



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

To,
Resident Engineer
NESPAK

China – Pakistan Economic Corridor (CPEC), Western Route Hakla (on M1) – Yarak (D.I. Khan) Motorway, Package-3 (Trap to Kot Belian)(M/s Karamdad Constructions (Pvt) Ltd)

Reference # CED/TFL **33715** (Dr. Qasim Khan)

Dated: 09-08-2019

Reference of the request letter # CPEC/NESPAK/CS/RE/PKG3/19/1120 Dated: 06-07-2019

Tension Test Report (Page – 1/2)

Date of Test 23-08-2019

Gauge length -----

Description Fence & Tension Wire Tensile Test

Sr. No.	Diameter of Single Wire	Breaking Load	Remarks
	(mm)	(kN)	
1	3.10	3.20	Fance
2	3.00	3.70	
3	2.90	6.20	Tension
4	2.90	5.50	
-	-	-	
-	-	-	
-	-	-	
-	-	-	
Only Four Samples for Test			

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UET Lahore, Pakistan.

Note:

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 Reference of the request letter # CPEC/NESPAK/CS/RE/PKG3/19/1120 Dated: 06-07-2019

Tension Test Report (Page – 2/2)

Date of Test 23-08-2019
 Gauge length 2 inches
 Description U-Clamp Strip Tensile Test

Sr. No.	Designation	Size of Strip	X Section Area	Yield load	Breaking Load	Yield Stress	Ultimate Stress	Elongation	% Elongation	Remarks
1	U-Clamp	15.10x4.85	73.24	-----	30.70	-----	419.20	0.60	30.00	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
Only One Sample for Tensile Test										
Bend Test										

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To,
M/S Madina Hardware
Lahore

Reference # CED/TFL **33725** (Dr. Qasim Khan)
Reference of the request letter # Nil

Dated: 21-08-2019
Dated: 21-08-2019

Tension Test Report (Page -1/1)

Date of Test 23-08-2019
Gauge length 8 inches
Description Anchor Bolt Bar Tensile 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	Elongation (inch)	% Elongation	Remarks	
		Nominal (mm)	Actual (mm)	Nominal	Actual								
1	8.016	36	36.06	---	1021.2	58000	73600	557	707	1.00	12.5		
-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only one sample for tensile test													
Bend Test													

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Ref: CED/TFL/08/33726

Dated: 21-08-19

To
Manager Civil
Orient, Lahore

Subject: - CALIBRATION OF PRESSURE GAUGE (MARK: TFL/08/33726)

Reference to your Letter No. ORIENT/Izhar/Hotel Tower/Guages/001, Dated: 19/08/2019 on the subject cited above. One Pressure Gauge as received by us has been calibrated. The results are tabulated as under:

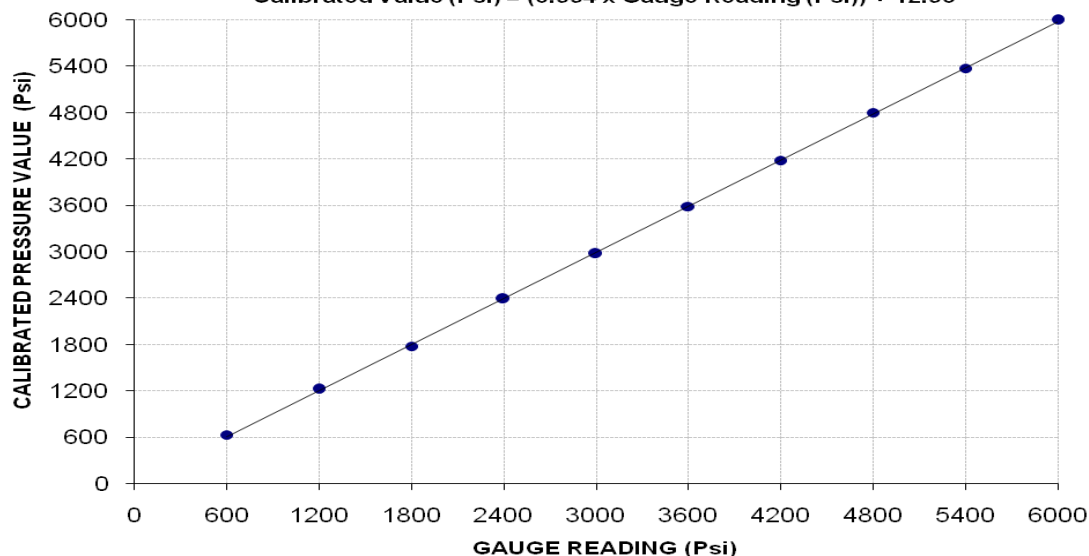
Total Range : Zero - 8000 (Psi)
Calibrated Range : Zero - 6000 (Psi)

Pressure Gauge Reading (Psi)	600	1200	1800	2400	3000	3600	4200	4800	5400	6000
Calibrated Load (kg)	8800	17000	24800	33300	41400	49900	58200	66800	74800	83500
Calibrated Pressure (Psi)	632.13	1221.17	1781.47	2392.05	2973.90	3584.48	4180.70	4798.47	5373.13	5998.08

The Ram Area use for Calibration = 198 cm²

Calibration Curve for Pressure Gauge

Calibrated Value (Psi) = (0.994 × Gauge Reading (Psi)) + 12.93



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To,
Chief Material Engineer
MM Pakistan (Pvt) Ltd
Peshawar Sustainable Bus Rapid Transit Corridor Project Reach-ii

Reference # CED/TFL **33728** (Dr. Qasim Khan) Dated: 22-08-2019
Reference of the request letter # MMP/CME/BRT/PSH/123 Dated: 22-08-2019

Tension Test Report (Page – 1/4)

Date of Test 23-08-2019
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	% Elongation	Remarks / Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)	E, GPa		
1	15.24 (0.6")	1102.0	1105.0	24500	240.35	27900	273.70	199	>3.50	xx
2	15.24 (0.6")	1102.0	1104.0	24800	243.29	28100	275.66	199	>3.50	xx
3	15.24 (0.6")	1102.0	1104.0	24700	242.31	27700	271.74	198	>3.50	xx
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	

Only three 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

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UET Lahore, Pakistan.

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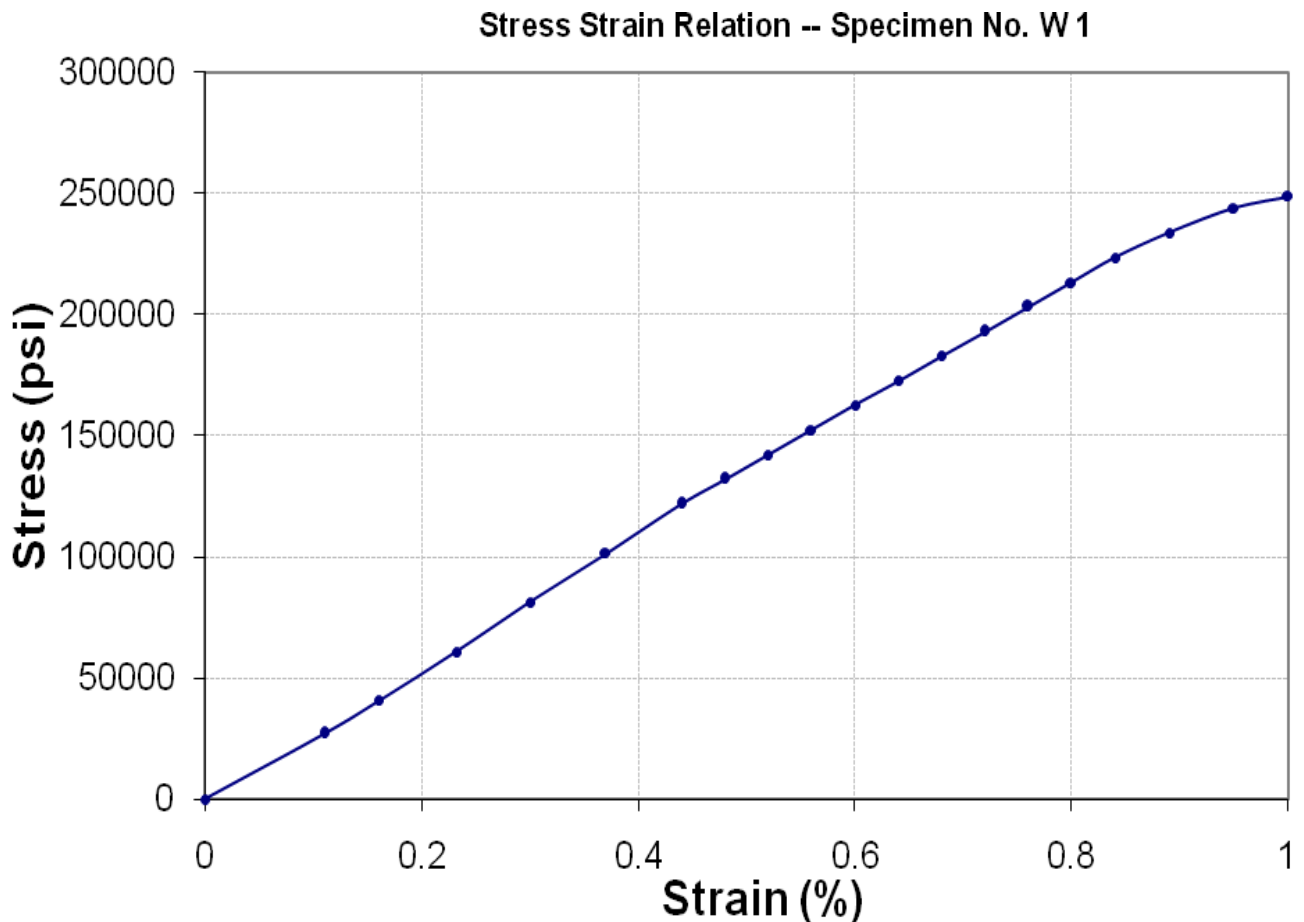


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To,
Chief Material Engineer
MM Pakistan (Pvt) Ltd
Peshawar Sustainable Bus Rapid Transit Corridor Project Reach-ii

Reference # CED/TFL **33728** (Dr. Qasim Khan) Dated: 22-08-2019
Reference of the request letter # MMP/CME/BRT/PSH/123 Dated: 22-08-2019

Graph (Page – 2/4)



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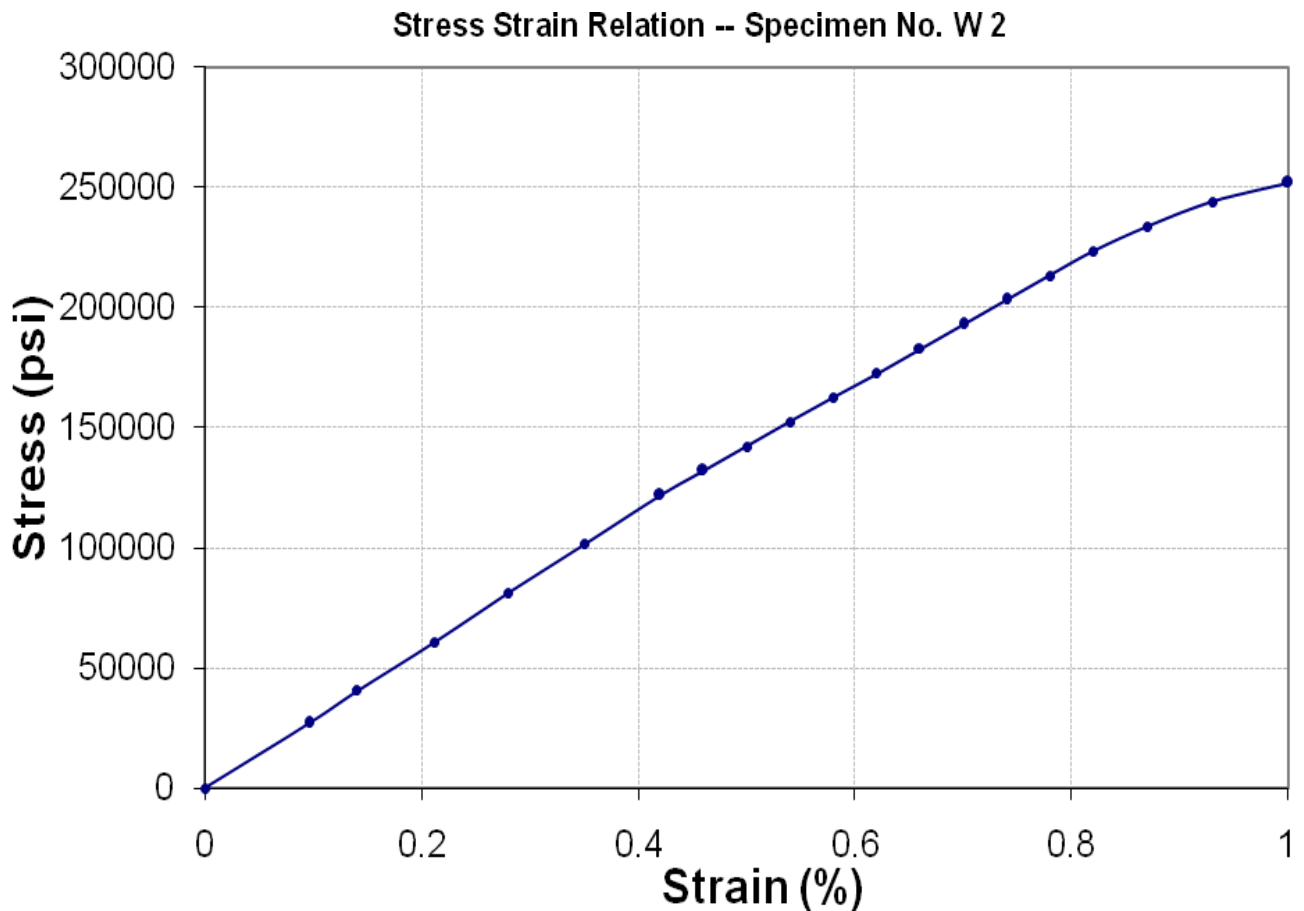


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To,
Chief Material Engineer
MM Pakistan (Pvt) Ltd
Peshawar Sustainable Bus Rapid Transit Corridor Project Reach-ii

Reference # CED/TFL **33728** (Dr. Qasim Khan) Dated: 22-08-2019
Reference of the request letter # MMP/CME/BRT/PSH/123 Dated: 22-08-2019

Graph (Page – 3/4)



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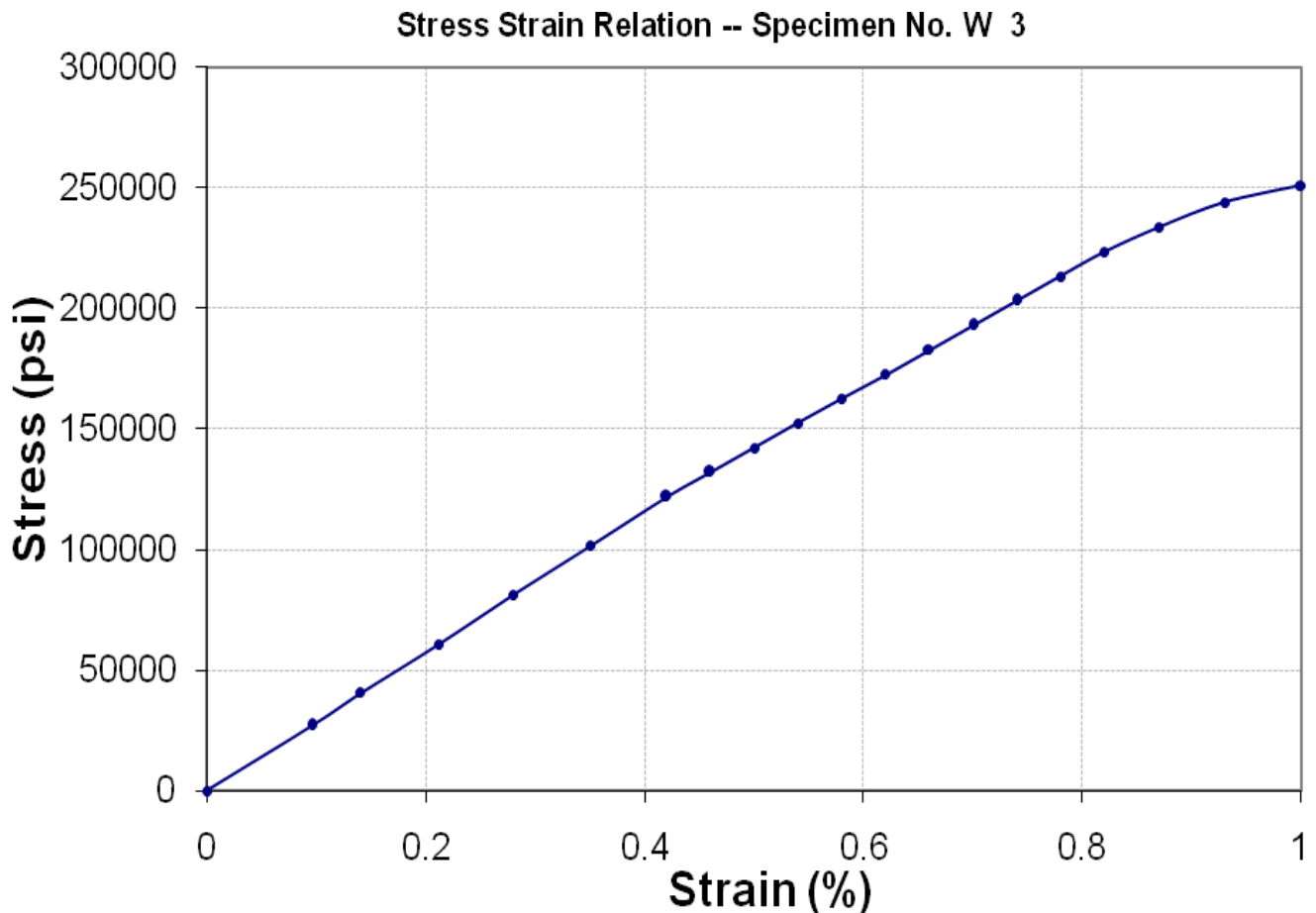


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To,
Chief Material Engineer
MM Pakistan (Pvt) Ltd
Peshawar Sustainable Bus Rapid Transit Corridor Project Reach-ii

Reference # CED/TFL **33728** (Dr. Qasim Khan) Dated: 22-08-2019
Reference of the request letter # MMP/CME/BRT/PSH/123 Dated: 22-08-2019

Graph (Page – 4/4)



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To,
 DCRE/RE-1
 Zeeruk International (Pvt) Ltd
 Lahore Sialkot Motorway Project

Reference # CED/TFL **33729** (Dr. Qasim Khan)
 Reference of the request letter # LSMP/RE-I/2019/1021

Dated: 22-08-2019
 Dated: 22-08-2019

Tension Test Report (Page -1/1)

Date of Test 23-08-2019
 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	4.238	32	31.99	1.25	1.246	43600	55200	76896	77150	97355	97700	1.50	18.8	
2	4.232	32	31.97	1.25	1.244	43200	54600	76191	76550	96297	96800	1.50	18.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
32mm Bar Bend Test Through 180° is Satisfactory														

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To,
 Ahmed Fraz
 Lahore

Reference # CED/TFL **33734** (Dr. Qasim Khan)
 Reference of the request letter # Nil

Dated: 23-08-2019
 Dated: 23-08-2019

Tension Test Report (Page -1/1)

Date of Test 23-08-2019
 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	0.375	3	0.375	0.11	0.110	3010	4230	60400	60120	84800	84500	1.60	20.0	Afco
2	0.376	3	0.375	0.11	0.110	4000	4840	80200	79800	97000	96600	1.20	15.0	Amreli
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile test														
Bend Test														

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