



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/06/33353, 354

Dated: 12-06-19

To

Resident Engineer
EA Consulting (Pvt) Ltd
Sukkur - Multan Motorway Project
Sec-III (CSCEC)
(New Pipe Casting Industry Lahore)

Subject: **TESTING OF GRATING (Drainage), (AASHTO-M-306)**
(Page – 1/2)

Reference to your letter No. CRE/EA/M.P-III/428-2019, dated 11.06.2019 on the subject cited above. One Grating (drainage) as received by us has been tested. The results are tabulated as under.

Sr. No.	Sample	Failure Load
1	Grating (drainage)	8300 kg

I/C Testing Laboratories
UET Lahore, Pakistan.

Note:

- 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



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
EA Consulting (Pvt) Ltd
Sukkur – Multan Motorway Project
Sec-III (CSCEC)
(New Pipe Casting Industry Lahore)

Reference # CED/TFL **33353, 354** (Dr. M Rizwan Riaz)
Reference of the request letter # CRE/EA/M.P-III/428-2019

Dated: 12-06-2019

Dated: 11-06-2019

Tension Test Report (Page – 2/2)

Date of Test 03-07-2019
Gauge length 25 mm
Description Grating Steel Specimen Tensile Test

Sr. No.	Diameter / size	Area	Yield load	Breaking Load	Yield Stress	Ultimate Stress	Elongation	% Elongation	Marks
	(mm)	(mm ²)	(kg)	(kg)	(MPa)	(MPa)	(mm)		
1	15.00	176.715	-----	3000	-----	166.54	2	8.00	
Only One Sample for Tensile Test									

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

- 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



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

To,
 Chief Resident Engineer
 Osmani & Company (Pvt) Ltd
 Swat Motorway Project

Reference # CED/TFL **33440** (Dr. Waseem Abbas)
 Reference of the request letter # 301/CRE/QAT/SMP/2019

Dated: 26-06-2019
 Dated: 21-05-2019

Tension Test Report (Page -1/1)

Date of Test 03-07-2019
 Gauge length 2 inches
 Description J-Bolt Tensile Test as per ASTM- F1554

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	6.239	32	31.81	-----	794.7	27800	47400	343	585	0.50	25.0	
-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	
Note: only one sample for tensile test												
Bend Test												

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

- 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



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)(Jamal Pipe Industries)

Reference # CED/TFL **33448** (Dr. M Rizwan Riaz) Dated: 27-06-2019
 Reference of the request letter # CPEC/NESPAK/CS/RE/PKG3/19/1018 Dated: 26-06-2019

Tension Test Report (Page – 1/1)

Date of Test 03-07-2019
 Gauge length 2 inches
 Description Spacer Block Strip Tensile Test

Sr. No.	Designation	Size of Strip	X Section Area	Yield load	Breaking Load	Yield Stress	Ultimate Stress	Elongation	% Elongation	Remarks
1	Spacer Block	2.39x0.61	1.46	5500	7400	3772.55	5075.79	0.60	30.00	
2		2.39x0.61	1.46	5200	7600	3566.77	5212.98	0.60	30.00	
-	.	-	-	-	-	-	-	-	-	
-	.	-	-	-	-	-	-	-	-	
-	.	-	-	-	-	-	-	-	-	
-	.	-	-	-	-	-	-	-	-	
Only Two Samples for Tensile Test										
Bend Test										

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

- 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



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)(Jamal Pipe Industries)

Reference # CED/TFL **33449** (Dr. M Rizwan Riaz) Dated: 27-06-2019
 Reference of the request letter # CPEC/NESPAK/CS/RE/PKG3/19/1005 Dated: 23-06-2019

Tension Test Report (Page – 1/1)

Date of Test 03-07-2019
 Gauge length 2 inches
 Description Steel Vertical Post & W-Beam Metal Guard Rail Strip Tensile and Bend 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
1	Steel Vertical Post	2.39x0.62	1.48	5200	7500	3509.25	5061.41	0.70	35.00	
2		2.39x0.62	1.48	5700	7400	3846.67	4993.93	0.70	35.00	
3	W-Beam	2.79x0.30	0.84	3500	4300	4181.60	5137.40	0.50	25.00	
4		2.79x0.30	0.84	3300	4300	3942.65	5137.40	0.50	25.00	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
Only Four Samples for Tensile and Two Samples for Bend Test										
Bend Test										
Strip Taken from W-Beam Bend Test Through 180° is Satisfactory										
Strip Taken from W-Beam Bend Test Through 180° is Satisfactory										

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

- 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



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)(Lahore Fabrication)

Reference # CED/TFL **33450** (Dr. M Rizwan Riaz) Dated: 27-06-2019
 Reference of the request letter # CPEC/NESPAK/CS/RE/PKG3/19/1019 Dated: 26-06-2019

Tension Test Report (Page – 1/1)

Date of Test 03-07-2019
 Gauge length 2 inches
 Description W-Beam of Metal Guard Rail Strip Tensile and Bend 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
1	W-Beam	2.72x0.28	0.76	2800	3800	3676.47	4989.50	0.60	30.00	
2		2.72x0.28	0.76	2700	3800	3545.17	4989.50	0.60	30.00	
-	.	-	-	-	-	-	-	-	-	
-	.	-	-	-	-	-	-	-	-	
-	.	-	-	-	-	-	-	-	-	
-	.	-	-	-	-	-	-	-	-	
Only Two Samples for Tensile and Two Samples for Bend Test										
Bend Test										
Strip Taken from W-Beam Bend Test Through 180° is Satisfactory										
Strip Taken from W-Beam Bend Test Through 180° is Satisfactory										

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

- 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



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)(Spleen Manu. Pvt Ltd)(SRCC)

Reference # CED/TFL **33451** (Dr. M Rizwan Riaz) Dated: 27-06-2019
 Reference of the request letter # CPEC/NESPAK/CS/RE/PKG3/19/1017 Dated: 26-06-2019

Tension Test Report (Page – 1/1)

Date of Test 03-07-2019
 Gauge length 2 inches
 Description Steel Spacer Block, Steel Vertical Post & W-Beam Metal Guard Rail Strip
 Tensile and Bend 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
1	Steel Spacer Block	2.80x0.51	1.43	4800	6800	3361.34	4761.90	0.60	30.00	
2		2.80x0.51	1.43	4700	6900	3291.32	4831.93	0.70	35.00	
3	Steel Vertical Post	2.81x0.60	1.69	5400	7700	3202.85	4567.02	0.80	40.00	
4		2.79x0.60	1.69	5100	7700	3024.91	4567.02	0.80	40.00	
5	W-Beam Guard Rail	2.79x0.28	0.78	2600	3100	3328.21	3968.25	0.50	25.00	
6		2.01x0.28	0.78	2400	2900	3072.20	3712.24	0.60	30.00	

Only Six Samples for Tensile and Two Samples for Bend Test

Bend Test

Strip Taken from W-Beam Guardrail Bend Test Through 180° is Satisfactory

Strip Taken from W-Beam Guardrail Bend Test Through 180° is Satisfactory

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

- 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



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)(Jamal Group of Industries)(FABCO)

Reference # CED/TFL **33452** (Dr. M Rizwan Riaz) Dated: 27-06-2019
 Reference of the request letter # CPEC/NESPAK/CS/RE/PKG3/19/1016 Dated: 26-06-2019

Tension Test Report (Page – 1/1)

Date of Test 03-07-2019
 Gauge length 2 inches
 Description W-Beam of Metal Guard Rail Strip Tensile and Bend 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
1	W-Beam	2.79x0.28	0.78	2300	3000	2944.19	3840.25	0.70	35.00	
2		2.79x0.28	0.78	2300	3100	2944.19	3968.25	0.50	25.00	
-	.	-	-	-	-	-	-	-	-	
-	.	-	-	-	-	-	-	-	-	
-	.	-	-	-	-	-	-	-	-	
-	.	-	-	-	-	-	-	-	-	
Only Two Samples for Tensile and Two Samples for Bend Test										
Bend Test										
Strip Taken from W-Beam Bend Test Through 180° is Satisfactory										
Strip Taken from W-Beam Bend Test Through 180° is Satisfactory										

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

- 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



STRUCTURAL ENGINEERING DIVISION
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. 2,
 Gujrat
 (Construction of Police Station Doulat Nagar District Gujrat)

Reference # CED/TFL **33470** (Dr. Waseem Abbas)
 Reference of the request letter # 3777/G

Dated: 02-07-2019
 Dated: 27-06-2019

Tension Test Report (Page -1/1)

Date of Test 03-07-2019
 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	Remarks
		Nominal	Actual	Nominal	Actual			Nominal	Actual	Nominal	Actual			
1	0.377	3/8	0.375	0.11	0.111	3500	4800	70200	69690	96200	95600	1.10	13.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only one sample for tensile and one sample for bend test														
Bend Test														
3/8" Dia Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

- 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



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

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

Reference # CED/TFL **33472** (Dr. Waseem Abbas)
 Reference of the request letter # USD/ASE/10

Dated: 02-07-2019
 Dated: 02-07-2019

Tension Test Report (Page -1/1)

Date of Test 03-07-2019
 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	0.419	10	10.06	0.12	0.123	3000	4500	55115	53710	82673	80600	1.60	20.0	
2	0.423	10	10.10	0.12	0.124	3400	4700	62464	60330	86347	83400	1.70	21.3	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
10mm Dia Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

- 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



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

To
 Material Engineer
 Zeeruk International (Pvt) Ltd Sec. II & III
 Lahore Sialkot Motorway

Reference # CED/TFL **33473** (Dr. Waseem Abbas)
 Reference of the request letter # LSM/RE-II/St/8719/335

Dated: 02-07-2019
 Dated: 02-07-2019

Tension Test Report (Page -1/1)

Date of Test 03-07-2019
 Gauge length -----
 Description Plain Steel Wire Tensile and Bend Test as per ASTM-A82

Sr. No.	Weight (lbs/ft)	Diameter/ size		Area (in ²)		Yield load (kg)	Breaking Load (kg)	Yield Stress (psi)		Ultimate Stress (psi)		Reduced Area (in ²)	% Reduction of Area	Remarks
		Nominal (mm)	Actual (inch)	Nominal	Actual			Nominal	Actual	Nominal	Actual			
1	0.245	6	7.70	-----	0.072	2000	2800	-----	61120	-----	85600	0.026	63.53	
2	0.247	6	7.72	-----	0.073	2100	2900	-----	63760	-----	88100	0.022	69.10	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
6mm Dia Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratories
UET Lahore, Pakistan.

Note:

- 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



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

To,
 Chief Resident Engineer, Package-1
 NESPAK
 Construction/ Improvement & Rehabilitation of at Grade Works along Lahore Orange Line
 Metro Train Corridor Package-1 (Section-III) Cutt & Cover Area

Reference # CED/TFL **33475** (Dr. Waseem Abbas)
 Reference of the request letter # 4042/13/FAM/steel-021

Dated: 02-07-2019
 Dated: 01-07-2019

Tension Test Report (Page -1/1)

Date of Test 03-07-2019
 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	0.365	3	0.370	0.11	0.107	3100	4900	62200	63640	98200	100600	1.10	13.8	Ittefaq Steel
2	0.372	3	0.373	0.11	0.109	3100	5000	62200	62570	100200	101000	1.10	13.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

- 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



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

To,
 Project Manager - Civil
 Kohinoor Textile Mills (Pvt) Ltd
 Construction of Admin Block, Al-Aleem Medical College, Gulab Devi Chest Hospital Lahore

Reference # CED/TFL **33476** (Dr. Waseem Abbas)
 Reference of the request letter # Nil

Dated: 02-07-2019
 Dated: 02-07-2019

Tension Test Report (Page -1/1)

Date of Test 03-07-2019
 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	0.367	3	0.371	0.11	0.108	3600	5000	72200	73500	100200	102100	1.20	15.0	
2	0.361	3	0.367	0.11	0.106	3500	4900	70200	72750	98200	101900	1.00	12.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

- 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



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/07/33477

Dated: 02-07-19

To
Resident Engineer
NESPAK

Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/07/33477)** (Page – 1/2)

Reference to your Letter No. SA-335/RW/QAK/05/150, Dated: 30/06/2019 on the subject cited above. One Hydraulic Jack No. KEY-251 as received by us has been calibrated. The results are tabulated as under:

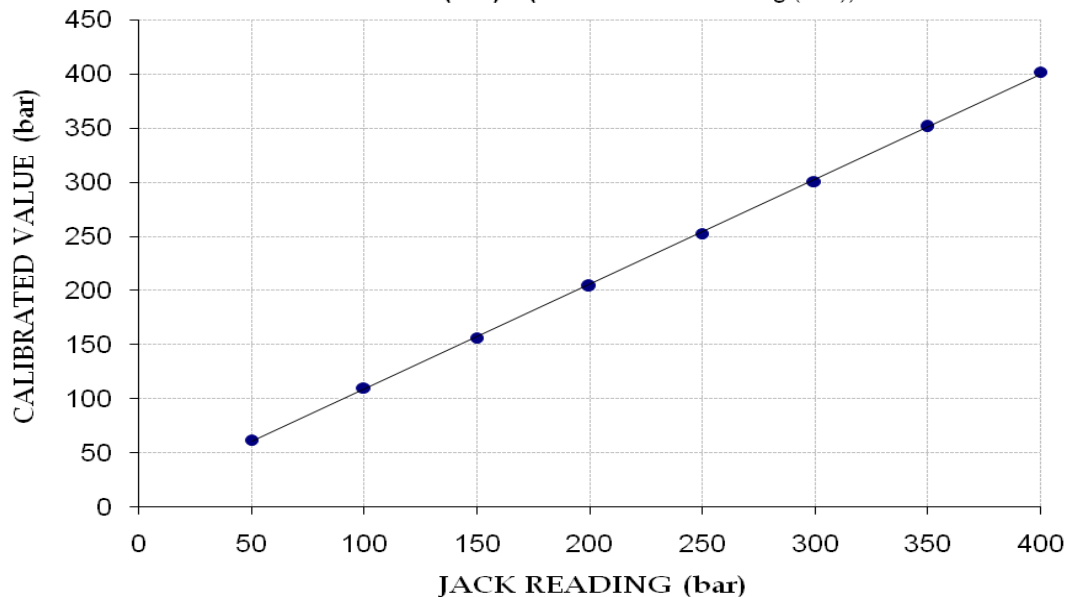
Total Range : Zero - 700 (bar)
Calibrated Range : Zero - 400 (bar)

Hydraulic Jack Reading (bar)	50	100	150	200	250	300	350	400
Calibrated Load (k g)	29100	51800	73400	95800	118800	141400	165100	188800
Calibrated Pressure (bar)	61.88	110.14	156.07	203.70	252.61	300.66	351.05	401.45

The Ram Area of Jack = 461.22 cm²

Calibration Curve For Jack No. KEY-251

Calibrated Value (bar) = (0.967 x Jack Reading (bar)) + 11.96



I/C Testing Laboratories
UET Lahore, Pakistan.

Note:

- 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



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

To,
 Chief Resident Engineer, Package-1
 NESPAK
 Construction/ Improvement & Rehabilitation of at Grade Works along Lahore Orange Line
 Metro Train Corridor Package-1 (Section-I) Pakistan Mint to Shalimar Chowk (Left Side)

Reference # CED/TFL **33481** (Dr. Waseem Abbas)
 Reference of the request letter # 4042/13/FAM/steel-027

Dated: 02-07-2019
 Dated: 02-07-2019

Tension Test Report (Page -1/1)

Date of Test 03-07-2019
 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	0.374	3	0.374	0.11	0.110	3500	5100	70200	70150	102200	102300	1.30	16.3	City Steel
2	0.375	3	0.375	0.11	0.110	3300	5000	66200	65990	100200	100000	1.30	16.3	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

- 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



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

To,
 Chief Resident Engineer, Package-1
 NESPAK
 Construction/ Improvement & Rehabilitation of at Grade Works along Lahore Orange Line
 Metro Train Corridor Package-1 (Section-III) from Daroghawala Chowk to Pakistan Mint (Right Side)
 Reference # CED/TFL **33484** (Dr. Waseem Abbas) Dated: 02-07-2019
 Reference of the request letter # 4042/13/FAM/steel-031 Dated: 02-07-2019

Tension Test Report (Page -1/1)

Date of Test 03-07-2019
 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	0.381	3	0.378	0.11	0.112	2800	4300	56200	55110	86200	84700	1.60	20.0	Afco Steel
2	0.379	3	0.377	0.11	0.111	2900	4300	58200	57380	86200	85100	1.60	20.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

- 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



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

I/C Testing Laboratories
UET Lahore, Pakistan.

Note:

- 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