



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

To,
 Resident Head (Civil)
 Jaggran-II Hydropower Consultants
 EPC Contract for 48MW Jaggran-II Hydropower Project

Reference # CED/TFL **33491** (Dr. Safer Abbas)
 Reference of the request letter # E314-L-JHC-RE-EPCC-OC-0114

Dated: 05-07-2019
 Dated: 02-07-2019

Tension Test Report (Page -1/1)

Date of Test 09-07-2019
 Gauge length -----
 Description Wire Mesh Tensile and Bend Test

Sr. No.	Weight (Kg/m)	Diameter/ size		Area (mm ²)		Yield load (kg)	Breaking Load (kg)	Yield Stress (Mpa) Actual	Ultimate Stress (Mpa) Actual	Reduced Area (mm ²)	% Reduction of Area	Remarks
		Nominal (in)	Actual (mm)	Nominal	Actual							
1	0.238	-----	6.21	-----	30.3	1100	2100	356	680	11.04	63.6	
2	0.229	-----	6.10	-----	29.2	1200	2200	403	739	12.56	57.0	
3	0.229	-----	6.09	-----	29.1	1200	2200	404	741	11.04	62.1	
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
Note: only three samples for tensile and three samples for bend test												
Bend Test												
Wire Mesh Bend Test Through 180° is Satisfactory												
Wire Mesh Bend Test Through 180° is Satisfactory												
Wire Mesh 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
- 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,
 Chief Resident Engineer, Package-1
 NESPAK
 Construction/ Improvement & Rehabilitation of at Grade Works along Lahore Orange Line
 Metro Train Corridor Construction of Steel Impact Gantries for Stations Package-1

Reference # CED/TFL **33503** (Dr. Waseem Abbas)
 Reference of the request letter # 4042/13/FAM/steel-040

Dated: 05-07-2019
 Dated: 04-07-2019

Tension Test Report (Page -1/1)

Date of Test 09-07-2019
 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	4.167	10	1.249	1.27	1.225	36600	51400	63600	65860	89300	92500	1.70	21.3	Amreli Steel
2	4.161	10	1.248	1.27	1.223	36200	50200	62900	65230	87200	90500	1.70	21.3	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
#10 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
- 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,
Executive – Civil Works (TS)
FFC Rawalpindi

Reference # CED/TFL **33506** (Dr. Safeer Abbas)
Reference of the request letter # FFC/CW/TSC/43/Altec

Dated: 08-07-2019

Dated: 01-07-2019

Tension Test Report (Page – 1/1)

Date of Test 09-07-2019
Gauge length -----
Description Steel Wire Rope Tensile Test

Sr. No.	Nominal Diameter	Measured weight	Yield Load	Breaking Load	Remarks / Coil No.
	(mm)	(kg/km)	(kg)	(kg)	
1	8	251.15	-----	4600	
-	-	-	-	-	
-	-	-	-	-	
-	-	-	-	-	
-	-	-	-	-	
Only one sample for 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
- 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/07/33508

Dated: 08-07-19

To
Resident Engineer
NESPAK

(China - Pakistan Economic Corridor (CPEC), Western Route Hakla (on M1) to D.I. Khan Motorway, Package 3)(Tarap to Kot Belian)

Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/07/33508)** (Page -1/2)

Reference to your Letter No. CPEC/NESPAK/CS/RE/PKG3/19/1046, Dated: 07/07/2019 on the subject cited above. One Hydraulic Jack (Jack No 1501, Gauge No. AES-1501) as received by us has been calibrated. The results are tabulated as under:

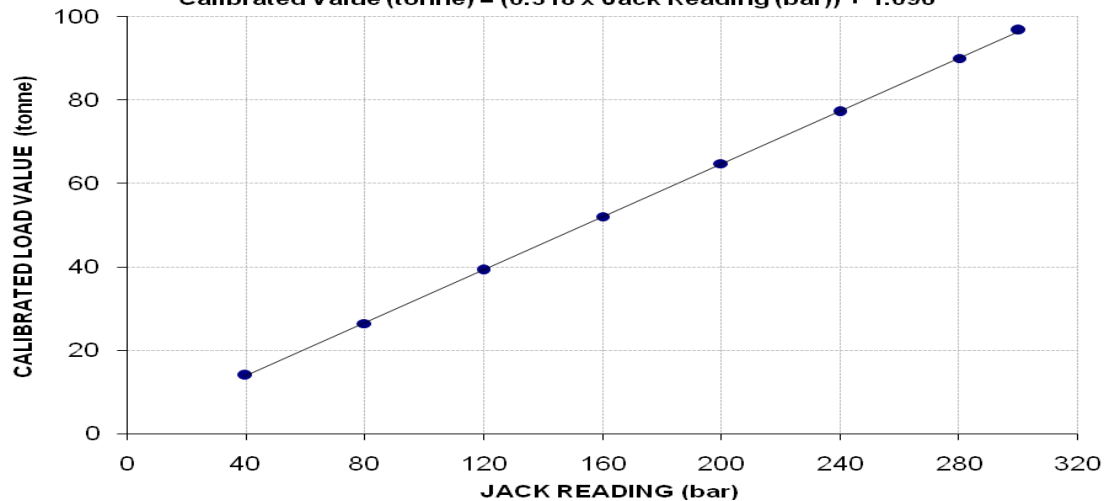
Total Range : Zero - 600 (bar)
Calibrated Range : Zero - 300 (bar)

Hydraulic Jack Reading (bar)	40	80	120	160	200	240	280	300	
Calibrated Load	(Kg)	14000	26400	39200	52000	64800	77200	90000	96800
	Tonne	14.00	26.40	39.20	52.00	64.80	77.20	90.00	96.80
Calibrated Pressure (bar)	43.19	81.44	120.92	160.41	199.89	238.14	277.63	298.60	

1 Tonne = 1000 Kg, The Ram Area of Jack = 317.92 cm²

Calibration Curve For Jack No. AES 1501

Calibrated Value (tonne) = (0.318 × Jack Reading (bar)) + 1.096



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
- 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/07/33508

Dated: 08-07-19

To
Resident Engineer
NESPAK

(China - Pakistan Economic Corridor (CPEC), Western Route Hakla (on M1) to D.I. Khan Motorway, Package 3)(Tarap to Kot Belian)

Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/07/33508)** (Page -2/2)

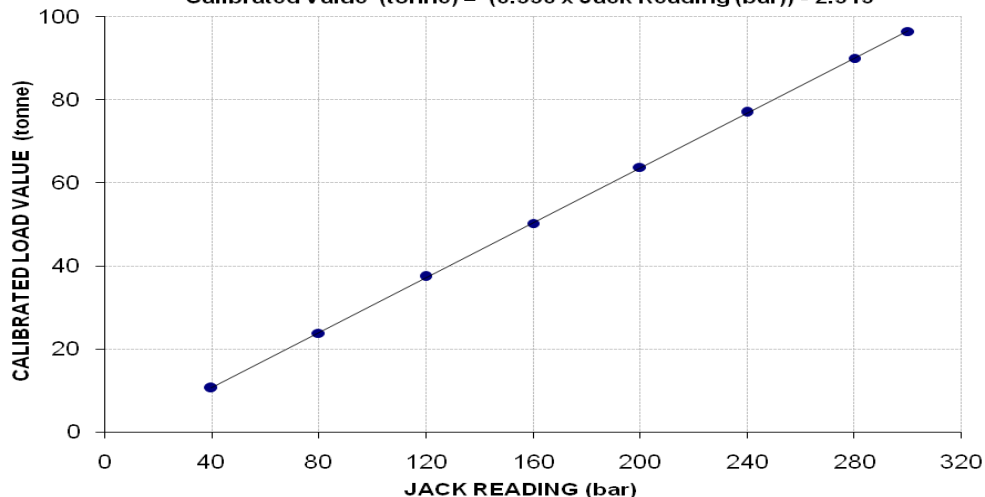
Reference to your Letter No. CPEC/NESPAK/CS/RE/PKG3/19/1046, Dated: 07/07/2019 on the subject cited above. One Hydraulic Jack (Jack No 1502, Gauge No. AES-1502) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 600 (bar)
Calibrated Range : Zero - 300 (bar)

Hydraulic Jack Reading (bar)	40	80	120	160	200	240	280	300	
Calibrated Load	(Kg)	10600	23800	37400	50200	63800	77000	90000	96400
	Tonne	10.60	23.80	37.40	50.20	63.80	77.00	90.00	96.40
Calibrated Pressure (bar)	32.70	73.42	115.37	154.85	196.81	237.52	277.63	297.37	

1 Tonne = 1000 Kg, The Ram Area of Jack = 317.92 cm²

Calibration Curve For Jack No. AES 1502
Calibrated Value (tonne) = (0.330 x Jack Reading (bar)) - 2.515



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
- 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,
M/S Defence Housing Authority.
Lahore Cantt
(Const of Mosque Sector-D, DHA Ph-VI)(M/s SCION)

Reference # CED/TFL **33510** (Dr. Safer Abbas)
Reference of the request letter # 408/241/E/Lab/631/457

Dated: 08-07-2019
Dated: 08-07-2019

Tension Test Report (Page -1/1)

Date of Test 09-07-2019
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	0.372	3	0.373	0.11	0.109	2600	4500	52100	52350	90200	90600	1.30	16.3	Ittefaq Steel
2	0.364	3	0.369	0.11	0.107	2700	4600	54100	55570	92200	94700	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.

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
- 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,
M/S Shenjio Engineering
Lahore
(Rehabilitation & Up-gradation of Trimmu Barrage)

Reference # CED/TFL **33513** (Dr. Waseem Abbas)
Reference of the request letter # Nil

Dated: 09-07-2019
Dated: 02-07-2019

Tension Test Report (Page – 1/1)

Date of Test 09-07-2019
Gauge length 2 inches
Description Steel Strip Tensile Test

Sr. No.	Designation	Size of Strip	X Section Area	Yield load	Breaking Load	Yield Stress	Ultimate Stress	Elongation	% Elongation	Remarks
	(inch)	(mm)	(mm ²)	(kg)	(kg)	(MPa)	(MPa)	(in)		
1	0.4	24.30x8.60	208.98	11600	13400	544.53	629.03	0.60	30.00	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
Only One Sample for Tensile Test										
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
- 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,
 Project Manager
 Liberty Builders
 Construction of Zee Avenue Project, 17-A, Cooper Road, Lahore

Reference # CED/TFL **33517** (Dr. Waseem Abbas)
 Reference of the request letter # CONC-20190709

Dated: 09-07-2019
 Dated: 09-07-2019

Tension Test Report (Page -1/1)

Date of Test 09-07-2019
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile 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	0.371	3	0.372	0.11	0.109	3200	4800	64200	64770	96200	97200	1.00	12.5	
2	0.360	3	0.367	0.11	0.106	3700	4900	74200	77060	98200	102100	0.80	10.0	
3	0.358	3	0.366	0.11	0.105	2800	4000	56200	58680	80200	83900	1.10	13.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only three samples for tensile and two samples for bend test														
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
- 2- The above results pertain to sample /samples supplied to this laboratory.
- 3- Sealed sample / Unsealed sample / Marked sample/Signed Samples