece of GFRP Bar	Stamped as : -	
Specification :	ASTM D7205		
Date Of Testing :	21/12/2017	Sample Drawn By : Party	
Project:MEGA-UG2 Package-L&T(A'Bad-Metro), Client:Metro-Link Express for Gandhinagar and A'Bad.(MEGA) Co.Ltd, Consultant:MEGA-GEC(A Consortium of SYSTRA-RITES-OCG-AECOM), Sampling Location:Kalupur Launching Shaft, Sample ID:L&T/MEGA/GFRP/03, Batch No.180917R32			
Section Dimension (in mm)	S.NO.2 Dia32	Min	Max
Area (in mm ²)	803.840		
Ultimate Load (in kn)	588.300		
UTS (in N/mm ²)	731.862	500.000	
Remarks:	The Result meets as per Customer Requirement.		
Witnessed By/ N.B. :	Mr.Avinash Pandey from "L&T" , Mr Bhaskar S.Rautela from "MEGA-GEC"		

Tested By :
(Under NABL)
Condition Of Reporting :

[Handwritten Signature]
BHASKAR S RAUTELA
SECTION ENGR / GEC / UG

Authorized Signatory



1. Sample must be drawn by the party. The result relate only to the sample submitted by the party.
2. Any part or parts of the Test Report shall not be reproduced, for this, the written request to DCS is mandatory for the Customer.
3. Samples are store for fifteen days from the date of receipt.

For Reference Only



Divine Metallurgical Services Pvt. Ltd.

CIN U74900GJ2012PTC069436

14, Gopal Industrial Estate, Vallabh Nagar
BRTS, Odhav, Ahmedabad 382 415

+91 79 2289 2604, +91 79 2289 1013,
+91 92272 20993

divinelab_nhp@rediffmail.com,
accounts@divinelaboratory.com

Test Certificate

Page 1 of 1

Test Certificate No.	DMSPL-24-003958-1	Date of Issue:	16-01-2024
Customer Name:	M/s. ARC INSULATION AND INSULATORS (P)LIMITED	Sample Received On:	16-01-2024
Customer Address:	Test Performed at: DMSPL, Ahmedabad.		

INFORMATION PROVIDED BY THE CUSTOMER

Reference.	Dia10mm GFRP Bar Batch No.281223R10 Make:ARC insulations and insulators Pvt Ltd.		
Description	RFI No./Sampe ID:581/108,Make:ARC insulations and insulators Pvt Ltd.,Batch No.281223R10		
Stamped As	NIL	Sample Drawn By	customer
Nature of Sample	Dia10mm GFRP Bar		
Specification	ASTM D7957:22		

MECHANICAL MECHANICAL PROPERTIES OF GFRP BAR		
Test Name : TENSILE TESTING		
Test Method : ASTM D7205:2021 Dt. of Testing : 16-01-2024		
Equipment : MCS 1500KN UTM (DMSPL/07/04) . Cal. Dt: 17-Jun-2023		
	Result	Requirement
Diameter (mm)	9.60	
Cross- sectional area (mm ²)	72.382	67-104
Ext.Gauge Length(mm)	100	
Ultimate tensile load (kN)	71.850	59 min.
U.T.S (in MPA)	992.644	
Ultimate Tensile Strain (%)	>2	1.1 min.
Stress at 0.6% Strain	281.54	
Stress at 0.1% Strain	41.45	
Young's Modulus Elasticity (in MPA)	48078	44800 min.
Statement of conformity: The Result meets the Requirement of ASTM D7957:22		
Decision Rule: Statement of Conformity is provided without consideration measurement uncertainty.		

-----End of Report-----

Tested By
H.K.VAMJA / S.S.Prajapati

Reviewed & Authorized by



Condition of Reporting:

1) DMSPL clarifies that sampling is not conducted by us; the provided report pertains solely to the sample submitted by the customer. 2) Reproduction of the report whole or part, requires explicit consent from DMSPL. 3) DMSPL assumes no responsibility for authenticity of reproduced reports, including but not limited to methods such as Xerox, email copies, or WhatsApp images. 4) Customer-provided samples are stored for 15 days from the reporting date. 5) All testing procedures conducted under ambient environmental conditions, unless explicitly specified otherwise. 6) While DMSPL endeavors to maintain accuracy, we are not liable for financial losses resulting from acts of omission or error, nor are we responsible for result deviations due to sample inhomogeneity or variations in manufacturing processes. 7) The test results are provided solely for informational purposes to the customer and do not confer any legal binding. 8) A Statement of Conformity issued without accounting for the measurement uncertainty of instruments unless explicitly specified by the customer. 9) The lab does not assume responsibility unmeasured parameters in the Statement of Conformity.