



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/08/3714

Dated: 08-08-2023

Dated: 15-08-2022

To

Manager Director
XPERT CCPL

Subject: STEEL PULL OUT TEST (Page – 1/1)

Reference to your letter No. MD/23/015, dated 08.08.2023 on the subject cited above. Two concrete cylinder with Steel Rebar grouted with XPERT XRE – 400 as received by us has been tested. The results are tabulated as under.

Sr. No.	Steel Size (#)	Ultimate Load (kg)	Failure Mode
1	5	10300	Steel rebar rupture
2	6	12500	Concrete / Epoxy failure

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
 Associated Consulting Engineers ACE Limited
 Construction of (GOR) in South Punjab Multan Secretariat.

Reference # CED/TFL **3715** (Dr. Safer Abbass)
 Reference of the request letter # ACE/RE/GOR/2023/444

Dated: 09-08-2023
 Dated: 07-08-2023

Tension Test Report (Page -1/1)

Date of Test 15-08-2023
 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	0.375	3	0.374	0.11	0.110	3400	5100	68200	68050	102200	102100	1.20	15.0	SJ Steel
2	0.376	3	0.375	0.11	0.111	3600	5400	72200	71770	108200	107700	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
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Pakistan. Ph: 92-42-99029202

To,

Resident Engineer
 New Vision Engineering Consultants
 Pilot Program for Hub and Spoke Model at Zahir Pir, Rahim Yar Khan

Reference # CED/TFL **3716** (Dr. Safer Abbass)

Dated: 09-08-2023

Reference of the request letter # NVEC/IDAP-ZPP/MF/0072

Dated: 07-08-2023

Tension Test Report (Page -1/1)

Date of Test 15-08-2023

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	0.423	3	0.398	0.11	0.124	4100	6000	82200	72610	120300	106300	1.00	12.5	SJ Steel
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only one sample 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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To,
Material Engineer
Banu Mukhtar Contracting (Pvt) Ltd
Burj – 1 by Ajwa Builders.

Reference # CED/TFL **3718** (Dr. Safer Abbass)
Reference of the request letter # DOC-BMC/AJWA/092

Dated: 09-08-2023
Dated: 09-08-2023

Tension Test Report (Page -1/1)

Date of Test 15-08-2023
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	0.378	3	0.376	0.11	0.111	3700	5000	74200	73360	100200	99200	1.30	16.3	
2	0.371	3	0.373	0.11	0.109	3600	4900	72200	72720	98200	99000	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:

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To,
Muddasir Ali
Lahore

Reference # CED/TFL **3722** (Dr. Safer Abbass)
Reference of the request letter # Nil

Dated: 10-08-2023
Dated: 10-08-2023

Tension Test Report (Page -1/1)

Date of Test 15-08-2023
Gauge length 8 inches
Description Deformed Steel Bar Tensile and Bend 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	0.372	3	0.373	0.11	0.109	3400	4700	68200	68520	94200	94800	1.30	16.3	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only one sample for tensile and one sample for bend test														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratories
UET Lahore, Pakistan.

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To,

A/XEN E&M
 GE (Air) Rafoqui
 “Rehabilitation of RCC Pen B-13, B-14, B-18 & B-20in Bravo Area at PAF Base Rafiqui.”
 “Rehabilitation of Pens / Operating Surfaces in Bravo Area”
 “Rehabilitation of Air Craft Pen in Charlie Area (Site-II) at PAF Base Rafiqui.”

Reference # CED/TFL **3725** (Dr. Safer Abbass)

Dated: 10-08-2023

Reference of the request letter # 6685/26/E-6

Dated: 07-08-2023

Tension Test Report (Page -1/2)

Date of Test 15-08-2023

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	0.369	3/8	0.372	0.11	0.109	3400	4500	68200	69020	90200	91400	1.10	13.8	
2	0.379	3/8	0.377	0.11	0.112	3900	4900	78200	77070	98200	96900	1.30	16.3	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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:

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

To,

A/XEN E&M
 GE (Air) Rafoqui
 "Rehabilitation of Air Craft Pen in Bravo Area (Site-I) at PAF Base Rafiqui."

Reference # CED/TFL **3725** (Dr. Safer Abbass)
 Reference of the request letter # 6578/47/E-6

Dated: 10-08-2023
 Dated: 07-08-2023

Tension Test Report (Page -2/2)

Date of Test 15-08-2023
 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	0.375	3/8	0.375	0.11	0.110	3200	4700	64200	63980	94200	94000	1.20	15.0	
2	0.376	3/8	0.375	0.11	0.111	3400	5200	68200	67810	104200	103700	1.20	15.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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.

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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 United Wire Industries (Pvt) Ltd
Lahore

Reference # CED/TFL **3726** (Dr. Rizwan Azam)
Reference of the request letter # UWIL/D-1859

Dated: 10-08-2023

Dated: 10-08-2023

Tension Test Report (Page – 1/1)

Date of Test 15-08-2023

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	12.70 (1/2")	775.0	785.0	18100	177.56	19600	192.28	>3.50	4033
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
Only one sample for Test									

I/C Testing Laboratoires
UET Lahore, Pakistan.

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Test Floor Laboratory
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To,
 Senior Manager Projects - Civil
 Vision Packaging
 Volka Food International Limited

Reference # CED/TFL 3727 (Dr. Safer Abbass)
 Reference of the request letter # VFI/Civil/21

Dated: 10-08-2023
 Dated: 26-07-2023

Tension Test Report (Page -1/1)

Date of Test 15-08-2023
 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	0.394	3/8	0.384	0.11	0.116	3500	4700	70200	66680	94200	89600	1.30	16.3	
2	0.382	3/8	0.378	0.11	0.112	3300	4600	66200	64710	92200	90200	1.40	17.5	
3	4.281	1.25	1.266	1.27	1.258	41000	56400	71200	71810	97900	98800	1.50	18.8	
4	4.264	1.25	1.263	1.27	1.253	40000	55600	69500	70340	96500	97800	1.50	18.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only four samples for tensile and two samples for bend test														
Bend Test														
3/8" Dia Bar Bend Test Through 180° is Satisfactory														
1.25" Dia 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,

Material Engineer
NESPAK – EPCM Consultants
Punjab Intermediate Cities Improvement Investment Program (PICIP)
Consultancy Services for Engineering, Procurement and Construction Management
Trunk Maimn Sewer, Effluent Pumping Station and Allied Works (Lot-4)
Reference # CED/TFL **3728** (Dr. Safer Abbass) Dated: 10-08-2023
Reference of the request letter # 3976/11/MS/SWL/Lot-4/01/118 Dated: 04-08-2023

Tension Test Report (Page -1/1)

Date of Test 15-08-2023
Gauge length 8 inches
Description Deformed Steel Bar Tensile and Bend 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	0.414	3	0.394	0.11	0.122	3700	5300	74200	66940	106200	95900	1.60	20.0	Sheikhoo Steel
2	0.415	3	0.394	0.11	0.122	3700	5300	74200	66890	106200	95900	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:

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STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
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To,

Resident Engineer
Diamer Basha Consultants Group (DBCg)
NESPAK - ACE -MMP - MWH - ROYRY - DOLSAR Jv
Diamer Basha Dam Project
(WMI)

Reference # CED/TFL **3729** (Dr. Rizwan Azam)

Dated: 11-08-2023

Reference of the request letter # DBCg/Lab/PF JV/2023/043

Dated: 07-08-2023

Tension Test Report (Page -1/3)

Date of Test 15-08-2023

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 "E"	% Elongation	Remarks / Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)	GPa		
1	15.24 (0.6")	1102.0	1125.0	24500	240.35	27000	264.87	198	>3.50	WS-S2-2023-01
2	15.24 (0.6")	1102.0	1133.0	25000	245.25	27200	266.83	199	>3.50	WS-S2-2023-01A
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	

Only two 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

I/C Testing Laboratoires
UET Lahore, Pakistan.

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To,

Resident Engineer
Diamer Basha Consultants Group (DBCG)
NESPAK - ACE -MMP - MWH - ROYRY - DOLSAR Jv
Diamer Basha Dam Project

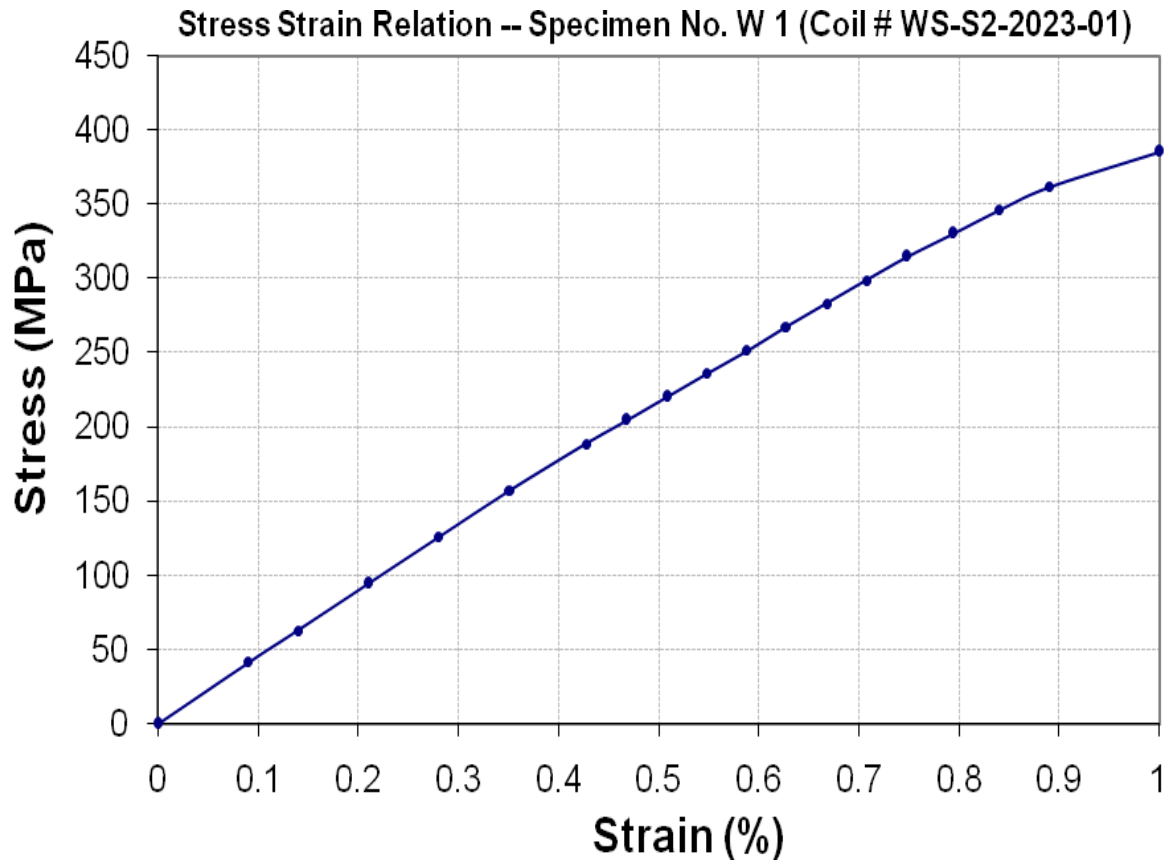
Reference # CED/TFL **3729** (Dr. Rizwan Azam)

Dated: 11-08-2023

Reference of the request letter # DBCG/Lab/PF JV/2023/043

Dated: 07-08-2023

Graph (Page – 2/3)



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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To,

Resident Engineer
Diamer Basha Consultants Group (DBCG)
NESPAK - ACE -MMP - MWH - ROYRY - DOLSAR Jv
Diamer Basha Dam Project

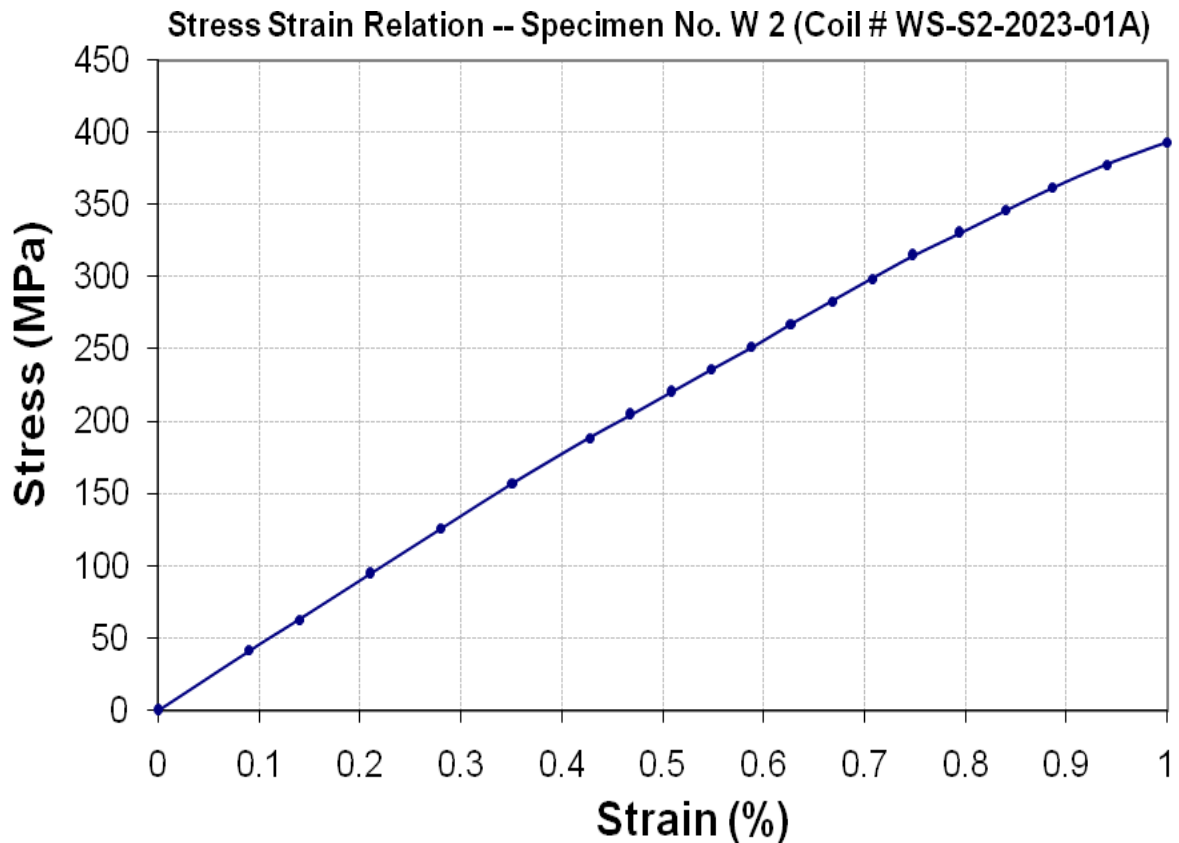
Reference # CED/TFL **3729** (Dr. Rizwan Azam)

Dated: 11-08-2023

Reference of the request letter # DBCG/Lab/PF JV/2023/043

Dated: 07-08-2023

Graph (Page – 3/3)



I/C Testing Laboratories
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/08/3730

Dated: 11-08-2023

Dated: 15-08-2023

To

Resident Engineer
Diamer Basha Consultants Group (DBCg)
NESPAK - ACE -MMP - MWH - ROYRY - DOLSAR JV
Diamer Basha Dam Project.

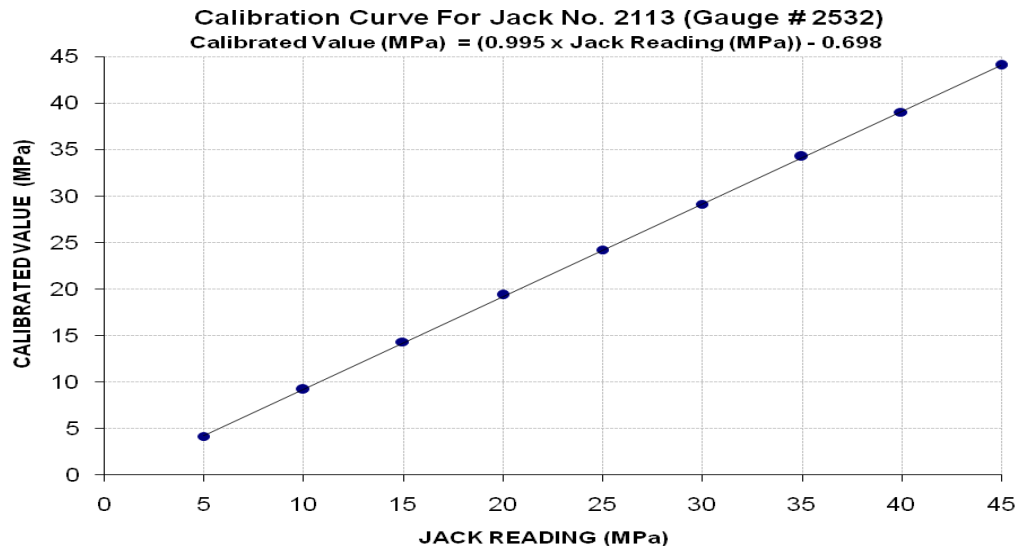
Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/08/33730)** (Page -1/1)

Reference to your Letter No. DBCG/Lab/PF JV/2023/045, dated: 09/08/2023 on the subject cited above. One Hydraulic Jack (Jack No. 2113, Gauge No. 2532) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 60 (MPa)
Calibrated Range : Zero - 45 (MPa)

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45
Calibrated Load (kg)	16000	35400	55000	74400	93200	112000	131600	150000	169400
Calibrated Pressure (Mpa)	4.16	9.21	14.31	19.35	24.24	29.13	34.23	39.02	44.07

The Ram Area of Jack = 377 cm²



I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

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- 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
NESPAK
Construction of Dual Carriageway from GT Road (Benazir Chowk) to Lahore-Sialkot
Motorway (Wando Interchange) L = 15.20 km, District Gujranwala.

Reference # CED/TFL **3736** (Dr. Safer Abbass)

Dated: 11-08-2023

Reference of the request letter # 103/EW/GRW/NT/Lab/11

Dated: 11-08-2023

Tension Test Report (Page -1/1)

Date of Test 15-08-2023

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	4.189	10	1.252	1.27	1.231	40000	52200	69500	71600	90600	93500	1.60	20.0	
2	4.229	10	1.258	1.27	1.243	39600	51800	68800	70210	89900	91900	1.50	18.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
#10 Bar Bend Test Through 180° is Satisfactory														

Witness by Zahid Hassan (NESPAK)

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,
 Asst Dir Infra
 Defence Housing Authority, Gujranwala
 "Sector L"

Reference # CED/TFL **3745** (Dr. Safer Abbass)
 Reference of the request letter # 111/15/AD/RS/Lab/Sec L/397

Dated: 15-08-2023
 Dated: 15-08-2023

Tension Test Report (Page -1/1)

Date of Test 15-08-2023
 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	0.378	3	0.376	0.11	0.111	3360	4690	67400	66690	94000	93100	1.20	15.0	Sheikhoo Steel
2	0.377	3	0.376	0.11	0.111	3420	4710	68600	68020	94400	93700	1.10	13.8	
3	4.236	10	1.259	1.27	1.245	43000	56600	74700	76130	98300	100200	1.30	16.3	
4	4.124	10	1.242	1.27	1.212	39000	54000	67700	70920	93800	98200	1.30	16.3	
5	5.327	11	1.412	1.56	1.566	48200	70000	68100	67860	98900	98600	1.30	16.3	
6	5.357	11	1.416	1.56	1.575	47400	68600	67000	66350	97000	96100	1.40	17.5	
Note: only six samples for tensile and three samples for bend test														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														
#10 Bar Bend Test Through 180° is Satisfactory														
#11 Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

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