



**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  
 (U/G External Elec Sys of Additional Pockets in Sector-A & B of Commercial Broadway, Ph-VIII (M/s MEFA)

Reference # CED/TFL **35567** (Dr. Usman Akmal)  
 Reference of the request letter # 408/241/E/Lab/1020/36

Dated: 28-10-2020  
 Dated: 28-10-2020

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

Date of Test 29-10-2020  
 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 <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	0.358	3	0.366	0.11	0.105	3800	4800	76200	79620	96200	100600	1.00	12.5	Mughal Steel
2	0.367	3	0.370	0.11	0.108	3900	4700	78200	79750	94200	96200	1.00	12.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two 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:

- 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](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  
 Meinhardt  
 PEC Building Project - Lahore

Reference # CED/TFL **35568** (Dr. Usman Akmal) Dated: 28-10-2020  
 Reference of the request letter # MPPL/Proj PEC/LHR/RE/016 Dated: 28-10-2020

**Tension Test Report** (Page -1/2)

Date of Test 29-10-2020  
 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 <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	0.380	3	0.377	0.11	0.112	4500	5600	90200	88710	112300	110400	0.90	11.3	S.J. Steel
2	0.382	3	0.378	0.11	0.112	4500	5600	90200	88270	112300	109900	0.90	11.3	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two 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.**

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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  
 Meinhardt  
 PEC Building Project - Lahore

Reference # CED/TFL **35568** (Dr. Usman Akmal) Dated: 28-10-2020  
 Reference of the request letter # MPPL/Proj PEC/LHR/RE/015 Dated: 28-10-2020

**Tension Test Report** (Page -2/2)

Date of Test 29-10-2020  
 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 <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	0.365	3	0.369	0.11	0.107	3900	4900	78200	80230	98200	100800	0.90	11.3	Mughal Steel
2	0.357	3	0.365	0.11	0.105	4000	5000	80200	84080	100200	105100	0.80	10.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two samples for tensile and one sample for bend test</b>														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

**I/C Testing Laboratoires**  
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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,  
M/S Defence Housing Authority.  
Lahore Cantt  
(Infra Dev Works – Const of Addl Lab Rooms, B-Block, DHA Ph-9 Town (M/s TCEW))

Reference # CED/TFL **35570, 571** (Dr. Usman Akmal)  
Reference of the request letter # 408/241/E/Lab/1024/06

Dated: 28-10-2020  
Dated: 28-10-2020

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

Date of Test 29-10-2020  
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 <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	0.370	3	0.372	0.11	0.109	3300	4700	66200	66960	94200	95400	1.10	13.8	Kamran Steel
2	0.372	3	0.373	0.11	0.109	3500	4900	70200	70550	98200	98800	1.00	12.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two 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**  
**University of Engineering and Technology Lahore, 54890**  
**Pakistan. Ph: 92-42-99029202**

To,  
 Sub Divisional Officer  
 Maintenance; Sub Division No. 2  
 GOR-III, Lahore  
 (Construction of Multi-story Flats / Suites for Officers of P&D and S&GA D in GOR-II, Lahore)

Reference # CED/TFL **35572** (Dr. Usman Akmal)  
 Reference of the request letter # 134/SD/GOR-III, LHR

Dated: 28-10-2020  
 Dated: 26-09-2020

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

Date of Test 29-10-2020  
 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 <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	3/8	0.384	0.11	0.116	3300	4800	66200	62960	96200	91600	1.30	16.3	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only one sample for tensile and one sample for bend test</b>														
Bend Test														
3/8" Dia Bar Bend Test Through 180° is Satisfactory														

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

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

AGE (Air) Multan

“Construction of Flight Line in Bravo Area at PAF Base Multan - CA No. CEAF-CZ-04/2021”  
 (M/s Raja Engg.)

Reference # CED/TFL **35574** (Dr. Usman Akmal)

Dated: 29-10-2020

Reference of the request letter # 6489/25/E6

Dated: 26-10-2020

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

Date of Test 29-10-2020

Gauge length 8 inches

Description Deformed Steel Bar Tensile 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	0.387	3	0.381	0.11	0.114	2900	4300	58200	56150	86200	83300	1.10	13.8	
2	0.379	3	0.377	0.11	0.111	2800	4000	56200	55370	80200	79100	1.10	13.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two samples for tensile test</b>														
Bend Test														

**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**  
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To,  
Manager QA  
Chaman Das & Company

Reference # CED/TFL **35575** (Dr. Usman Akmal)  
Reference of the request letter # 0010

Dated: 29-10-2020

Dated: 29-10-2020

**Tension Test Report** (Page – 1/3)

Date of Test 29-10-2020

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)			
1	12.70 (1/2")	775.0	794.0	17200	168.73	19800	194.24	199	>3.50	xx
2	12.70 (1/2")	775.0	795.0	17900	175.60	19900	195.22	199	>3.50	xx
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
<b>Only two samples 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.**

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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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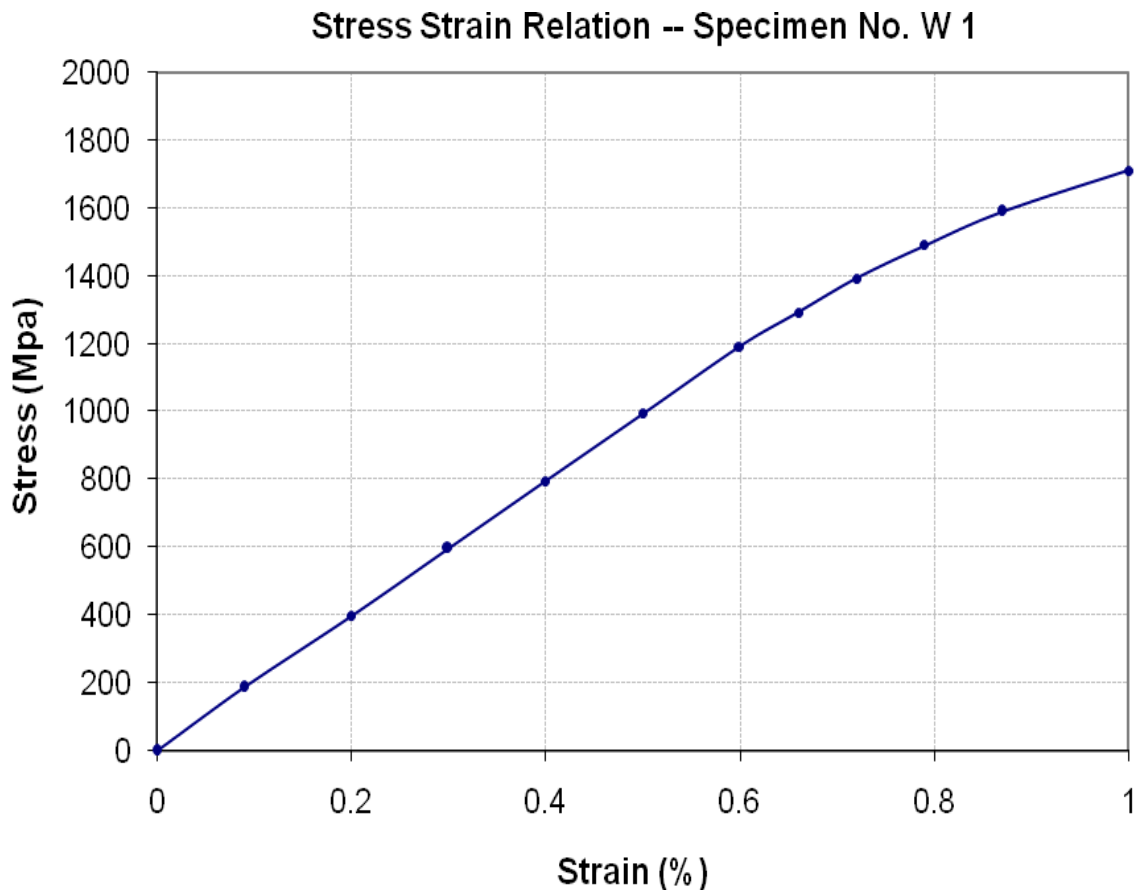
To,  
Manager QA  
Chaman Das & Company

Reference # CED/TFL **35575** (Dr. Usman Akmal)  
Reference of the request letter # 0010

Dated: 29-10-2020

Dated: 29-10-2020

**Graph** (Page – 2/3)



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

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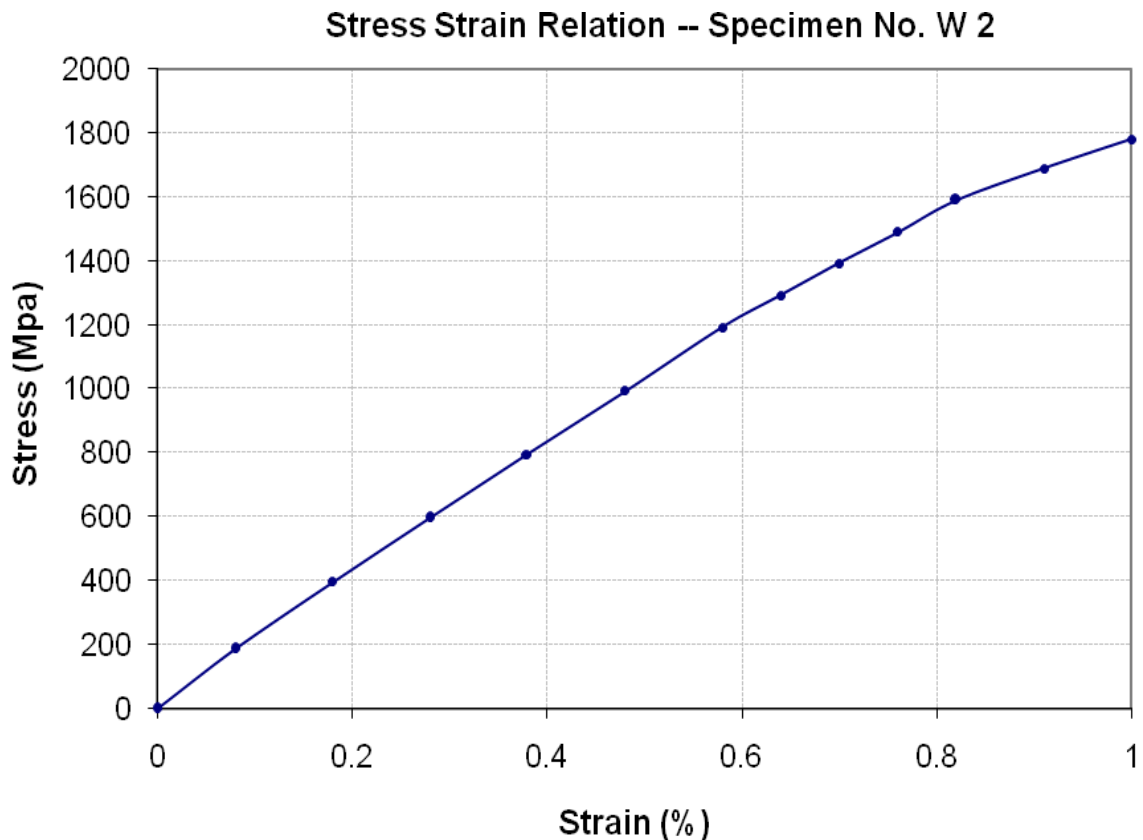
To,  
Manager QA  
Chaman Das & Company

Reference # CED/TFL **35575** (Dr. Usman Akmal)  
Reference of the request letter # 0010

Dated: 29-10-2020

Dated: 29-10-2020

**Graph** (Page – 3/3)



**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**

o,  
 Resident Engineer / Team Leader  
 Prime Engineering Consultancy  
 Kallurkot Bridge Project  
 Construction of 4 Lane Bridge over River Indus Connecting Kallur Kot with D.I Khan

Reference # CED/TFL **35577** (Dr. Usman Akmal)  
 Reference of the request letter # KK-DIK--BR-PJ/2020/203

Dated: 29-10-2020  
 Dated: 27-10-2020

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

Date of Test 29-10-2020  
 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 <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	4.149	32	31.65	1.25	1.219	38000	55000	67020	68680	97002	99500	1.40	17.5	Abbas Steel
2	4.179	32	31.76	1.25	1.228	37800	54400	66667	67830	95944	97700	1.50	18.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two samples for tensile and two samples for bend test</b>														
Bend Test														
32mm Dia Bar Bend Test Through 180° is Satisfactory														
32mm 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 / Team Leader  
 Prime Engineering Consultancy  
 Kallurkot Bridge Project  
 Construction of 4 Lane Bridge over River Indus Connecting Kallur Kot with D.I Khan

Reference # CED/TFL **35578** (Dr. Usman Akmal)  
 Reference of the request letter # KK-DIK--BR-PJ/2020/202

Dated: 29-10-2020  
 Dated: 27-10-2020

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

Date of Test 29-10-2020  
 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 <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	4.333	32	32.35	1.25	1.274	36800	59800	64903	63680	105468	103500	1.40	17.5	Pak Steel
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only one sample for tensile and one sample for bend test</b>														
Bend Test														
32mm Dia Bar Bend Test Through 180° is Satisfactory														

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

Note:

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

Ref: CED/TFL/10/35581

Dated: 29-10-2020

Dated of Test: 29-10-2020

**To**  
**M/S AJ Pipe Factory**  
**Lahore**

**Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/10/35581)**

Reference to your Letter No. 015/15/21, Dated: 29/10/2020 on the subject cited above. One Hydraulic Jack as received by us has been calibrated. The results are tabulated as under:

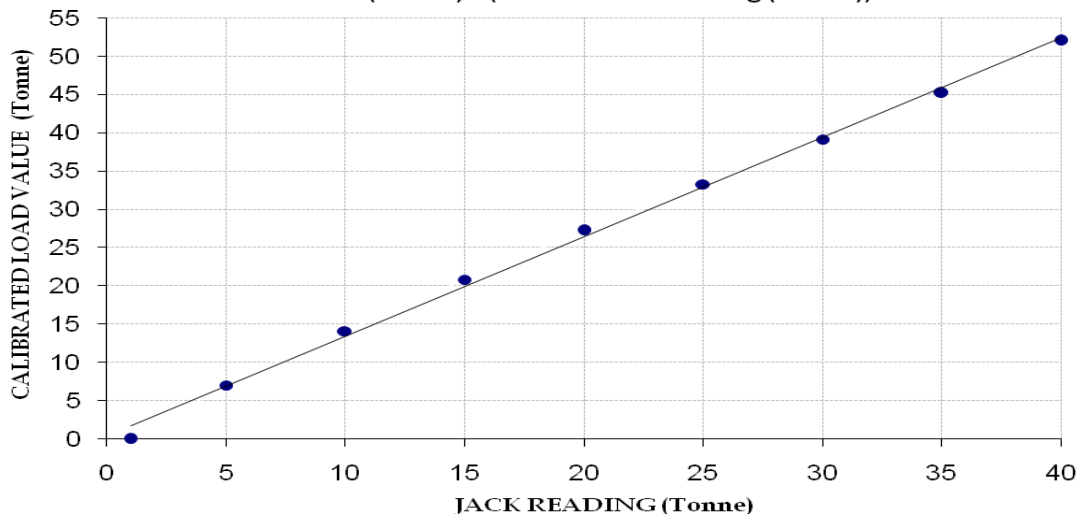
**Total Range : Zero - 50 (Tonne)**  
**Calibrated Range : Zero - 40 (Tonne)**

Hydraulic Jack Reading (Tonne)	1	5	10	15	20	25	30	35	40	
Calibrated Load	(kg)	0	7000	14100	20800	27200	33300	39100	45200	52000
	Tonne	0	7.00	14.10	20.80	27.20	33.30	39.10	45.20	52.00

1 Tonne = 1000 Kg

**Calibration Curve For Jack**

**Calibrated Value (Tonne) = (1.299 × Jack Reading (Tonne)) + 0.380**



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**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](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