

Engr. Farzeen Badshah

Test Performed By:

Dr. /Engr.

S. Asad Ali Gillani

Project Manager, Gorkin-Matiltan Hydropower Project, Barqaab Consulting Services (Pvt) Ltd.

Client Reference: 3852-55/PM/(30)GMHPP/2019

Dated: 10-07-2019

SOM Lab Ref: CED/SOM/1096 (Page-1/1)

Dated: 12-07-2019

Test: Tension Test & Bend Test

Test Specification: ASTM-A-615

Sample Type: Deformed Bar

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 <sup>2</sup>	mm <sup>2</sup>	kN	kN	MPa	MPa	MPa	MPa	mm	mm	%	
1	3.812	25	24.88	491	486	171.50	265.20	349	353	540	546	45.0	200	22.5	
2	3.808	25	24.85	491	485	171.00	266.50	348	353	543	550	47.5	200	23.8	
3	2.240	19	19.06	284	285	105.50	161.20	372	370	569	565	40.0	200	20.0	
4	2.278	19	19.22	284	290	140.70	203.00	496	485	716	700	40.0	200	20.0	
5	1.564	16	15.93	201	199	73.00	108.70	363	367	541	546	40.0	200	20.0	
6	1.544	16	15.82	201	197	73.20	108.70	364	373	541	553	37.5	200	18.8	
7	0.889	12	12.01	113	113	42.20	60.20	373	373	532	532	42.5	200	21.3	
8	0.885	12	11.98	113	113	40.00	59.00	354	355	522	524	30.0	200	15.0	
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**BEND TEST:**

25mm	Sample bend through 180 degrees Satisfactorily without any crack	<b>Note:-  Only Twelve Samples Received and Tested</b>
19mm	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](http://www.uet-civil.edu.pk)

Assistant Engineer/Bridges  
Pakistan Railways, Multan

Test Performed By: Dr. /Engr.

S. Asad Ali  
Gillani

Client Reference: 55-W/1/M

SOM Lab

Ref: 1092(Page-1/1)

Dated: 11-07-2019

Dated: 12-07-2019

Test: Tension Test & Bend Test

Test Specification:

ASTM-A-615

Gauge Length: 8 inch

Sample Type:

Deformed Bar(Mughal Steel)

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)				
	lb/ft	#	in	in <sup>2</sup>	in <sup>2</sup>	Tons	Tons	psi	psi	psi	psi	in	in	%	
1	2.628	8	0.991	0.79	0.772	23.39	35.95	65310	66840	100370	102710	1.00	8.0	12.5	
2	0.629	4	0.485	0.20	0.185	5.58	8.48	61490	66480	93530	101110	1.10	8.0	13.8	
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**BEND TEST:**

# 8	Sample bend through 180 degrees Satisfactorily without any crack	<b>Note:-</b>  <b>Only Four Samples Received and Tested</b>
# 4	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](http://www.uet-civil.edu.pk)

Abdul Ghafar  
Project Manager Liberty Builders, Lahore

Test Performed By: Dr. /Engr. M Rizwan Azam

Client Reference: CONC - 20190712  
Dated: 12-07-2019  
Test: Tension Test  
Gauge Length: 8 inch

Test Specification: ASTM-A-615  
Sample Type: Deformed Bar( Model Steel)

SOM Lab  
Ref: 1093(Page-1/1)  
Dated: 12-07-2019

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)				
	lb/ft	#	in	in <sup>2</sup>	in <sup>2</sup>	Tons	Tons	psi	psi	psi	psi	in	in	%	
1	1.484	6	0.745	0.44	0.436	13.61	18.52	68210	68840	92840	93690	1.20	8.0	15.0	
2	1.497	6	0.748	0.44	0.440	13.53	18.25	67810	67810	91460	91460	1.20	8.0	15.0	
3	1.506	6	0.751	0.44	0.443	13.73	19.54	68830	68360	97950	97290	1.30	8.0	16.3	
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**BEND TEST:**

--	No Bend test performed	<b>Note:-  Only Three Samples Received and Tested</b>

Note: Please always confirm the results of above report on web [www.uet-civil.edu.pk](http://www.uet-civil.edu.pk)

Abdul Ghafar  
Project Manager Liberty Builders, Lahore

Test Performed By: Dr. /Engr. M Rizwan Azam

Client Reference: CONC - 20190712

SOM Lab

Ref: 1094(Page-1/1)

Dated: 12-07-2019

Dated: 12-07-2019

Test: Tension Test & Bend Test

Test Specification:

ASTM-A-615

Gauge Length: 8 inch

Sample Type:

Deformed Bar( Model Steel)

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)				
	lb/ft	#	in	in <sup>2</sup>	in <sup>2</sup>	Tons	Tons	psi	psi	psi	psi	in	in	%	
1	1.503	6	0.750	0.44	0.442	13.66	17.94	68470	68160	89930	89520	1.30	8.0	16.3	
2	1.481	6	0.744	0.44	0.435	14.70	18.76	73680	74530	94020	95100	1.20	8.0	15.0	
3	1.498	6	0.748	0.44	0.440	13.61	17.89	68210	68210	89670	89670	1.20	8.0	15.0	
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**BEND TEST:**

# 6	Sample bend through 180 degrees Satisfactorily without any crack	<b>Note:-  Only Four Samples Received and Tested</b>

Note: Please always confirm the results of above report on web [www.uet-civil.edu.pk](http://www.uet-civil.edu.pk)

Abdullah Khadim  
Resident Engineer, DAR Engineering

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

Client Reference: DB-78/DAR/RE/ME/2019/0198

SOM Lab Ref: 1098(Page-1/1)

Dated: 11-07-2019

Dated: 12-07-2019

Test: Tension Test & Bend Test

Test Specification:

ASTM-A-615

Gauge Length: 8 inch

Sample Type:

Deformed Bar(Kamran Steel)

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)				
	lb/ft	#	in	in <sup>2</sup>	in <sup>2</sup>	Tons	Tons	psi	psi	psi	psi	in	in	%	
1	1.452	6	0.737	0.44	0.427	12.90	18.81	64640	66610	94270	97140	1.40	8.0	17.5	J-26
2	1.439	6	0.734	0.44	0.423	12.28	18.04	61570	64050	90440	94070	1.30	8.0	16.3	J-26
3	1.052	5	0.627	0.31	0.309	9.99	13.68	71070	71300	97330	97640	1.20	8.0	15.0	P-53
4	1.068	5	0.632	0.31	0.314	10.60	14.39	75420	74460	102400	101100	1.20	8.0	15.0	P-53
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**BEND TEST:**

# 6	Sample bend through 180 degrees Satisfactorily without any crack	<b>Note:-  Only Six Samples Received and Tested</b>
# 5	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](http://www.uet-civil.edu.pk)

Abdullah Khadim

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

Resident Engineer, DAR Engineering

Client Reference: DB-78/DAR/RE/ME/2019/0198

Dated: 11-07-2019

Test: Tension Test & Bend Test

Gauge Length: 8 inch

Test Specification:

Sample Type:

SOM Lab

Ref: 1098(Page-1/1)

Dated: 12-07-2019

ASTM-A-615

Deformed Bar(Kamran Steel)

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)				
	lb/ft	#	in	in <sup>2</sup>	in <sup>2</sup>	Tons	Tons	psi	psi	psi	psi	in	in	%	
1	1.452	6	0.737	0.44	0.427	12.90	18.81	64640	66610	94270	97140	1.40	8.0	17.5	J-26
2	1.439	6	0.734	0.44	0.423	12.28	18.04	61570	64050	90440	94070	1.30	8.0	16.3	J-26
3	1.052	5	0.627	0.31	0.309	9.99	13.68	71070	71300	97330	97640	1.20	8.0	15.0	P-53
4	1.068	5	0.632	0.31	0.314	10.60	14.39	75420	74460	102400	101100	1.20	8.0	15.0	P-53
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**BEND TEST:**

# 6	Sample bend through 180 degrees Satisfactorily without any crack	<b>Note:-  Only Six Samples Received and Tested</b>
# 5	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](http://www.uet-civil.edu.pk)

Wajid Ali Shah  
GM - Works, FF Steel Lahore

Test Performed By: Dr. /Engr.

S. Asad Ali Gillani

Client Reference: Nil  
Dated: 10-07-019  
Test: Tension Test

SOM Lab  
Ref: 1099(Page-1/1)  
Dated: 12-07-2019

Test Specification: ASTM-A-615  
Deformed Bar

Gauge Length: 8 inch

Sample Type:

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)				
	lb/ft	#	in	in <sup>2</sup>	in <sup>2</sup>	Tons	Tons	psi	psi	psi	psi	in	in	%	
1	1.507	6	0.751	0.44	0.443	15.24	19.59	76390	75870	98210	97540	1.20	8.0	15.0	
2	1.503	6	0.750	0.44	0.442	14.84	19.27	74400	74060	96570	96130	1.10	8.0	13.8	
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**BEND TEST:**

--	No Bend test performed	<b>Note:- Only Two Samples Received and Tested</b>

**Note: Please always confirm the results of above report on web [www.uet-civil.edu.pk](http://www.uet-civil.edu.pk)**