

DGM Civil(Line-IV)

Test Performed By:

Dr. /Engr.

S. Asad Ali Gillani

MLCF Iskandarabad, Dist. Mianwali

Client Reference: MLCFL/Line-IV/CIVIL/2021/02

Dated: 19-06-2021

SOM Lab Ref: CED/SOM/4583 (Page-1/4)

Dated: 30-06-2021

Test: Tensile Test & Bend Test

Test Specification: ASTM-A-615

Sample Type: Deformed Bar(Mughal Steel)

Gauge Length: 200 mm

S.No.	Weight	Dia.		Area		Yield Load	Ultimate Load	Yield Stress		Ult. Stress		Elongation	Gauge Length	%age Elongation	Remarks
		Nominal	Calculated	Nominal	Calculated			(according to nominal area)	(according to measured area)	(according to nominal area)	(according to measured area)				
	kg/m	mm	mm	mm ²	mm ²	kN	kN	MPa	MPa	MPa	MPa	mm	mm	%	
1	0.876	12	11.94	113	112	64.50	81.50	570	576	721	728	25.0	200	12.5	2859
2	0.867	12	11.86	113	110	64.50	82.20	570	585	727	745	22.5	200	11.3	2859
3	0.867	12	11.86	113	110	64.20	80.00	568	582	707	725	27.5	200	13.8	1592
4	0.876	12	11.92	113	112	65.20	82.70	576	585	731	741	27.5	200	13.8	1592
5	0.877	12	11.93	113	112	64.20	79.20	568	575	700	709	30.0	200	15.0	9774
6	0.876	12	11.92	113	112	64.20	81.50	568	576	721	731	25.0	200	12.5	9774
7	0.876	12	11.92	113	112	65.20	81.50	576	585	721	731	27.5	200	13.8	9793
8	0.881	12	11.96	113	112	60.50	76.70	535	539	678	684	22.5	200	11.3	9793
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BEND TEST:

12mm	Sample bend through 180 degrees Satisfactorily without any crack	Note:- Only Twelve Samples Received and Tested
12mm	Sample bend through 180 degrees Satisfactorily without any crack	
12mm	Sample bend through 180 degrees Satisfactorily without any crack	
12mm	Sample bend through 180 degrees Satisfactorily without any crack	
25mm	Sample bend through 180 degrees Satisfactorily without any crack	

Note: Please always confirm the results of above report on web www.uet-civil.edu.pk

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Client Reference: MLCFL/Line-IV/CIVIL/2021/02

Dated: 19-06-2021

SOM Lab Ref: CED/SOM/4583 (Page-2/4)

Dated: 30-06-2021

Test: Tensile Test & Bend Test

Test Specification: ASTM-A-615

Sample Type: Deformed Bar(Mughal Steel)

Gauge Length: 200 mm

S.No.	Weight	Dia.		Area		Yield Load	Ultimate Load	Yield Stress		Ult. Stress		Elongation	Gauge Length	%age Elongation	Remarks
		Nominal	Calculated	Nominal	Calculated			(according to nominal area)	(according to measured area)	(according to nominal area)	(according to measured area)				
	kg/m	mm	mm	mm ²	mm ²	kN	kN	MPa	MPa	MPa	MPa	mm	mm	%	
1	1.549	16	15.84	201	197	94.70	132.20	471	481	658	672	30.0	200	15.0	559
2	1.539	16	15.80	201	196	99.00	136.70	492	505	680	698	27.5	200	13.8	559
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BEND TEST:

16mm	Sample bend through 180 degrees Satisfactorily without any crack	Note:- Only Three Samples Received and Tested

Note: Please always confirm the results of above report on web www.uet-civil.edu.pk

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MLCF Iskandarabad, Dist. Mianwali

Client Reference: MLCFL/Line-IV/CIVIL/2021/02

Dated: 19-06-2021

SOM Lab Ref: CED/SOM/4583 (Page-3/4)

Dated: 30-06-2021

Test: Tensile Test & Bend Test

Test Specification: ASTM-A-615

Sample Type: Deformed Bar(Mughal Steel)

Gauge Length: 200 mm

S.No.	Weight	Dia.		Area		Yield Load	Ultimate Load	Yield Stress		Ult. Stress		Elongation	Gauge Length	%age Elongation	Remarks
		Nominal	Calculated	Nominal	Calculated			(according to nominal area)	(according to measured area)	(according to nominal area)	(according to measured area)				
	kg/m	mm	mm	mm ²	mm ²	kN	kN	MPa	MPa	MPa	MPa	mm	mm	%	
1	2.430	20	19.87	314	310	143.20	185.20	456	462	590	598	32.5	200	16.3	552
2	2.447	20	19.92	314	312	188.20	226.70	599	604	722	728	25.0	200	12.5	552
3	2.453	20	19.95	314	313	175.70	224.70	559	563	715	720	30.0	200	15.0	553
4	2.479	20	20.05	314	316	189.70	238.20	604	601	758	755	25.0	200	12.5	553
5	2.427	20	19.84	314	309	177.70	221.70	566	575	706	718	25.0	200	12.5	554
6	2.440	20	19.89	314	311	172.20	217.50	548	555	692	700	32.5	200	16.3	554
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BEND TEST:

20mm	Sample bend through 180 degrees Satisfactorily without any crack	Note:- Only Nine Samples Received and Tested
20mm	Sample bend through 180 degrees Satisfactorily without any crack	
20mm	Sample bend through 180 degrees Satisfactorily without any crack	

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Test Performed By:

Dr. /Engr.

S. Asad Ali Gillani

MLCF Iskandarabad, Dist. Mianwali

Client Reference: MLCFL/Line-IV/CIVIL/2021/02

Dated: 19-06-2021

SOM Lab Ref: CED/SOM/4583 (Page-4/4)

Dated: 30-06-2021

Test: Tensile Test & Bend Test

Test Specification: ASTM-A-615

Sample Type: Deformed Bar(Mughal Steel)

Gauge Length: 200 mm

S.No.	Weight	Dia.		Area		Yield Load	Ultimate Load	Yield Stress		Ult. Stress		Elongation	Gauge Length	%age Elongation	Remarks
		Nominal	Calculated	Nominal	Calculated			(according to nominal area)	(according to measured area)	(according to nominal area)	(according to measured area)				
	kg/m	mm	mm	mm ²	mm ²	kN	kN	MPa	MPa	MPa	MPa	mm	mm	%	
1	3.854	25	25.00	491	491	282.00	357.50	574	575	728	729	25.0	200	12.5	12
2	3.853	25	25.00	491	491	282.60	360.00	576	576	733	734	25.0	200	12.5	12
3	3.837	25	24.95	491	489	306.00	371.70	623	627	757	761	25.0	200	12.5	526
4	3.828	25	24.92	491	488	309.00	374.20	629	634	762	768	25.0	200	12.5	526
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BEND TEST:

25mm	Sample bend through 180 degrees Satisfactorily without any crack	Note:- Only Six Samples Received and Tested
25mm	Sample bend through 180 degrees Satisfactorily without any crack	

Note: Please always confirm the results of above report on web www.uet-civil.edu.pk

Amreli Steels Limited
Head Office Karachi

Test Performed By: Dr. /Engr. S. Asad Ali Gillani

Client Reference: nil
SOM Lab Ref: CED/SOM/4585 (Page-1/1)
Test: Tension Test Bend Test
Sample Type: Deformed Bar(Amreli Steel)

Dated: 30-06-2021
Dated: 30-06-2021
Test Specification: ASTM-A 615
Gauge Length: 200 mm

S.No.	Weight	Dia.		Area		Yield Load	Ultimate Load	Yield Stress		Ult. Stress		Elongation	Gauge Length	%age Elongation	Remarks
		Nominal	Calculated	Nominal	Calculated			(according to nominal area)	(according to measured area)	(according to nominal area)	(according to measured area)				
	kg/m	mm	mm	mm ²	mm ²	kN	kN	MPa	MPa	MPa	MPa	mm	mm	%	
1	3.832	25	24.93	491	488	250.00	315.20	509	513	642	646	35.0	200	17.5	
2	2.240	20	19.06	314	285	143.70	175.70	457	504	559	616	32.5	200	16.3	
3	1.552	16	15.87	201	198	96.70	122.20	481	490	608	619	30.0	200	15.0	
4	0.884	12	11.97	113	113	57.00	70.50	504	507	623	627	30.0	200	15.0	
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BEND TEST:

25mm	Sample bend through 180 degrees Satisfactorily without any crack	Note:- Only Eight Samples Received and Tested
20mm	Sample bend through 180 degrees Satisfactorily without any crack	
16mm	Sample bend through 180 degrees Satisfactorily without any crack	
12mm	Sample bend through 180 degrees Satisfactorily without any crack	

Note: Please always confirm the results of above report on web www.uet-civil.edu.pk

Test Performed By: Dr. Syed Asad Ali Gillani

Imran Shaukat
Manager Sales & Marketing
Creative Electronics (Pvt) Ltd.
3-1, A2, Ali Road, Township, Lahore

Client Reference: CG/GRP/0786/R&D

Dated: 28-06-2021

SOM Laboratory Reference: CED/SOM/4586(Page-1/1)

Dated: 30-06-2021

Test: Stiffness Test & Tensile Test & Compressive Test

Sample Type: GRP Pipe 400mm Diameter

Stiffness Test (Parallel Plate Loading Test as per ASTM-D-2412)

(GRP Pipe 400mm)

Total Length = 327 mm, External Diameter = 420 mm, Wall Thickness = 10.0 mm

Percentage Reduction in Diameter of Sample	Compression Load, P (kN)	Stiffness (Corrected)			Remarks
		Pipe Stiffness (kN/m ²)	Stiffness Factor (N-m)	Specific Tangential initial Stiffness (N/m ²)	
5%	6.45	1015	1303	20362	No Crack Observed
10%	10.80	917	1177	18389	No Crack Observed
12%	12.95	944	1212	18930	No Crack Observed
16%	15.5	872	1120	17497	Delamination Occur

Tensile Test

Sample Type	Size of Sample (mm)	Ultimate Load (kN)	Ultimate Stress (MPa)
GRP Pipe (400mm)	19.0 x 10	3.0	15.789

Note: Please always confirm the results of above report on web: www.uet-civil.edu.pk

Test Performed By: Dr. Syed Asad Ali Gillani

Engr. Yousaf Zaman
Resident Engineer,
M-3, IC Industrial City, Faisalabad

Client Reference: CRE/M3IC/FIC-039/Lab/394 Dated: 11-06-2020

SOM Laboratory Reference: CED/SOM/2651(Page-2/2) Dated: 29-06-2020

Test: Stiffness Test & Tensile Test & Compressive Test

Sample Type: GRP Pipe 300mm Diameter (Fiber Craft, Industry)

Stiffness Test (Parallel Plate Loading Test as per ASTM-D-2412)

(GRP Pipe 300mm)

Total Length = 305 mm, External Diameter = 317 mm, Wall Thickness = 7.8 mm

Percentage Reduction in Diameter of Sample	Compression Load, P (kN)	Stiffness (Corrected)			Remarks
		Pipe Stiffness (kN/m ²)	Stiffness Factor (N-m)	Specific Tangential initial Stiffness (N/m ²)	
5%	5.0	1118	616	22482	No Crack Observed
10%	8.7	1049	578	21102	No Crack Observed
15%	10.0	866	477	17412	No Crack Observed
20%	11.2	782	430	15722	No Crack Observed

Tensile Test

Sample Type	Size of Sample (mm)	Ultimate Load (kN)	Ultimate Stress (MPa)
GRP Pipe (300mm)	22.0 x 2.8	2.8	45.45

Compression Strength Test (ASTM-D-695)

Sample Type	Size of Sample (mm)	Compression Load (kN)	Compressive Stress (MPa)
GRP Pipe (300mm)	14.0 x 12.0	25.0	148.80

Note: Please always confirm the results of above report on web: www.uet-civil.edu.pk

