



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

To,
 Resident Head (Civil)
 Jaggran-II Hydropower Consultants
 JHC- 48 MW Jaggran-II Hydropower Project
 (Pak Steel)

Reference # CED/TFL **34943** (Dr. M Rizwan Riaz)

Dated: 04-06-2020

Reference of the request letter # E314-L-JHC-RE-EPCC-OC-252

Dated: 02-06-2020

Tension Test Report (Page -1/1)

Date of Test 12-06-2020

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	4.139	32	31.61	1.25	1.217	36600	54000	64551	66300	95239	97900	1.50	18.8	
2	4.133	32	31.59	1.25	1.215	36600	54000	64551	66400	95239	98000	1.70	21.3	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
32mm 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
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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/06/34957
2020

Dated: 08-06-

Dated of Test: 12-06-2020

To
Resident Engineer - I
NESPAK
Construction Underpass at Firdous Market, Lahore

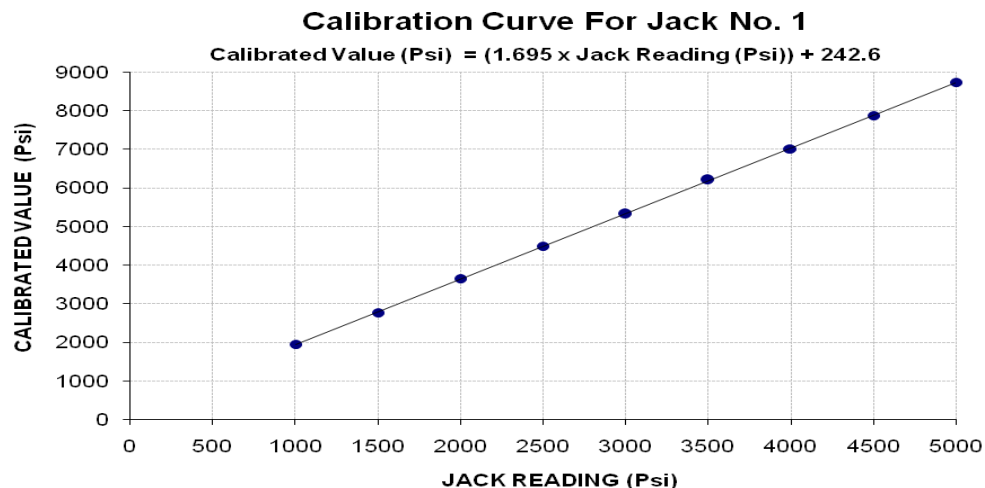
Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/06/34957) (Page # 1/2)

Reference to your Letter No. 3772/FMU/103/MWA/04/10, dated: 05/06/2020 on the subject cited above. One Hydraulic (Jack No. 1) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 15000 (Psi)
Calibrated Range : Zero - 5000 (Psi)

Hydraulic Jack Reading (Psi)	1000	1500	2000	2500	3000	3500	4000	4500	5000
Calibrated Load (kg)	19800	28200	37200	45800	54200	63200	71400	80200	89000
Calibrated Pressure (Psi)	1942.18	2766.13	3648.94	4492.51	5316.46	6199.27	7003.60	7866.79	8729.98

The Ram Area of Jack = 145 cm² (Witness by Muhammad Saleem (Material Specialist NESPAK))



I/C Testing Laboratories
UET Lahore, Pakistan.

Note:

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Ref: CED/TFL/06/34957
2020

Dated: 08-06-

Dated of Test: 12-06-2020

To
Resident Engineer - I
NESPAK
Construction Underpass at Firdous Market, Lahore

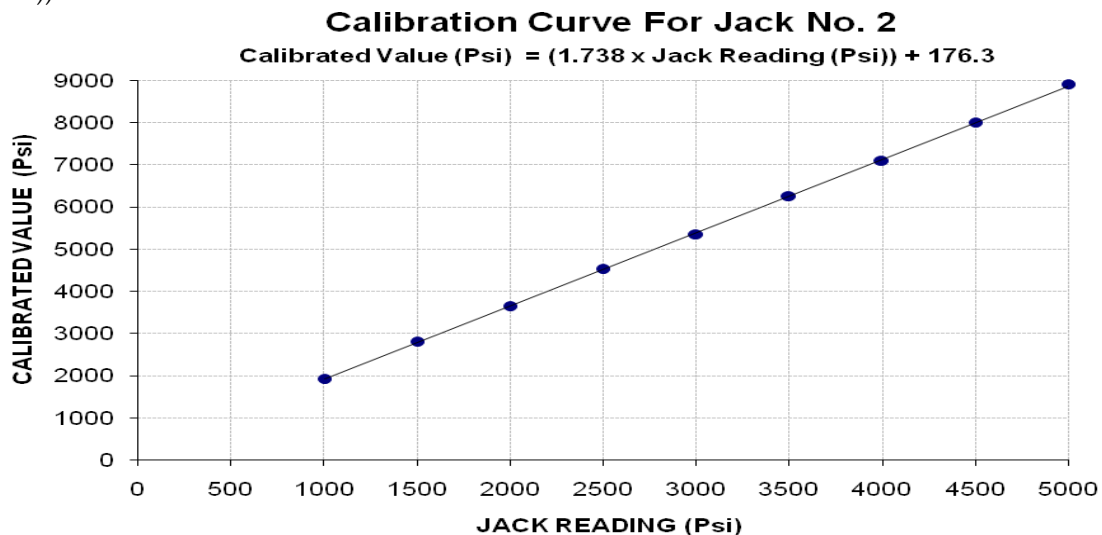
Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/06/34957) (Page # 2/2)**

Reference to your Letter No. 3772/FMU/103/MWA/04/10, dated: 05/06/2020 on the subject cited above. One Hydraulic (Jack No. 2) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 15000 (Psi)
Calibrated Range : Zero - 5000 (Psi)

Hydraulic Jack Reading (Psi)	1000	1500	2000	2500	3000	3500	4000	4500	5000
Calibrated Load (kg)	19600	28600	37200	46200	54600	63800	72400	81600	90800
Calibrated Pressure (Psi)	1922.56	2805.36	3648.94	4531.74	5355.70	6258.12	7101.69	8004.12	8906.54

The Ram Area of Jack = 145 cm² (Witness by Muhammad Saleem (Material Specialist NESPAK))



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,
 Add: DY: Manager Civil
 South LESCO Ltd.
 Saidpur Lahore

Reference # CED/TFL **34958** (Dr. M Rizwan Riaz)
 Reference of the request letter # 786-90/Camp Office

Dated: 08-06-2020
 Dated: 08-06-2020

Tension Test Report (Page -1/2)

Date of Test 12-06-2020
 Gauge length 8 inches
 Description Spiral Wire 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	0.146	5	4.87	-----	18.6	710	1040	374	547	0.30	3.8	
-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	
Note: only one sample for tensile test												
Bend Test												

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

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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,
Add: DY: Manager Civil
South LESCO Ltd.
Saidpur Lahore

Reference # CED/TFL **34958** (Dr. M Rizwan Riaz)
Reference of the request letter # 786-90/Camp Office

Dated: 08-06-2020
Dated: 08-06-2020

Tension Test Report (Page -2/2)

Date of Test 12-06-2020
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)		% Elongation	Remarks / Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)		
1	9.53 (3/8")	432.0	430.0	10000	98.10	10900	106.93	>3.50	xx
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
Only one sample for 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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To,
 Resident Engineer
 Metroplan-Asian Jv
 Resident Construction Supervision for Establishment of 200 Bedded Mother & Child Hospital
 and Nursing College, District Mianwali

Reference # CED/TFL **34959** (Dr. M Rizwan Riaz) Dated: 09-06-2020
 Reference of the request letter # Metroplan Asian Jv-Nexus-MMCH-RE-223 Dated: 06-06-2020

Tension Test Report (Page -1/2)

Date of Test 12-06-2020
 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	0.373	3	0.373	0.11	0.110	3260	4790	65400	65610	96000	96400	1.30	16.3	SJ Steel
2	0.383	3	0.378	0.11	0.112	3330	4910	66800	65280	98400	96300	1.20	15.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	

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
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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,
 Resident Engineer
 Metroplan-Asian Jv
 Resident Construction Supervision for Establishment of 200 Bedded Mother & Child Hospital
 and Nursing College, District Mianwali

Reference # CED/TFL **34959** (Dr. M Rizwan Riaz) Dated: 09-06-2020
 Reference of the request letter # Metroplan Asian Jv-Nexus-MMCH-RE-212 Dated: 02-06-2020

Tension Test Report (Page -2/2)

Date of Test 12-06-2020
 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	4.134	10	1.244	1.27	1.215	38600	52800	67000	70020	91700	95800	1.50	18.8	SJ Steel
2	4.127	10	1.243	1.27	1.213	38600	53000	67000	70140	92000	96300	1.60	20.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
#10 Bar Bend Test Through 180° 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,
 Sub Divisional Officer
 Building Sub Division
 Okara
 (Const: of Additional Class Rooms Under DFID (UK) Project in Punjab (One at GGPS Chak # 22/4-L Tehsil & District Okara)
 Reference # CED/TFL **34961** (Dr. M Rizwan Riaz) Dated: 09-06-2020
 Reference of the request letter # 725/SDO/OK Dated: 28-04-2020

Tension Test Report (Page -1/1)

Date of Test 12-06-2020
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile 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	0.388	3/8	0.381	0.11	0.114	3490	5170	70000	67400	103600	99900	1.00	12.5	
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.	
.	
.	
Note: only one sample 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
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
 Director
 Abdullah Ibrahim Construction
 Construction of Hussain Bibi Memorial Cardiac & General Hospital, Gujranwala

Reference # CED/TFL **34964** (Dr. M Rizwan Riaz)
 Reference of the request letter # AIC/2020/GW/20

Dated: 09-06-2020
 Dated: 09-06-2020

Tension Test Report (Page -1/1)

Date of Test 12-06-2020
 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	0.397	3	0.385	0.11	0.117	4280	5150	85800	80890	103200	97400	0.90	11.3	
2	0.373	3	0.374	0.11	0.110	4080	4790	81800	82000	96000	96300	0.90	11.3	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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:

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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,
 Sub Divisional Officer
 Highway Sub Division, Taunsa
 (Rehabilitation of Metalled Road from Zain to Barthi Including Pile Foundation Bridge over
 Nallah Sanghar Length = 16.00 km (Grop-III)(Bridge Portion)

Reference # CED/TFL **34967** (Dr. M Rizwan Riaz)
 Reference of the request letter # 3351

Dated: 11-06-2020
 Dated: 16-05-2020

Tension Test Report (Page -1/1)

Date of Test 12-06-2020

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	4.317	10	1.271	1.27	1.269	36800	53600	63900	63920	93100	93100	1.70	21.3	
2	4.252	10	1.262	1.27	1.250	35200	52600	61100	62070	91300	92800	1.70	21.3	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
#10 Bar Bend Test Through 180° 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,
 Sub Divisional Officer
 Highway Sub Division, Taunsa
 (Rehabilitation of Metalled Road from Zain to Barthi Including Pile Foundation Bridge over
 Nallah Sanghar Length = 16.00 km (Grop-III)(Bridge Portion)

Reference # CED/TFL **34968** (Dr. M Rizwan Riaz)
 Reference of the request letter # 3352

Dated: 11-06-2020
 Dated: 16-05-2020

Tension Test Report (Page -1/1)

Date of Test 12-06-2020

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	0.420	3	0.396	0.11	0.123	3770	5660	75600	67310	113500	101100	1.10	13.8	
2	0.430	3	0.401	0.11	0.126	3920	5830	78600	68430	116900	101800	1.30	16.3	
3	5.277	11	1.405	1.56	1.551	49600	68200	70100	70480	96400	97000	1.60	20.0	
4	5.384	11	1.419	1.56	1.582	50400	68600	71300	70200	97000	95600	1.60	20.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only four samples for tensile and two samples for bend test														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														
#11 Bar Bend Test Through 180° 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 Model Steel Enterprises (Pvt) Limited
Darogawala, Lahore

Reference # CED/TFL **34970** (Dr. M Rizwan Riaz)
Reference of the request letter # Nil

Dated: 11-06-2020
Dated: 11-06-2020

Tension Test Report (Page -1/1)

Date of Test 12-06-2020
Gauge length 8 inches
Description Deformed Steel Bar Tensile 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	0.376	3/8	0.375	0.11	0.110	3410	4560	68400	68080	91400	91100	0.80	10.0	
2	0.375	3/8	0.375	0.11	0.110	3180	4350	63800	63610	87200	87100	0.90	11.3	
3	0.373	3/8	0.374	0.11	0.110	3410	4940	68400	68580	99000	99400	1.00	12.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only three samples for tensile test														
Bend Test														

I/C Testing Laboratories
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 Defence Housing Authority.
Lahore Cantt
(Proposed Commercial Plaza, DRGCC Ph-III, DHA Ph-III - (M/s Construct))

Reference # CED/TFL **34971** (Dr. M Rizwan Riaz)
Reference of the request letter # 408/241/E/Lab/917/5181

Dated: 11-06-2020
Dated: 11-06-2020

Tension Test Report (Page -1/1)

Date of Test 12-06-2020
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	0.372	3	0.373	0.11	0.109	3380	4560	67800	68100	91400	91900	1.20	15.0	Kamran Steel
2	0.370	3	0.372	0.11	0.109	3470	4790	69600	70270	96000	97000	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.

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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 Defence Housing Authority.
Lahore Cantt
(Proposed Commercial Plaza, DRGCC Ph-III, DHA Ph-III - (M/s Construct))

Reference # CED/TFL **34972** (Dr. M Rizwan Riaz)
Reference of the request letter # 408/241/E/Lab/918/5194

Dated: 11-06-2020
Dated: 11-06-2020

Tension Test Report (Page -1/1)

Date of Test 12-06-2020
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	0.368	3	0.371	0.11	0.108	3470	4760	69600	70690	95400	97000	1.20	15.0	Kamran Steel
2	0.365	3	0.370	0.11	0.107	3470	4790	69600	71230	96000	98400	1.20	15.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

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UET Lahore, Pakistan.

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Tension Test Report (Page -1/1)

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		Nominal (#)	Actual (inch)	Nominal	Actual			Nominal	Actual	Nominal	Actual			
1	0.368	3	0.371	0.11	0.108	3470	4760	69600	70690	95400	97000	1.20	15.0	Kamran Steel
2	0.365	3	0.370	0.11	0.107	3470	4790	69600	71230	96000	98400	1.20	15.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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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,
 Resident Engineer
 Orbit Housing
 Spring Apartments, Canal Road, Lahore

Reference # CED/TFL **34977** (Dr. M Rizwan Riaz)
 Reference of the request letter # Nil

Dated: 12-06-2020
 Dated: 12-06-2020

Tension Test Report (Page -1/1)

Date of Test 12-06-2020
 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	0.382	3	0.378	0.11	0.112	3180	4690	63800	62500	94000	92200	1.40	17.5	
2	0.396	3	0.385	0.11	0.116	3260	4790	65400	61680	96000	90700	1.50	18.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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