



**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/06/5216

Dated: 05-6-2024

Dated of Test: 11-06-2024

To

**Resident Engineer**  
**NESPAK**  
**Development of DHA-AWT Land Adyala (RVS PH-IV)**

**Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/06/5216) (Page -1/2)**

Reference to your Letter No. 4592/103/DHA-AWT/FM/102/29, dated: 03/06/2024 on the subject cited above. One Hydraulic Jack (Jack No. 313, Gauge No. AES-313) as received by us has been calibrated. The results are tabulated as under:

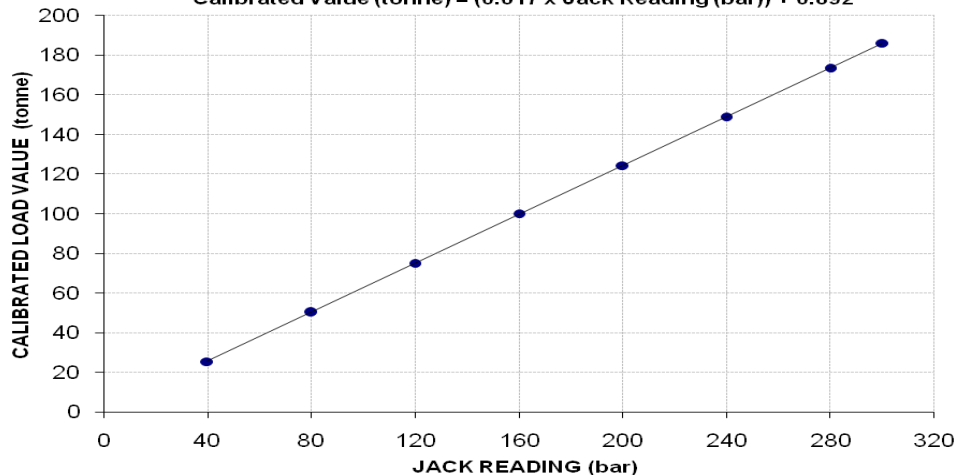
**Total Range : Zero - 1000 (bar)**  
**Calibrated Range : Zero - 300 (bar)**

Hydraulic Jack Reading (bar)	40	80	120	160	200	240	280	300	
Calibrated Load	(kg)	25400	50200	75000	100000	124400	148800	173600	186000
	(tonne)	25.40	50.20	75.00	100.00	124.40	148.80	173.60	186.00
Calibrated Pressure (bar)	41	82	122	163	203	242	283	303	

The Ram Area of Jack = 602.09 cm<sup>2</sup>

**Calibration Curve For Jack No. 313**

Calibrated Value (tonne) = (0.617 × Jack Reading (bar)) + 0.892



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

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To

**Resident Engineer**  
**NESPAK**  
**Development of DHA-AWT Land Adyala (RVS PH-IV)**

**Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/06/5216) (Page -2/2)**

Reference to your Letter No. 4592/103/DHA-AWT/FM/102/29, dated: 03/06/2024 on the subject cited above. One Hydraulic Jack (Jack No. 314, Gauge No. AES-314) as received by us has been calibrated. The results are tabulated as under:

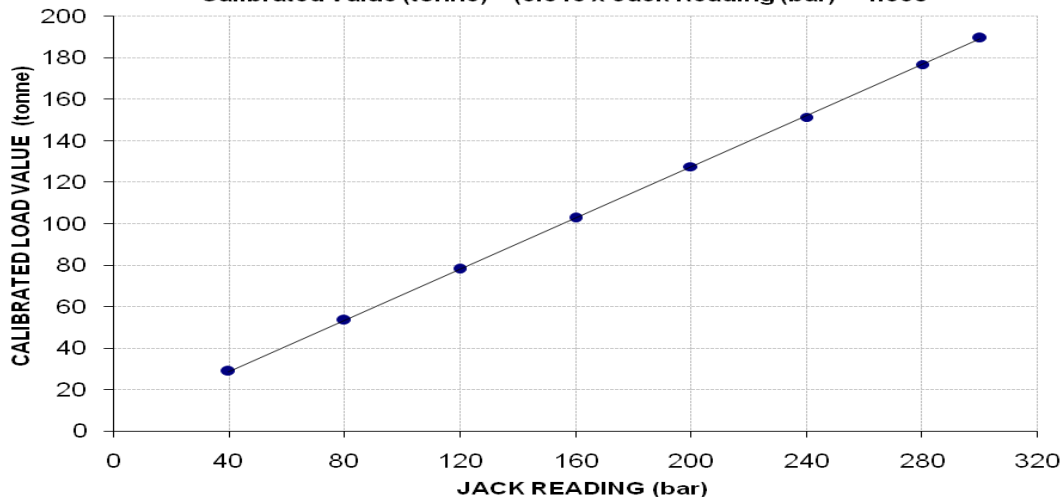
**Total Range : Zero - 1000 (bar)**  
**Calibrated Range : Zero - 300 (bar)**

Hydraulic Jack Reading (bar)	40	80	120	160	200	240	280	300	
Calibrated Load	(kg)	28800	53400	78000	102600	127400	151400	176800	189400
	(tonne)	28.80	53.40	78.00	102.60	127.40	151.40	176.80	189.40
Calibrated Pressure (bar)	47	87	127	167	208	247	288	308	

The Ram Area of Jack = 602.09 cm<sup>2</sup>

**Calibration Curve For Jack No. 314**

Calibrated Value (tonne) = (0.616 x Jack Reading (bar) + 4.008



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To,  
Resident Engineer  
NESPAK  
Construction of Rawalpindi Ring Road (RRR)  
(Wire Manufacturing Industries)

Reference # CED/TFL **5221** (Dr. Usman Akmal)  
Reference of the request letter # 4713/RRR/RE/110

Dated: 05-06-2024  
Dated: 03-06-2024

**Tension Test Report** (Page -1/3)

Date of Test 11-06-2024  
Gauge length 600 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")	780.0	781.0	17900	175.60	19200	188.35	198	>3.50	25448
2	12.70 (1/2")	780.0	781.0	17600	172.66	19400	190.31	199	>3.50	25448
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	

**Only two samples for Test**

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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To,

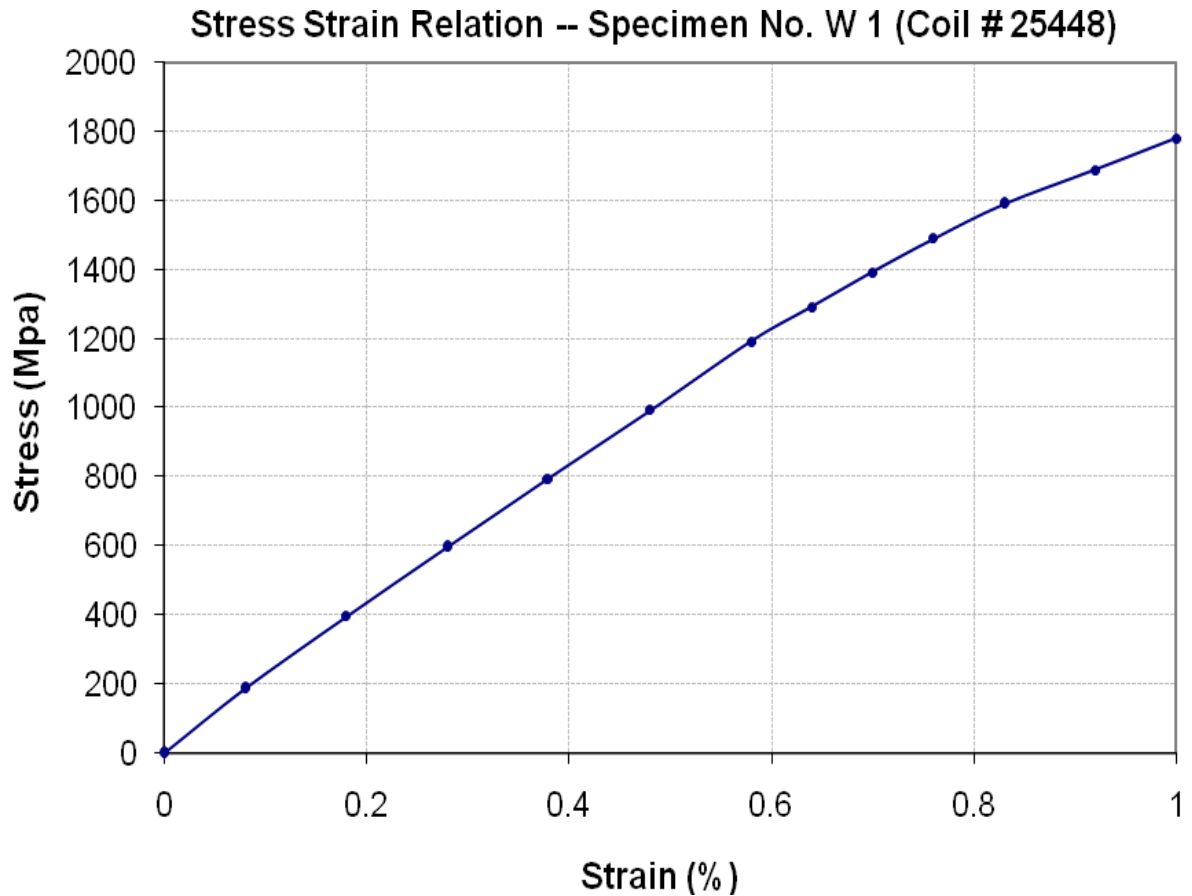
Resident Engineer  
NESPAK  
Construction of Rawalpindi Ring Road (RRR)  
(Wire Manufacturing Industries)

Reference # CED/TFL **5221** (Dr. Usman Akmal)  
Reference of the request letter # 4713/RRR/RE/110

Dated: 05-06-2024

Dated: 03-06-2024

**Graph** (Page – 2/3)



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

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To,

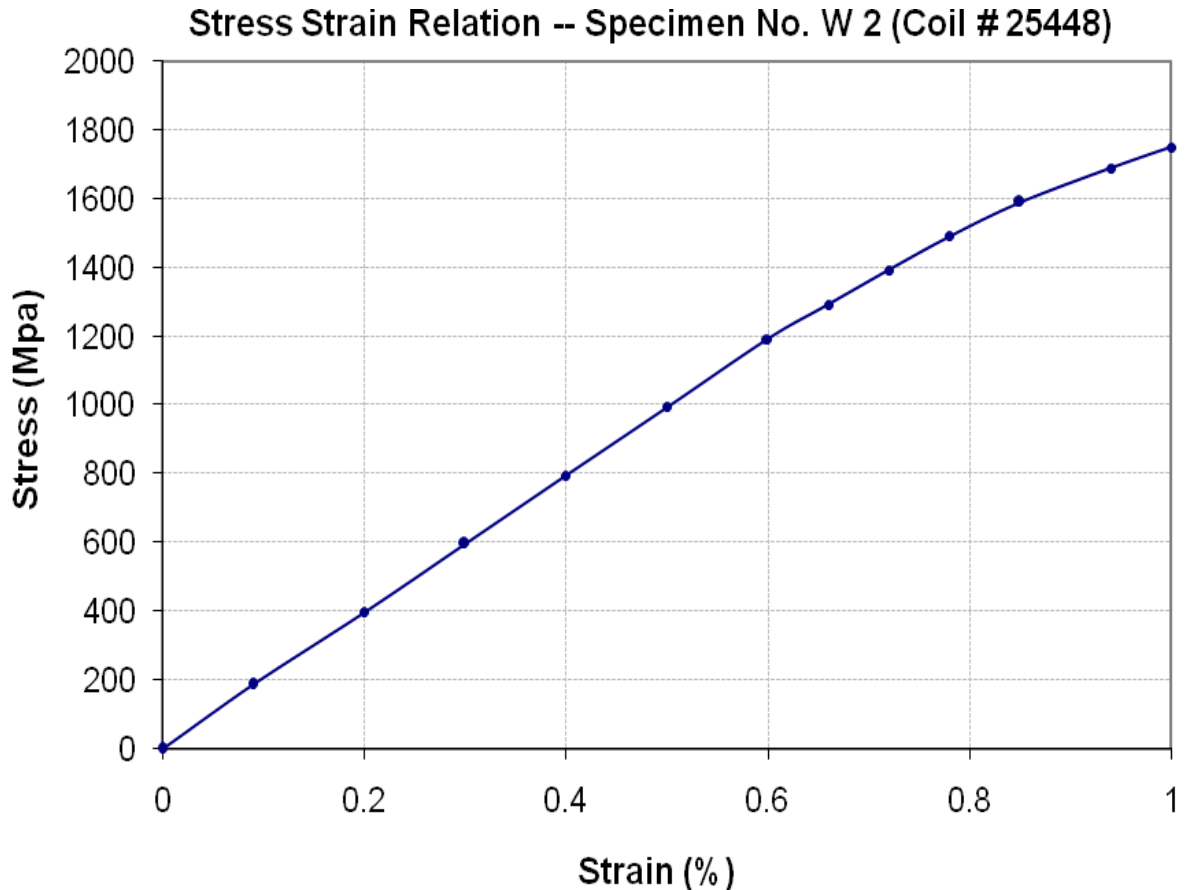
Resident Engineer  
NESPAK  
Construction of Rawalpindi Ring Road (RRR)  
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Reference # CED/TFL **5221** (Dr. Usman Akmal)  
Reference of the request letter # 4713/RRR/RE/110

Dated: 05-06-2024

Dated: 03-06-2024

**Graph** (Page – 3/3)



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

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To,

Lab In Charge  
CMEC  
NESPAK - Punjab Thermal Power (Pvt) Ltd.  
Construction of 1263MW Punjab Thermal Power Plant, Jhang.

Reference # CED/TFL **5223** (Dr. Asad Ali)

Dated: 06-06-2024

Reference of the request letter # CMEC/UET/24060302

Dated: 03-06-2024

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

Date of Test 11-06-2024

Gauge length 8 inches

Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615  
(FF Steel)

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	Heat No.
		Nominal	Actual	Nominal	Actual			Nominal	Actual	Nominal	Actual			
1	0.405	10	9.89	0.12	0.119	3920	5450	72017	72530	100126	100900	1.30	16.3	126
2	0.406	10	9.91	0.12	0.119	4050	5420	74405	74730	99574	100000	1.10	13.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two samples for tensile and one sample for bend test</b>														
Bend Test														
10mm Dia Bar Bend Test Through 180° is Satisfactory														

Witness by Sheikh Waleed (NESPAK)

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

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To,

Lab In Charge  
CMEC  
NESPAK - Punjab Thermal Power (Pvt) Ltd.  
Construction of 1263MW Punjab Thermal Power Plant, Jhang.

Reference # CED/TFL **5223** (Dr. Asad Ali)

Dated: 06-06-2024

Reference of the request letter # CMEC/UET/24060303

Dated: 03-06-2024

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

Date of Test 11-06-2024

Gauge length 8 inches

Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615  
(Ittehad Steel)

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	Heat No.
		Nominal	Actual	Nominal	Actual			Nominal	Actual	Nominal	Actual			
1	0.444	10	10.35	0.12	0.130	4030	5960	74038	68100	109495	100800	1.20	15.0	111
2	0.446	10	10.38	0.12	0.131	4100	6030	75324	68940	110781	101400	1.10	13.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two samples for tensile and one sample for bend test</b>														
Bend Test														
10mm Dia Bar Bend Test Through 180° is Satisfactory														

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