



**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/07/35064

Dated: 01-07-2020

Dated of Test: 02-07-2020

To  
QA/QC Department  
CGGC  
Dasu Hydropower Project

Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/07/35064) (Page -1/4)

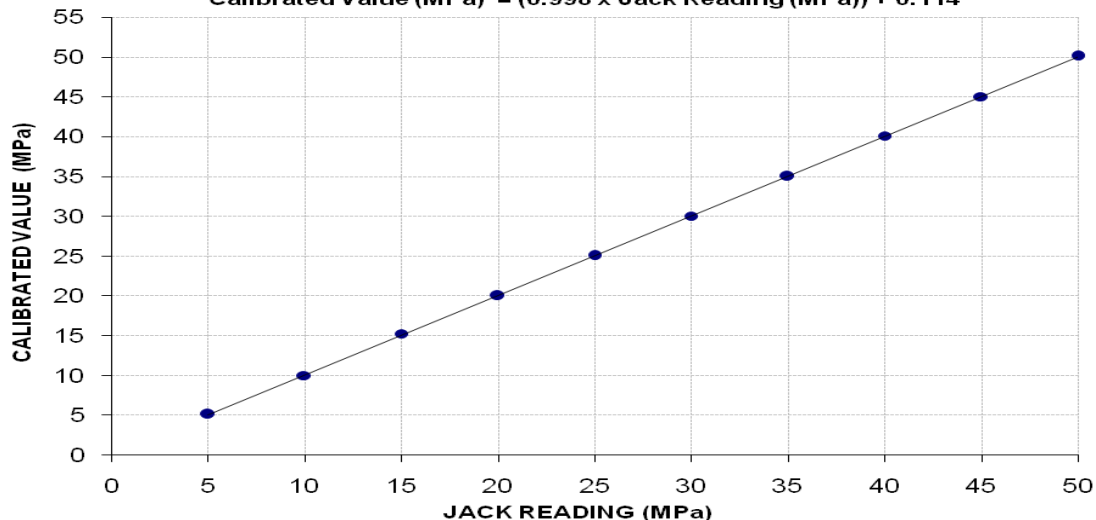
Reference to your Letter No. Nil, dated: 30/06/2020 on the subject cited above. One Hydraulic Jack (Jack No. 1809, Gauge No. 2019-2-1218) as received by us has been calibrated. The results are tabulated as under:

**Total Range : Zero - 60 (MPa)**  
**Calibrated Range : Zero - 50 (MPa)**

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45	50
Calibrated Load (kg)	15600	30400	46400	60800	76200	91200	106400	121800	136800	152200
Calibrated Pressure (Mpa)	5.13	10.00	15.27	20.01	25.08	30.01	35.02	40.08	45.02	50.09

The Ram Area of Jack = 298 cm<sup>2</sup> (Witness by Tariq (QA/QC Engineer DHC))

**Calibration Curve For Jack No. 1809 (Gauge # 2019-2-1218)**  
**Calibrated Value (MPa) = (0.998 x Jack Reading (MPa)) + 0.114**



**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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Ref: CED/TFL/07/35064

Dated: 01-07-2020

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To  
QA/QC Department  
CGGC  
Dasu Hydropower Project

Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/07/35064) (Page -2/4)

Reference to your Letter No. Nil, dated: 30/06/2020 on the subject cited above. One Hydraulic Jack (Jack No. 1801, Gauge No. 2019-2-1281) as received by us has been calibrated. The results are tabulated as under:

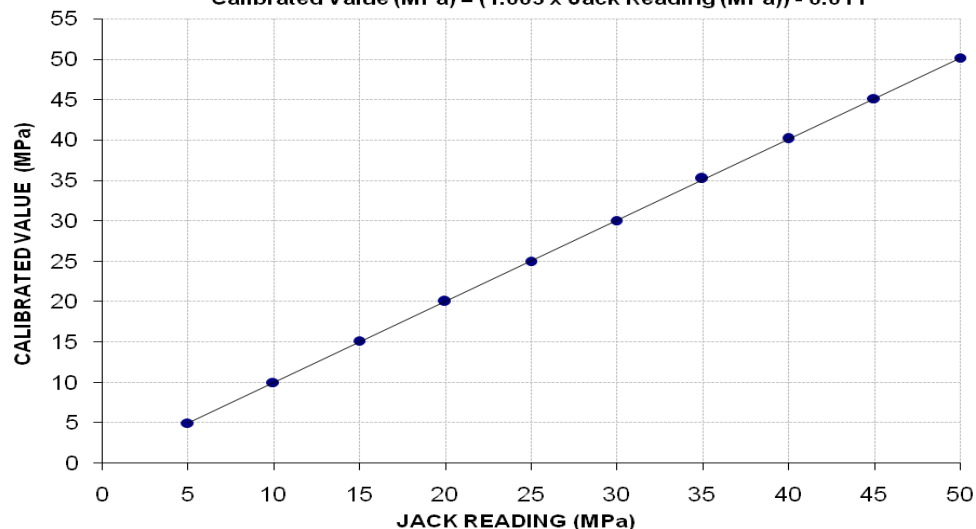
**Total Range : Zero - 60 (MPa)**  
**Calibrated Range : Zero - 50 (MPa)**

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45	50
Calibrated Load (kg)	15200	30400	46000	60900	76000	91200	107100	122000	137200	152400
Calibrated Pressure (Mpa)	5.00	10.00	15.14	20.04	25.01	30.01	35.25	40.15	45.15	50.15

The Ram Area of Jack = 298 cm<sup>2</sup> (Witness by Tariq (QA/QC Engineer DHC))

Calibration Curve For Jack No. 1801 (Gauge # 2019-2-1281)

Calibrated Value (MPa) = (1.003 × Jack Reading (MPa)) - 0.011



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

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Dated: 01-07-2020

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To  
QA/QC Department  
CGGC  
Dasu Hydropower Project

Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/07/35064) (Page -3/4)

Reference to your Letter No. Nil, dated: 30/06/2020 on the subject cited above. One Hydraulic Jack (Jack No. 1719, Gauge No. 2019-2-1281) as received by us has been calibrated. The results are tabulated as under:

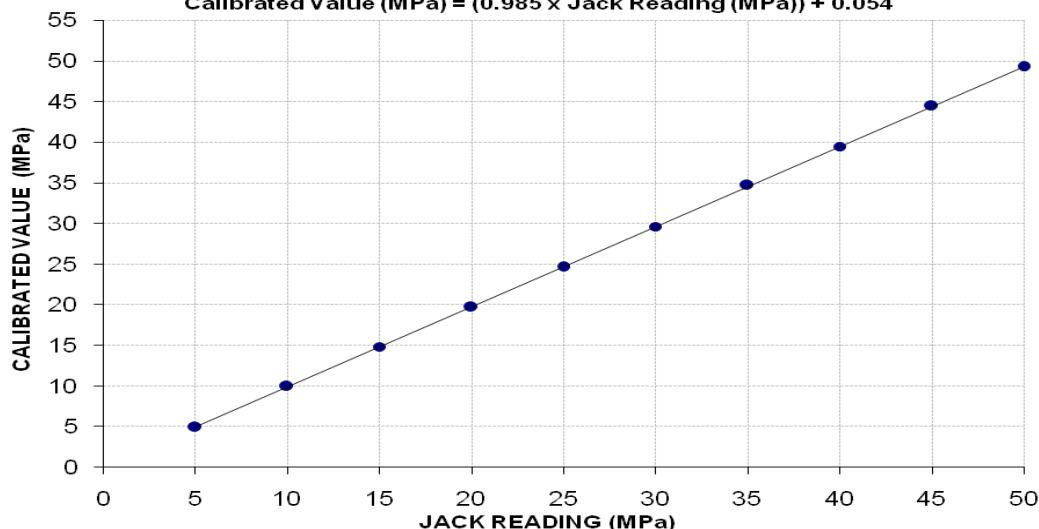
**Total Range : Zero - 60 (MPa)**  
**Calibrated Range : Zero - 50 (MPa)**

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45	50
Calibrated Load (kg)	9600	19400	28900	38300	47900	57600	67500	76700	86400	95800
Calibrated Pressure (Mpa)	4.93	9.97	14.85	19.69	24.62	29.61	34.69	39.42	44.41	49.24

The Ram Area of Jack = 298 cm<sup>2</sup> (Witness by Tariq (QA/QC Engineer DHC))

Calibration Curve For Jack No. 1719 (Gauge # 2019-2-1281)

Calibrated Value (MPa) = (0.985 x Jack Reading (MPa)) + 0.054



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

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Ref: CED/TFL/07/35064

Dated: 01-07-2020

Dated of Test: 02-07-2020

To  
QA/QC Department  
CGGC  
Dasu Hydropower Project

Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/07/35064) (Page -4/4)

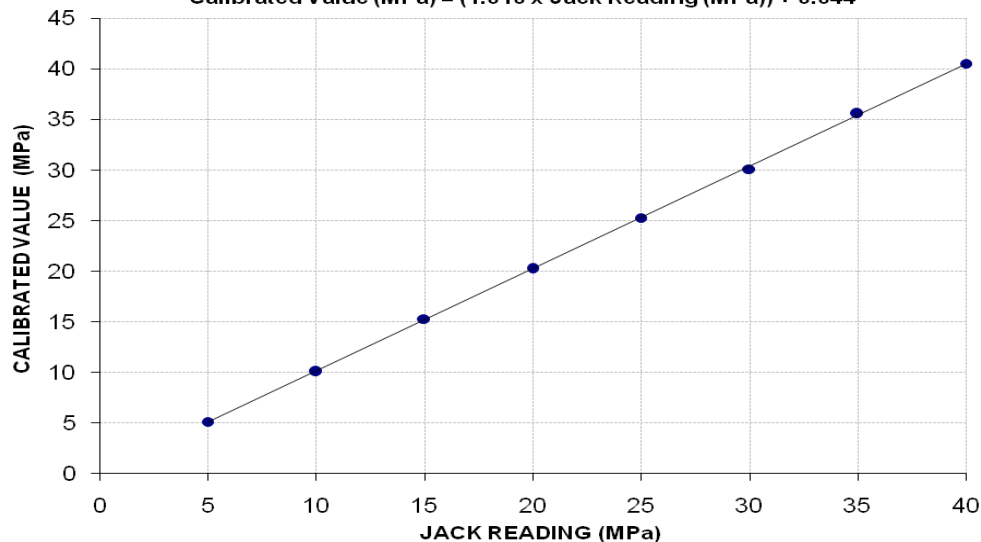
Reference to your Letter No. Nil, dated: 30/06/2020 on the subject cited above. One Hydraulic Jack (Jack No. 19174, Gauge No. 2019-2-1218) as received by us has been calibrated. The results are tabulated as under:

**Total Range : Zero - 60 (MPa)**  
**Calibrated Range : Zero - 40 (MPa)**

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40
Calibrated Load (kg)	2500	4900	7450	9850	12300	14650	17300	19700
Calibrated Pressure (Mpa)	5.14	10.07	15.31	20.25	25.28	30.11	35.56	40.49

The Ram Area of Jack = 47.71 cm<sup>2</sup> (Witness by Tariq (QA/QC Engineer DHC))

**Calibration Curve For Jack No. 19174 (Gauge # 2019-2-1218)**  
**Calibrated Value (MPa) = (1.010 x Jack Reading (MPa)) + 0.044**



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

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**Test Floor Laboratory**  
**Department of Civil Engineering**  
**University of Engineering and Technology Lahore, 54890**  
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To,  
M/S SA-RA Group  
Lahore  
(Procurement of Plant, Design, Supply, Installation, Testing and Commission of 220 kV Double  
Circuit Transmission Line on Rail Conductor from D.I Khan to Zhob)(Approx. 220km)

Reference # CED/TFL **35065** (Dr. Qasim Khan)  
Reference of the request letter # MIG/2020/713

Dated: 01-07-2020  
Dated: 30-06-2020

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

Date of Test 02-07-2020  
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	0.375	3	0.375	0.11	0.110	3940	5100	79000	78720	102200	101900	1.00	12.5	City Steel
2	0.368	3	0.371	0.11	0.108	3920	4860	78600	79810	97400	99000	0.80	10.0	
-	0.368	3	0.371	0.11	0.108	3790	4740	76000	77140	95000	96500	0.60	7.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only three samples for tensile and three samples for bend test</b>														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														
#3 Bar Bend Test Through 180° is Satisfactory														
#3 Bar Bend Test Through 180° is Satisfactory														

Witness by Sohaib Ali (Sub-Engineer NESPAK)

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

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2. The above results pertain to sample /samples supplied to this laboratory.
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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**

To,  
 Additional Director (Development)  
 Defence Housing Authority Multan  
 STP Project DHA Multan

Reference # CED/TFL **35066** (Dr. Qasim Khan)  
 Reference of the request letter # 701/38/P&D/DHA

Dated: 01-07-2020  
 Dated: 29-06-2020

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

Date of Test 02-07-2020  
 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	0.415	3/8	0.394	0.11	0.122	4560	5000	91400	82450	100200	90500	0.80	10.0	
2	0.415	3/8	0.394	0.11	0.122	4610	5020	92400	83250	100600	90700	0.75	9.4	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two samples 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.**

Note:

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To,  
 Resident Engineer  
 AZEA Sialkot Residency  
 Dualization of Sialkot-Pasrur Road, Length = 27.35 km Phase-I (km 0.0 to 14.00)(Section km  
 No. 1.35 to 5.80 km, Length = 4.45 km) in District Sialkot, Group-I

Reference # CED/TFL **35067** (Dr. Qasim Khan) Dated: 01-07-2020  
 Reference of the request letter # AZEA/SIALKOT/ADAM/20/13 Dated: 01-07-2020

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

Date of Test 02-07-2020  
 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	0.369	3/8	0.372	0.11	0.109	4230	5050	84800	85850	101200	102500	0.80	10.0	Mughal Steel
2	0.364	3/8	0.369	0.11	0.107	4000	4820	80200	82410	96600	99400	0.80	10.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two samples 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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**STRUCTURAL ENGINEERING DIVISION**  
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**University of Engineering and Technology Lahore, 54890**  
**Pakistan. Ph: 92-42-99029202**

To,  
M/S Defence Housing Authority.  
Lahore Cantt  
(1 \* Entry Gate Towerds Ring Road Sector-F Prism)(M/s N A Associates)

Reference # CED/TFL **35068** (Dr. Qasim Khan) Dated: 01-07-2020  
Reference of the request letter # 408/241/E/Lab/933 Dated: 29-06-2020

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

Date of Test 02-07-2020  
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	0.387	3	0.381	0.11	0.114	4230	5680	84800	81930	113900	110100	0.85	10.6	A F Steel
2	0.379	3	0.377	0.11	0.111	3770	4890	75600	74610	98000	96800	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**  
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**University of Engineering and Technology Lahore, 54890**  
**Pakistan. Ph: 92-42-99029202**

To,  
 Resident Engineer  
 Orbit Housing  
 The Spring Apartment Homes, Canal Road, Lahore

Reference # CED/TFL **35070** (Dr. Qasim Khan)  
 Reference of the request letter # Nil

Dated: 02-07-2020  
 Dated: 02-07-2020

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

Date of Test 02-07-2020  
 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	0.378	3	0.376	0.11	0.111	3830	5050	76800	75940	101200	100200	1.10	13.8	
2	0.377	3	0.376	0.11	0.111	3740	4890	75000	74420	98000	97300	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														

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