

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

To,
Resident Engineer
EA Consulting (Pvt) Ltd
Sukkur – Multan Motorway Project
Scrtion - III
(IIL Lahore)

Reference # CED/TFL **33202** (Dr. Qasim Khan) Dated: 09-05-2019 Reference of the request letter # CRE/EA/M.P-III/408-2019 Dated: 06-05-2019

Tension Test Report (Page -1/1)

Date of Test 17-05-2019 Gauge length 2 inches

Description Stainless Steel Pipe Strip Tensile Test

Sr. No.	Designation	(mm) Size of Strip	X Section Area	gy Yield load	Breaking Coad	(MPa)	Ultimate Stress	(ui) Elongation	% Elongation	Remarks
1		26.60x1.10	29.26	1760	2240	590.08	751.00	0.60	30.00	
2	Stainless Steel Pipe	26.50x1.10	29.15	1720	2200	578.84	740.38	0.60	30.00	
			Only Ty	vo Samples	for Tens	sile Test				
				Obampies						
				Bend '	Test					

I/C Testing Laboratoires UET Lahore, Pakistan.

- 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



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

To,
Resident Engineer
REC
SBB Bridge & Approach Roads Zahirpir

Reference # CED/TFL **33205** (Dr. Qasim Khan) Dated: 09-05-2019 Reference of the request letter # SBBB/TE/2019/1286 Dated: 03-05-2019

Tension Test Report (Page - 1/1)

Date of Test 17-05-2019 Gauge length 2 inches

Description W Beam Guard Rail, Guard Rail Post & Backup Plate Strip Tensile

Test as per AASHTOO A-180

Sr. No.	Designation	Size of Strip	X Section Area	Yield load	Breaking Load	Yield Stress	Ultimate Stress	Elongation	% Elongation	Remarks
		(cm)	(cm ²)	(kg)	(kg)	(kg/cm ²)	(kg/cm ²)	(in)	0	
1	W Beam Guard	2.65x0.290	0.77	2800	3500	3643.46	4554.33	0.50	25.00	
2	Rail	2.66x0.290	0.77	2700	3500	3500.13	4537.21	0.65	32.50	
3	Consul Day Doug	2.66x0.520	1.38	4900	6600	3542.51	4771.54	0.60	30.00	
4	Guard Rail Post	2.66x0.520	1.38	4800	6500	3470.21	4699.25	0.60	30.00	
5	Darley Dlate	2.67x0.475	1.27	6600	7900	5204.02	6229.06	0.45	22.50	
6	Backup Plate	2.68x0.475	1.27	6700	7900	5263.16	6205.81	0.45	22.50	
		T	Only Si	x Samples	for Tens	ile Test			1	
				Bend '	Test					

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

To, Resident Engineer EA Consulting (Pvt) Ltd Sukkur – Multan Motorway Project Scrtion - III

Reference # CED/TFL **33207** (Dr. Qasim Khan)

Reference of the request letter # RE/EA/M.P-III/411-2019

Dated: 09-05-2019

Dated: 09-05-2019

Bend Test Report (Page – 1/1)

Date of Test 17-05-2019

Gauge length -----

Description Guard Rail Bend Test

Bend Test

Strip taken from Guard Rail Bend Test Through 180° is Satisfactory

Strip taken from Guard Rail Bend Test Through 180° is Satisfactory

Strip taken from Guard Rail Bend Test Through 180° is Satisfactory

Strip taken from Guard Rail Bend Test Through 180° is Satisfactory

Only four samples for bend test

I/C Testing Laboratoires UET Lahore, Pakistan.

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

To,

Sub Divisional Officer

Building Sub Division No. 9

Lahore

(Construction Provincial Police Line of Punjab Highway Patrol at Jia Bagga, Lahore (First

Floor))

Reference # CED/TFL 33240 (Dr. Qasim Khan)

Reference of the request letter # 49/9th

Tension Test Report (Page -1/1)

Date of Test 17-05-2019 Gauge length 8 inches

Description Deformed Steel Bar Tensile Test as per ASTM-A615

Sr. No.	Weight	Si	neter/ ize ch)		rea n²)	Yield load	Breaking Load		Stress si)		e Stress si)	Elongation	% Elongation	Remarks
S	(lbs/ft)	Nominal	Actual	Nominal	Actual	(kg)	(kg)	Nominal	Actual	Nominal	Actual	(inch)	3 %	Re
1	0.417	3/8	0.395	0.11	0.123	4400	5700	88200	79120	114300	102500	0.80	10.0	
2	0.422	3/8	0.397	0.11	0.124	4600	6100	92200	81790	122300	108500	0.80	10.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			1		Not	e: only t	wo samp	es for te	nsile test	1		ı	ı	
							Bend T	'est						

I/C Testing Laboratoires UET Lahore, Pakistan.

Dated: 16-05-2019

Dated: 27-04-2019

- 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.
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NEE RING THE PROPERTY OF THE P

STRUCTURAL ENGINEERING DIVISION

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

To,
University Engineer
University of Sargodha
Extension of Chemistry Department & Extension of Physics Department, University of Sargodha
(M/s T.M.C)

Reference # CED/TFL **33241** (Dr. Qasim Khan) Dated: 16-05-2019 Reference of the request letter # SU/P.D(W)/14934 Dated: 14-05-2019

Tension Test Report (Page -1/1)

Date of Test 17-05-2019 Gauge length 8 inches

Description Deformed Steel Bar Tensile Test as per ASTM-A615

Sr. No.	Weight	Si	neter/ ize ch)		rea n²)	Yield load	Breaking Load		Stress si)		e Stress si)	Elongation	% Elongation	Remarks
S	(lbs/ft)	Nominal	Actual	Nominal	Actual	(kg)	(kg)	Nominal	Actual	Nominal	Actual	(inch)	% E	Re
1	0.373	38	0.374	0.11	0.110	3700	4800	74200	74370	96200	96500	1.20	15.0	
2	0.367	3/8	0.370	0.11	0.108	3400	4600	68200	69530	92200	94100	1.00	12.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
					Not	e: only t	wo samp	es for te	nsile test	ı	ı	ī	1	
							D 17							
							Bend T	est						

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: <u>CED/TFL/05/33243</u> Dated: <u>16-05-19</u>

To

Director Technical

Kangyegangsi Post-Tensioning Systems

Construction of 4-Lane Bridge Across River Indus LinkingLayyah with Taunsa Including 2-Lane Approach Road and Training Works

Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/05/33243 (Page – 1/2)

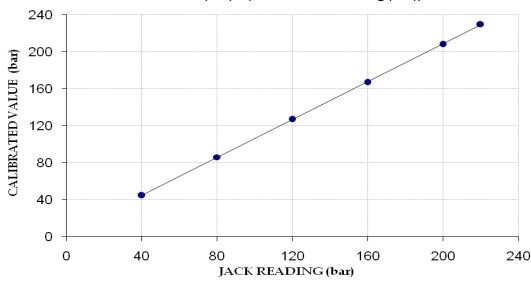
Reference to your Letter No. KY/CL/19/13, Dated: 15/05/2019 on the subject cited above. One Hydraulic Jack No. KY-401 as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 700 (bar) Calibrated Range : Zero - 220 (bar)

Hydraulic Jack Reading (bar)	40	80	120	160	200	220
Calibrated Load (Kg)	36000	69400	102400	134800	168000	185200
Calibrated Pressure (bar)	44.60	85.97	126.85	166.98	208.11	229.42

The Ram Area of Jack = 791.68 cm^2

Calibration Curve For Jack No. KY-401 Calibrated Value (bar) = (1.023 x Jack Reading (bar)) + 3.815



I/C Testing Laboratoires UET Lahore, Pakistan.

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

Ref: <u>CED/TFL/05/33243</u> Dated: <u>16-05-19</u>

To

Director Technical

Kangyegangsi Post-Tensioning Systems

Construction of 4-Lane Bridge Across River Indus LinkingLayyah with Taunsa Including 2-Lane Approach Road and Training Works

Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/05/33243 (Page – 2/2)

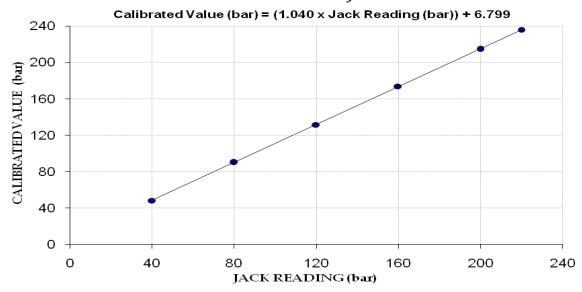
Reference to your Letter No. KY/CL/19/13, Dated: 15/05/2019 on the subject cited above. One Hydraulic Jack No. KY-402 as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 700 (bar) Calibrated Range : Zero - 220 (bar)

Hydraulic Jack Reading (bar)	40	80	120	160	200	220
Calibrated Load (Kg)	39000	72800	106200	140200	173200	190400
Calibrated Pressure (bar)	48.31	90.18	131.56	173.67	214.55	235.86

The Ram Area of Jack = 791.68 cm^2

Calibration Curve For Jack No. KY-402



I/C Testing Laboratoires UET Lahore, Pakistan.

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

To,
Resident Engineer
Dar Engineering
Punjab Agriculture Food and Durg Authority's Science Enclave, Lahore Pakistan
(Heat No. P-782– Kamran Steel)

Reference # CED/TFL **33244** (Dr.Qasim Khan)

Reference of the request letter # DB-78/DAR/RE/ME/2019/0194

Dated: 16-05-2019

Dated: 14-05-2019

Tension Test Report (Page -1/1)

Date of Test 17-05-2019 Gauge length 8 inches

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

Sr. No.	Weight		neter/ ize		rea 1 ²)	Yield load	Breaking Load		Stress si)		e Stress si)	Elongation	% Elongation	Remarks
S	(lbs/ft)	Nominal (#)	Actual (inch)	Nominal	Actual	(kg)	No A		Nominal	Actual	(inch)	Э%	R	
1	0.407	3	0.391	0.11	0.120	4300	5600	86200	79140	112300	103100	0.90	11.3	
2	0.363	3	0.368	0.11	0.107	3100	4600	62200	64090	92200	95100	1.20	15.0	
-	-	-	-	-	-		-	-	-	-	-	-	-	
-	-	-	-	-	-		-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		•	No	ote: onl	y two s	amples	for tensil	e and on	e sample	for bend	test	•		
							Bend '	Test						
#3	Bar Ben	d Test	Throug	h 180°	is Satisf	actory								

I/C Testing Laboratoires UET Lahore, Pakistan.

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

To,
M/S Mansoor Mazhar & Associates
Lahore
(Parkview Housing Society Multan Road, Lahore)

Reference # CED/TFL **33245** (Dr. Qasim Khan)

Reference of the request letter # Nil

Dated: 16-05-2019

Dated: 16-05-2019

Tension Test Report (Page -1/1)

Date of Test 17-05-2019 Gauge length 8 inches

Description Deformed Steel Bar Tensile and Bend Test

Sr. No.	Weight		neter/ ze		rea n²)	Yield load	Breaking Load		Stress si)		e Stress si)	Elongation	% Elongation	Remarks
S	(lbs/ft)	Nominal (#)	Actual (inch)	Nominal	Actual	(kg)	(kg)	Nominal	Actual	Nominal	Actual	(inch)	% E	Re
1	0.393	3	0.383	0.11	0.115	3500	4700	70200	66820	94200	89800	1.30	16.3	
2	0.394	3	0.384	0.11	0.116	3700	4900	74200	70420	98200	93300	1.10	13.8	
-		-	-	-	-	-	-	-	-	-	-	-	-	
-		-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			No	ote: on	ly two s	amples f	or tensile	and one	sample f	or bend t	test			
							Bend T	'est						
#3	Bar Ben	d Test	Through	180° is	s Satisfa	ctory								

I/C Testing Laboratoires UET Lahore, Pakistan.

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

To, Junior Research Officer-I Building Research Station Lahore (Mughal Steel)

Reference # CED/TFL **33248** (Dr. Qasim Khan)

Reference of the request letter # 154-R/1087

Dated: 16-05-2019

Dated: 30-04-2019

Tension Test Report (Page -1/1)

Date of Test 17-05-2019 Gauge length 8 inches

Description Deformed Steel Bar Tensile and Bend Test

Sr. No.	Weight		neter/ ze		rea n²)	Yield load	Breaking Load		Stress si)		te Stress si)	Elongation	% Elongation	Remarks
S	(1J/sqI)	Nominal (#)	Actual (inch)	Nominal	Actual	(kg)	(kg)	Nominal	Actual	Nominal	Actual	(inch)	3 %	R
1	0.360	3	0.367	0.11	0.106	3800	4700	76200	79070	94200	97800	1.10	13.8	
2	0.359	3	0.367	0.11	0.106	3700	4700	74200	77240	94200	98200	1.00	12.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			No	ote: on	ly two s	amples f	or tensile	and one	sample f	or bend	test	1		
#3	Bar Ben	d Test '		180° i	Satisfa	etory	Bend T	est						
#3	Dai Dell	u rest	i inougi	1 100 1	Sausta	icioi y								

I/C Testing Laboratoires UET Lahore, Pakistan.

- 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



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

To, Junior Research Officer-I Building Research Station Lahore (Mughal Steel)

Reference # CED/TFL **33249**, **250** (Dr. Qasim Khan)

Reference of the request letter # 154-R/1089

Dated: 16-05-2019

Dated: 30-04-2019

Tension Test Report (Page -1/1)

Date of Test 17-05-2019 Gauge length 8 inches

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

Sr. No.	Weight		neter/ ze		rea n²)	Yield load	Breaking Load		Stress si)		e Stress si)	Elongation	% Elongation	Grade
Si	(lbs/ft)	Nominal (#)	Actual (inch)	Nominal	Actual	(kg)	(kg)	Nominal	Actual	Nominal	Actual	(inch)	3 %	
1	0.368	3	0.371	0.11	0.108	2600	4200	52100	52930	84200	85500	1.60	20.0	40
2	0.364	3	0.369	0.11	0.107	2600	4200	52100	53540	84200	86500	1.30	16.3	4
3	0.370	3	0.372	0.11	0.109	3500	4700	70200	70930	94200	95300	0.90	11.3	99
4	0.373	3	0.374	0.11	0.110	3600	4800	72200	72310	96200	96500	0.90	11.3	9
5	4.393	10	1.282	1.27	1.291	42800	53400	74300	73060	92700	91200	1.80	22.5	09
6	4.334	10	1.274	1.27	1.274	43200	53800	75000	74740	93400	93100	1.60	20.0	9
		T	No	te: only	y six sar	nples for	tensile a	nd three	samples	for bend	test	I	Ī	
							<i>p</i>							
щ2	Dor Don	d Task T	Thansa ah	1000:	. Catiafa		Bend T	est						

#3 Bar Bend Test Through 180° is Satisfactory

#3 Bar Bend Test Through 180° is Satisfactory

#10 Bar Bend Test Through 180° is Satisfactory

I/C Testing Laboratoires UET Lahore, Pakistan.

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- 3- Sealed sample / Unsealed sample / Marked sample/Signed Samples



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

To,

Assistant Engineer/SDO (Civil)

University of Okara

(1. Vertical Extension 2nd Floor on Academic Block, 2. Vertical Extension 1st Floor on Student Service Center, 3. Vertical Extension 1ST Floor on Student Hostel Bui; Iding at University of Okara)

Reference # CED/TFL 33253 (Dr. Qasim Khan)

Reference of the request letter # 299

253 (Dr. Qasim Khan) Dated: 16-05-2019 Dated: 14-05-2019

Tension Test Report (Page -1/1)

Date of Test 17-05-2019 Gauge length 8 inches

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

Sr. No.	Weight		neter/ ze		rea n²)	Yield load	Breaking Load		Stress si)		e Stress si)	Elongation	% Elongation	Remarks
S	(lbs/ft)	Nominal (#)	Actual (inch)	Nominal	Actual	(kg)	(kg)	Nominal	Actual	Nominal	Actual	(inch)	E %	Ŗ
1	0.378	3	0.376	0.11	0.111	3600	4900	72200	71330	98200	97100	0.90	11.3	
2	0.366	3	0.370	0.11	0.108	3200	4500	64200	65550	90200	92200	1.00	12.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-		
-	-	-	-	-	-	-	-	-	-	-	-	-		
			N	ote: on	ly two s	amples f	or tensile	and one	sample f	or bend t	test			
							Bend T	est						
#3	Bar Ben	d Test	Through	180° is	s Satisfa	ctory								

I/C Testing Laboratoires UET Lahore, Pakistan.

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

To,
General Manager (Projects)
A.S Enterprises
(Style Textile Mills)(AA Associates)(Afco)

Reference # CED/TFL **33254** (Dr. Qasim Khan)

Reference of the request letter # USD/ASE/04

Dated: 16-05-2019

Dated: 16-05-2019

Tension Test Report (Page -1/1)

Date of Test 17-05-2019 Gauge length 8 inches

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

Sr. No.	Weight	Si	neter/ ze m)		rea 1 ²)	Yield load	Breaking Load		Stress si)		e Stress si)	Elongation	% Elongation	Remarks
S	(lbs/ft)	Nominal	Actual	Nominal	Actual	(kg)	(kg)	Nominal	Actual	Nominal	Actual	(inch)	% E	Re
1	0.405	10	9.89	0.11	0.119	3700	4900	74200	68470	98200	90700	1.10	13.8	
2	0.385	10	9.65	0.11	0.113	3400	4500	68200	66150	90200	87600	1.20	15.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		Note: only two samples for tensile and one sample for bend test												
							Bend T	est est						
10r	nm Dia	Bar Bei	nd Test	Throug	h 180° i	s Satisfac								

I/C Testing Laboratoires UET Lahore, Pakistan.

- 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
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