



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
AZ Engineering Associates
Dualization of Road from GT Road (Sama) to Gujrat Dinga Road I/C Gujrat Flyover Length=31 kms in District Gujrat
(Group No. III, km No. 17.53 to 31.03 including 2 no. Small Bridges with Approaches, Length = 13.50 kms)

Reference # CED/TFL **36542** (Dr. Safeer Abbass)
Reference of the request letter # RE AZEA/GT-133

Dated: 10-06-2021
Dated: 25-05-2021

Tension Test Report (Page -1/3)

Date of Test 16-06-2021
Gauge length 640 mm
Description Steel Strand Tensile Test as per ASTM A-416-94a

Sr. No.	Nominal Diameter	Nominal Weight	Measured weight	Yield strength clause (6.3)		Breaking strength clause (6.2)		Young's Modulus of Elasticity "E" GPa	% Elongation	Remarks / Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)			
1	12.70 (1/2")	775.0	785.0	18200	178.54	20000	196.20	199	>3.50	xx
2	12.70 (1/2")	775.0	784.0	18000	176.58	19700	193.26	199	>3.50	xx
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
Only two samples for Test										

Note:

1. Modulus of Elasticity is based on nominal steel area of the steel strand vide clause 13.3 of ASTM – A416a
2. Load versus percentage strain graphs are attached

I/C Testing Laboratories
UET Lahore, Pakistan.

Note:

- 1- You can See your reports On Internet in the following web site
http://www.uet.edu.pk/faculties/facultiesinfo/civil/index.html?RID=testing_reports
2. The above results pertain to sample /samples supplied to this laboratory.
- 3- Sealed sample / Unsealed sample / Marked sample/Signed Samples



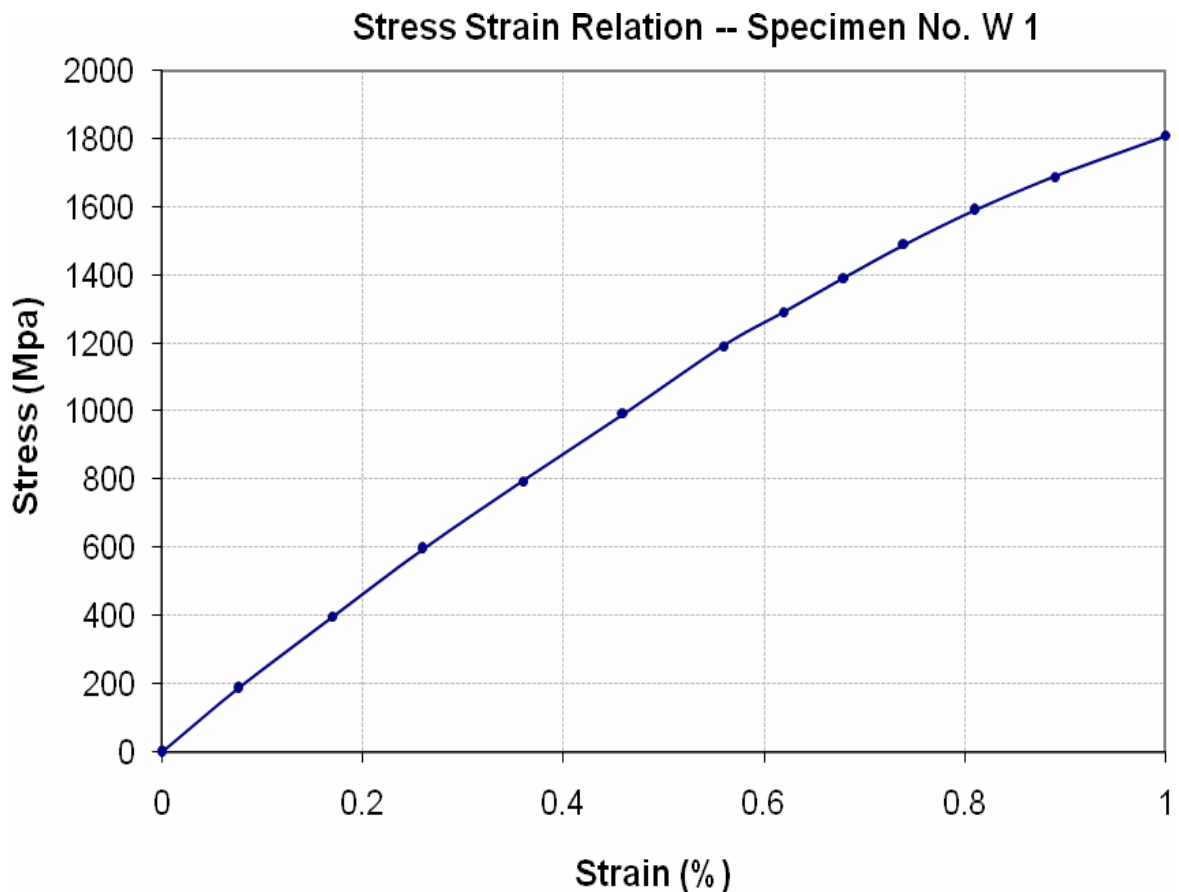
STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
Resident Engineer
AZ Engineering Associates
Dualization of Road from GT Road (Sama) to Gujrat Dinga Road I/C Gujrat Flyover Length=31 kms in Ditricr Gujrat
(Group No. III, km No. 17.53 to 31.03 including 2 no. Small Bridges with Approaches, Length = 13.50 kms)

Reference # CED/TFL **36542** (Dr. Safeer Abbass)
Reference of the request letter # RE AZEA/GT-133

Dated: 10-06-2021
Dated: 25-05-2021

Graph (Page – 2/3)



I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

- 1- You can See your reports On Internet in the following web site
http://www.uet.edu.pk/faculties/facultiesinfo/civil/index.html?RID=testing_reports
2. The above results pertain to sample /samples supplied to this laboratory.
- 3- Sealed sample / Unsealed sample / Marked sample/Signed Samples



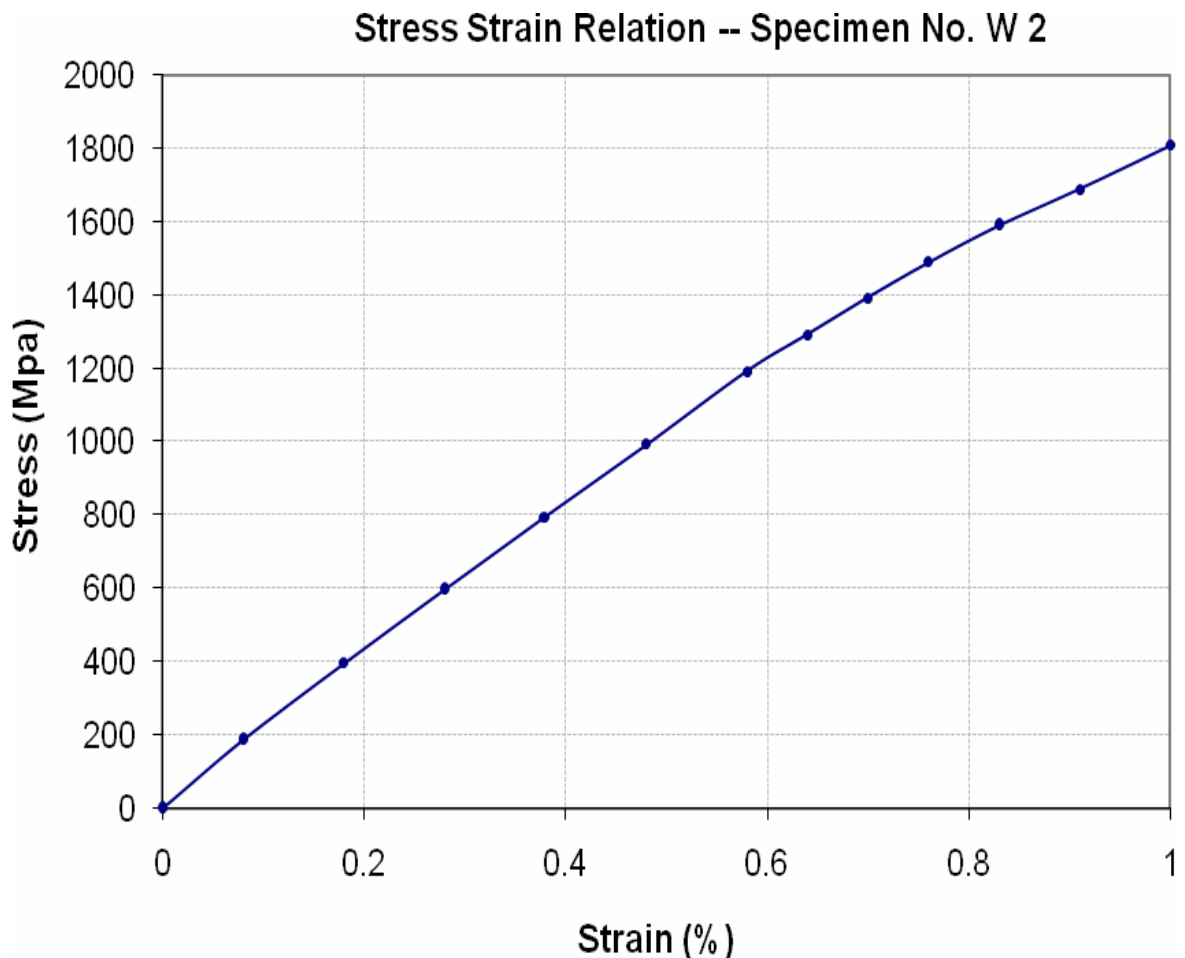
STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
Resident Engineer
AZ Engineering Associates
Dualization of Road from GT Road (Sama) to Gujrat Dinga Road I/C Gujrat Flyover Length=31 kms in Ditric
Gujrat
(Group No. III, km No. 17.53 to 31.03 including 2 no. Small Bridges with Approaches, Length = 13.50 kms)

Reference # CED/TFL **36542** (Dr. Safeer Abbass)
Reference of the request letter # RE AZEA/GT-133

Dated: 10-06-2021
Dated: 25-05-2021

Graph (Page – 3/3)



I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

- 1- You can See your reports On Internet in the following web site
http://www.uet.edu.pk/faculties/facultiesinfo/civil/index.html?RID=testing_reports
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,
M/S Imperium Hospitality (Pvt) Limited
Gulberg II, Lahore

Reference # CED/TFL **36551** (Dr. Waseem Abbass)
Reference of the request letter # IHPL/Steel/090

Dated: 11-06-2021

Dated: 09-06-2021

Tension Test Report (Page -1/1)

Date of Test 16-06-2021
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	4.263	10	1.263	1.27	1.253	37200	57000	64600	65430	99000	100300	1.40	17.5	PCS Steel
2	4.235	10	1.259	1.27	1.245	34800	45000	60400	61620	78100	79700	1.50	18.8	
3	4.224	10	1.257	1.27	1.242	36600	56400	63600	64980	97900	100200	1.40	17.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only three samples for tensile and two samples for bend test														
Bend Test														
#10 Bar Bend Test Through 180° is Satisfactory														
#10 Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

- 1- You can See your reports On Internet in the following web site
http://www.uet.edu.pk/faculties/facultiesinfo/civil/index.html?RID=testing_reports
- 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

Ref: CED/TFL/06/36563

Dated: 14-06-2021

Dated of Test: 16-06-2021

To
Deputy General Manager
Habib Rafiq Engineering (Pvt) Limited
Development of Lahore Smart City

Subject: TESTING OF R.C.C. PIPE [ASTM-C76 - 08a]

Reference to your letter No. L-LSC-21/32, dated 09.06.2021 on the subject cited above. One R.C.C. Pipe as received by us has been tested. The results are tabulated as under.

Sr. No	Nominal Size	Total Length	Loaded Length	External Diameter	Internal Diameter	Wall Thickness	Proof load	Ultimate Load	Proof Stress	Ultimate Stress
	(inch)	(foot)	(foot)	(foot)	(foot)	(inch)	(kg)	(kg)	Pound/Linear foot/foot	Pound/Linear foot/foot
1	12	7.77	7.28	1.32	0.96	2.15	8700	13000	2743	4098

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

- 1- You can See your reports On Internet in the following web site
http://www.uet.edu.pk/faculties/facultiesinfo/civil/index.html?RID=testing_reports
- 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,
 Deputy General Manager Projects
 Habib Rafiq Engineering (Pvt) Limited
 Construction of Sky Gardens Tower, Lahore

Reference # CED/TFL **36574-577** (Dr. Asad Ali)
 Reference of the request letter # HRLE/SKG/2021/011

Dated: 16-06-2021
 Dated: 15-06-2021

Tension Test Report (Page -1/1)

Date of Test 16-06-2021
 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	0.450	10	10.43	0.12	0.132	3740	5980	68710	62280	109863	99600	1.10	13.8	
2	0.448	10	10.40	0.12	0.132	3750	6030	68894	62790	110781	101000	1.20	15.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
10mm Dia Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

- 1- You can See your reports On Internet in the following web site
http://www.uet.edu.pk/faculties/facultiesinfo/civil/index.html?RID=testing_reports
- 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,
M/S Defence Housing Authority.
Lahore Cantt
(Construction of 1 Kanal House NGV DRGCC DHA Phase-VI Lahore)(M/s Linker Developers
(Pvt) Ltd)
Reference # CED/TFL 36576 (Dr. Asad Ali) Dated: 16-06-2021
Reference of the request letter # 408/241/E/Lab/85/323 Dated: 15-06-2021

Tension Test Report (Page -1/1)

Date of Test 16-06-2021
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	0.370	3	0.372	0.11	0.109	3310	5050	66400	67060	101200	102400	1.20	15.0	Moiz Steel
2	0.365	3	0.370	0.11	0.107	3310	4940	66400	67960	99000	101500	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:

- 1- You can See your reports On Internet in the following web site
http://www.uet.edu.pk/faculties/facultiesinfo/civil/index.html?RID=testing_reports
- 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,
 Sub Divisional Officer
 Buildings Sub Division
 Pindi Bhattian
 (Strengthening of Basic Health Units of Punjab One at Jandaraka Tehsil Pindi Bhattian)

Reference # CED/TFL **36581** (Dr. Qasim Khan)
 Reference of the request letter # 88/PB

Dated: 16-06-2021
 Dated: 29-05-2021

Tension Test Report (Page -1/1)

Date of Test 16-06-2021
 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	3260	4890	65400	64310	98000	96500	1.00	12.5	
2	0.382	3/8	0.378	0.11	0.112	3210	4790	64400	62990	96000	94000	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.

Note:

- 1- You can See your reports On Internet in the following web site
http://www.uet.edu.pk/faculties/facultiesinfo/civil/index.html?RID=testing_reports
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

Ref: CED/TFL/06/36583
Dated of Test: 16-06-2021

Dated: 16-06-2021

To,
M/S Amjad Engineering Services
Lahore

Subject: - CALIBRATION OF PRESSURE GAUGE (MARK: TFL/06/36583) (Page -1/2)

Reference to your Letter No. Nil, Dated: 16/06/2021 on the subject cited above. One Pressure Gauge No. AES-313 as received by us has been calibrated. The results are tabulated as under:

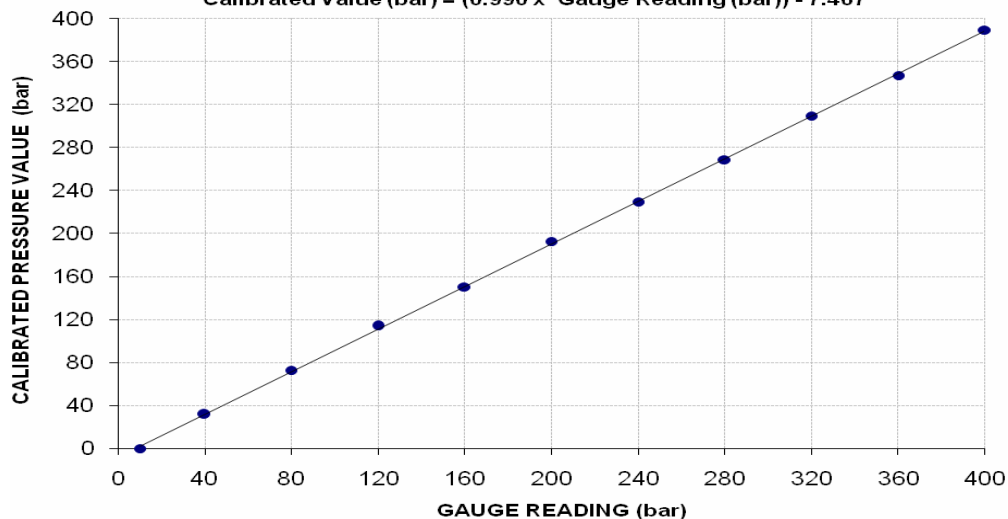
Total Range : Zero - 1000 (bar)
Calibrated Range : Zero - 400 (bar)

Pressure Gauge Reading (bar)	10	40	80	120	160	200	240	280	320	360	400
Calibrated Load (kg)	0	6400	14700	23000	30400	38900	46300	54300	62500	70100	78600
Calibrated Pressure (bar)	0	31.70	72.81	113.92	150.57	192.67	229.33	268.95	309.56	347.21	389.31

The Ram Area use for Calibration = 198 cm^2

Calibration Curve for Pressure Gauge No. AES-313

Calibrated Value (bar) = $(0.990 \times \text{Gauge Reading (bar)}) - 7.467$



I/C Testing Laboratories
UET Lahore, Pakistan.

Note:

- 1- You can See your reports On Internet in the following web site
http://www.uet.edu.pk/faculties/facultiesinfo/civil/index.html?RID=testing_reports
- 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

Ref: CED/TFL/06/36583
Dated of Test: 16-06-2021

Dated: 16-06-2021

To,
M/S Amjad Engineering Services
Lahore

Subject: - CALIBRATION OF PRESSURE GAUGE (MARK: TFL/06/36583) (Page -2/2)

Reference to your Letter No. Nil, Dated: 16/06/2021 on the subject cited above. One Pressure Gauge No. AES-314 as received by us has been calibrated. The results are tabulated as under:

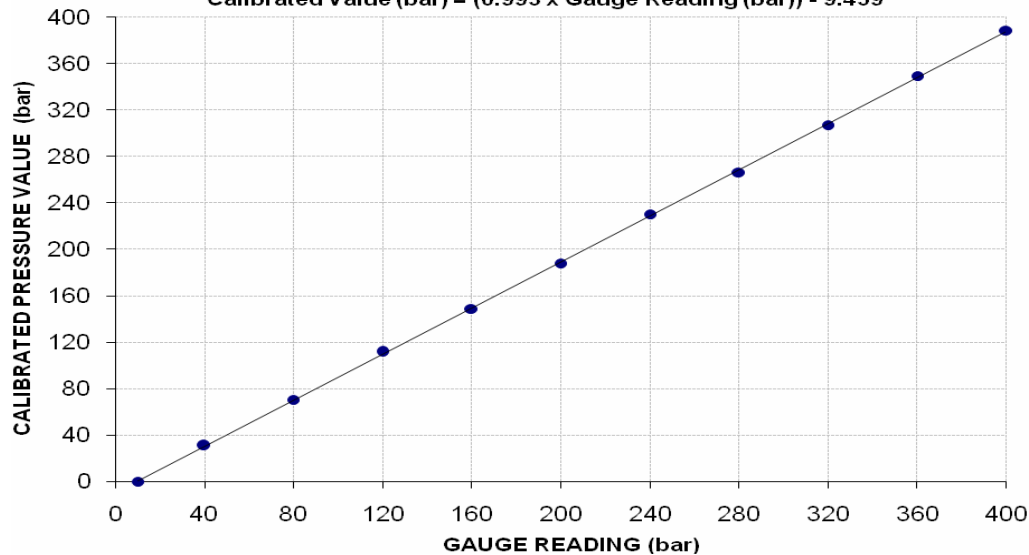
Total Range : Zero - 1000 (bar)
Calibrated Range : Zero - 400 (bar)

Pressure Gauge Reading (bar)	10	40	80	120	160	200	240	280	320	360	400
Calibrated Load (kg)	0	6200	14200	22500	30000	38000	46500	53800	62000	70600	78500
Calibrated Pressure (bar)	0	30.71	70.33	111.44	148.59	188.22	230.32	266.47	307.09	349.68	388.81

The Ram Are use for Calibration = 198 cm^2

Calibration Curve for Pressure Gauge No. AES-314

Calibrated Value (bar) = $(0.993 \times \text{Gauge Reading (bar)}) - 9.459$



I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

- 1- You can See your reports On Internet in the following web site
http://www.uet.edu.pk/faculties/facultiesinfo/civil/index.html?RID=testing_reports
- 2- The above results pertain to sample /samples supplied to this laboratory.
- 3- Sealed sample / Unsealed sample / Marked sample/Signed Samples