



**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  
Diamer Basha Consultants Group (DBCG)  
NESPAK - ACE -MMP - MWH - ROYRY - DOLSAR Jv  
Diamer Basha Dam Project  
(WMI)

Reference # CED/TFL **3840** (Dr. M Kashif)

Dated: 01-09-2023

Reference of the request letter # DBCG/Lab/PF JV/2023/048

Dated: 31-08-2023

**Tension Test Report** (Page -1/3)

Date of Test 08-09-2023

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	782.0	18100	177.56	19600	192.28	198	>3.50	WS-S4-2023-09
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
<b>Only one sample for Test</b>										

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 Laboratoires**  
**UET Lahore, Pakistan.**

Note:

- 1- You can See your reports On Internet in the following web site  
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Resident Engineer  
Diamer Basha Consultants Group (DBCG)  
NESPAK - ACE -MMP - MWH - ROYRY - DOLSAR Jv  
Diamer Basha Dam Project

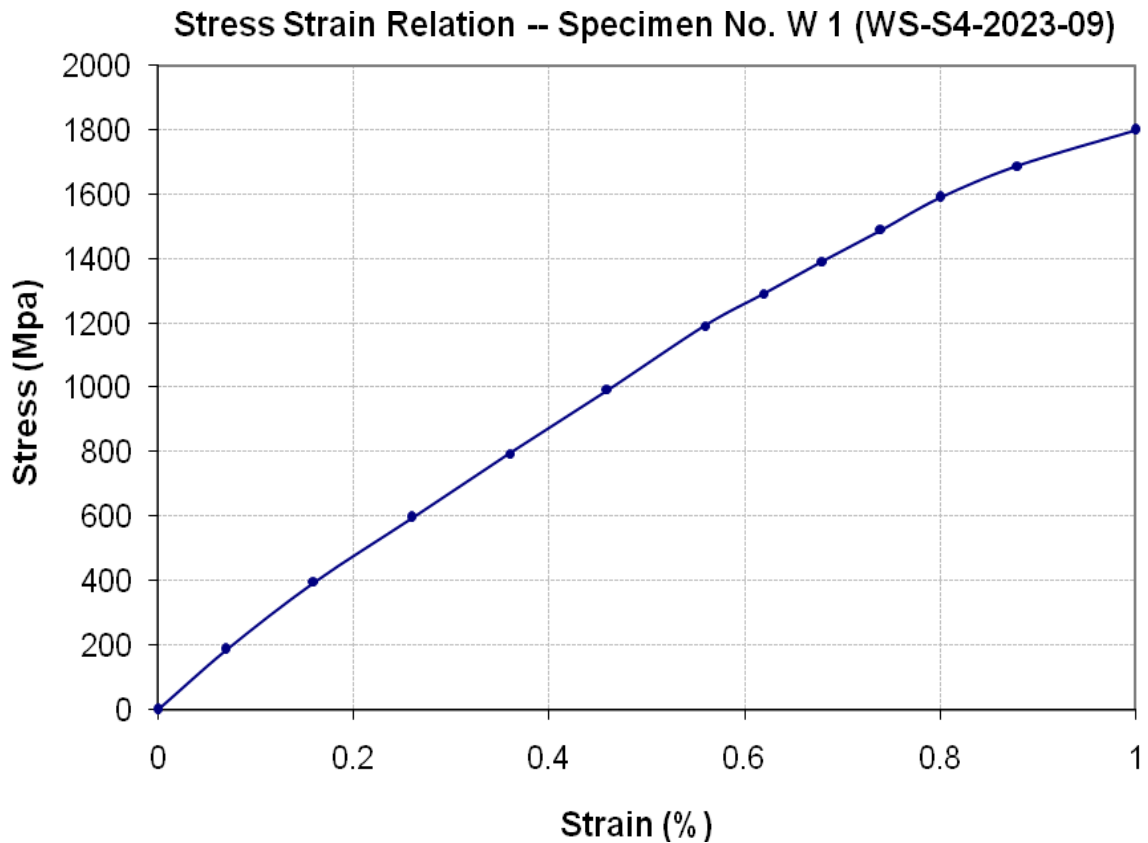
Reference # CED/TFL **3840** (Dr. M Kashif)

Dated: 01-09-2023

Reference of the request letter # DBCG/Lab/PF JV/2023/048

Dated: 31-08-2023

**Graph** (Page – 2/2)



**I/C Testing Laboratories**  
**UET Lahore, Pakistan.**

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**University of Engineering and Technology Lahore, 54890**  
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To,

Deputy Director (Maint)  
NHA, Wazirabad  
(Construction of U-Turn / Closing of Existing U-Turns on GT Road N-5 (Wapsa Town))

Reference # CED/TFL **3885** (Dr. M Kashif)

Dated: 07-09-2023

Reference of the request letter # Gen/DD(Maint)/WZD/NHA/2023/977

Dated: 05-09-2023

**Tension Test Report** (Page -1/1)

Date of Test 08-09-2023

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 <sup>2</sup> )		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	0.393	10	9.74	0.12	0.115	3800	5100	69812	72540	93696	97400	1.20	15.0	
2	0.394	10	9.75	0.12	0.116	3900	5100	71650	74270	93696	97200	1.30	16.3	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two samples for tensile and one sample for bend test</b>														
Bend Test														
10mm Dia Bar Bend Test Through 180° is Satisfactory														

**I/C Testing Laboratories**  
**UET Lahore, Pakistan.**

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To,

Resident Engineer  
Diamer Basha Consultants Group (DBCg)  
NESPAK - ACE -MMP - MWH - ROYRY - DOLSAR Jv  
Diamer Basha Dam Project  
(WMI)

Reference # CED/TFL **3868** (Dr. M Kashif)

Dated: 05-09-2023

Reference of the request letter # DBCg/Lab/PF JV/2023/040

Dated: 10-08-2023

**Tension Test Report** (Page -1/3)

Date of Test 08-09-2023

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	15.24 (0.6")	1102.0	1120.0	24300	238.38	27800	272.72	199	>3.50	PST-S3-2023-03
2	15.24 (0.6")	1102.0	1122.0	25100	246.23	27900	273.70	199	>3.50	PST-S3-2023-03A
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	

**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 Laboratoires**  
**UET Lahore, Pakistan.**

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To,

Resident Engineer  
Diamer Basha Consultants Group (DBCG)  
NESPAK - ACE -MMP - MWH - ROYRY - DOLSAR Jv  
Diamer Basha Dam Project

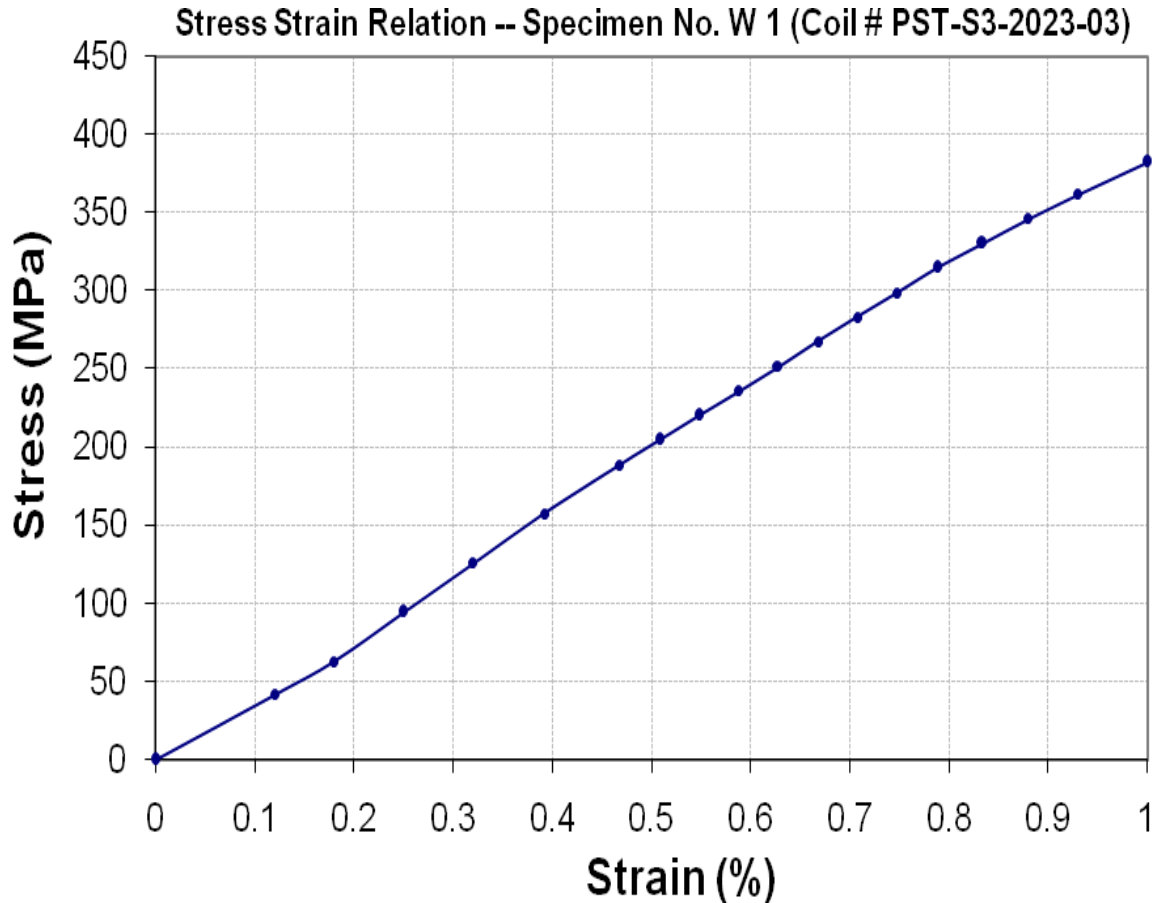
Reference # CED/TFL **3868** (Dr. M Kashif)

Dated: 05-09-2023

Reference of the request letter # DBCG/Lab/PF JV/2023/040

Dated: 10-08-2023

**Graph** (Page – 2/3)



**I/C Testing Laboratories**  
**UET Lahore, Pakistan.**

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Diamer Basha Dam Project

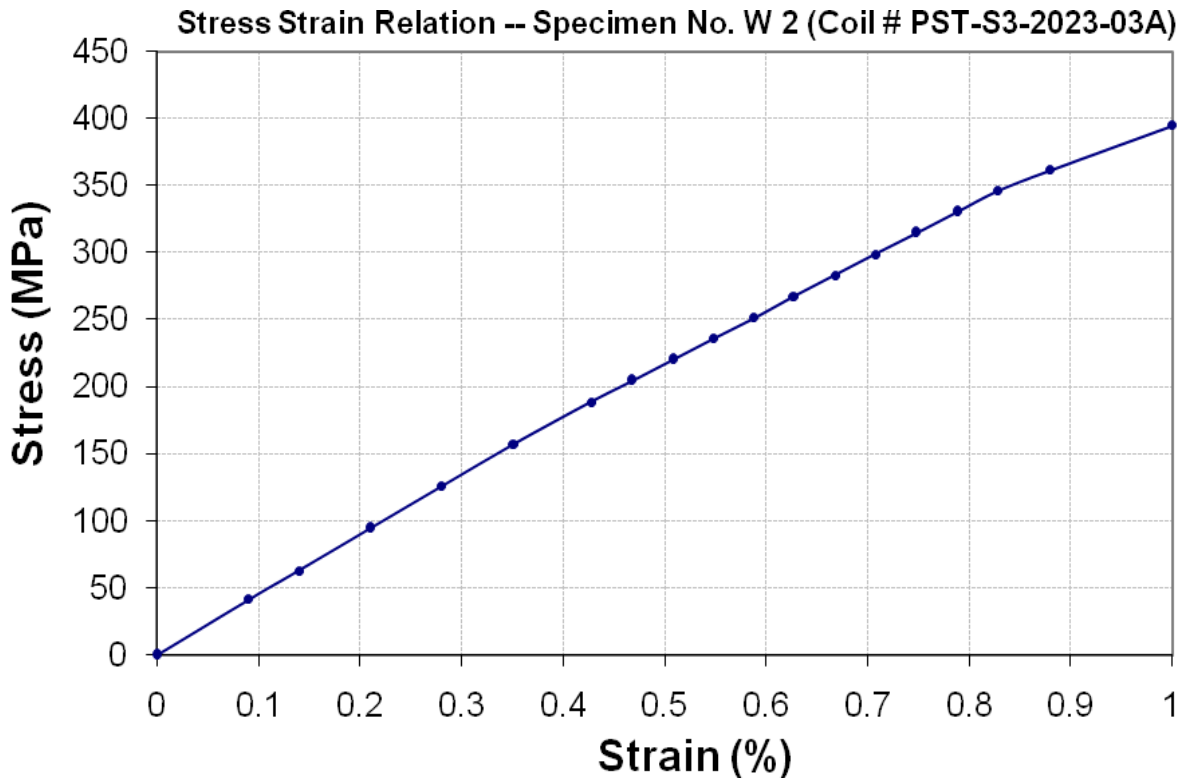
Reference # CED/TFL **3868** (Dr. M Kashif)

Dated: 05-09-2023

Reference of the request letter # DBCG/Lab/PF JV/2023/040

Dated: 10-08-2023

**Graph** (Page – 3/3)



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To,

Sr. Engineer (Civi) KCP (W&S)  
Pakistan Atomic Energy Commission  
Jauharabad  
(Construction of Hostels of Hostels for KCP General Hospital)

Reference # CED/TFL **3876** (Dr. M Kashif)

Dated: 06-09-2023

Reference of the request letter # KCP(W&S)-Hosp-(Hostels)/2020 Dated: 28-08-2023

**Tension Test Report** (Page -1/1)

Date of Test 08-09-2023

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 <sup>2</sup> )		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	0.409	3	0.391	0.11	0.120	4100	5200	82200	75260	104200	95500	1.30	16.3	
2	0.412	3	0.393	0.11	0.121	4100	5200	82200	74640	104200	94700	1.40	17.5	
3	0.409	3	0.391	0.11	0.120	4000	5100	80200	73290	102200	93500	1.20	15.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only three samples for tensile and one sample for bend test</b>														
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**  
**Test Floor Laboratory**  
**Department of Civil Engineering**  
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**Pakistan. Ph: 92-42-99029202**

Ref: CED/TFL/09/3879

Dated: 06-09-2023

Dated of Test: 08-09-2023

To

**M/S StrongForce Private Limited**  
**Wafaqi Colony, Lahore**  
**(Emaar Panorama Tower, Karachi)**

**Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/09/3879) (Page -1/2)**

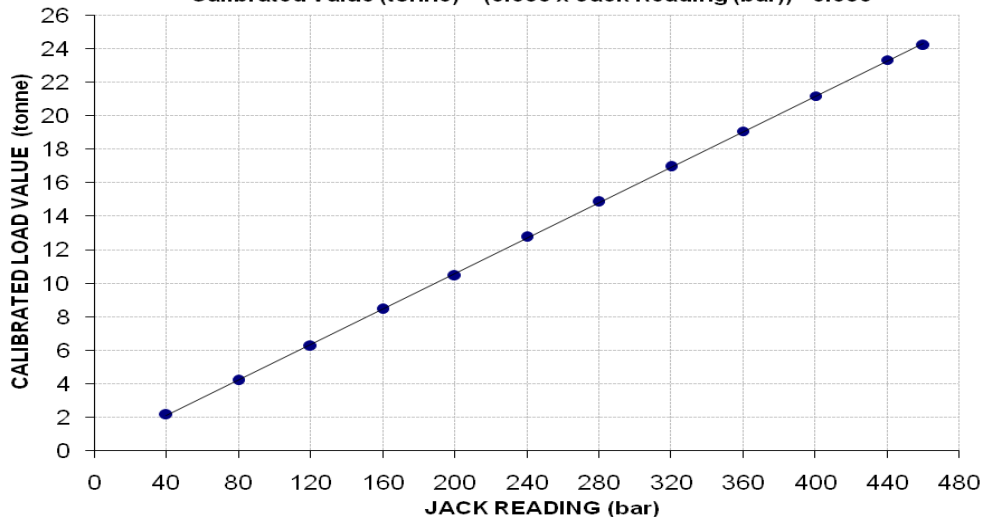
Reference to your Letter No. L2023-09-11629, dated: 06/09/2023 on the subject cited above. One Hydraulic Jack (Jack No. EJ-47, Gauge No. SF-47) as received by us has been calibrated. The results are tabulated as under:

**Total Range : Zero - 1000 (bar)**  
**Calibrated Range : Zero - 460 (bar)**

Hydraulic Jack Reading (bar)	40	80	120	160	200	240	280	320	360	400	440	460	
Calibrated Load	(kg)	2150	4200	6250	8450	10450	12750	14850	16950	19100	21200	23350	24200
	(tonne)	2.15	4.20	6.25	8.45	10.45	12.75	14.85	16.95	19.10	21.20	23.35	24.20
Calibrated Pressure (bar)	41.30	80.68	120.07	162.33	200.75	244.93	285.28	325.62	366.92	407.26	448.57	464.90	

The Ram Area of Jack = 51.05 cm<sup>2</sup>

**Calibration Curve For Jack No. 47**  
Calibrated Value (tonne) = (0.053 × Jack Reading (bar)) - 0.030



**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/09/3879

Dated: 06-09-2023

Dated of Test: 08-09-2023

To

**M/S StrongForce Private Limited**  
**Wafaqi Colony, Lahore**  
**(Emaar Panorama Tower, Karachi)**

**Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/09/3879) (Page -2/2)**

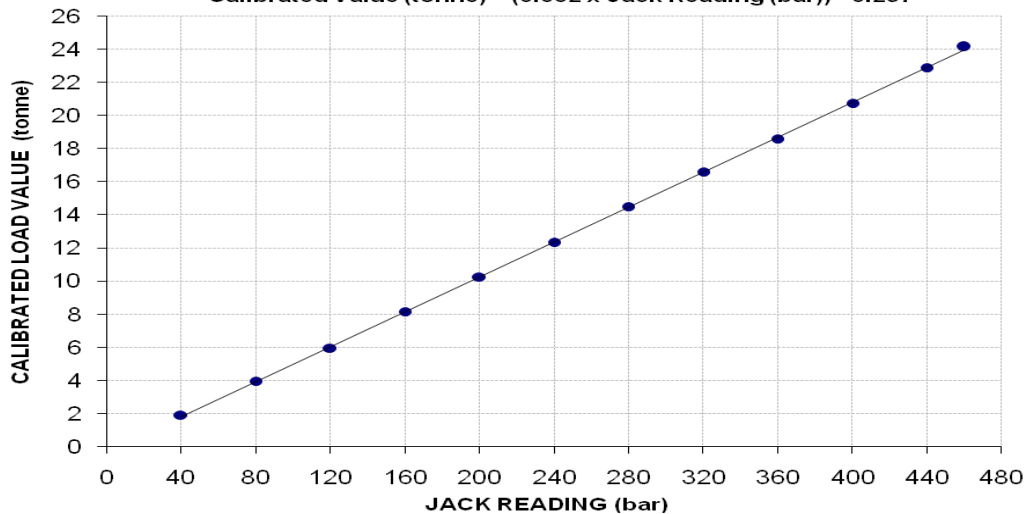
Reference to your Letter No. L2023-09-11629, dated: 06/09/2023 on the subject cited above. One Hydraulic Jack (Jack No. EJ-48, Gauge No. SF-48) as received by us has been calibrated. The results are tabulated as under:

**Total Range : Zero - 1000 (bar)**  
**Calibrated Range : Zero - 460 (bar)**

Hydraulic Jack Reading (bar)		40	80	120	160	200	240	280	320	360	400	440	460
Calibrated Load	(kg)	1900	3950	5950	8150	10250	12350	14500	16600	18600	20750	22900	24150
	(tonne)	1.90	3.95	5.95	8.15	10.25	12.35	14.50	16.60	18.60	20.75	22.90	24.15
Calibrated Pressure (bar)		36.50	75.88	114.30	156.57	196.91	237.25	278.55	318.90	357.32	398.62	439.92	463.94

The Ram Area of Jack = 51.05 cm<sup>2</sup>

**Calibration Curve For Jack No. 48**  
Calibrated Value (tonne) = (0.052 x Jack Reading (bar)) - 0.297



**I/C Testing Laboratoires**  
**UET Lahore, Pakistan.**

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

To,

Manager  
ABL – UML P-199 & 200  
Allied Bank  
Construction of ABL Upper Mall Lahore Plot No. 199, 200.

Reference # CED/TFL **3882** (Dr. M Kashif)

Dated: 07-09-2023

Reference of the request letter # ABL-UML-AMC-QAQC-25

Dated: 06-09-2023

**Tension Test Report** (Page -1/1)

Date of Test 08-09-2023

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 <sup>2</sup> )		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	4.191	32	31.81	1.25	1.232	39400	52000	69489	70490	91711	93100	1.60	20.0	Amreli Steel
2	4.226	32	31.94	1.25	1.242	39800	52200	70194	70620	92064	92700	1.50	18.8	
3	4.188	32	31.80	1.25	1.231	41200	53000	72664	73760	93475	94900	1.50	18.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only three samples for tensile and one sample for bend test</b>														
Bend Test														
32mm Dia Bar Bend Test Through 180° is Satisfactory														

**I/C Testing Laboratories**  
**UET Lahore, Pakistan.**

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**STRUCTURAL ENGINEERING DIVISION**  
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**University of Engineering and Technology Lahore, 54890**  
**Pakistan. Ph: 92-42-99029202**

To,  
Head QA/QC  
Al-A'Zamiyya Block Phase I  
Lahore

Reference # CED/TFL **3884** (Dr. M Kashif)  
Reference of the request letter# Alz./ST/006

Dated: 07-09-2023  
Dated: 07-09-2023

**Tension Test Report** (Page -1/1)

Date of Test 08-09-2023  
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 <sup>2</sup> )		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	0.373	3	0.374	0.11	0.110	3400	4700	68200	68380	94200	94600	1.60	20.0	
2	0.371	3	0.373	0.11	0.109	3300	4600	66200	66630	92200	92900	1.50	18.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Note: only two sample for tensile and one sample for bend test</b>														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

**I/C Testing Laboratoires**  
**UET Lahore, Pakistan.**

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To,

Deputy Director (Maint)  
NHA, Wazirabad  
(Construction of U-Turn / Closing of Existing U-Turn on GT Road N-5 (WAPDA Town))

Reference # CED/TFL **3885** (Dr. M Kashif)

Dated: 07-09-2023

Reference of the request letter # Gen/DD(Maint)/WZD/NHA/2023/977

Dated: 05-09-2023

**Tension Test Report** (Page -1/1)

Date of Test 08-09-2023

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 <sup>2</sup> )		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	0.393	10	9.74	0.12	0.115	3800	5100	69812	72540	93696	97400	1.20	15.0	
2	0.394	10	9.75	0.12	0.116	3900	5100	71650	74270	93696	97200	1.30	16.3	
3	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two samples for tensile and one sample for bend test</b>														
Bend Test														
10mm Dia Bar Bend Test Through 180° is Satisfactory														

**I/C Testing Laboratories**  
**UET Lahore, Pakistan.**

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