



**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/03/4759  
2024

Dated: 07-03-

Dated of Test: 18-03-2024

To

**Project Manager/RE**  
**Osmani & Company (Pvt.) Ltd.**  
**EDCS Project, Pakpattan**  
**Engineering Design & Construction Supervision for Punjab Rural Sustainable**  
**Water Supply & Sanitation Project (PRSWSSP) Cluster Central II**

Subject: **TESTING OF R.C.C. PIPE [ASTM-C76 - 08a]** (Page # 1/1)

Reference to your letter No. PM/OCL/PRSWSSP/EDCS/Pkg-04/2024,  
dated 07.03.2024 on the subject cited above. Two R.C.C. Pipes as received by us have  
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)	(inch)	(inch)	(inch)	(kg)	(kg)	Pound/Linear foot/foot	Pound/Linear foot/foot
1	12	7.74	7.30	15.94	11.84	2.05	13500	18000	4131	5508
2	12	7.75	7.28	15.75	11.85	1.95	13800	18500	4231	5672

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

Ref: CED/TFL/03/4760

Dated: 07-03-2024

Dated of Test: 18-03-2024

To

**Project Manager/RE**  
**Osmani & Company (Pvt.) Ltd.**  
**EDCS Project, Pakpattan**  
**Engineering Design & Construction Supervision for Punjab Rural Sustainable**  
**Water Supply & Sanitation Project (PRSWSSP) Cluster Central II**

Subject: **TESTING OF R.C.C. PIPE [ASTM-C76 - 08a]** (Page # 1/1)

Reference to your letter No. PM/OCL/PRSWSSP/EDCS/Pkg-07/2024/19, dated 24.02.2024 on the subject cited above. Two R.C.C. Pipes as received by us have 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)	(inch)	(inch)	(inch)	(kg)	(kg)	Pound/Linear foot/foot	Pound/Linear foot/foot
1	12	7.74	7.35	15.98	11.85	2.07	12000	17500	3643	5313
2	12	7.78	7.30	16.06	11.93	2.07	13000	18000	3947	5465

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

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[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)
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**Pakistan. Ph: 92-42-99029202**

Ref: CED/TFL/03/4761

Dated: 07-03-2024

Dated of Test: 18-03-2024

To

**Project Manager/RE**  
**Osmani & Company (Pvt.) Ltd.**  
**EDCS Project, Pakpattan**  
**Engineering Design & Construction Supervision for Punjab Rural Sustainable**  
**Water Supply & Sanitation Project (PRSWSSP) Cluster Central II**

Subject: **TESTING OF R.C.C. PIPE [ASTM-C76 - 08a]** (Page # 1/1)

Reference to your letter No. PM/OCL/PRSWSSP/EDCS/Pkg-05/2024/16A, dated 04.02.2024 on the subject cited above. Three R.C.C. Pipes as received by us have 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)	(inch)	(inch)	(inch)	(kg)	(kg)	Pound/Linear foot/foot	Pound/Linear foot/foot
1	12	7.72	7.33	15.87	11.44	2.22	14500	19000	4575	5994
2	12	7.72	7.34	16.02	11.81	2.11	14000	18000	4274	5495
3	12	7.74	7.31	15.83	11.75	2.04	13800	17800	4252	5485

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

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

To,  
Dy Dir Infra  
Defence Housing Authority, Gujranwala  
"Sec K"

Reference # CED/TFL **4804** (Dr. Ali Ahmed)  
Reference of the request letter # 111/15/DD/RS/Lab/K/575

Dated: 18-03-2024  
Dated: 18-03-2024

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

Date of Test 18-03-2024  
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 <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	0.377	3	0.376	0.11	0.111	3280	4910	65800	65240	98400	97700	1.30	16.3	Siraj Steel
2	0.378	3	0.376	0.11	0.111	3360	4990	67400	66720	100000	99100	1.10	13.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<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**  
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**Department of Civil Engineering**  
**University of Engineering and Technology Lahore, 54890**  
**Pakistan. Ph: 92-42-99029202**

Ref: CED/TFL/03/4787

Dated: 13-03-2024

Dated: 18-03-2024

To

**M/S CGGC Dasu Hydropower Project Management in Pakistan**  
**Dasu Hydropower Project**

Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/03/4787)** (Page -1/16)

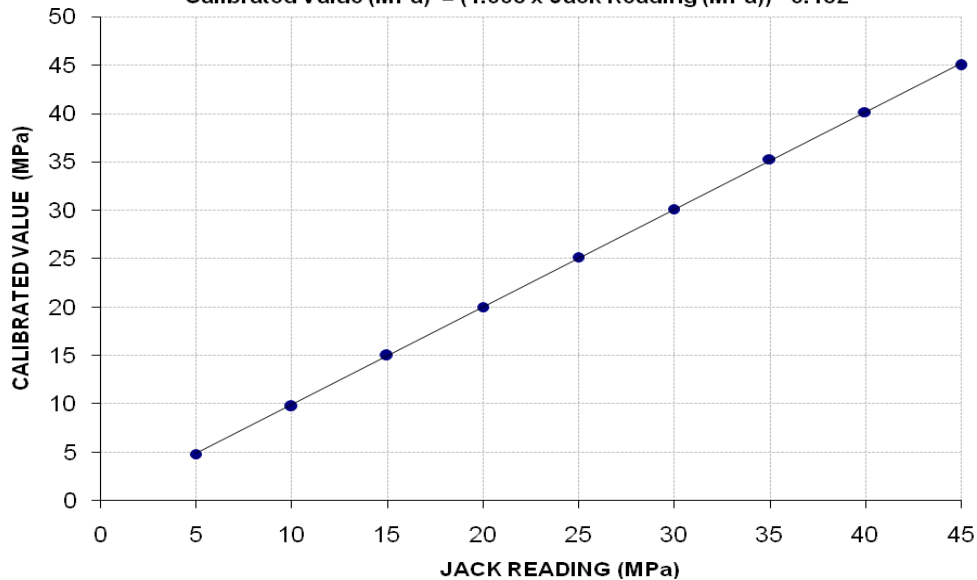
Reference to your Letter No. Nil, dated: 13/03/2024 on the subject cited above. One Hydraulic Jack (Jack No. 2319, Gauge No. 2669) as received by us has been calibrated. The results are tabulated as under:

**Total Range : Zero - 60 (MPa)**  
**Calibrated Range : Zero - 45 (MPa)**

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45
Calibrated Load (kg)	14600	29600	45600	60800	76400	91600	107200	122000	136600
Calibrated Pressure (Mpa)	4.80	9.74	15.01	20.01	25.14	30.15	35.28	40.15	44.95

The Ram Area of Jack = 298 cm<sup>2</sup>

**Calibration Curve For Jack No. 2319 (Gauge # 2669)**  
**Calibrated Value (MPa) = (1.008 x Jack Reading (MPa)) - 0.182**



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

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Ref: CED/TFL/03/4787

Dated: 13-03-2024

Dated: 18-03-2024

To

**M/S CGGC Dasu Hydropower Project Management in Pakistan**  
**Dasu Hydropower Project**

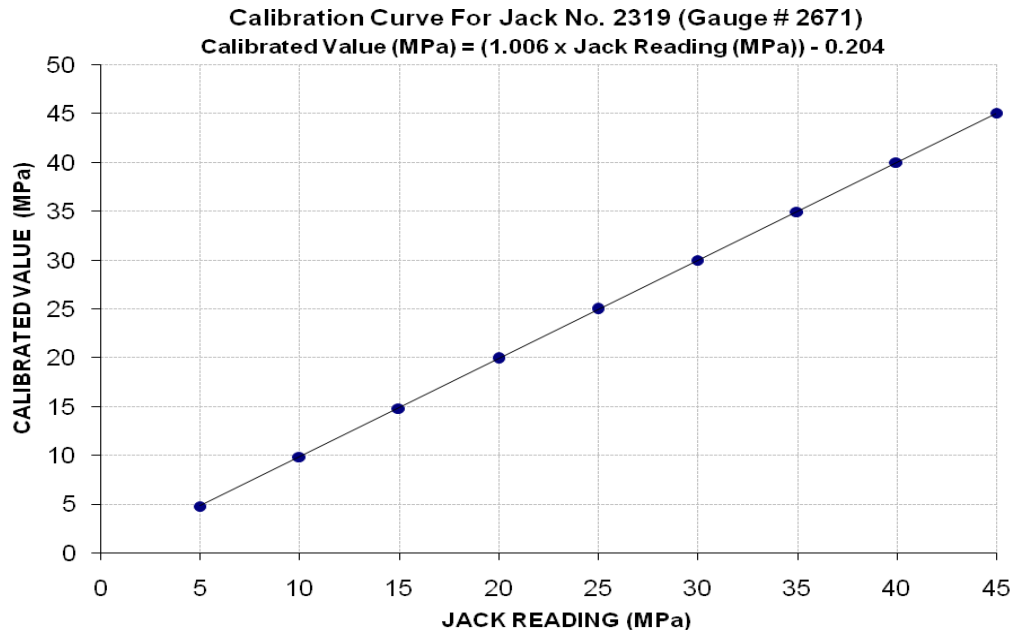
Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/03/4787) (Page -2/16)**

Reference to your Letter No. Nil, dated: 13/03/2024 on the subject cited above. One Hydraulic Jack (Jack No. 2319, Gauge No. 2671) as received by us has been calibrated. The results are tabulated as under:

**Total Range : Zero - 60 (MPa)**  
**Calibrated Range : Zero - 45 (MPa)**

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45
Calibrated Load (kg)	14600	30000	45100	60600	76000	91200	106200	121600	137000
Calibrated Pressure (Mpa)	4.80	9.87	14.84	19.94	25.01	30.01	34.95	40.02	45.09

The Ram Area of Jack = 298 cm<sup>2</sup>



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

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Ref: CED/TFL/03/4787

Dated: 13-03-2024

Dated: 18-03-2024

To

**M/S CGGC Dasu Hydropower Project Management in Pakistan**  
**Dasu Hydropower Project**

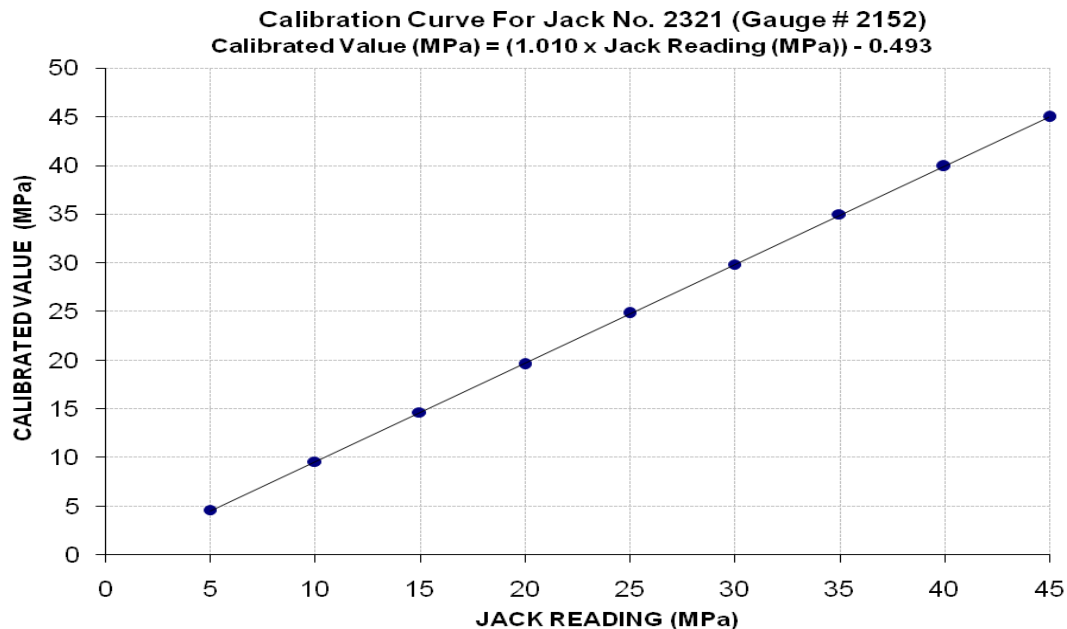
Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/03/4787)** (Page -3/16)

Reference to your Letter No. Nil, dated: 13/03/2024 on the subject cited above. One Hydraulic Jack (Jack No. 2321, Gauge No. 2152) as received by us has been calibrated. The results are tabulated as under:

**Total Range : Zero - 60 (MPa)**  
**Calibrated Range : Zero - 45 (MPa)**

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45
Calibrated Load (kg)	14000	29200	44600	59400	75400	90600	106400	121200	136600
Calibrated Pressure (Mpa)	4.61	9.61	14.68	19.55	24.81	29.82	35.02	39.89	44.95

The Ram Area of Jack = 298 cm<sup>2</sup>



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

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Ref: CED/TFL/03/4787

Dated: 13-03-2024

Dated: 18-03-2024

To

**M/S CGGC Dasu Hydropower Project Management in Pakistan**  
**Dasu Hydropower Project**

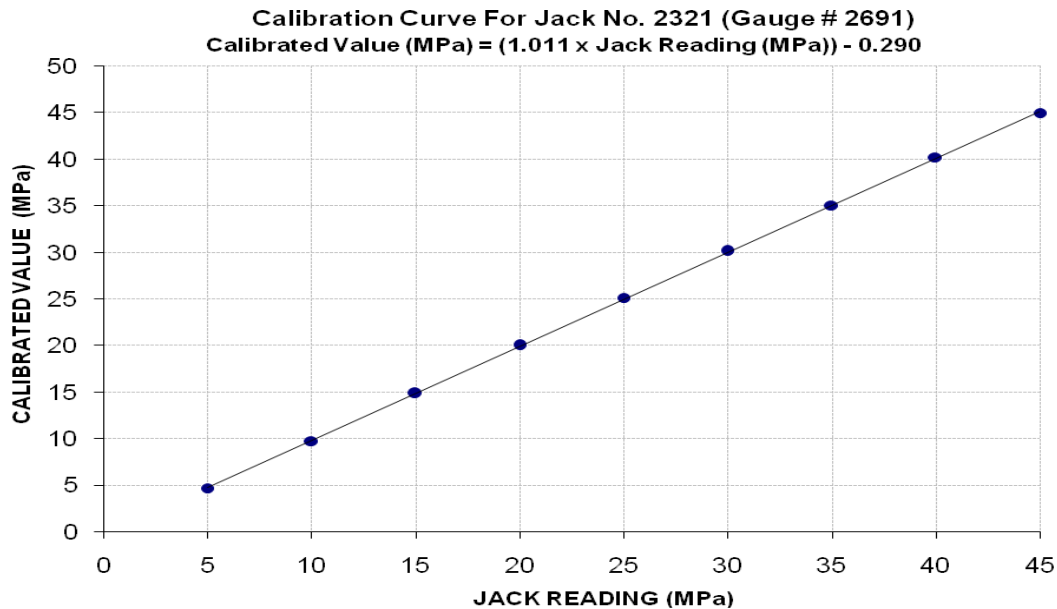
Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/03/4787)** (Page -4/16)

Reference to your Letter No. Nil, dated: 13/03/2024 on the subject cited above. One Hydraulic Jack (Jack No. 2321, Gauge No. 2691) as received by us has been calibrated. The results are tabulated as under:

**Total Range : Zero - 60 (MPa)**  
**Calibrated Range : Zero - 45 (MPa)**

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45
Calibrated Load (kg)	14200	29600	45200	60800	76400	91600	106600	122200	136800
Calibrated Pressure (Mpa)	4.67	9.74	14.88	20.01	25.14	30.15	35.08	40.22	45.02

The Ram Area of Jack = 298 cm<sup>2</sup>



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**Pakistan. Ph: 92-42-99029202**

Ref: CED/TFL/03/4787

Dated: 13-03-2024

Dated: 18-03-2024

To

**M/S CGGC Dasu Hydropower Project Management in Pakistan**  
**Dasu Hydropower Project**

Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/03/4787)** (Page -5/16)

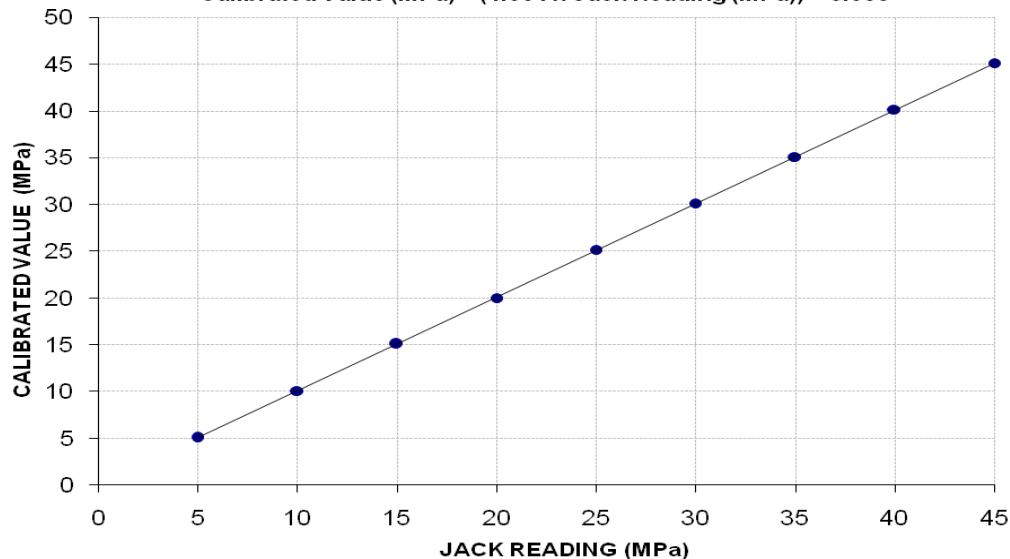
Reference to your Letter No. Nil, dated: 13/03/2024 on the subject cited above. One Hydraulic Jack (Jack No. 2315, Gauge No. 2670) as received by us has been calibrated. The results are tabulated as under:

**Total Range : Zero - 60 (MPa)**  
**Calibrated Range : Zero - 45 (MPa)**

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45
Calibrated Load (kg)	15400	30600	45800	60800	76400	91600	106600	122000	137000
Calibrated Pressure (Mpa)	5.07	10.07	15.07	20.01	25.14	30.15	35.08	40.15	45.09

The Ram Area of Jack = 298 cm<sup>2</sup>

**Calibration Curve For Jack No. 2315 (Gauge # 2670)**  
**Calibrated Value (MPa) = (1.001 x Jack Reading (MPa)) + 0.053**



**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/03/4787

Dated: 13-03-2024

Dated: 18-03-2024

To

**M/S CGGC Dasu Hydropower Project Management in Pakistan**  
**Dasu Hydropower Project**

Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/03/4787)** (Page -6/16)

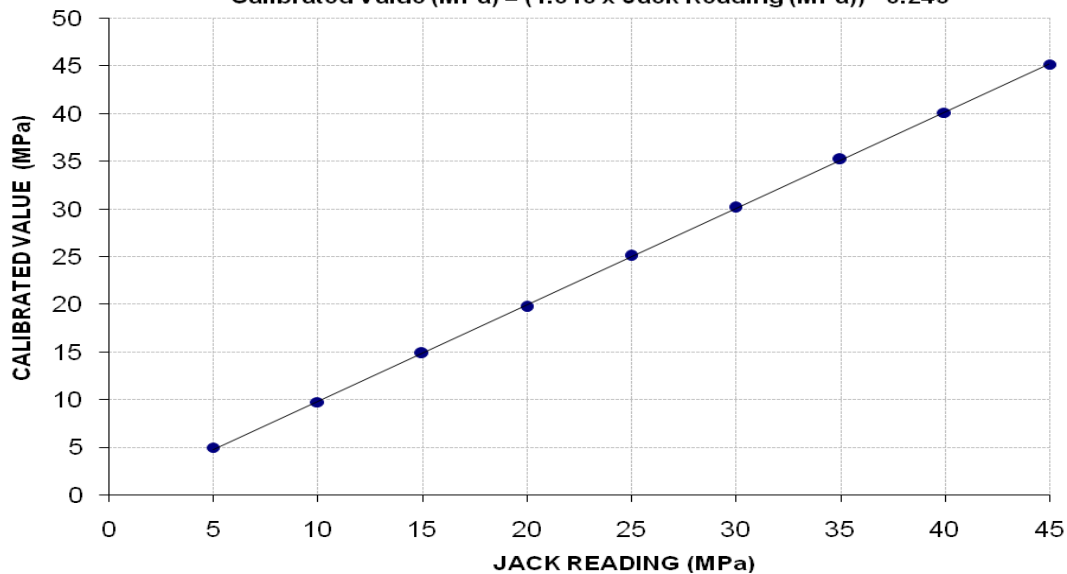
Reference to your Letter No. Nil, dated: 13/03/2024 on the subject cited above. One Hydraulic Jack (Jack No. 2315, Gauge No. 2690) as received by us has been calibrated. The results are tabulated as under:

**Total Range : Zero - 60 (MPa)**  
**Calibrated Range : Zero - 45 (MPa)**

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45
Calibrated Load (kg)	15200	29600	45200	60000	76200	91600	107000	122000	137400
Calibrated Pressure (Mpa)	5.00	9.74	14.88	19.75	25.08	30.15	35.21	40.15	45.22

The Ram Area of Jack = 298 cm<sup>2</sup>

**Calibration Curve For Jack No. 2315 (Gauge # 2690)**  
**Calibrated Value (MPa) = (1.010 x Jack Reading (MPa)) - 0.245**



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

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Ref: CED/TFL/03/4787

Dated: 13-03-2024

Dated: 18-03-2024

To

**M/S CGGC Dasu Hydropower Project Management in Pakistan**  
**Dasu Hydropower Project**

Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/03/4787)** (Page -7/16)

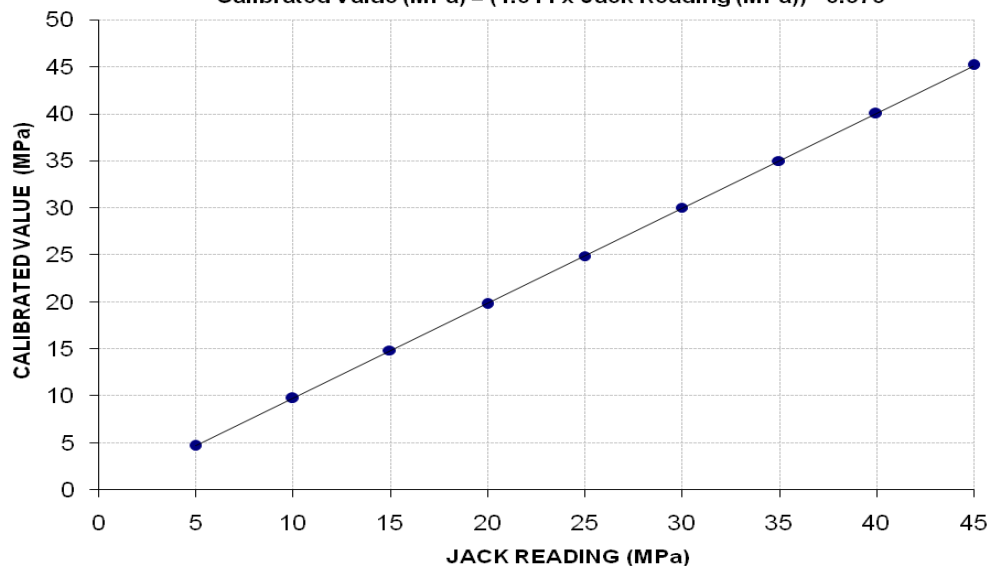
Reference to your Letter No. Nil, dated: 13/03/2024 on the subject cited above. One Hydraulic Jack (Jack No. 2318, Gauge No. 2676) as received by us has been calibrated. The results are tabulated as under:

**Total Range : Zero - 60 (MPa)**  
**Calibrated Range : Zero - 45 (MPa)**

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45
Calibrated Load (kg)	14200	29600	45200	60000	75600	91200	106400	121600	137200
Calibrated Pressure (Mpa)	4.67	9.74	14.88	19.75	24.88	30.01	35.02	40.02	45.15

The Ram Area of Jack = 298 cm<sup>2</sup>

**Calibration Curve For Jack No. 2318 (Gauge # 2676)**  
**Calibrated Value (MPa) = (1.011 x Jack Reading (MPa)) - 0.373**



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

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

Ref: CED/TFL/03/4787

Dated: 13-03-2024

Dated: 18-03-2024

To

**M/S CGGC Dasu Hydropower Project Management in Pakistan**  
**Dasu Hydropower Project**

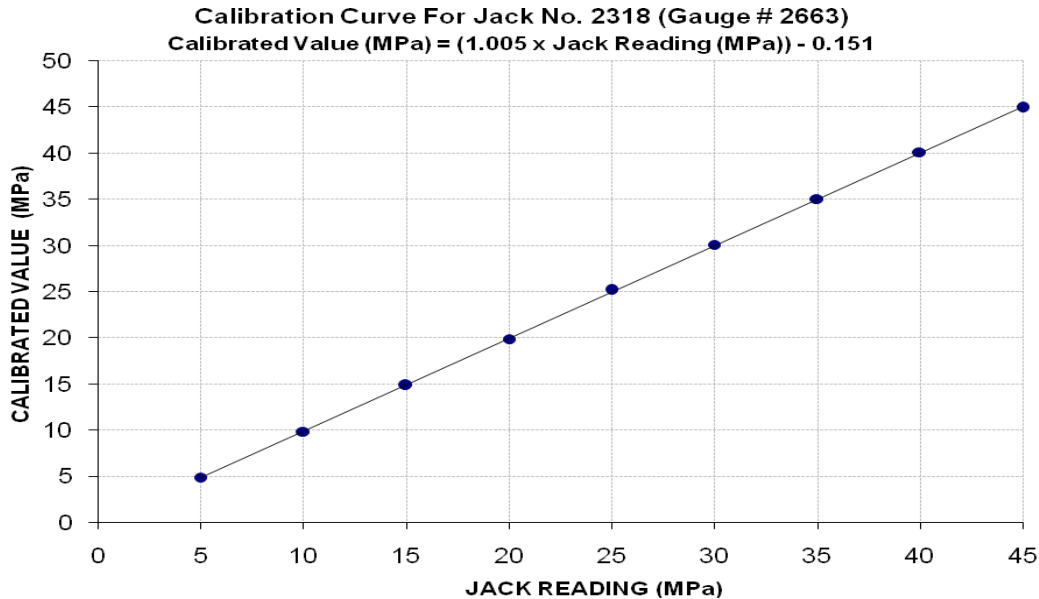
Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/03/4787)** (Page -8/16)

Reference to your Letter No. Nil, dated: 13/03/2024 on the subject cited above. One Hydraulic Jack (Jack No. 2318, Gauge No. 2663) as received by us has been calibrated. The results are tabulated as under:

**Total Range : Zero - 60 (MPa)**  
**Calibrated Range : Zero - 45 (MPa)**

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45
Calibrated Load (kg)	14800	30000	45200	60400	76600	91400	106600	122000	136600
Calibrated Pressure (Mpa)	4.87	9.87	14.88	19.88	25.21	30.08	35.08	40.15	44.95

The Ram Area of Jack = 298 cm<sup>2</sup>



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

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**Dasu Hydropower Project**

Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/03/4787)** (Page -9/16)

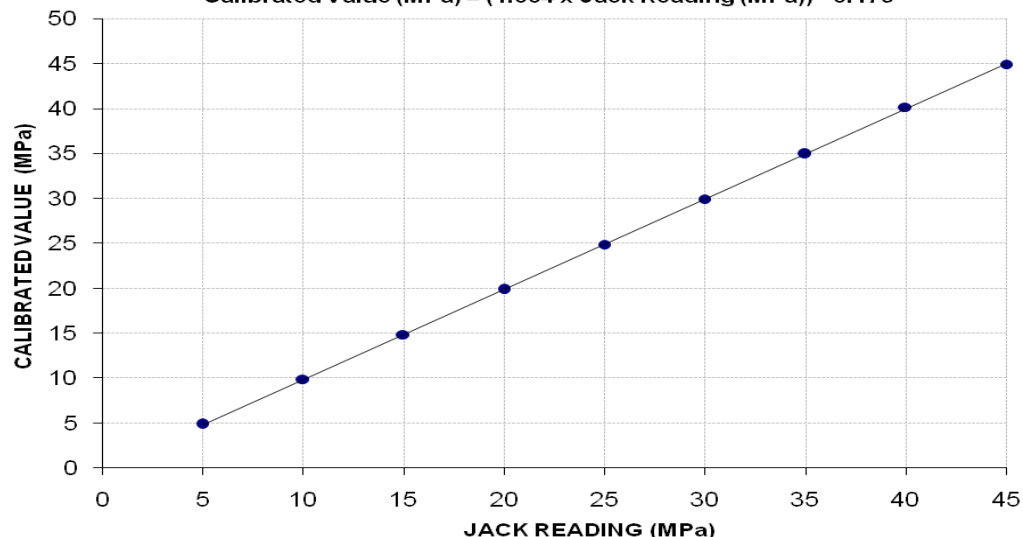
Reference to your Letter No. Nil, dated: 13/03/2024 on the subject cited above. One Hydraulic Jack (Jack No. 2317, Gauge No. 2698) as received by us has been calibrated. The results are tabulated as under:

**Total Range : Zero - 60 (MPa)**  
**Calibrated Range : Zero - 45 (MPa)**

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45
Calibrated Load (kg)	14800	30000	45100	60400	75600	91000	106200	122000	136400
Calibrated Pressure (Mpa)	4.87	9.87	14.84	19.88	24.88	29.95	34.95	40.15	44.89

The Ram Area of Jack = 298 cm<sup>2</sup>

**Calibration Curve For Jack No. 2317 (Gauge # 2698)**  
**Calibrated Value (MPa) = (1.004 x Jack Reading (MPa)) - 0.179**



**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



**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/03/4787

Dated: 13-03-2024

Dated: 18-03-2024

To

**M/S CGGC Dasu Hydropower Project Management in Pakistan**  
**Dasu Hydropower Project**

Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/03/4787)** (Page -10/16)

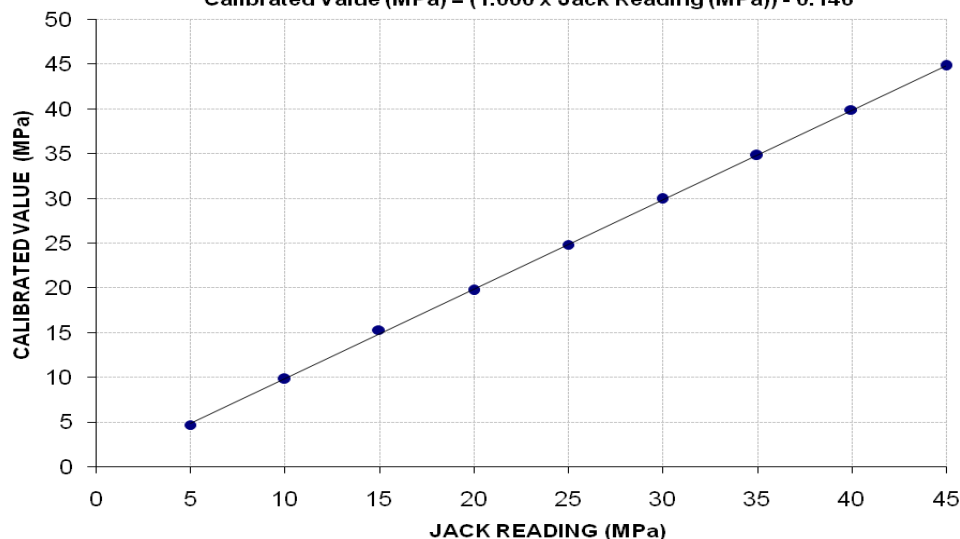
Reference to your Letter No. Nil, dated: 13/03/2024 on the subject cited above. One Hydraulic Jack (Jack No. 2317, Gauge No. 2694) as received by us has been calibrated. The results are tabulated as under:

**Total Range : Zero - 60 (MPa)**  
**Calibrated Range : Zero - 45 (MPa)**

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45
Calibrated Load (kg)	14200	29800	46500	60000	75400	91000	105800	121400	136200
Calibrated Pressure (Mpa)	4.67	9.81	15.30	19.75	24.81	29.95	34.82	39.95	44.82

The Ram Area of Jack = 298 cm<sup>2</sup>

**Calibration Curve For Jack No. 2317 (Gauge # 2694)**  
**Calibrated Value (MPa) = (1.000 x Jack Reading (MPa)) - 0.146**



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

Note:

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

Ref: CED/TFL/03/4787

Dated: 13-03-2024

Dated: 18-03-2024

To

**M/S CGGC Dasu Hydropower Project Management in Pakistan**  
**Dasu Hydropower Project**

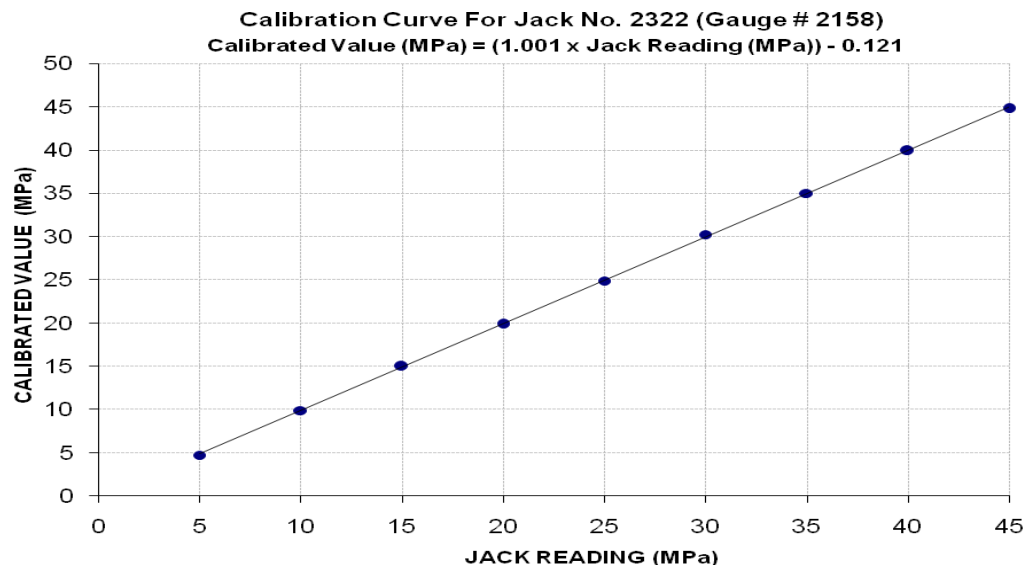
Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/03/4787)** (Page -11/16)

Reference to your Letter No. Nil, dated: 13/03/2024 on the subject cited above. One Hydraulic Jack (Jack No. 2322, Gauge No. 2158) as received by us has been calibrated. The results are tabulated as under:

**Total Range : Zero - 60 (MPa)**  
**Calibrated Range : Zero - 45 (MPa)**

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45
Calibrated Load (kg)	14400	30000	45600	60400	75600	91900	106400	121200	136000
Calibrated Pressure (Mpa)	4.74	9.87	15.01	19.88	24.88	30.24	35.02	39.89	44.76

The Ram Area of Jack = 298 cm<sup>2</sup>



Ref: CED/TFL/03/4787

Dated: 13-03-2024

**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)
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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**

Dated: 18-03-2024

To

**M/S CGGC Dasu Hydropower Project Management in Pakistan**  
**Dasu Hydropower Project**

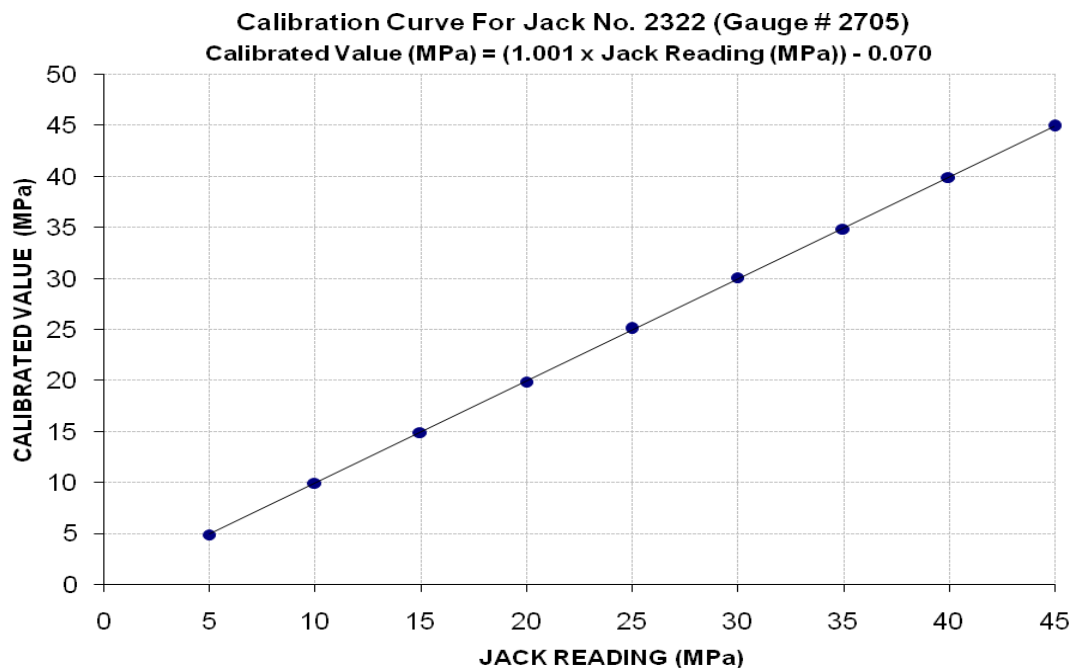
Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/03/4787)** (Page -12/16)

Reference to your Letter No. Nil, dated: 13/03/2024 on the subject cited above. One Hydraulic Jack (Jack No. 2322, Gauge No. 2705) as received by us has been calibrated. The results are tabulated as under:

**Total Range : Zero - 60 (MPa)**  
**Calibrated Range : Zero - 45 (MPa)**

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45
Calibrated Load (kg)	14800	30300	45400	60400	76300	91400	106000	121400	136600
Calibrated Pressure (Mpa)	4.87	9.97	14.94	19.88	25.11	30.08	34.88	39.95	44.95

The Ram Area of Jack = 298 cm<sup>2</sup>



**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**

Ref: CED/TFL/03/4787

Dated: 13-03-2024

Dated: 18-03-2024

To

**M/S CGGC Dasu Hydropower Project Management in Pakistan**  
**Dasu Hydropower Project**

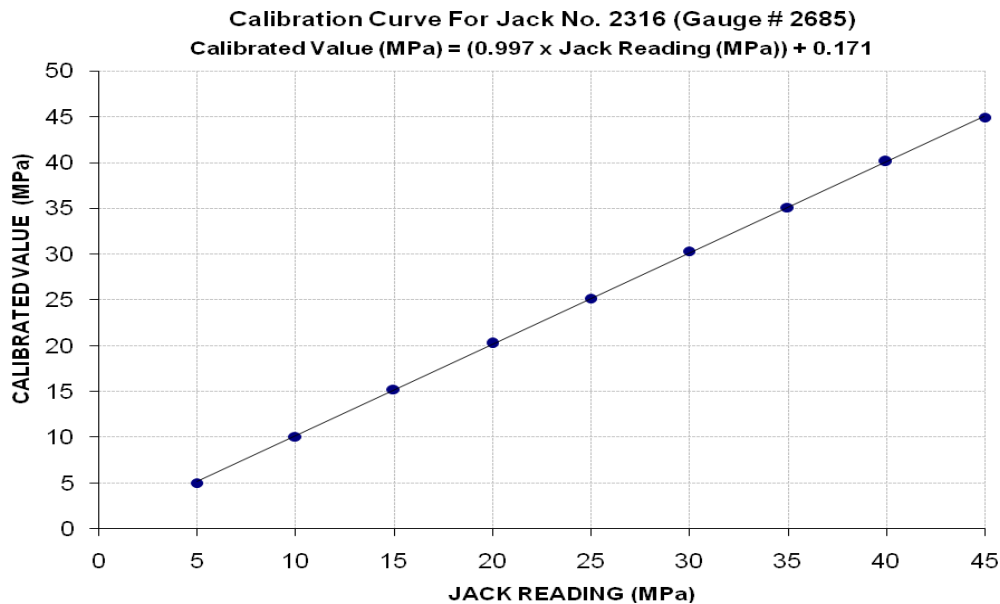
Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/03/4787)** (Page -13/16)

Reference to your Letter No. Nil, dated: 13/03/2024 on the subject cited above. One Hydraulic Jack (Jack No. 2316, Gauge No. 2685) as received by us has been calibrated. The results are tabulated as under:

**Total Range : Zero - 60 (MPa)**  
**Calibrated Range : Zero - 45 (MPa)**

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45
Calibrated Load (kg)	15200	30600	46300	61500	76400	92100	106600	121800	136400
Calibrated Pressure (Mpa)	5.00	10.07	15.24	20.24	25.14	30.31	35.08	40.08	44.89

The Ram Area of Jack = 298 cm<sup>2</sup>



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

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[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**

Ref: CED/TFL/03/4787

Dated: 13-03-2024

Dated: 18-03-2024

To

**M/S CGGC Dasu Hydropower Project Management in Pakistan**  
**Dasu Hydropower Project**

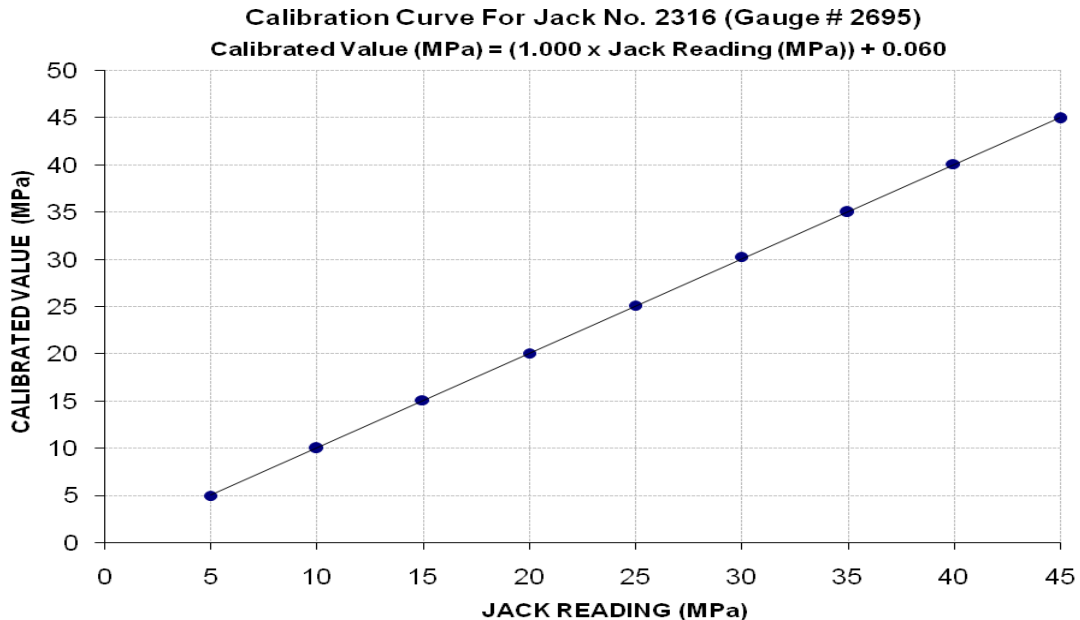
Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/03/4787)** (Page -14/16)

Reference to your Letter No. Nil, dated: 13/03/2024 on the subject cited above. One Hydraulic Jack (Jack No. 2316, Gauge No. 2695) as received by us has been calibrated. The results are tabulated as under:

**Total Range : Zero - 60 (MPa)**  
**Calibrated Range : Zero - 45 (MPa)**

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45
Calibrated Load (kg)	15100	30400	46000	61000	76400	92000	106400	122000	136500
Calibrated Pressure (Mpa)	4.97	10.00	15.14	20.07	25.14	30.28	35.02	40.15	44.92

The Ram Area of Jack = 298 cm<sup>2</sup>



**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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**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/03/4787

Dated: 13-03-2024

Dated: 18-03-2024

To

**M/S CGGC Dasu Hydropower Project Management in Pakistan**  
**Dasu Hydropower Project**

Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/03/4787)** (Page -15/16)

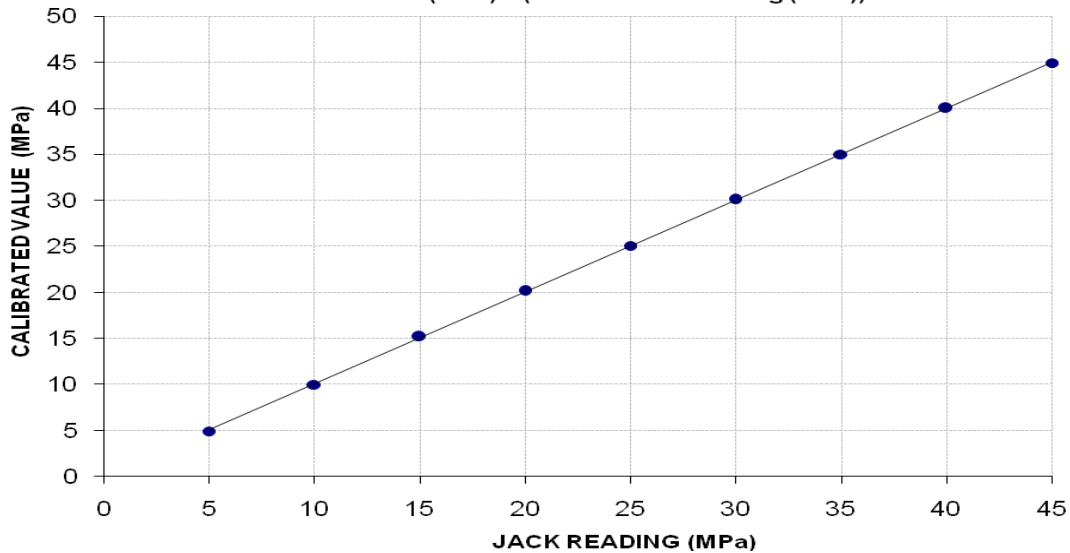
Reference to your Letter No. Nil, dated: 13/03/2024 on the subject cited above. One Hydraulic Jack (Jack No. 2320, Gauge No. 2679) as received by us has been calibrated. The results are tabulated as under:

**Total Range : Zero - 60 (MPa)**  
**Calibrated Range : Zero - 45 (MPa)**

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45
Calibrated Load (kg)	15000	30400	46100	61200	76200	91400	106400	121600	136400
Calibrated Pressure (Mpa)	4.94	10.00	15.17	20.14	25.08	30.08	35.02	40.02	44.89

The Ram Area of Jack = 298 cm<sup>2</sup>

**Calibration Curve For Jack No. 2320 (Gauge # 2676)**  
**Calibrated Value (MPa) = (0.998 x Jack Reading (MPa)) + 0.080**



**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)
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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/03/4787

Dated: 13-03-2024

Dated: 18-03-2024

To

**M/S CGGC Dasu Hydropower Project Management in Pakistan**  
**Dasu Hydropower Project**

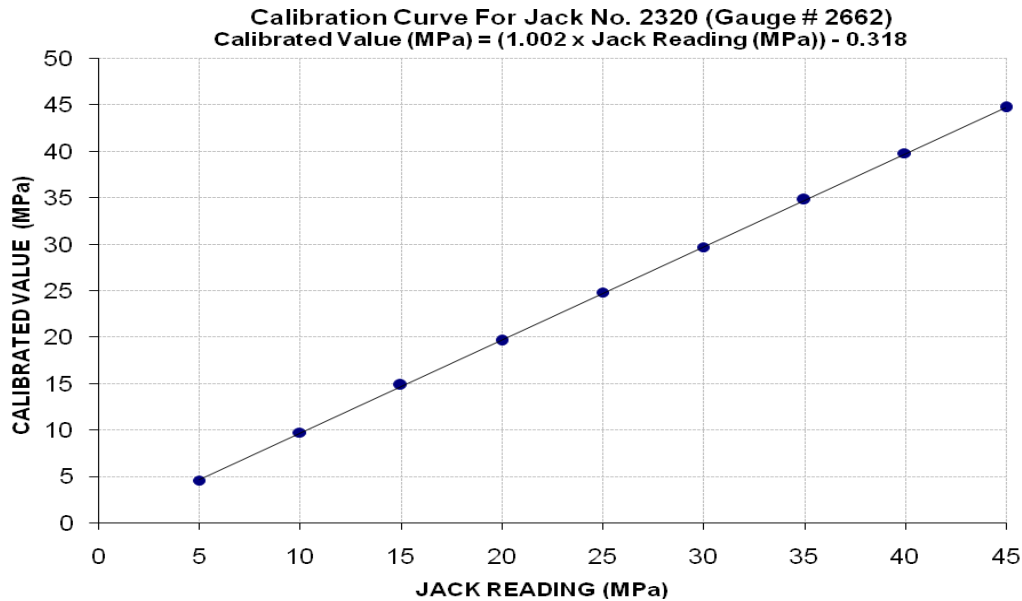
Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/03/4787)** (Page -16/16)

Reference to your Letter No. Nil, dated: 13/03/2024 on the subject cited above. One Hydraulic Jack (Jack No. 2320, Gauge No. 2662) as received by us has been calibrated. The results are tabulated as under:

**Total Range : Zero - 60 (MPa)**  
**Calibrated Range : Zero - 45 (MPa)**

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45
Calibrated Load (kg)	14000	29600	45200	59600	75400	90200	105800	121000	136000
Calibrated Pressure (Mpa)	4.61	9.74	14.88	19.61	24.81	29.68	34.82	39.82	44.76

The Ram Area of Jack = 298 cm<sup>2</sup>



**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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**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 Amanah Noor Residence  
Wapda Town, Lahore

Reference # CED/TFL **4798** (Dr. Ali Ahmed)  
Reference of the request letter # Nil

Dated: 18-03-2024  
Dated: 18-03-2024

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

Date of Test 18-03-2024  
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 <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	3540	5070	71000	71130	101600	101900	1.20	15.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only one sample for tensile and one sample for bend test</b>														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

To,

**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)
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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**

Dy Dir Infra  
Defence Housing Authority, Gujranwala  
"Sec K"

Reference # CED/TFL **4804** (Dr. Ali Ahmed)  
Reference of the request letter # 111/15/DD/RS/Lab/K/575

Dated: 18-03-2024  
Dated: 18-03-2024

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

Date of Test 18-03-2024  
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 <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	0.377	3	0.376	0.11	0.111	3280	4910	65800	65240	98400	97700	1.30	16.3	Siraj Steel	
2	0.378	3	0.376	0.11	0.111	3360	4990	67400	66720	100000	99100	1.10	13.8		
-	-	-	-	-	-	-	-	-	-	-	-	-	-		
-	-	-	-	-	-	-	-	-	-	-	-	-	-		
-	-	-	-	-	-	-	-	-	-	-	-	-	-		
-	-	-	-	-	-	-	-	-	-	-	-	-	-		
<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 Laboratories**  
**UET Lahore, Pakistan.**

Note:

- 1- You can See your reports On Internet in the following web site  
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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/03/4805

Dated: 18-03-2024

Dated of Test: 18-03-2024

To

**M/s National Technocommercial Services (Private) Limited**  
**Lahore**

**Subject: - BREAKING LOAD TEST OF LUG No. MK-59 (NTS with Harding)**  
**(Page # 1/2)**

Reference to your Letter No. NTS/DC-Lug 59/DC/24, dated: 18/03/2024, on the subject cited above. One Lug No. Sr. 1 (dia 44.0 mm, Length 66.50mm) with assembly as received by us have been tested. The results are shown below:

<b>Sample No.</b>	<b>:</b>	<b>1</b>
<b>Breaking Load</b>	<b>:</b>	<b>12100 kg</b>
<b>Remarks</b>	<b>:</b>	<b>Hook Break</b>

**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**

Ref: CED/TFL/03/4805

Dated: 18-03-2024

Dated of Test: 18-03-2024

To

**M/s National Technocommercial Services (Private) Limited**  
**Lahore**

**Subject: - BREAKING LOAD TEST OF LUG) (MK-2) No. - 43A (ATR) (NTS with**  
**Harding) (Page # 2/2)**

Reference to your Letter No. NTS/DC-Lug 43A/DC/24, dated: 18/03/2024, on the subject cited above. One Lug No. Sr. 2 (dia 44 mm, Length 59mm) with assembly as received by us has been tested. The results are shown below:

<b>Sample No.</b>	<b>:</b>	<b>1</b>
<b>Breaking Load</b>	<b>:</b>	<b>12500 kg</b>
<b>Remarks</b>	<b>:</b>	<b>Hook Break</b>

---

**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.
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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 Shahid & Co.  
DHA Multan  
Sheikhoo Steel

Reference # CED/TFL **4806** (Dr. Ali Ahmed)  
Reference of the request letter # Nil

Dated: 18-03-2024  
Dated: 14-03-2024

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

Date of Test 18-03-2024  
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	0.374	3	0.374	0.11	0.110	3620	4910	72600	72620	98400	98500	1.20	15.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only one sample for tensile test</b>														
Bend Test														

**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