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/07/33609, 697 Dated: 22-07-19

To
Chief Executive Officer
Pak Matiari-Lahore Transmission Company (Pvt) Ltd
+660kV Matiari-Lahore HVDC Transmission Project (CPEC) Lot-05 Camp near Derawar

Subject:- **CALIBRATION OF COMPRESSION TESTING MACHINE**
(MARK: CED/TFL/07/33609) (Page -1/2)

Reference to your letter No. MLTC-UET-19-2475, dated: 19/07/2019 on the subject cited above. One Compression Testing Machine (Serial No. 313812589) has been calibrated by using standard calibration device. The results are tabulated as under:

Calibrated Rang : Zero – 200000 (Lbs)

Machine Reading (Lbs)	Corrected Load Value (Lbs)	Machine Reading (Lbs)	Corrected Load Value (Lbs)	Machine Reading (Lbs)	Corrected Load Value (Lbs)
5000	6321	75000	72958	145000	140219
10000	11007	80000	77661	150000	145600
15000	16019	85000	82146	155000	150541
20000	20814	90000	86856	160000	155372
25000	25609	95000	91675	165000	160204
30000	30513	100000	96823	170000	165255
35000	34981	105000	101533	175000	169866
40000	39558	110000	106023	180000	175451
45000	44617	115000	110851	185000	180944
50000	49209	120000	115675	190000	185778
55000	53693	125000	120719	195000	191052
60000	58177	130000	125762	200000	196327
65000	62988	135000	130447		
70000	67926	140000	135278		

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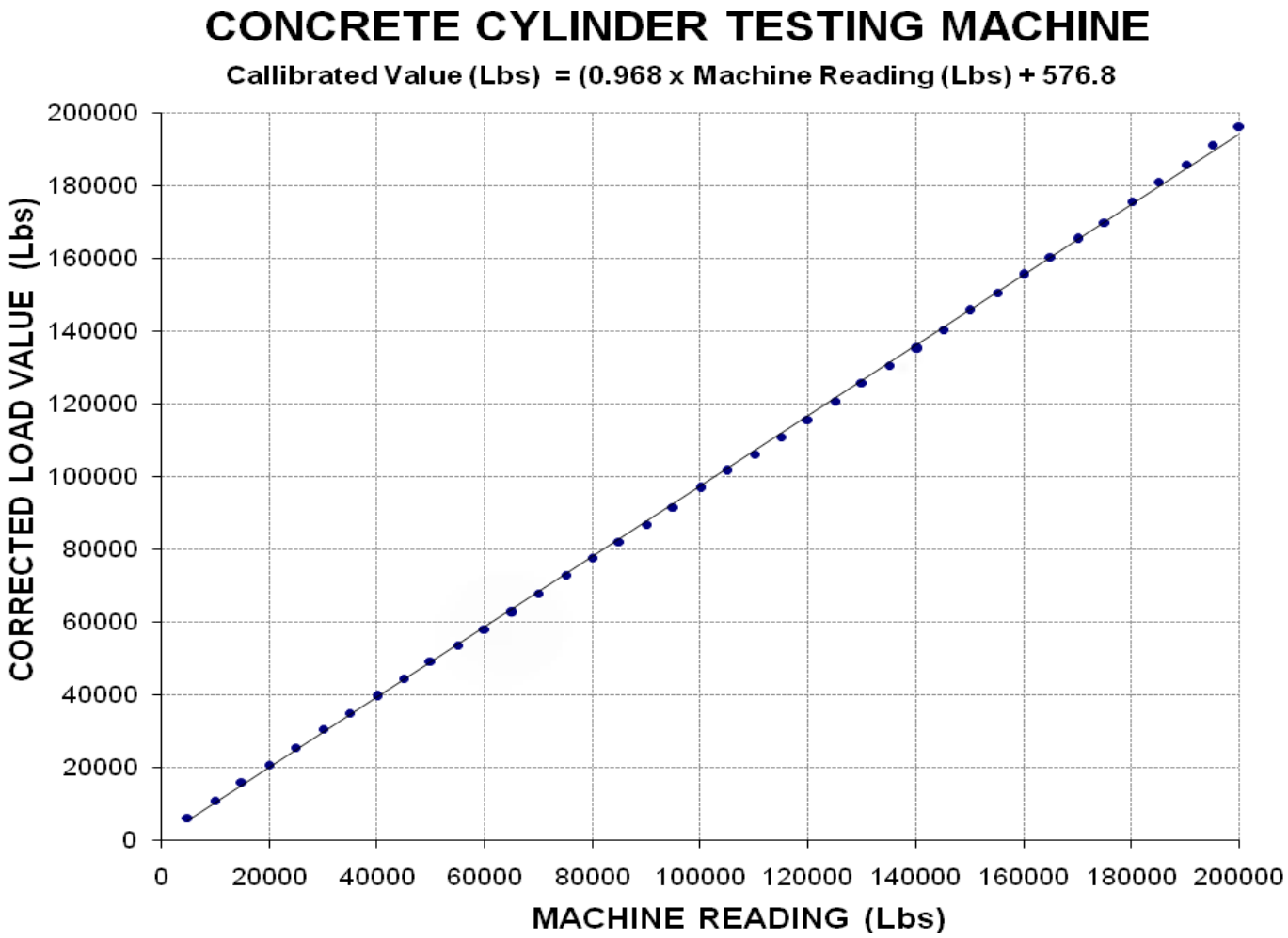
Ref: CED/TFL/07/33609, 697 Dated: 22-07-19

To
Chief Executive Officer
Pak Matiari-Lahore Transmission Company (Pvt) Ltd
+660kV Matiari-Lahore HVDC Transmission Project (CPEC) Lot-05 Camp near Derawar

Subject:- **CALIBRATION OF COMPRESSION TESTING MACHINE**
(MARK: CED/TFL/07/33609) (Page -2/2)



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To,
Resident Engineer CPEC-Package-3
NESPAK
China – Pakistan Economic Corridor (CPEC), Western Route Hakla (On M1) – Yarak (D.I Khan) Motorway, Package-3 (Tarap to Kot Belian)(M/s Fabco)(M/s Ishtiaq Steel Industry)
Reference # CED/TFL **33671** (Dr. M Rizwan Riaz) Dated: 01-08-2019
Reference of the request letter # CPEC/NESPAK/CS/RE/PKG3/19/1087 Dated: 30-07-2019

Tension Test Report (Page – 1/1)

Date of Test 09-08-2019
Gauge length 2 inches
Description Steel Structure Steel Strip Tensile and Bend Test as per ASTM A36

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	H-Beam	14x14	28.70x18.20	522.34	18000	25000	338.06	469.52	0.90	45.00	
2		14x14	28.70x18.20	522.34	16500	24300	309.88	456.38	0.90	45.00	
3	H-Beam	6x6	28.40x10.10	286.84	14000	18400	478.80	629.28	0.70	35.00	
4		6x6	28.40x10.10	286.84	12000	17600	410.40	601.92	0.70	35.00	
5	H-Beam	14x6	28.40x12.10	343.64	14000	21600	399.66	616.62	0.70	35.00	
6		14x6	28.40x12.10	343.64	14000	21700	399.66	619.48	0.60	30.00	
7	H-Beam	6x16	28.40x12.00	340.80	12600	18900	362.69	544.04	0.60	30.00	
8		6x16	28.4x12.00	340.80	13000	18600	374.21	535.40	0.70	35.00	
9	MS Angle	$1^1/_2$x$1^1/_2$	12.10x6.65	80.47	2800	4200	341.37	512.05	0.60	30.00	
10		$1^1/_2$x$1^1/_2$	12.10x6.65	80.47	2900	4300	353.56	524.24	0.70	35.00	
11	MS Angle	2x2	23.80x6.40	152.32	5200	7500	334.90	483.03	0.70	35.00	
12		2x2	23.80x6.40	152.32	5200	7600	334.90	489.47	0.60	30.00	

Only Twelve Samples for Tensile and Four Samples for Bend Test

Bend Test

Strip Taken from H-Beam (14"x14") Bend Test Through 180º is Satisfactory
Strip Taken from H-Beam (6"x6") Bend Test Through 180º is Satisfactory
Strip Taken from I-Beam (14"x6") Bend Test Through 180º is Satisfactory
Strip Taken from I-Beam (6"x16") Bend Test Through 180º is Satisfactory
Strip Taken from MS Angle ($1^1/_2$"x$1^1/_2$") Bend Test Through 180º is Satisfactory
Strip Taken from MS Angle (2"x2") Bend Test Through 180º is Satisfactory

I/C Testing Laboratoires
UET Lahore, Pakistan.

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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 Suhail Ahmed Associates
New Garden Town, Lahore

Reference # CED/TFL **33678** (Dr. M Rizwan Riaz) Dated: 02-08-2019
Reference of the request letter # Nil Dated: 02-08-2019

Tension Test Report (Page – 1/2)

Date of Test 09-08-2019
Gauge length 2 inches
Description Mild Steel Pipe 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	**10**	**26.20x5.60**	**146.72**	**6100**	**7000**	**407.86**	**468.03**	**0.70**	**35.00**	
2	**10**	**26.20x5.60**	**146.72**	**5500**	**7000**	**367.74**	**468.03**	**0.55**	**27.50**	
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-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
Only Two Samples for Tensile Test										
Bend Test										

I/C Testing Laboratoires
UET Lahore, Pakistan.

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STRUCTURAL ENGINEERING DIVISION

Test Floor Laboratory
Department of Civil Engineering
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Pakistan. Ph: 92-42-99029202

To,
M/S Suhail Ahmed Associates
New Garden Town, Lahore

Reference # CED/TFL **33678** (Dr. M Rizwan Riaz) Dated: 02-08-2019
Reference of the request letter # Nil Dated: 02-08-2019

Weight &Size Test Report

Date of Test 09-08-2019
Gauge length -------
Description Mild Steel Pipe Weight and Size Test

Sr. No.	Designation	Weight	Length	Weight per Unit Length	External Diameter	Internal Diameter	Thickness	Remark
	(inch)	(g)	(cm)	(kg/m)	(mm)	(mm)	(mm)	
1	**10**	**4223**	**114.0**	**37.04**	**275.00**	**263.60**	**5.70**	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
Only One Sample for Test								

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UET Lahore, Pakistan.

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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/08/33704 Dated: 07-08-19

To
Chief Executive Officer
Pak Matiari-Lahore Transmission Company (Pvt) Ltd
+660kV Matiari-Lahore HVDC Transmission Project (CPEC) Lot-06 Camp near Khairpur Tamiwali

Subject:- **CALIBRATION OF COMPRESSION TESTING MACHINE**
(MARK: CED/TFL/08/33704) (Page -1/2)

Reference to your letter No. MLTC-UET-19-2582, dated: 05/08/2019 on the subject cited above. One Compression Testing Machine (Serial No. 3143-12-588) has been calibrated by using standard calibration device. The results are tabulated as under:

Calibrated Rang : Zero – 200000 (Lbs)

Machine Reading (Lbs)	Corrected Load Value (Lbs)	Machine Reading (Lbs)	Corrected Load Value (Lbs)	Machine Reading (Lbs)	Corrected Load Value (Lbs)
5000	3342	75000	67379	145000	132497
10000	7628	80000	71827	150000	137401
15000	12133	85000	76567	155000	142086
20000	16782	90000	81270	160000	146698
25000	21359	95000	85724	165000	151676
30000	25864	100000	89740	170000	156287
35000	30441	105000	95290	175000	160972
40000	35163	110000	99671	180000	165747
45000	39878	115000	104308	185000	170727
50000	44398	120000	109279	190000	175415
55000	48918	125000	114250	195000	180249
60000	53511	130000	118782	200000	185952
65000	58177	135000	123493		
70000	62712	140000	127885		

I/C Testing Laboratoires
UET Lahore, Pakistan.

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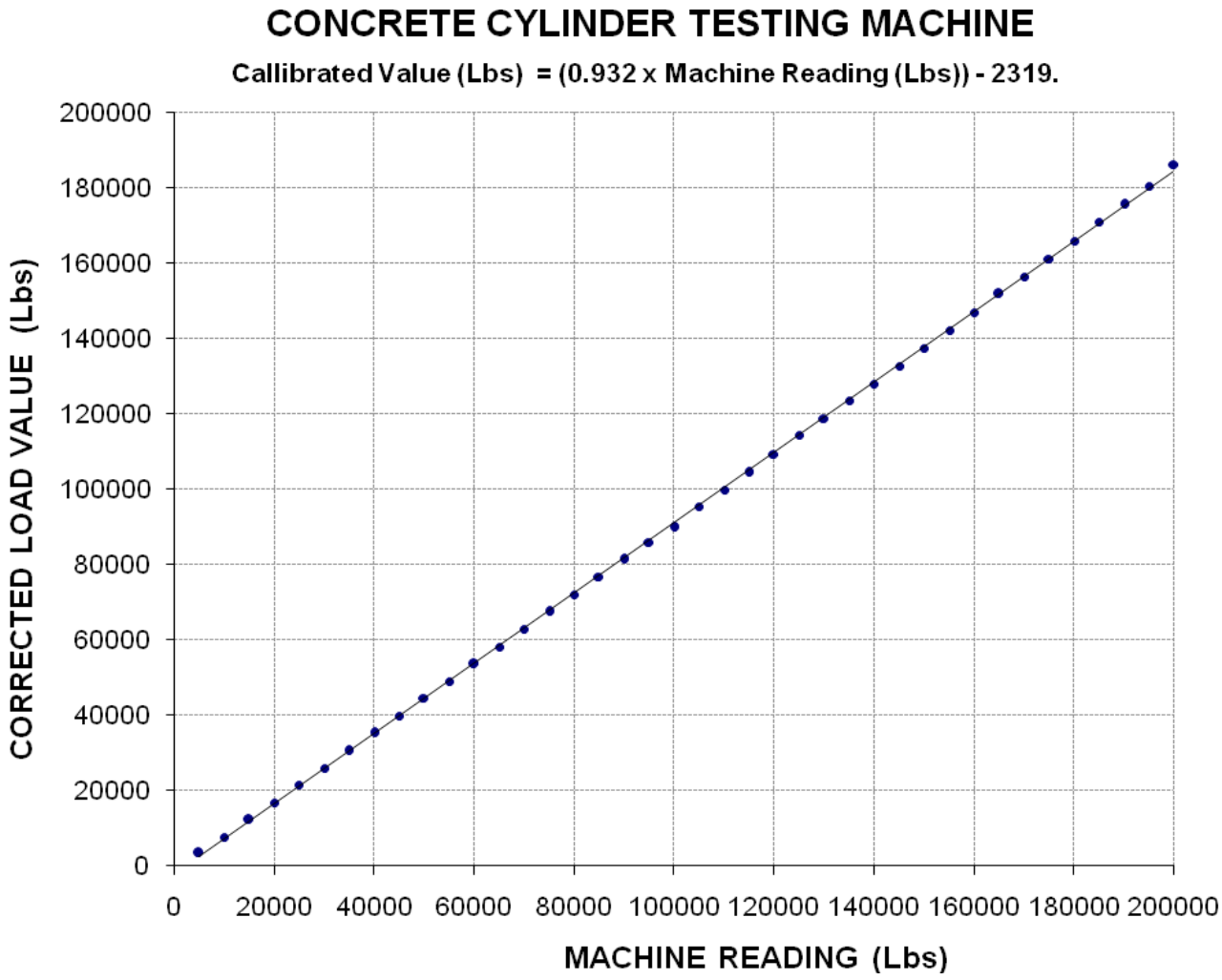
STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

Ref: CED/TFL/08/33704 Dated: 07-08-19

To
Chief Executive Officer
Pak Matiari-Lahore Transmission Company (Pvt) Ltd
+660kV Matiari-Lahore HVDC Transmission Project (CPEC) Lot-06 Camp near Khairpur Tamiwali

Subject:- **CALIBRATION OF COMPRESSION TESTING MACHINE**
(MARK: CED/TFL/08/33704) (Page -2/2)



I/C Testing Laboratoires
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To,
Manager Projects
Matrix Management (Pvt) Ltd
Ibrahim Industries, Lahore

Reference # CED/TFL **33712** (Dr. Safeer Abbas) Dated: 08-08-2019
Reference of the request letter # Nil Dated: 08-08-2019

Tension Test Report (Page -1/1)

Date of Test 09-08-2019
Gauge length 8 inches
Description Deformed Steel Bar Tensile Test as per ASTM-A615

Sr. No.	Weight	Diameter/ size		Area (in^2)		Yield load	Breaking Load	Yield Stress (psi)		Ultimate Stress (psi)		Elongation	% Elongation	Remarks
	(lbs/ft)	Nominal (#)	Actual (inch)	Nominal	Actual	(kg)	(kg)	Nominal	Actual	Nominal	Actual	(inch)		
1	0.420	3	0.396	0.11	0.123	4000	5500	80200	71490	110200	98300	1.00	12.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only one sample for tensile test														
Bend Test														

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