



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/06/37507

Dated: 13-12-2021

Date of Calibration: 15-12-2021

To
Resident Engineer (Structure)
NESPAK
Construction of Flyover and at-Grade Improvement at Shahkaam Chowk Lahore

Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/12/37507) (Page – 1/2)

Reference to your Letter No. 4047/13/05/AZL/46, dated: 10/12/2021 on the subject cited above. One Hydraulic Jack (Jack No. G 200-078, Pump No. (B2) 965) as received by us has been calibrated. The results are tabulated as under:

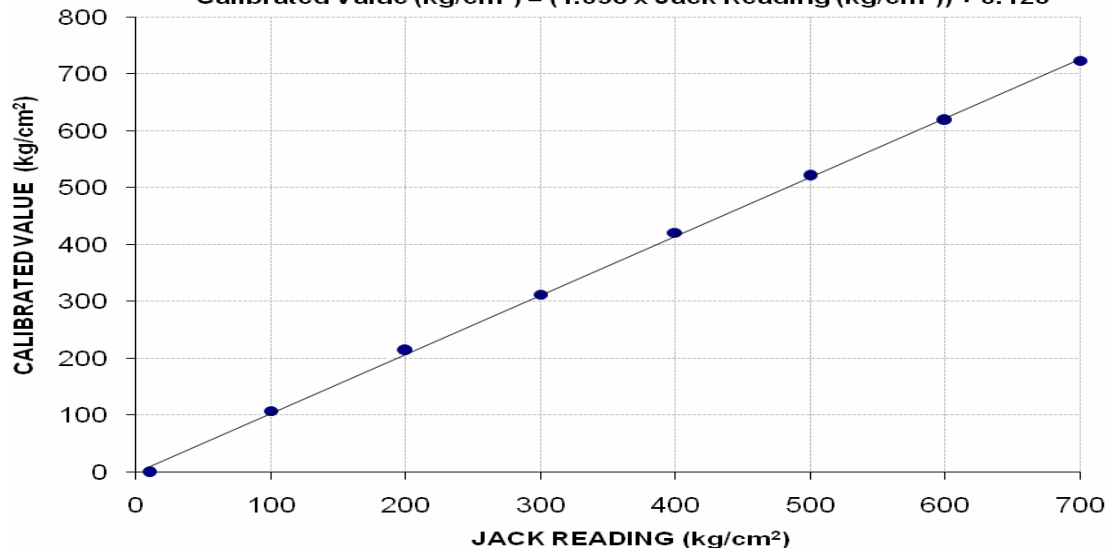
Total Range : Zero - 1000 (kg/cm²)
Calibrated Range : Zero - 700 (kg/cm²)

Hydraulic Jack Reading (kg/cm ²)	10	100	200	300	400	500	600	700
Calibrated Load (kg)	0	28800	57200	83400	112600	139200	165400	193400
Calibrated Pressure (kg/cm ²)	0	107.78	214.06	312.10	421.38	520.92	618.97	723.75

The Ram Area of Jack = 267.22 cm²

Calibration Curve For Jack No. 078

Calibrated Value (kg/cm²) = (1.038 x Jack Reading (kg/cm²)) + 0.126



I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

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NESPAK
Construction of Flyover and at-Grade Improvement at Shahkaam Chowk Lahore

Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/12/37507) (Page – 1/2)

Reference to your Letter No. 4047/13/05/AZL/46, dated: 10/12/2021 on the subject cited above. One Hydraulic Jack (Jack No. G 200-079, Pump No. (B2) 975) as received by us has been calibrated. The results are tabulated as under:

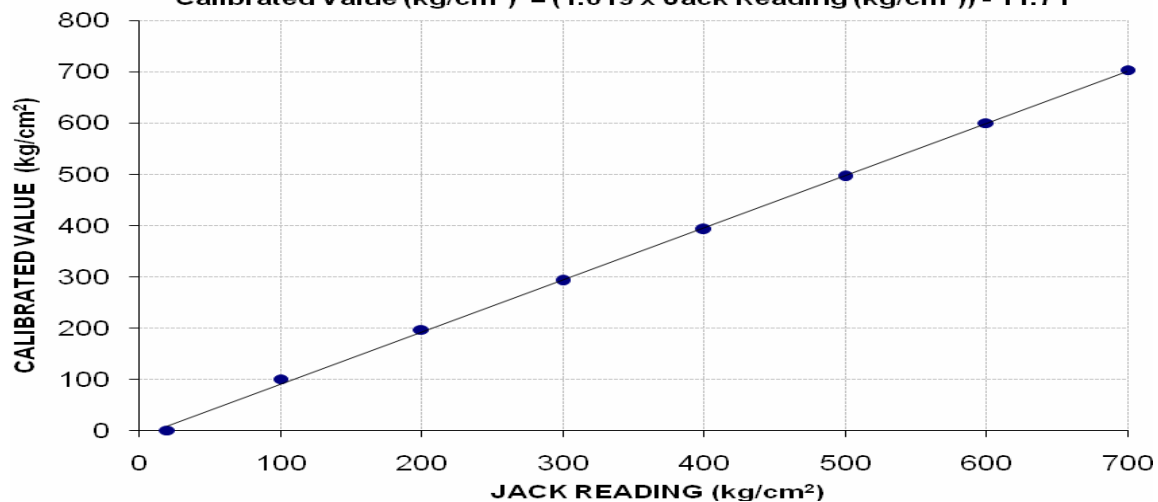
Total Range : Zero - 1000 (kg/cm²)
Calibrated Range : Zero - 700 (kg/cm²)

Hydraulic Jack Reading (kg/cm ²)	20	100	200	300	400	500	600	700
Calibrated Load (kg)	0	26800	52533	78000	104800	132533	160400	188000
Calibrated Pressure (kg/cm ²)	0	100.29	196.59	291.89	392.19	495.97	600.25	703.54

The Ram Area of Jack = 267.22 cm²

Calibration Curve For Jack No. 079

Calibrated Value (kg/cm²) = (1.019 × Jack Reading (kg/cm²)) - 11.71



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To,
Resident Engineer
NESPAK
Construction of Flyover and At-Grade Improvement at Shahkaam Chowk Lahore
(WMI)

Reference # CED/TFL **37509** (Dr. Asif Hameed)
Reference of the request letter # 4047/13/05/AZL/48

Dated: 14-12-2021

Dated: 11-12-2021

Tension Test Report (Page -1/3)

Date of Test 15-12-2021

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")	775.0	783.0	17700	173.64	19700	193.26	199	>3.50	23022
1	12.70 (1/2")	775.0	782.0	17700	173.64	19900	195.22	198	>3.50	23037
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
Only two samples for Test										

Witness by Rauf Niazi (MS NESPAK) & M. Anwar Ayub (ME NLC)

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

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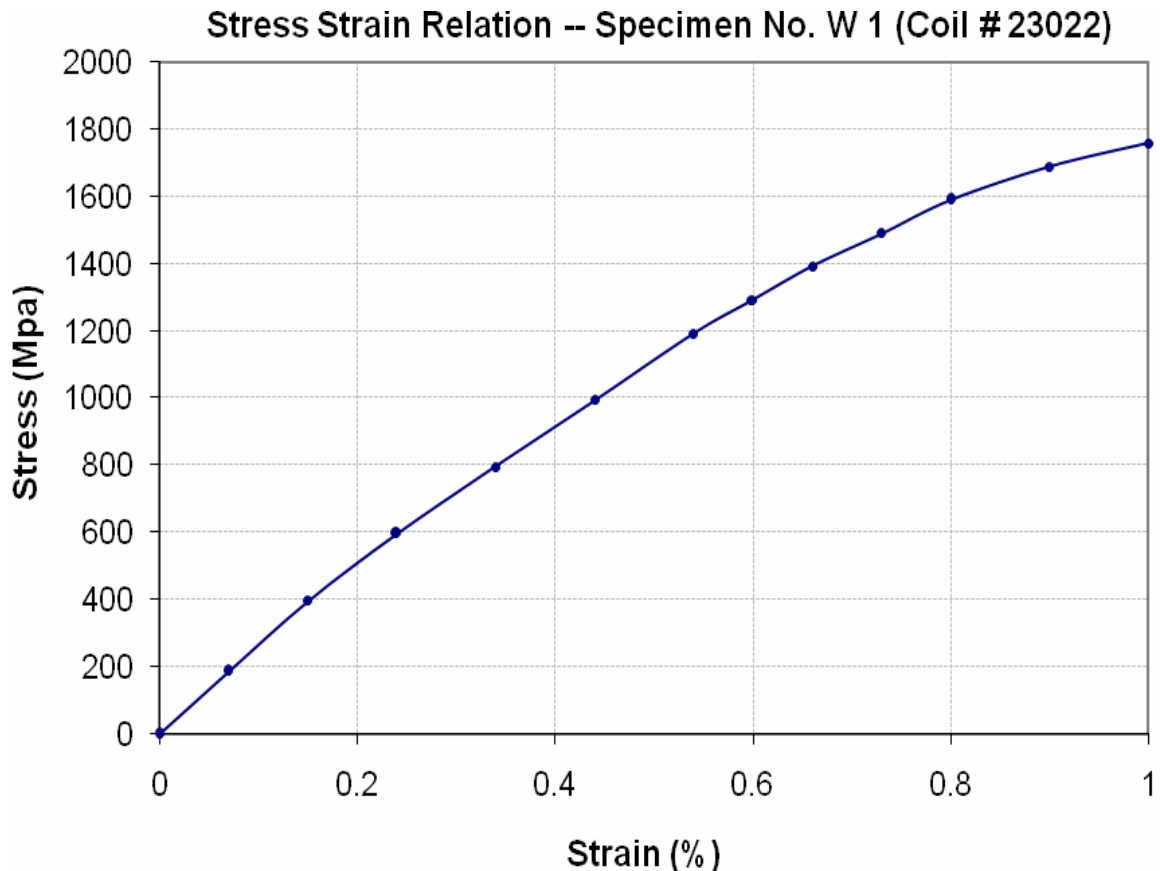
To,
Resident Engineer
NESPAK
Construction of Flyover and At-Grade Improvement at Shahkaam Chowk Lahore
(WMI)

Reference # CED/TFL **37509** (Dr. Asif Hameed)
Reference of the request letter # 4047/13/05/AZL/48

Dated: 14-12-2021

Dated: 11-12-2021

Graph (Page – 2/3)



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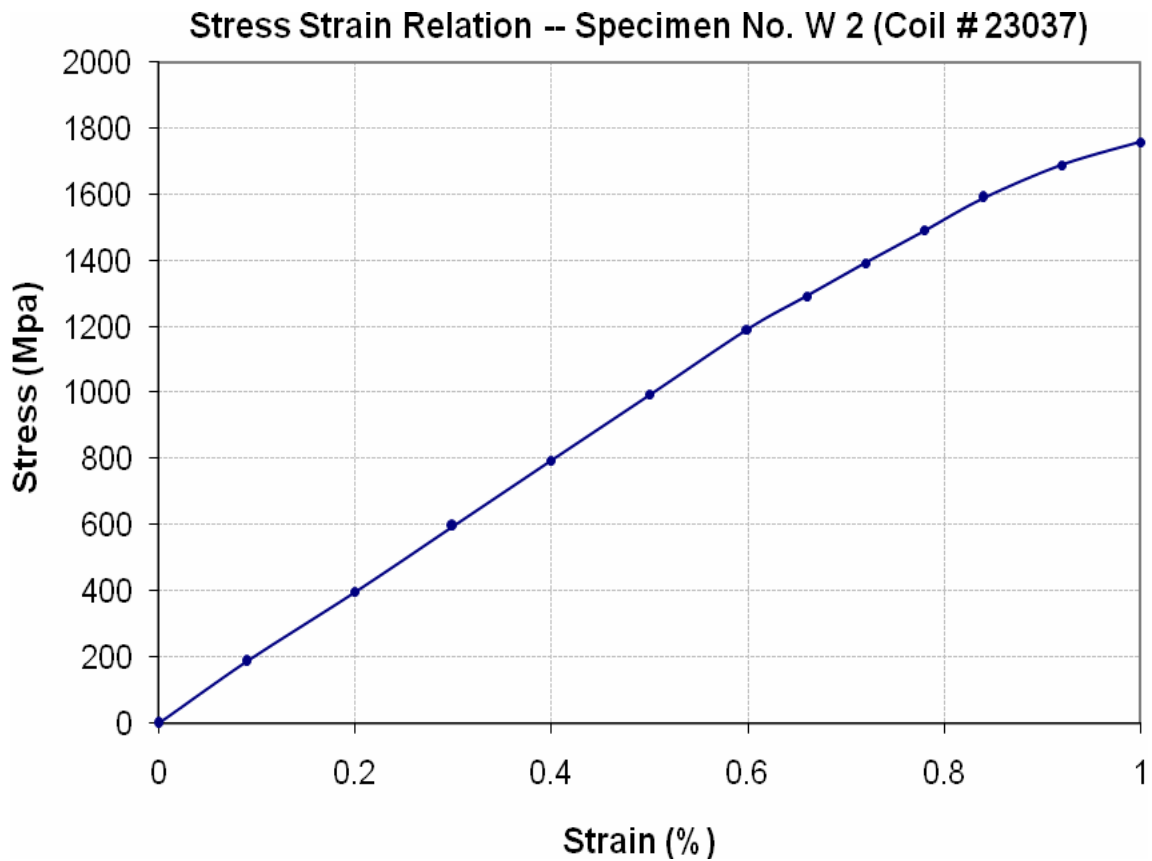
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Construction of Flyover and At-Grade Improvement at Shahkaam Chowk Lahore
(WMI)

Reference # CED/TFL 37509 (Dr. Asif Hameed)
Reference of the request letter # 4047/13/05/AZL/48

Dated: 14-12-2021

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Graph (Page – 3/3)



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STRUCTURAL ENGINEERING DIVISION
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Ref: CED/TFL/12/37510

Dated: 14-12-2021

Dated of Test: 15-12-2021

To,
Resident Engineer (RRWP-II)
PEAS Consulting (Pvt) Ltd.
Rawat – Rawalpindi Project (RRWP) – Phase – II,
Conversion of 2-Lane Lai and Swan Bridge to 04 Lane Bridge

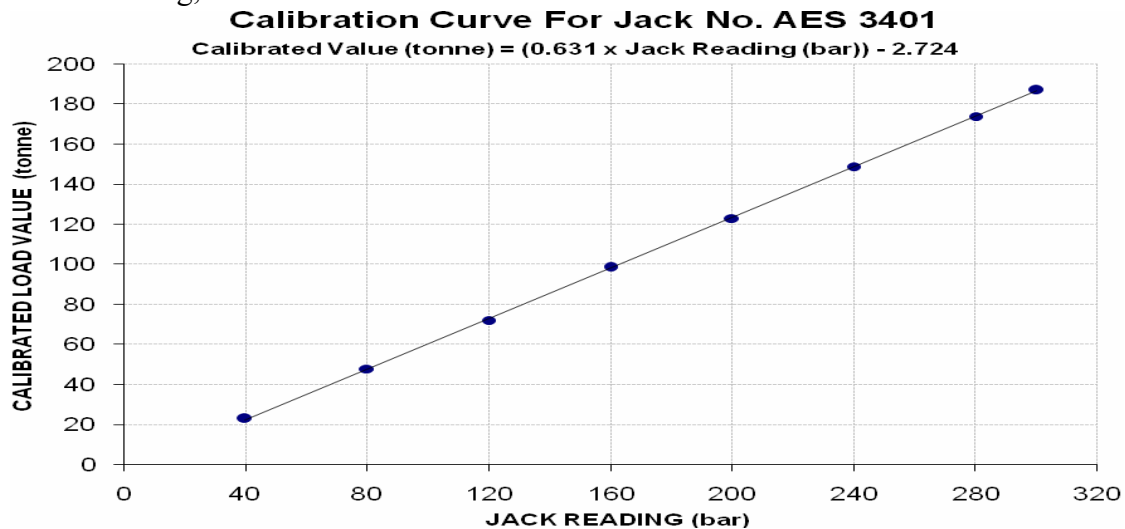
Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/06/36648) (Page -1/2)

Reference to your Letter No. 3963/RE/PRP/SM/067, Dated: 24/06/2021 on the subject cited above. One Hydraulic Jack (Jack No 3401, Gauge No. AES-3401) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 1000 (bar)
Calibrated Range : Zero - 300 (bar)

Hydraulic Jack Reading (bar)	40	80	120	160	200	240	280	300	
Calibrated Load	(kg)	23000	47800	72200	98600	123000	148800	173800	187000
	Tonne	23.00	47.80	72.20	98.60	123.00	148.80	173.80	187.00
Calibrated Pressure (bar)	37.46	77.86	117.60	160.60	200.35	242.37	283.09	304.59	

1 Tonne = 1000 kg, The Ram Area of Jack = 602.09 cm²



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
Pakistan. Ph: 92-42-99029202

Ref: CED/TFL/12/37510

Dated: 14-12-2021

Dated of Test: 15-12-2021

To,
Resident Engineer (RRWP-II)
PEAS Consulting (Pvt) Ltd.
Rawat – Rawalpindi Project (RRWP) – Phase – II,
Conversion of 2-Lane Lai and Swan Bridge to 04 Lane Bridge

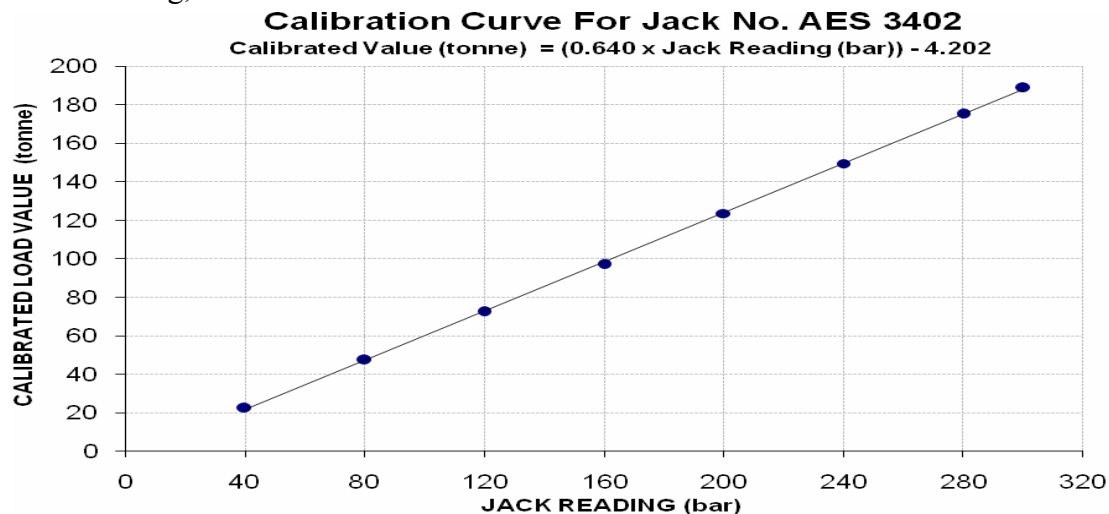
Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/06/36648) (Page -2/2)

Reference to your Letter No. 3963/RE/PRP/SM/067, Dated: 24/06/2021 on the subject cited above. One Hydraulic Jack (Jack No 3402, Gauge No. AES-3402) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 1000 (bar)
Calibrated Range : Zero - 300 (bar)

Hydraulic Jack Reading (bar)	40	80	120	160	200	240	280	300	
Calibrated Load	(kg)	22267	47333	72267	96933	123600	149333	175200	188800
	Tonne	22.27	47.33	72.27	96.93	123.60	149.33	175.20	188.80
Calibrated Pressure (bar)	36.27	77.10	117.71	157.89	201.32	243.24	285.37	307.52	

1 Tonne = 1000 kg, The Ram Area of Jack = 602.09 cm²



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UET Lahore, Pakistan.

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To,
 Project Manager
 Banu Mukhtar Contracting (Pvt) Ltd
 Roomi Fabric Ltd, Quid-e-Azam Business Park, Sheikhpura

Reference # CED/TFL **37511** (Dr. Ali Ahmed)
 Reference of the request letter # Nil

Dated: 14-12-2021
 Dated: 10-12-2021

Tension Test Report (Page -1/1)

Date of Test 15-12-2021
 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 ²)		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	0.411	10	9.96	0.12	0.121	3800	5100	69812	69380	93696	93200	0.90	11.3	Agha Steel
2	0.405	10	9.89	0.12	0.119	3800	5100	69812	70390	93696	94500	0.90	11.3	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and two samples for bend test														
Bend Test														
10mm Dia Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

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To,
 Resident Engineer
 NESPAK
 Construction of Underpass Across Bedian Road Connecting Phase-VI with Phase-IX, DHA,
 Lahore

Reference # CED/TFL **37512** (Dr. Ali Ahmed) Dated: 14-12-2021
 Reference of the request letter # 3790/102/IUK/UET/01/011 Dated: 10-12-2021

Tension Test Report (Page -1/1)

Date of Test 15-12-2021
 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	0.361	3	0.367	0.11	0.106	3400	4700	68200	70710	94200	97800	1.10	13.8	FF Steel
2	0.356	3	0.365	0.11	0.105	3400	4700	68200	71520	94200	98900	1.20	15.0	
3	4.251	10	1.261	1.27	1.250	41400	54400	71900	73020	94500	96000	1.70	21.3	
4	4.161	10	1.248	1.27	1.223	43600	57000	75700	78580	99000	102800	1.50	18.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only four samples for tensile and two samples for bend test														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														
#10 Bar Bend Test Through 180° is Satisfactory														

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To,
 Garrison Engineer (Army) – I
 Gujranwala Cantt
 (CA No. ENC-A-50/2021 – Const of 8 x D Type Flats (G+3) at Gwa Cantt)

Reference # CED/TFL **37514** (Dr. Ali Ahmed)
 Reference of the request letter # 6180-2424/28/E-8

Dated: 14-12-2021
 Dated: 10-12-2021

Tension Test Report (Page -1/1)

Date of Test 15-12-2021
 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 ²)		Yield load (kg)	Breaking Load (kg)	Yield Stress (psi)		Ultimate Stress (psi)		Elongation (inch)	% Elongation	Grad
		Nominal	Actual	Nominal	Actual			Nominal	Actual	Nominal	Actual			
1	0.326	3/8	0.349	0.11	0.096	2800	4300	56200	64410	86200	99000	1.00	12.5	40
2	0.336	3/8	0.355	0.11	0.099	2700	4200	54100	60280	84200	93800	1.00	12.5	
3	0.372	3/8	0.373	0.11	0.109	3000	3700	60200	60480	74200	74600	1.90	23.8	60
4	0.375	3/8	0.375	0.11	0.110	3000	3900	60200	60030	78200	78100	1.90	23.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only four samples for tensile and two samples for bend test														
Bend Test														
3/8" Dia Bar Bend Test Through 180° is Satisfactory														
3/8" Dia Bar Bend Test Through 180° is Satisfactory														

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To,
 Manager
 Sinohydro Corporation Limited
 Procurement of Plant, Design, Supply, Installation, Testing and Commissioning of Three (03)
 220 kV Transmission Lines Associated with Lahore North Substation

Reference # CED/TFL **37515, 516** (Dr. Aqsa Shabir)
 Reference of the request letter # ADB-301B/2018/326

Dated: 15-12-2021
 Dated: 13-12-2021

Tension Test Report (Page -1/1)

Date of Test 15-12-2021
 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	4.242	10	1.260	1.27	1.247	36800	55200	63900	65060	95800	97600	1.60	20.0	Batala Premium
2	4.268	10	1.264	1.27	1.254	37000	55600	64300	65010	96500	97700	1.50	18.8	
3	4.247	10	1.261	1.27	1.248	37200	55500	64600	65680	96400	98000	1.60	20.0	
4	4.268	10	1.264	1.27	1.255	30700	41500	53300	53940	72100	73000	1.50	18.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only four samples for tensile and two samples for bend test														
Bend Test														
#10 Bar Bend Test Through 180° is Satisfactory														
#10 Bar Bend Test Through 180° is Satisfactory														

Witness by M Zahid Sharif Khan (Jr. Engr. NESPAK + Barqaab (J.V))

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