



STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
 Resident Engineer
 ETI GB
 Hatoon Chachoi Scheme Under Development Project of ETI - GB.
 Reference # CED/TFL **35784** (Dr. M Rizwan Riaz)
 Reference of the request letter # RCUG/Hatoon/MS Pipetesting/03

Dated: 18-12-2020

Dated: 18-12-2020

Tension Test Report (Page – 1/4)

Date of Test 22-12-2020
 Gauge length 2 inches
 Description Mild Steel (MS) Pipe Steel Strip Tensile Test

Sr. No.	Designation	Size of Strip	X Section Area	Yield load	Breaking Load	Yield Stress	Ultimate Stress	Elongation	% Elongation	Remarks
	(inch)	(mm)	(mm ²)	(kg)	(kg)	(MPa)	(MPa)	(in)		
1	10 Ø	34.10x4.00	136.40	4900	6400	352.41	460.29	0.70	35.00	1A
2		34.10x4.00	136.40	4800	6400	345.22	460.29	0.80	40.00	
3	10 Ø	34.00x4.00	136.00	5000	7300	360.66	526.57	0.65	32.50	1B
4		34.00x4.00	136.00	5400	7300	389.51	526.57	0.65	32.50	
5	10 Ø	34.00x4.00	136.00	4800	6400	346.24	461.65	0.60	30.00	1C
6		34.10x4.00	136.40	4700	6400	338.03	460.29	0.70	35.00	
7	10 Ø	34.10x4.00	136.40	4900	6300	352.41	453.10	0.70	35.00	2A
8		34.00x4.00	136.00	4900	6300	353.45	454.43	0.70	35.00	
9	10 Ø	34.00x4.00	136.00	5000	6200	360.66	447.22	0.70	35.00	2B
10		34.10x4.00	136.40	4900	6200	352.41	445.91	0.70	35.00	
11	10 Ø	34.10x4.00	136.40	4700	6300	338.03	453.10	0.70	35.00	2C
12		34.10x4.00	136.40	4800	6300	345.22	453.10	0.70	35.00	
Only Twelve Samples for Tensile Test										
Bend Test										

Witness by Shahid Hussain (RE – ETI-GB), Naeem Abbass (A.E –WMD-GHIZED), Shafiat Wali (SMT) and Zaheer Ahmed (Shaheen Sons)

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

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To,
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 Reference # CED/TFL **35784** (Dr. M Rizwan Riaz)
 Reference of the request letter # RCUG/Hatoon/MS Pipetesting/03

Dated: 18-12-2020

Dated: 18-12-2020

Tension Test Report (Page – 2/4)

Date of Test 22-12-2020
 Gauge length 2 inches
 Description Mild Steel (MS) Pipe Steel Strip Tensile Test

Sr. No.	Designation	Size of Strip	X Section Area	Yield load	Breaking Load	Yield Stress	Ultimate Stress	Elongation	% Elongation	Remarks
	(inch)	(mm)	(mm ²)	(kg)	(kg)	(MPa)	(MPa)	(in)		
1	10 Ø	34.10x4.00	136.40	5000	6700	359.60	481.87	0.70	35.00	3A
2		34.10x4.00	136.40	5200	6600	373.99	474.68	0.65	32.50	
3	10 Ø	34.00x4.00	136.00	5200	6800	375.09	490.50	0.65	32.50	3B
4		34.10x4.00	136.40	5300	6700	381.18	481.87	0.70	35.00	
5	10 Ø	34.10x4.00	136.40	5200	6700	373.99	481.87	0.75	37.50	3C
6		34.00x4.00	136.00	5200	6700	375.09	483.29	0.70	35.00	
7	10 Ø	34.00x4.00	136.00	5400	6800	389.51	490.50	0.65	32.50	4A
8		34.00x4.00	136.00	5000	6300	360.66	454.43	0.65	32.50	
9	10 Ø	34.10x4.00	136.40	4900	6200	352.41	445.91	0.75	37.50	4B
10		34.10x4.00	136.40	4900	6200	352.41	445.91	0.80	40.00	
11	10 Ø	34.10x4.00	136.40	4900	6300	352.41	453.10	0.80	40.00	4C
12		34.00x4.00	136.00	4900	6300	353.45	454.43	0.80	40.00	
Only Twelve Samples for Tensile Test										
Bend Test										

Witness by Shahid Hussain (RE – ETI-GB), Naeem Abbass (A.E –WMD-GHIZED), Shafiat Wali (SMT) and Zaheer Ahmed (Shaheen Sons)

I/C Testing Laboratoires
UET Lahore, Pakistan.

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ETI GB
Hatoon Chachoi Scheme Under Development Project of ETI - GB.
Reference # CED/TFL **35784** (Dr. M Rizwan Riaz)
Reference of the request letter # RCUG/Hatoon/MS Pipetesting/03

Dated: 18-12-2020

Dated: 18-12-2020

Tension Test Report (Page – 3/4)

Date of Test 22-12-2020

Gauge length 2 inches

Description Mild Steel (MS) Pipe Steel Strip Tensile Test

Sr. No.	Designation	Size of Strip	X Section Area	Yield load	Breaking Load	Yield Stress	Ultimate Stress	Elongation	% Elongation	Remarks
	(inch)	(mm)	(mm ²)	(kg)	(kg)	(MPa)	(MPa)	(in)		
1	10 Ø	34.00x4.00	136.00	5000	6500	360.66	468.86	0.60	30.00	5A
2		34.10x4.00	136.40	5000	6500	359.60	467.49	0.60	30.00	
3	10 Ø	34.10x4.00	136.40	4800	6100	345.22	438.72	0.70	35.00	5B
4		34.10x4.00	136.40	4800	6100	345.22	438.72	0.80	40.00	
5	10 Ø	34.10x4.00	136.40	4800	6100	345.22	438.72	0.80	40.00	5C
6		34.00x4.00	136.00	4800	6100	346.24	440.01	0.80	40.00	
7	10 Ø	34.00x4.00	136.00	5000	6200	360.66	447.22	0.70	35.00	6A
8		34.10x4.00	136.40	5000	6100	359.60	438.72	0.75	37.50	
9	10 Ø	34.10x4.00	136.40	5000	6200	359.60	445.91	0.70	35.00	6B
10		34.00x4.00	136.00	4900	6200	353.45	447.22	0.60	30.00	
11	10 Ø	34.00x4.00	136.00	4900	6200	353.45	447.22	0.70	35.00	6C
12		34.00x4.00	136.00	4900	6300	353.45	454.43	0.70	35.00	
Only Twelve Samples for Tensile Test										
Bend Test										

Witness by Shahid Hussain (RE – ETI-GB), Naeem Abbass (A.E –WMD-GHIZED), Shafiat Wali (SMT) and Zaheer Ahmed (Shaheen Sons)

I/C Testing Laboratoires
UET Lahore, Pakistan.

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 Reference of the request letter # RCUG/Hatoon/MS Pipetesting/03

Dated: 18-12-2020

Dated: 18-12-2020

Tension Test Report (Page – 4/4)

Date of Test 22-12-2020
 Gauge length 2 inches
 Description Mild Steel (MS) Pipe Steel Strip Tensile Test

Sr. No.	Designation	Size of Strip	X Section Area	Yield load	Breaking Load	Yield Stress	Ultimate Stress	Elongation	% Elongation	Remarks
	(inch)	(mm)	(mm ²)	(kg)	(kg)	(MPa)	(MPa)	(in)		
1	10 Ø	34.00x4.00	136.00	4900	6100	353.45	440.01	0.75	37.50	7A
2		34.00x4.00	136.00	5000	6200	360.66	447.22	0.70	35.00	
3	10 Ø	34.10x4.00	136.40	5100	6700	366.80	481.87	0.70	35.00	7B
4		34.10x4.00	136.40	5300	6800	381.18	489.06	0.75	37.50	
5	10 Ø	34.10x4.00	136.40	4900	6200	352.41	445.91	0.70	35.00	7C
6		34.10x4.00	136.40	5000	6200	359.60	445.91	0.70	35.00	
7	10 Ø	34.10x4.00	136.40	5000	6600	359.60	474.68	0.70	35.00	8A
8		34.10x4.00	136.40	5300	6600	381.18	474.68	0.70	35.00	
9	10 Ø	34.10x4.00	136.40	5300	6400	381.18	460.29	0.70	35.00	8B
10		34.00x4.00	136.00	5200	6200	375.09	447.22	0.70	35.00	
11	10 Ø	34.00x4.00	136.00	5300	6900	382.30	497.71	0.80	40.00	8C
12		34.00x4.00	136.00	5300	6900	382.30	497.71	0.75	37.50	
Only Twelve Samples for Tensile Test										
Bend Test										

Witness by Shahid Hussain (RE – ETI-GB), Naeem Abbass (A.E –WMD-GHIZED), Shafiat Wali (SMT) and Zaheer Ahmed (Shaheen Sons)

I/C Testing Laboratoires
UET Lahore, Pakistan.

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STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
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To,
M/S Defence Housing Authority.
Lahore Cantt
(Infra Development Works at Sector-Q, DHA Rahbar Ph-XI (M/s DHCA-C))

Reference # CED/TFL 35792 (Dr. M Rizwan Riaz)
Reference of the request letter # 408/241/E/Lab/1064/130

Dated: 21-12-2020
Dated: 17-12-2020

Tension Test Report (Page -1/1)

Date of Test 22-12-2020
Gauge length 8 inches
Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

Sr. No.	Weight (lbs/ft)	Diameter/ size		Area (in ²)		Yield load (kg)	Breaking Load (kg)	Yield Stress (psi)		Ultimate Stress (psi)		Elongation (inch)	% Elongation	Remarks
		Nominal (#)	Actual (inch)	Nominal	Actual			Nominal	Actual	Nominal	Actual			
1	0.366	3	0.370	0.11	0.108	3300	4800	66200	67590	96200	98400	1.20	15.0	Kamran Steel
2	0.379	3	0.377	0.11	0.111	3600	4900	72200	71230	98200	97000	1.20	15.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

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STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
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To,
M/S Defence Housing Authority.
Lahore Cantt
(Comnst of Sector Shops, Sector-D, DHA Ph-XI (Rahbar Sector))(M/s DHCA-C)

Reference # CED/TFL 35793 (Dr. M Rizwan Riaz)
Reference of the request letter # 408/241/E/Lab/1070/73

Dated: 21-12-2020
Dated: 21-12-2020

Tension Test Report (Page -1/1)

Date of Test 22-12-2020
Gauge length 8 inches
Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

Sr. No.	Weight (lbs/ft)	Diameter/ size		Area (in ²)		Yield load (kg)	Breaking Load (kg)	Yield Stress (psi)		Ultimate Stress (psi)		Elongation (inch)	% Elongation	Remarks
		Nominal (#)	Actual (inch)	Nominal	Actual			Nominal	Actual	Nominal	Actual			
1	0.368	3	0.371	0.11	0.108	3500	4800	70200	71380	96200	97900	1.20	15.0	Kamran Steel
2	0.371	3	0.373	0.11	0.109	3500	4900	70200	70670	98200	99000	1.30	16.3	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

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STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
 Sub Divisional Officer
 Public Health Engg: Sub Division
 Jhang
 (Rehabilitation / Improvement Sewerage System Jhang Phase-I)

Reference # CED/TFL **35794** (Dr. M Rizwan Riaz)
 Reference of the request letter # 227

Dated: 21-12-2020
 Dated: 17-12-2020

Tension Test Report (Page -1/1)

Date of Test 22-12-2020
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

Sr. No.	Weight (lbs/ft)	Diameter/ Size (inch)		Area (in ²)		Yield load (kg)	Breaking Load (kg)	Yield Stress (psi)		Ultimate Stress (psi)		Elongation (inch)	% Elongation	Remarks
		Nominal	Actual	Nominal	Actual			Nominal	Actual	Nominal	Actual			
1	0.378	3/8	0.376	0.11	0.111	3700	5100	74200	73360	102200	101200	1.10	13.8	
2	0.373	3/8	0.374	0.11	0.110	3400	4700	68200	68340	94200	94500	1.30	16.3	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
3/8" Dia Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

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STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
 Resident Engineer (AZEA)
 Sargodha Mianwali Road
 Mainwali
 Dualization of Sargodha Mianwali Road (Phase-I) Group-III, from km 284.42 (Bridge & Approaches) in District Mianwali

Reference # CED/TFL **35795** (Dr. M Rizwan Riaz)
 Reference of the request letter # RE/MWI-135

Dated: 21-12-2020
 Dated: 18-12-2020

Tension Test Report (Page -1/2)

Date of Test 22-12-2020
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

Sr. No.	Weight (lbs/ft)	Diameter/ Size (inch)		Area (in ²)		Yield load (kg)	Breaking Load (kg)	Yield Stress (psi)		Ultimate Stress (psi)		Elongation (inch)	% Elongation	Remarks
		Nominal	Actual	Nominal	Actual			Nominal	Actual	Nominal	Actual			
1	0.380	3/8	0.377	0.11	0.112	4700	5800	94200	92640	116300	114400	0.90	11.3	Pak Steel
2	0.377	3/8	0.376	0.11	0.111	4800	5700	96200	95400	114300	113300	1.00	12.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
3/8" Dia Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

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Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
 Resident Engineer (AZEA)
 Sargodha Mianwali Road
 Mainwali
 Dualization of Sargodha Mianwali Road (Phase-I) Group-III, from km 284.42 (Bridge & Approaches) in District Mianwali

Reference # CED/TFL **35795** (Dr. M Rizwan Riaz)
 Reference of the request letter # RE/MWI-136

Dated: 21-12-2020
 Dated: 18-12-2020

Tension Test Report (Page -2/2)

Date of Test 22-12-2020
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

Sr. No.	Weight (lbs/ft)	Diameter/ Size (inch)		Area (in ²)		Yield load (kg)	Breaking Load (kg)	Yield Stress (psi)		Ultimate Stress (psi)		Elongation (inch)	% Elongation	Remarks
		Nominal	Actual	Nominal	Actual			Nominal	Actual	Nominal	Actual			
1	4.014	1.25	1.226	1.27	1.180	36800	50000	63900	68750	86800	93500	1.50	18.8	Pak Steel
2	4.043	1.25	1.230	1.27	1.188	37200	50800	64600	69000	88200	94300	1.50	18.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
1.25" Dia Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

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Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
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Ref: CED/TFL/12/35797
Dated of Test: 22-12-2020

Dated: 21-12-2020

To,
Amjad Engineering Services
Lahore

Subject: - CALIBRATION OF PRESSURE GAUGE (MARK: TFL/12/35797) (Page -1/2)

Reference to your Letter No. Nil, Dated: 21/12/2020 on the subject cited above. One Pressure Gauge No. AES-1501 as received by us has been calibrated. The results are tabulated as under:

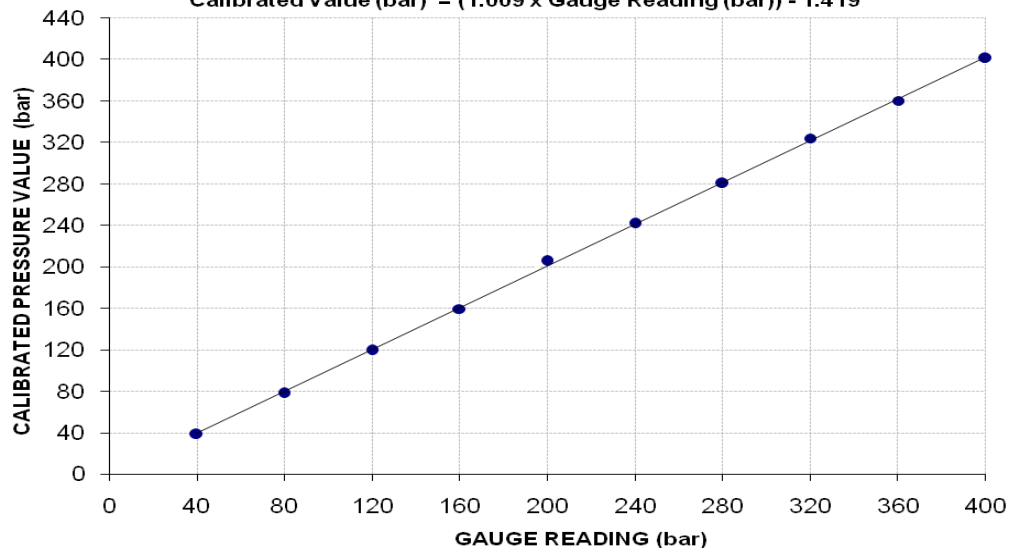
Total Range : Zero - 1000 (bar)
Calibrated Range : Zero - 400 (bar)

Pressure Gauge Reading (bar)	40	80	120	160	200	240	280	320	360	400
Calibrated Load (kg)	7700	15700	24100	32200	41500	48800	56600	65400	72700	81000
Calibrated Pressure (bar)	38.14	77.76	119.37	159.49	205.55	241.71	280.34	323.93	360.09	401.20

The Ram Area use for Calibration = 198 cm²

Calibration Curve for Pressure Gauge No. AES-1501

Calibrated Value (bar) = (1.009 × Gauge Reading (bar)) - 1.419



I/C Testing Laboratories
UET Lahore, Pakistan.

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Ref: CED/TFL/12/35797
Dated of Test: 22-12-2020

Dated: 21-12-2020

To,
Amjad Engineering Services
Lahore

Subject: - CALIBRATION OF PRESSURE GAUGE (MARK: TFL/12/35797) (Page -2/2)

Reference to your Letter No. Nil, Dated: 21/12/2020 on the subject cited above. One Pressure Gauge No. AES-1502 as received by us has been calibrated. The results are tabulated as under:

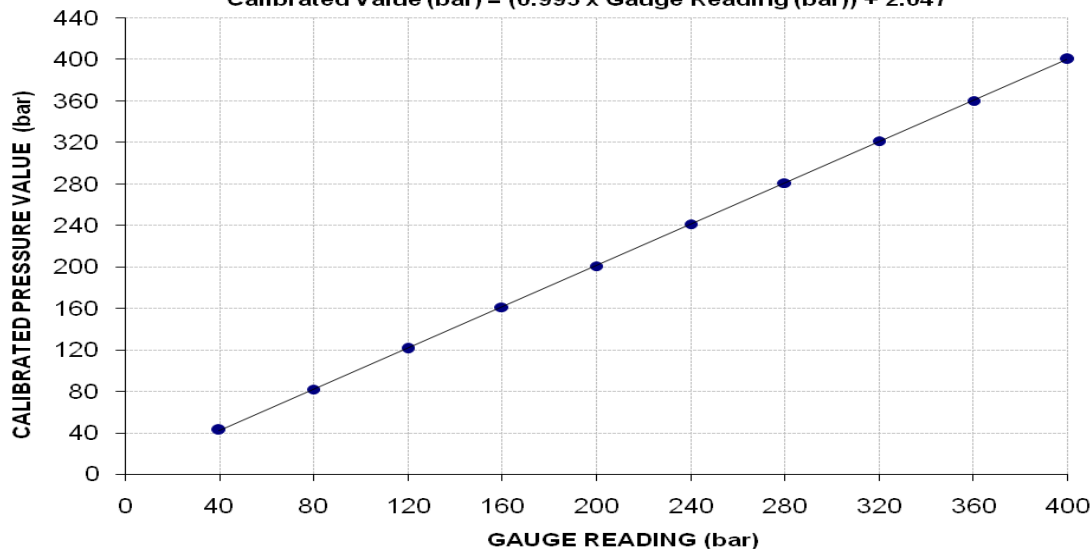
Total Range : Zero - 1000 (bar)
Calibrated Range : Zero - 400 (bar)

Pressure Gauge Reading (bar)	40	80	120	160	200	240	280	320	360	400
Calibrated Load (kg)	8600	16500	24400	32500	40500	48700	56700	64900	72700	80800
Calibrated Pressure (bar)	42.60	81.73	120.85	160.97	200.60	241.21	280.84	321.45	360.09	400.20

The Ram Area use for Calibration = 198 cm²

Calibration Curve for Pressure Gauge No. AES-1502

Calibrated Value (bar) = (0.995 x Gauge Reading (bar)) + 2.047



I/C Testing Laboratories
UET Lahore, Pakistan.

Note:

- 1- You can See your reports On Internet in the following web site
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- 2- The above results pertain to sample /samples supplied to this laboratory.
- 3- Sealed sample / Unsealed sample / Marked sample/Signed Samples



STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
 Project Manager
 One Liberty
 Gulberg III, Lahore

Reference # CED/TFL **35798** (Dr. M Rizwan Riaz)
 Reference of the request letter # Nil

Dated: 21-12-2020
 Dated: 21-12-2020

Tension Test Report (Page -1/1)

Date of Test 22-12-2020
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

Sr. No.	Weight (lbs/ft)	Diameter/ Size (mm)		Area (in ²)		Yield load (kg)	Breaking Load (kg)	Yield Stress (psi)		Ultimate Stress (psi)		Elongation (inch)	% Elongation	Remarks
		Nominal	Actual	Nominal	Actual			Nominal	Actual	Nominal	Actual			
1	0.363	9.5	9.36	0.110	0.107	3900	4700	78200	80670	94200	97300	0.80	10.0	
2	0.363	9.5	9.36	0.110	0.107	3600	4300	72200	74330	86200	88800	1.00	12.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
9.5mm Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

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STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
 Project Manager
 ASMI
 Construction of Residence for Mr. Asif Jamal at plot no. 1034, Sector K DHA Lahore

Reference # CED/TFL **35801** (Dr. M Rizwan Riaz)
 Reference of the request letter # Nil

Dated: 22-12-2020
 Dated: 19-12-2020

Tension Test Report (Page -1/1)

Date of Test 22-12-2020
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile Test as per ASTM-A615

Sr. No.	Weight (lbs/ft)	Diameter/ Size		Area (in ²)		Yield load (kg)	Breaking Load (kg)	Yield Stress (psi)		Ultimate Stress (psi)		Elongation (inch)	% Elongation	Marks
		Nominal (#)	Actual (inch)	Nominal	Actual			Nominal	Actual	Nominal	Actual			
1	0.373	3	0.374	0.11	0.110	3300	4300	66200	66290	86200	86400	1.20	15.0	A
2	0.372	3	0.373	0.11	0.109	3400	4300	68200	68590	86200	86800	1.20	15.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

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2. The above results pertain to sample /samples supplied to this laboratory.
- 3- Sealed sample / Unsealed sample / Marked sample/Signed Samples