



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

To,

Material Engineer
NESPAK

Infrastruture Development of Quaid-e-Azam Business Park on Motorway M-2, District
Sheikhupura. (Tubewell Works)

Reference # CED/TFL **4500** (Dr. M Rizwan Riaz)
Reference of the request letter # 4163/11/ZA/04/658

Dated: 15-01-2024
Dated: 15-01-2024

Tension Test Report (Page – 1/2)

Date of Test 22-01-2024
Gauge length 2 inches
Description 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
	(mm)	(mm)									
1	MS Pipe	450	27.30x5.70	155.61	56.20	77.00	361	495	0.70	35.00	
-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	
Only One Sample for Tensile Test											
Bend Test											

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

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To,

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Infrastruture Development of Quaid-e-Azam Business Park on Motorway M-2, District
Sheikhupura. (Tubewell Works)

Reference # CED/TFL **4500** (Dr. M Rizwan Riaz)

Dated: 15-01-2024

Reference of the request letter # 4163/11/ZA/04/658

Dated: 15-01-2024

Weight & Size Test Report (Page – 2/2)

Date of Test 22-01-2024

Description MS Pipe Weight and Size Test

Sr. No.	Designation	Weight	Length	Weight per Unit Length	External Diameter	Internal Diameter	Thickness	Remark
	(mm)	(g)	(mm)	(kg/m)	(mm)	(mm)	(mm)	
1	450	6950	100.80	68.95	472.00	460.50	5.75	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
Only One Sample for Test								

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To,

Resident Engineer (Bridges)
N-45, N-90 and N95
PEAS Consulting & Jv
Replacement of Talash & Shamsi Khan Causeways with Permanent Culvert-Bridge
@ km 110 & 112, Respectively (N-45), District Dir Lower

Reference # CED/TFL **4520** (Dr. M Rizwan Riaz)
Reference of the request letter # RE/PEAS/NHA-166

Dated: 18-01-2024
Dated: 05-01-2024

Tension Test Report (Page -1/2)

Date of Test 22-01-2024
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"	% Elongation	Remarks / Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)	GPa		
1	12.70 (1/2")	780.0	787.0	17600	172.66	19400	190.31	199	>3.50	xx
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	

Only one sample 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

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To,

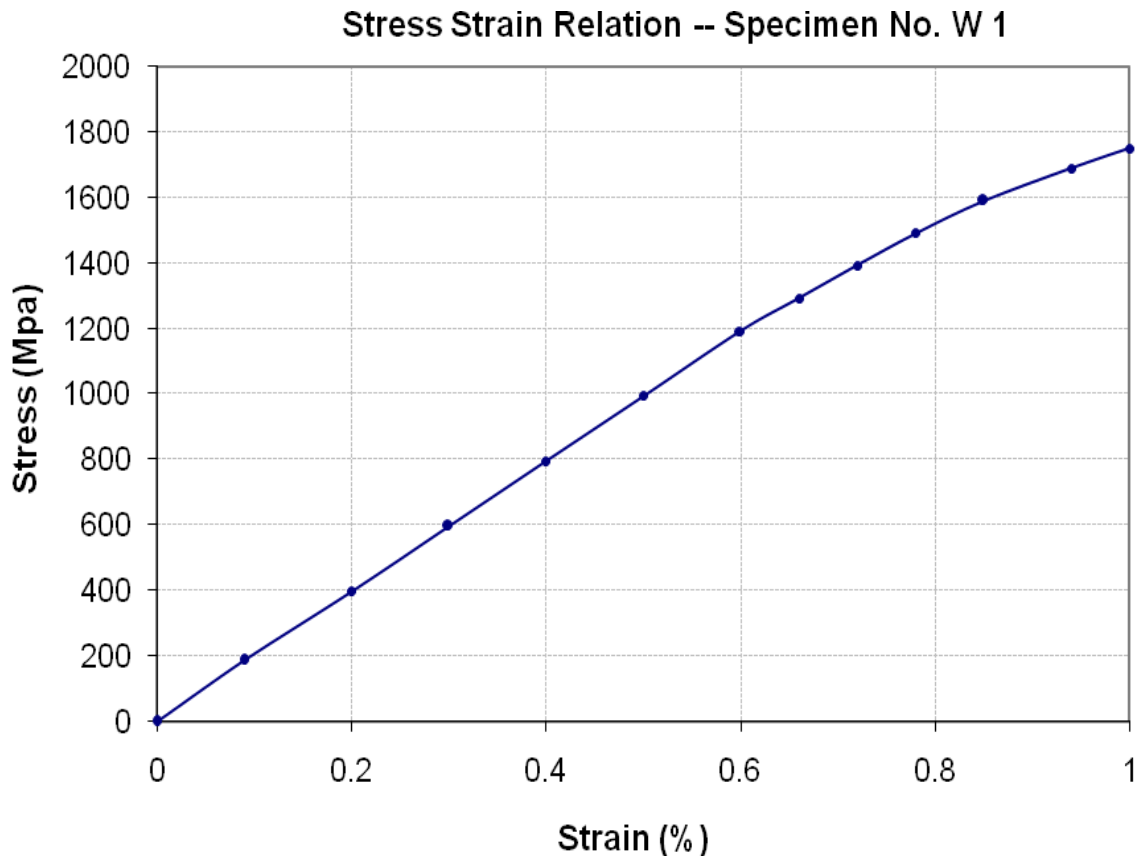
Resident Engineer (Bridges)
N-45, N-90 and N95
PEAS Consulting & Jv
Replacement of Talash & Shamsi Khan Causeways with Permanent Culvert-Bridge
@ km 110 & 112, Respectively (N-45), District Dir Lower

Reference # CED/TFL **4520** (Dr. M Rizwan Riaz)
Reference of the request letter # RE/PEAS/NHA-166

Dated: 18-01-2024

Dated: 05-01-2024

Graph (Page – 2/2)



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Ref: CED/TFL/01/4521

Dated: 18-01-2024

Dated of Test: 22-01-2024

To,

M/S Amjad Engineering Services
Lahore

Subject: - CALIBRATION OF PRESSURE GAUGE (MARK: TFL/01/4521) (Page -1/2)

Reference to your Letter No. Nil, Dated: 18/01/2024 on the subject cited above. One Pressure Gauge No. AES-310 as received by us has been calibrated. The results are tabulated as under:

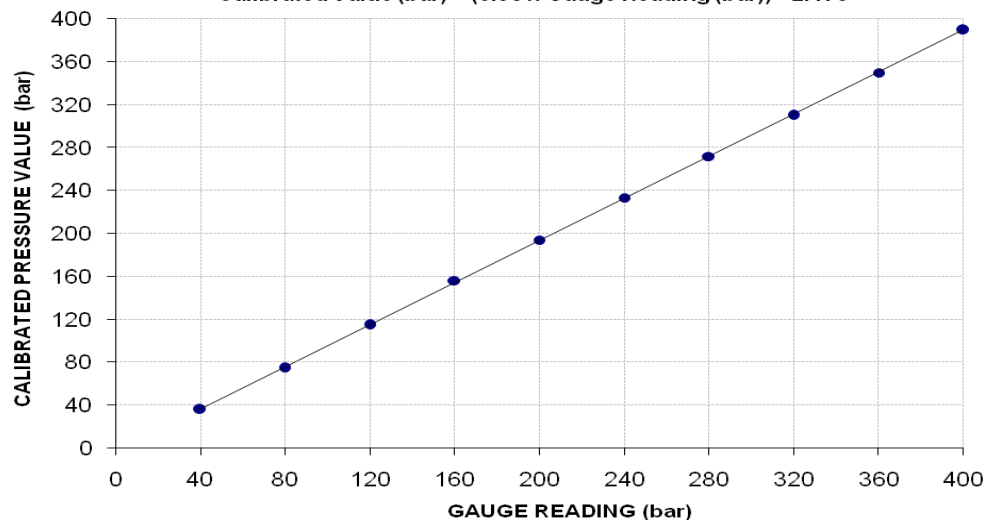
Total Range : Zero - 1000 (bar)
Calibrated Range : Zero - 400 (bar)

Pressure Gauge Reading (bar)	40	80	120	160	200	240	280	320	360	400
Calibrated Load (kg)	7300	15100	23200	31600	39200	47100	54900	62600	70600	78700
Calibrated Pressure (bar)	36	75	115	157	194	233	272	310	350	390

The Ram Area use for Calibration = 198 cm²

Calibration Curve for Pressure Gauge No. AES 310

Calibrated Value (bar) = (0.98 × Gauge Reading (bar)) - 2.476



I/C Testing Laboratories
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

Ref: CED/TFL/01/4521
Dated of Test: 22-01-2024

Dated: 18-01-2024

To,
M/S Amjad Engineering Services
Lahore

Subject: - CALIBRATION OF PRESSURE GAUGE (MARK: TFL/01/4521) (Page -2/2)

Reference to your Letter No. Nil, Dated: 18/01/2024 on the subject cited above. One Pressure Gauge No. AES-320 as received by us has been calibrated. The results are tabulated as under:

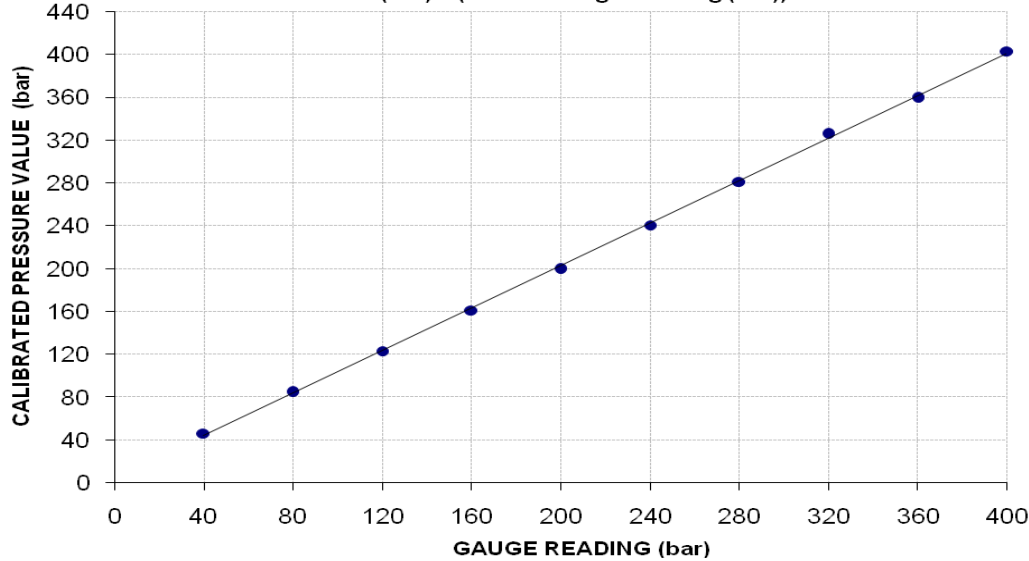
Total Range : Zero - 1000 (bar)
Calibrated Range : Zero - 400 (bar)

Pressure Gauge Reading (bar)	40	80	120	160	200	240	280	320	360	400
Calibrated Load (kg)	9400	17100	24900	32500	40300	48600	56800	65800	72600	81400
Calibrated Pressure (bar)	47	85	123	161	200	241	281	326	360	403

The Ram Area use for Calibration = 198 cm²

Calibration Curve for Pressure Gauge No. AES 320

Calibrated Value (bar) = (0.992 x Gauge Reading (bar)) + 4.292



I/C Testing Laboratories
UET Lahore, Pakistan.

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Test Floor Laboratory
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To,
PM Construction
Ittefaq Building Solutions (Pvt) Ltd.
Mr. Chughtai House Lahore Cantt.

Reference # CED/TFL **4524** (Dr. M Rizwan Riaz)
Reference of the request letter # IBS

Dated: 19-01-2024
Dated: 19-01-2024

Tension Test Report (Page -1/1)

Date of Test 22-01-2024
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	0.107	3540	4840	71000	72610	97000	99300	1.30	16.3	
2	0.365	3	0.369	0.11	0.107	3490	4840	70000	71780	97000	99600	1.50	18.8	
3	0.366	3	0.370	0.11	0.108	3490	4840	70000	71460	97000	99100	1.50	18.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only three 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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STRUCTURAL ENGINEERING DIVISION
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Pakistan. Ph: 92-42-99029202

To,

Design Engineer
Atiq Associates
Ijaz Cotton (Pvt.) Ltd. At 34-km, Kot Nabi Bukhas, Ferozpur Road, Lahore.

Reference # CED/TFL **4526** (Dr. M Rizwan Riaz)
Reference of the request letter # A.A/U.E.T/C.E.D/01/2024

Dated: 22-01-2024
Dated: 19-01-2024

Tension Test Report (Page -1/1)

Date of Test 22-01-2024
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	0.369	3	0.371	0.11	0.108	3330	4810	66800	67750	96400	97900	1.60	20.0	
2	0.378	3	0.376	0.11	0.111	3360	4960	67400	66600	99400	98400	1.40	17.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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
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Pakistan. Ph: 92-42-99029202

To,

Resident Engineer
 NESPAK
 Resident Construction Supervision of Annual Development Programme 2022-23 Falling
 in Highway Circle No. 2 Faisalabad.

Reference # CED/TFL **4527** (Dr. M Rizwan Riaz)
 Reference of the request letter # 3872/103/AR/14/1478

Dated: 22-01-2024
 Dated: 17-06-2023

Tension Test Report (Page -1/1)

Date of Test 22-01-2024
 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	0.381	3	0.377	0.11	0.112	3720	5270	74600	73310	105600	103900	1.30	16.3	SJ Steel
2	0.384	3	0.379	0.11	0.113	3770	5300	75600	73650	106200	103600	1.10	13.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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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Test Floor Laboratory
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University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

Ref: CED/TFL/01/4528

Dated: 22-01-2024

Dated OF Test: 22-01-2024

To,

Cal World Engineering Pvt. Ltd.
Lahore

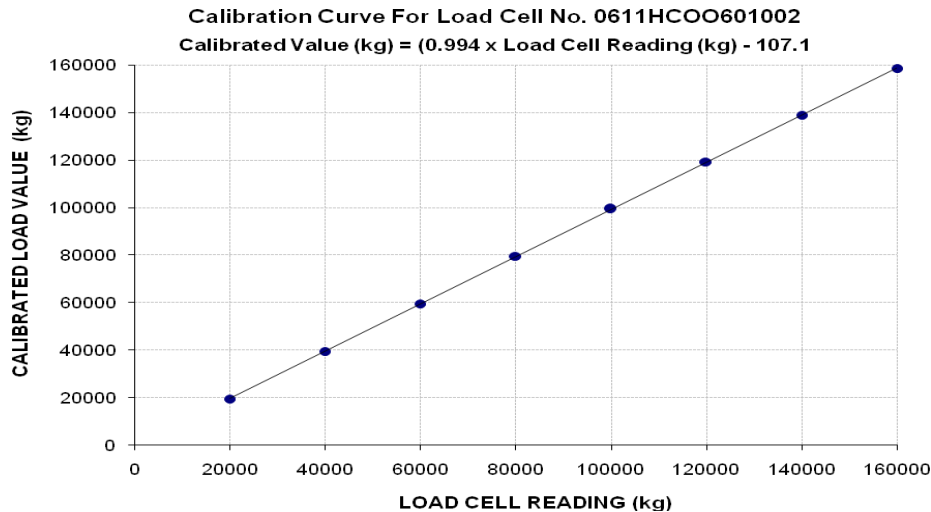
Subject: - CALIBRATION OF LOAD CELL (MARK: TFL/01/4528)

Reference to your Letter No. CWE/M-01/CAL-OS/005, dated: 22/01/2024 on the subject cited above. One Load Cell (200 Ton, Sr. No. 0611HCOO601002, Model HC-200T, Make CAS Corporation)(Digital Weighing Indicator - 200 Ton, Sr. No. 20220023300004, Model TM801C) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 200000 (kg)
Calibrated Range : Zero - 160000 (kg)

Calibrated Load (kg)	20000	40000	60000	80000	100000	120000	140000	160000
Load Cell Reading (kg)	19600	39600	59600	79600	99600	119400	139000	158800

NOTE: The load cell is calibrated with the standard calibration device. It is recommended that this device can be used as load cell but should not be used to calibrate any other device or machine.



I/C Testing Laboratoires
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To,

Resident Engineer
NESPAK - Turk Pak jv
MCH Bahawalnagar
Establishment of 200 Bedded Mother and Child Hospital & Nursing College at District
Bahawalnagar.

Reference # CED/TFL **4530** (Dr. M Rizwan Riaz)

Dated: 22-01-2024

Reference of the request letter # 4460/13/MA/04/345

Dated: 20-01-2024

Tension Test Report (Page -1/1)

Date of Test 22-01-2024

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	0.377	3	0.376	0.11	0.111	3280	4760	65800	65190	95400	94600	1.00	12.5	SJ Steel
2	0.377	3	0.375	0.11	0.111	3330	4790	66800	66300	96000	95400	1.10	13.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

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