



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

Reference # CED/TFL **3723** (Dr. Ali Ahmed)

Dated: 10-08-2023

Reference of the request letter # DBCg/Lab/PF JV/2023/041

Dated: 04-08-2023

Tension Test Report (Page -1/3)

Date of Test 18-08-2023

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	12.70 (1/2")	775.0	790.0	18100	177.56	19600	192.28	198	>3.50	WS-S4-2023-08
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
Only one sample 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

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Note:

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To,

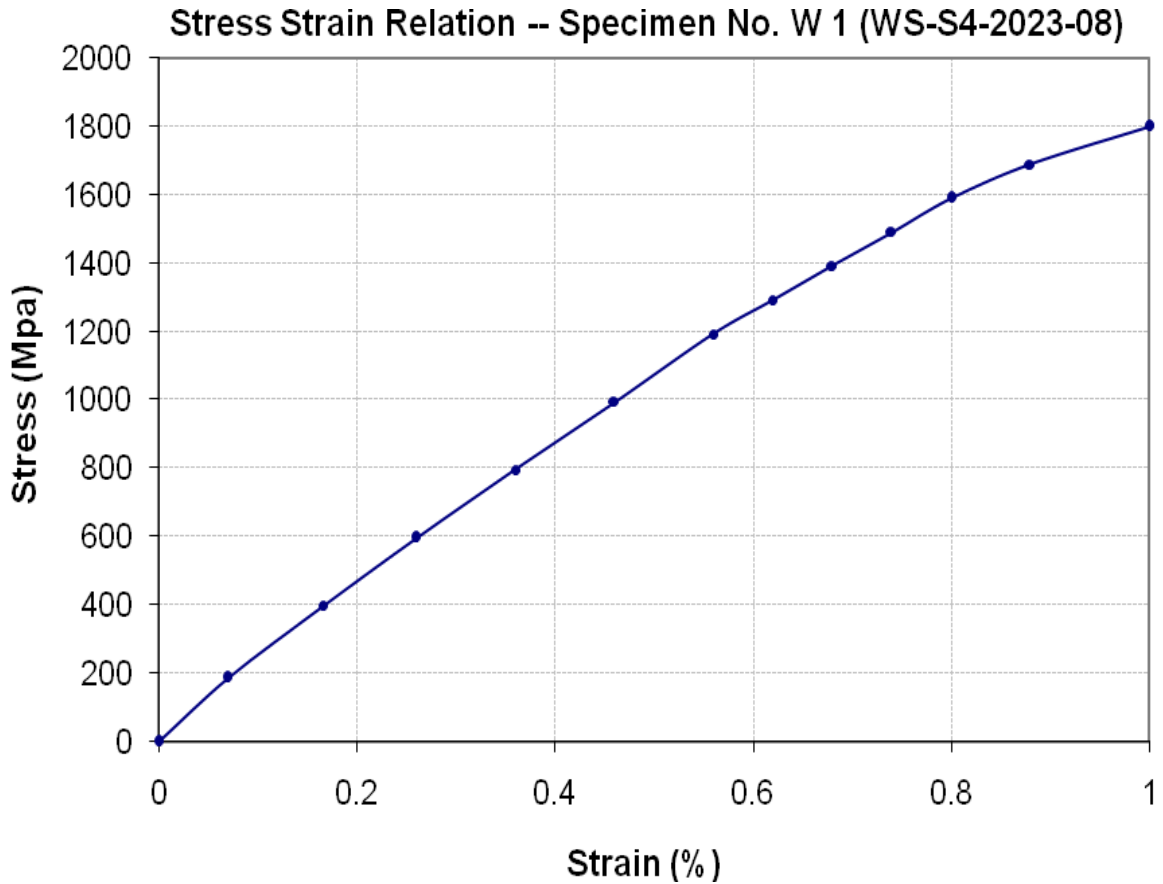
Resident Engineer
Diamer Basha Consultants Group (DBCG)
NESPAK - ACE -MMP - MWH - ROYRY - DOLSAR Jv
Diamer Basha Dam Project

Reference # CED/TFL **3562** (Dr. M Rizwan Riaz)
Reference of the request letter # DBCG/Lab/PF JV/2023/034

Dated: 06-07-2023

Dated: 15-06-2023

Graph (Page – 2/2)



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To,
 Resident Engineer
 NESPAK
 Construction of 8-Lane Overhead Bridge at Imamia Colony Railway Crossing, Shahdara.

Reference # CED/TFL **3724** (Dr. M Rizwan Riaz)
 Reference of the request letter # RE/SA-543/02/MH/42

Dated: 10-08-2023
 Dated: 25-07-2023

Tension Test Report (Page # 1/12)

Date of Test 18-07-2023
 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	4.252	10	1.261	1.27	1.250	42400	58400	73600	74780	101400	103000	1.40	17.5	FF Steel
2	4.254	10	1.262	1.27	1.250	41000	58800	71200	72270	102100	103700	1.50	18.8	
3	4.203	10	1.254	1.27	1.235	39400	60200	68400	70300	104500	107500	1.30	16.3	
4	4.238	10	1.259	1.27	1.246	41000	56000	71200	72550	97200	99100	1.20	15.0	
5	4.400	10	1.283	1.27	1.293	46000	61600	79900	78400	107000	105000	1.30	16.3	
6	4.315	10	1.271	1.27	1.268	47000	57400	81600	81670	99700	99800	1.60	20.0	
Note: only six samples for tensile and three samples for bend test														
Bend Test														
#10 Bar Bend Test Through 180° is Satisfactory														
#10 Bar Bend Test Through 180° is Satisfactory														
#10 Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
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To,

Resident Engineer
 NESPAK

Construction of 8-Lane Overhead Bridge at Imamia Colony Railway Crossing, Shahdara.

Reference # CED/TFL **3724** (Dr. M Rizwan Riaz)

Dated: 10-08-2023

Reference of the request letter # RE/SA-543/02/MH/31

Dated: 25-07-2023

Tension Test Report (Page # 2/12)

Date of Test 18-07-2023

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	4.154	10	1.247	1.27	1.221	41800	54200	72600	75460	94100	97900	1.60	20.0	Mughal Steel
2	4.273	10	1.265	1.27	1.256	40800	57400	70900	71600	99700	100800	1.10	13.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
#10 Bar Bend Test Through 180° is Satisfactory														

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Reference # CED/TFL **3724** (Dr. M Rizwan Riaz)
 Reference of the request letter # RE/SA-543/02/MH/32

Dated: 10-08-2023
 Dated: 27-07-2023

Tension Test Report (Page # 3/12)

Date of Test 18-07-2023
 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	4.187	10	1.252	1.27	1.231	39000	51200	67700	69850	88900	91700	1.80	22.5	Mughal Steel
2	4.137	10	1.244	1.27	1.216	39200	52400	68100	71050	91000	95000	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														

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 Construction of 8-Lane Overhead Bridge at Imamia Colony Railway Crossing, Shahdara.

Reference # CED/TFL **3724** (Dr. M Rizwan Riaz)
 Reference of the request letter # RE/SA-543/02/MH/33

Dated: 10-08-2023
 Dated: 29-07-2023

Tension Test Report (Page # 4/12)

Date of Test 18-07-2023
 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	4.224	10	1.257	1.27	1.242	38600	52200	67000	68530	90600	92700	1.60	20.0	Mughal Steel
2	4.215	10	1.256	1.27	1.239	40000	54200	69500	71170	94100	96500	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														

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To,
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 NESPAK
 Construction of 8-Lane Overhead Bridge at Imamia Colony Railway Crossing, Shahdara.

Reference # CED/TFL **3724** (Dr. M Rizwan Riaz)
 Reference of the request letter # RE/SA-543/02/MH/36

Dated: 10-08-2023
 Dated: 23-07-2023

Tension Test Report (Page # 5/12)

Date of Test 18-07-2023
 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	4.216	10	1.256	1.27	1.239	39400	53800	68400	70070	93400	95700	1.60	20.0	Kamran Steel
2	4.203	10	1.254	1.27	1.235	41400	56800	71900	73860	98600	101400	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														

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Reference # CED/TFL **3724** (Dr. M Rizwan Riaz)
 Reference of the request letter # RE/SA-543/02/MH/37

Dated: 10-08-2023
 Dated: 23-07-2023

Tension Test Report (Page # 6/12)

Date of Test 18-07-2023
 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	4.160	10	1.248	1.27	1.223	42400	59600	73600	76420	103500	107500	1.40	17.5	Kamran Steel
2	4.219	10	1.257	1.27	1.240	40200	56400	69800	71450	97900	100300	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														

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Pakistan. Ph: 92-42-99029202

To,

Resident Engineer
NESPAK

Construction of 8-Lane Overhead Bridge at Imamia Colony Railway Crossing, Shahdara.

Reference # CED/TFL **3724** (Dr. M Rizwan Riaz)
Reference of the request letter # RE/SA-543/02/MH/40

Dated: 10-08-2023
Dated: 21-07-2023

Tension Test Report (Page # 7/12)

Date of Test 18-07-2023

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	4.275	10	1.265	1.27	1.257	40200	56400	69800	70510	97900	99000	1.50	18.8	FF Steel
2	4.338	10	1.274	1.27	1.275	42800	60000	74300	73980	104200	103800	1.40	17.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
#10 Bar Bend Test Through 180° is Satisfactory														

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To,

Resident Engineer
 NESPAK

Construction of 8-Lane Overhead Bridge at Imamia Colony Railway Crossing, Shahdara.

Reference # CED/TFL **3724** (Dr. M Rizwan Riaz)

Dated: 10-08-2023

Reference of the request letter # RE/SA-543/02/MH/31

Dated: 25-07-2023

Tension Test Report (Page # 8/12)

Date of Test 18-07-2023

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	4.153	10	1.247	1.27	1.221	39200	52200	68100	70780	90600	94300	1.50	18.8	Mughal Steel
2	4.180	10	1.251	1.27	1.229	40000	53400	69500	71760	92700	95800	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														

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Construction of 8-Lane Overhead Bridge at Imamia Colony Railway Crossing, Shahdara.

Reference # CED/TFL **3724** (Dr. M Rizwan Riaz)
Reference of the request letter # RE/SA-543/02/MH/25

Dated: 10-08-2023
Dated: 20-07-2023

Tension Test Report (Page # 9/12)

Date of Test 18-07-2023
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	0.368	3	0.371	0.11	0.108	3690	4560	74000	75230	91400	93000	0.90	11.3	Mughal Steel
2	0.366	3	0.370	0.11	0.108	3820	4690	76600	78220	94000	96100	0.80	10.0	
3	4.218	10	1.256	1.27	1.240	42000	56200	72900	74670	97600	100000	1.50	18.8	
4	4.162	10	1.248	1.27	1.223	38600	52800	67000	69550	91700	95200	1.60	20.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only four samples for tensile and twone sample for bend test														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														
#10 Bar Bend Test Through 180° is Satisfactory														

Witness by Farooq Ahmed (Lab Tech. NESPAK)

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Construction of 8-Lane Overhead Bridge at Imamia Colony Railway Crossing, Shahdara.

Reference # CED/TFL **3724** (Dr. M Rizwan Riaz)
Reference of the request letter # RE/SA-543/02/MH/26

Dated: 10-08-2023
Dated: 20-07-2023

Tension Test Report (Page # 10/12)

Date of Test 18-07-2023
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	4.266	10	1.264	1.27	1.254	41200	56000	71500	72420	97200	98500	1.40	17.5	FF Steel	
2	4.242	10	1.260	1.27	1.247	39200	55400	68100	69300	96200	98000	1.40	17.5		
-	-	-	-	-	-	-	-	-	-	-	-	-	-		
-	-	-	-	-	-	-	-	-	-	-	-	-	-		
-	-	-	-	-	-	-	-	-	-	-	-	-	-		
-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Note: only two samples for tensile and one sample for bend test															
Bend Test															
#10 Bar Bend Test Through 180° is Satisfactory															

Witness by Farooq Ahmed (Lab Tech. NESPAK)

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Construction of 8-Lane Overhead Bridge at Imamia Colony Railway Crossing, Shahdara.

Reference # CED/TFL **3724** (Dr. M Rizwan Riaz)
Reference of the request letter # RE/SA-543/02/MH/35

Dated: 10-08-2023
Dated: 21-07-2023

Tension Test Report (Page # 11/12)

Date of Test 18-07-2023

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	4.222	10	1.257	1.27	1.241	40000	57400	69500	71040	99700	102000	1.50	18.8	Kamran Steel
2	4.348	10	1.276	1.27	1.278	43600	58800	75700	75200	102100	101500	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 Farooq Ahmed (Lab Tech. NESPAK)

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

To,
 Resident Engineer
 NESPAK
 Construction of 8-Lane Overhead Bridge at Imamia Colony Railway Crossing, Shahdara.

Reference # CED/TFL **3724** (Dr. M Rizwan Riaz)
 Reference of the request letter # RE/SA-543/02/MH/41

Dated: 10-08-2023
 Dated: 24-07-2023

Tension Test Report (Page # 12/12)

Date of Test 18-07-2023
 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	4.288	10	1.267	1.27	1.261	39800	56600	69100	69590	98300	99000	1.60	20.0	FF Steel
2	4.322	10	1.272	1.27	1.270	42000	58200	72900	72870	101100	101000	1.40	17.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
#10 Bar Bend Test Through 180° is Satisfactory														

Witness by Farooq Ahmed (Lab Tech. 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,

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 **3739** (Dr. Ali Ahmed)

Dated: 15-08-2023

Reference of the request letter # 103/EW/GRW/NT/Lab/16

Dated: 15-08-2023

Tension Test Report (Page -1/6)

Date of Test 18-08-2023

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	12.70 (1/2")	775.0	775.0	18000	176.58	19100	187.37	198	>3.50	1
2	12.70 (1/2")	775.0	777.0	17900	175.60	19300	189.33	199	>3.50	2
3	12.70 (1/2")	775.0	776.0	17700	173.64	19200	188.35	199	>3.50	3
4	12.70 (1/2")	775.0	778.0	18300	179.52	19700	193.26	198	>3.50	4
5	12.70 (1/2")	775.0	775.0	18400	180.50	19400	190.31	199	>3.50	5
-	-	-	-	-	-	-	-	-	-	-

Only five 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.

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,

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.

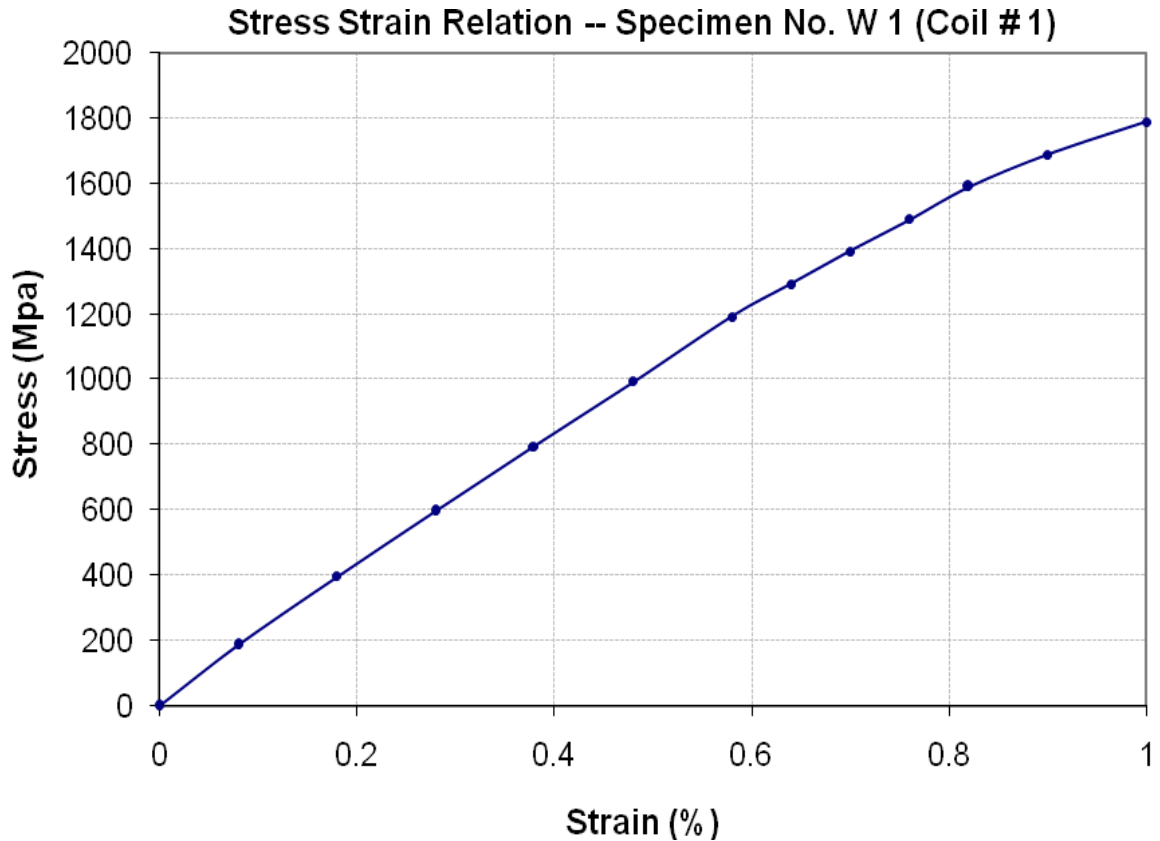
Reference # CED/TFL **3739** (Dr. Ali Ahmed)

Dated: 15-08-2023

Reference of the request letter # 103/EW/GRW/NT/Lab/16

Dated: 15-08-2023

Graph (Page – 2/6)



I/C Testing Laboratoires
UET Lahore, Pakistan.

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To,

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NESPAK

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

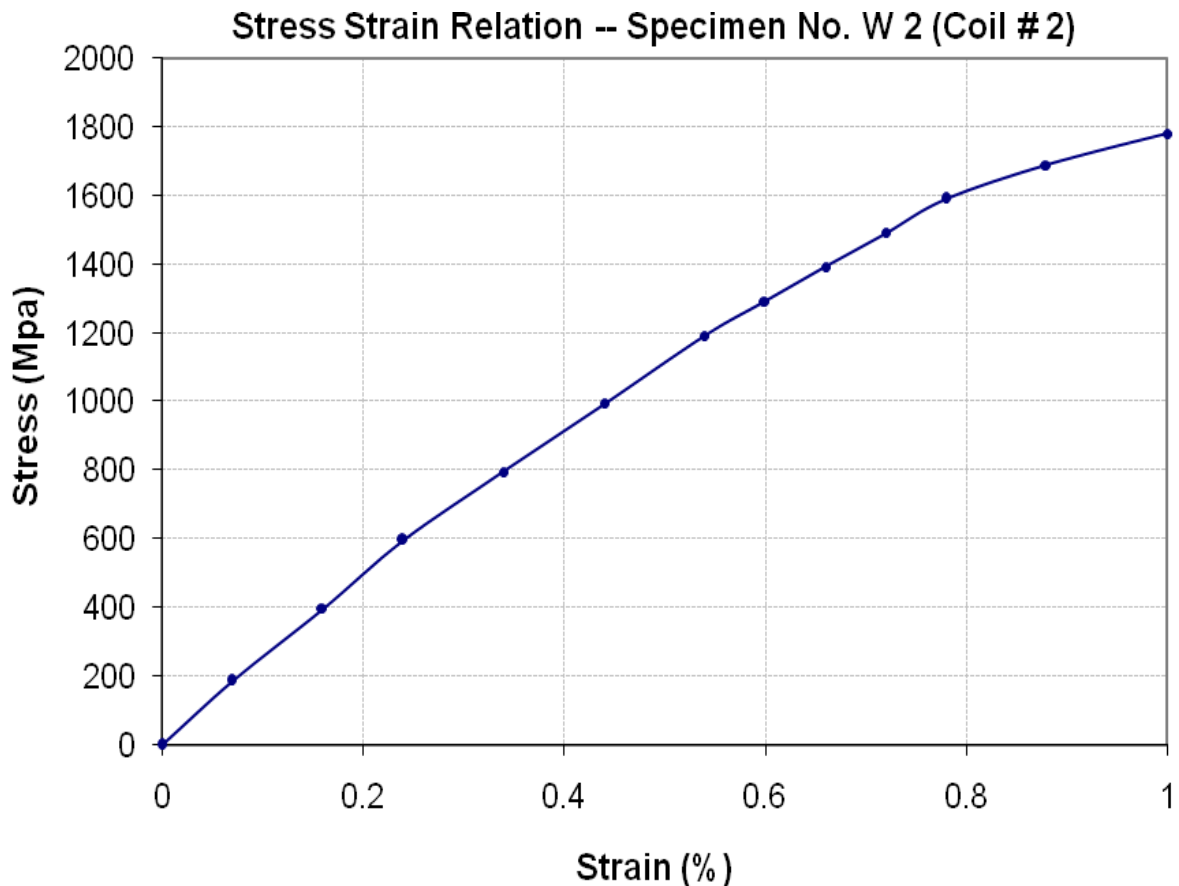
Reference # CED/TFL **3739** (Dr. Ali Ahmed)

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Reference of the request letter # 103/EW/GRW/NT/Lab/16

Dated: 15-08-2023

Graph (Page – 3/6)



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University of Engineering and Technology Lahore, 54890
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Construction of Dual Carriageway from GT Road (Benazir Chowk) to Lahore-Sialkot
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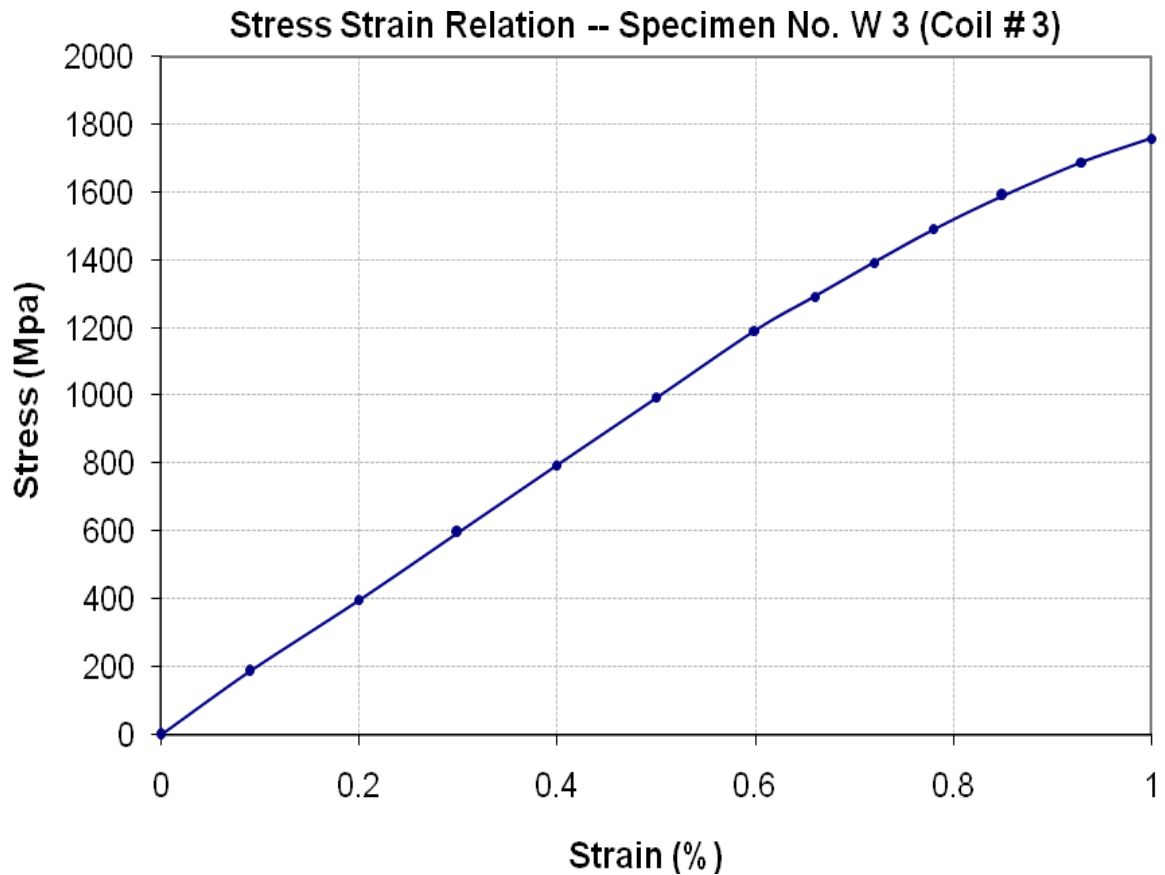
Reference # CED/TFL **3739** (Dr. Ali Ahmed)

Dated: 15-08-2023

Reference of the request letter # 103/EW/GRW/NT/Lab/16

Dated: 15-08-2023

Graph (Page – 4/6)



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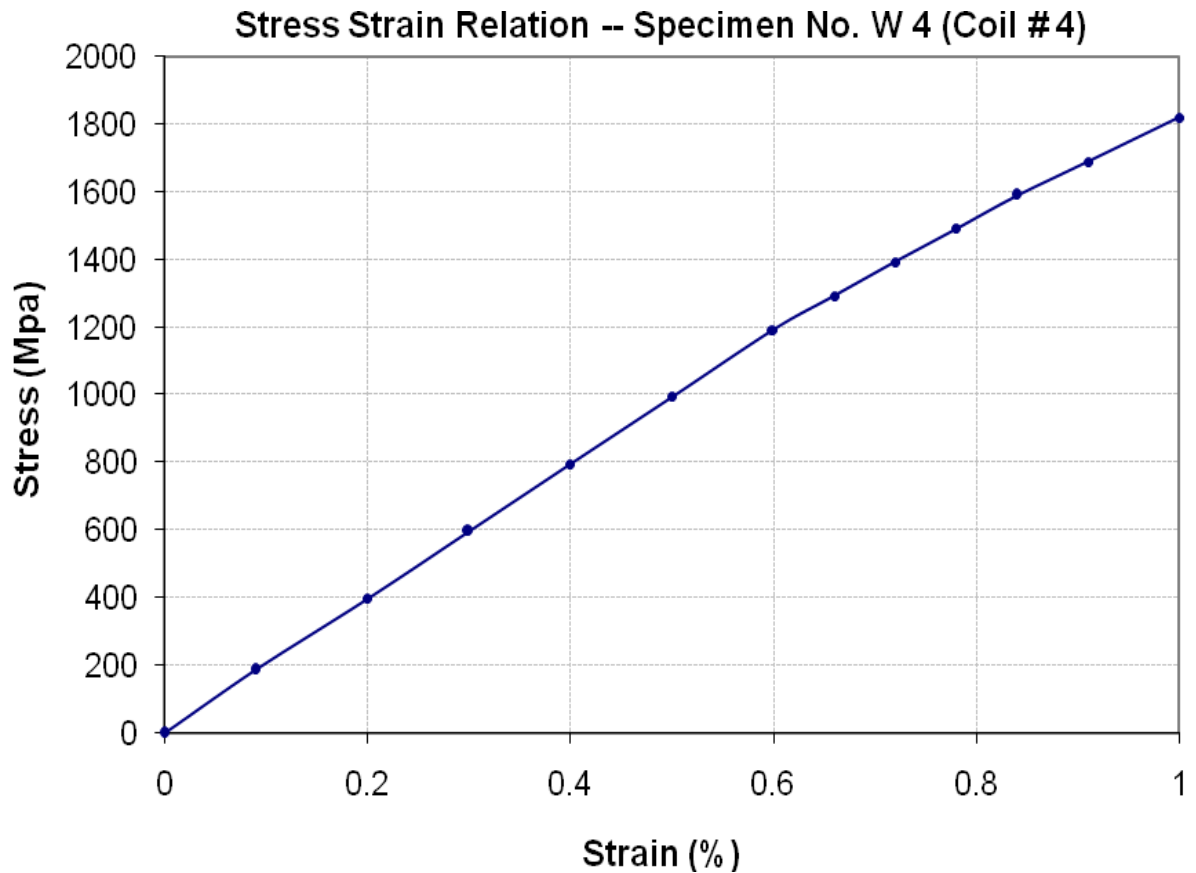
Reference # CED/TFL **3739** (Dr. Ali Ahmed)

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Reference of the request letter # 103/EW/GRW/NT/Lab/16

Dated: 15-08-2023

Graph (Page – 5/6)



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Pakistan. Ph: 92-42-99029202

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

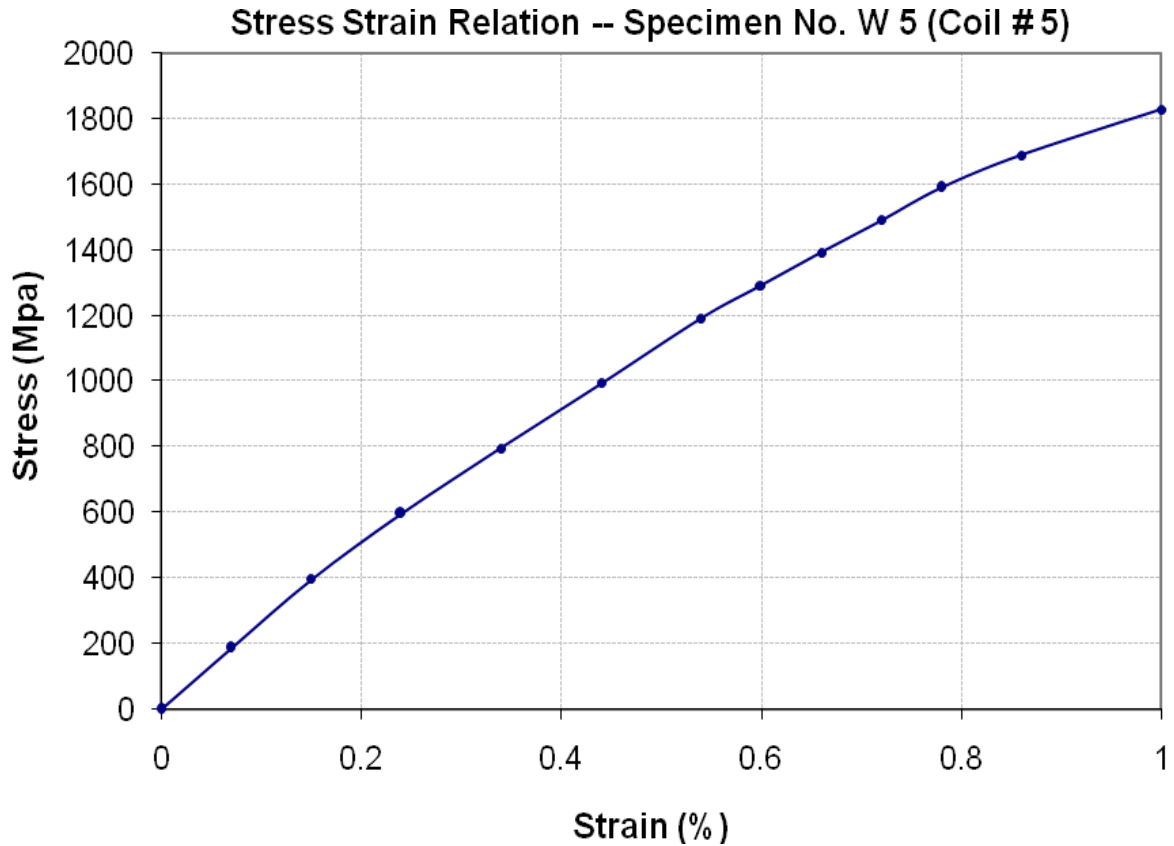
Reference # CED/TFL **3739** (Dr. Ali Ahmed)

Dated: 15-08-2023

Reference of the request letter # 103/EW/GRW/NT/Lab/16

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Graph (Page – 6/6)



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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
M/S ZEERUK – LOYA – MHA JV
Development of Islamabad Expressway PWD Underpass to GT – Road including
Bhander Bridge, Japan Road Underpass & Soan Bridge.
(United Wire Industries).

Reference # CED/TFL **3746** (Dr. M Rizwan Riaz)
Reference of the request letter # ZI/RE/FWO/P-N-5/23/144

Dated: 15-08-2023
Dated: 07-08-2023

Tension Test Report (Page -1/7)

Date of Test 18-08-2023
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	12.70 (1/2")	775.0	779.0	18000	176.58	19800	194.24	198	>3.50	3954
2	12.70 (1/2")	775.0	784.0	17900	175.60	20000	196.20	199	>3.50	3963
3	12.70 (1/2")	775.0	779.0	17900	175.60	19700	193.26	199	>3.50	3972
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

Only three 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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Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,

Resident Engineer
M/S ZEERUK – LOYA – MHA JV
Development of Islamabad Expressway PWD Underpass to GT – Road including
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(United Wire Industries).

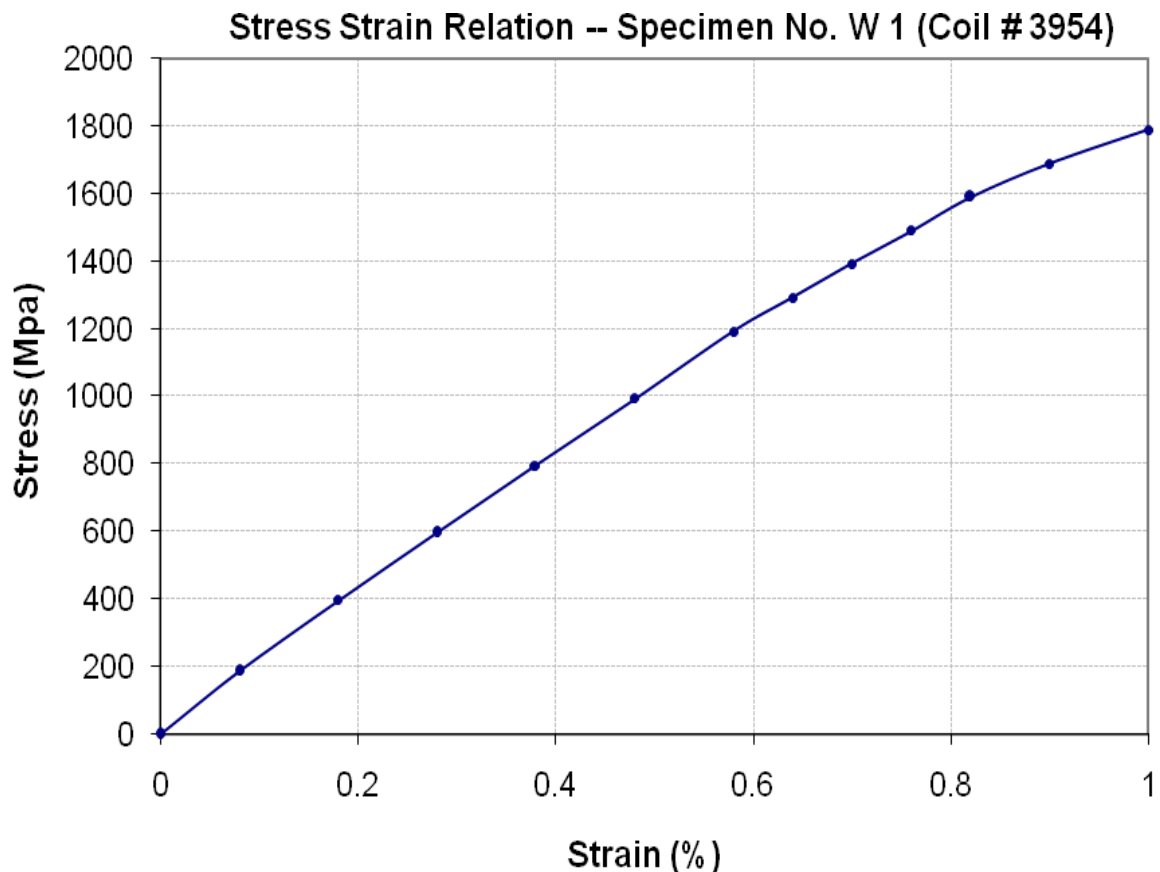
Reference # CED/TFL **3746** (Dr. M Rizwan Riaz)

Dated: 15-08-2023

Reference of the request letter # ZI/RE/FWO/P-N-5/23/144

Dated: 07-08-2023

Graph (Page – 2/7)



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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,

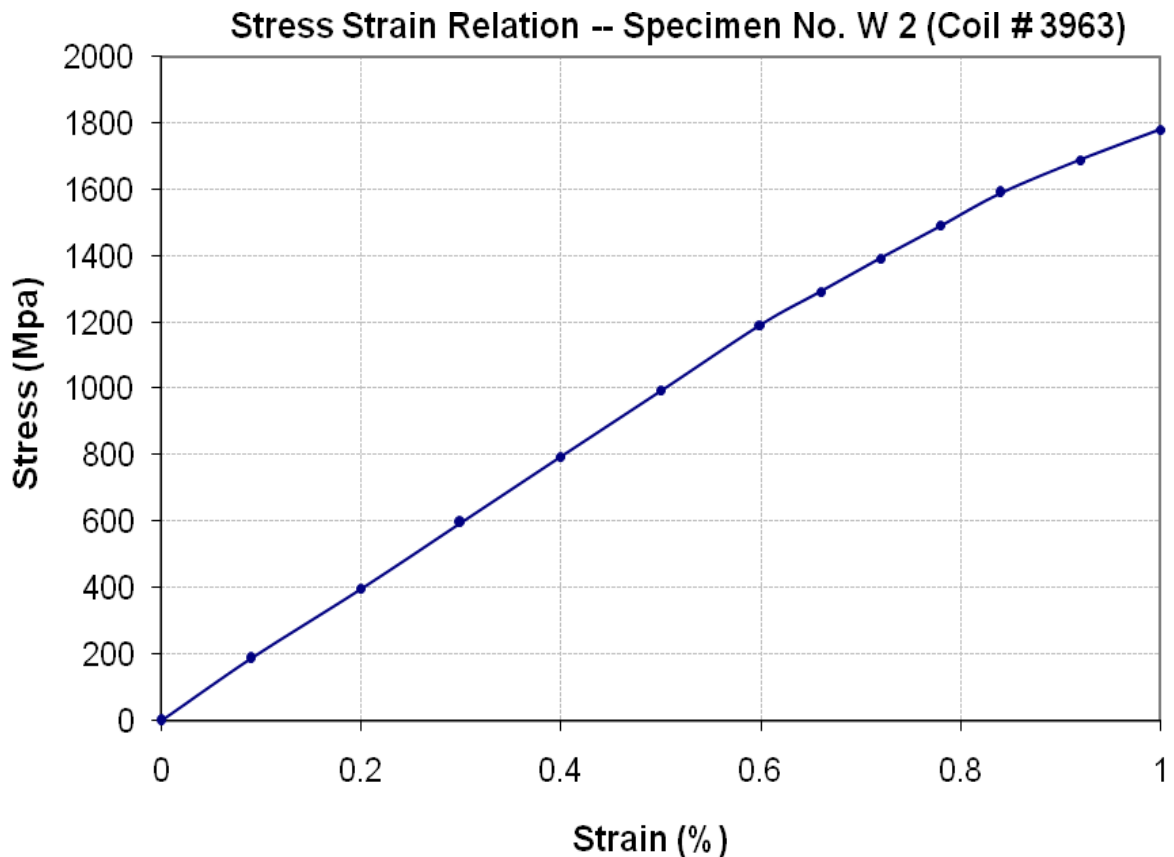
Resident Engineer
M/S ZEERUK – LOYA – MHA JV
Development of Islamabad Expressway PWD Underpass to GT – Road including
Bhander Bridge, Japan Road Underpass & Soan Bridge.
(United Wire Industries).

Reference # CED/TFL **3746** (Dr. M Rizwan Riaz)
Reference of the request letter # ZI/RE/FWO/P-N-5/23/144

Dated: 15-08-2023

Dated: 07-08-2023

Graph (Page – 3/7)



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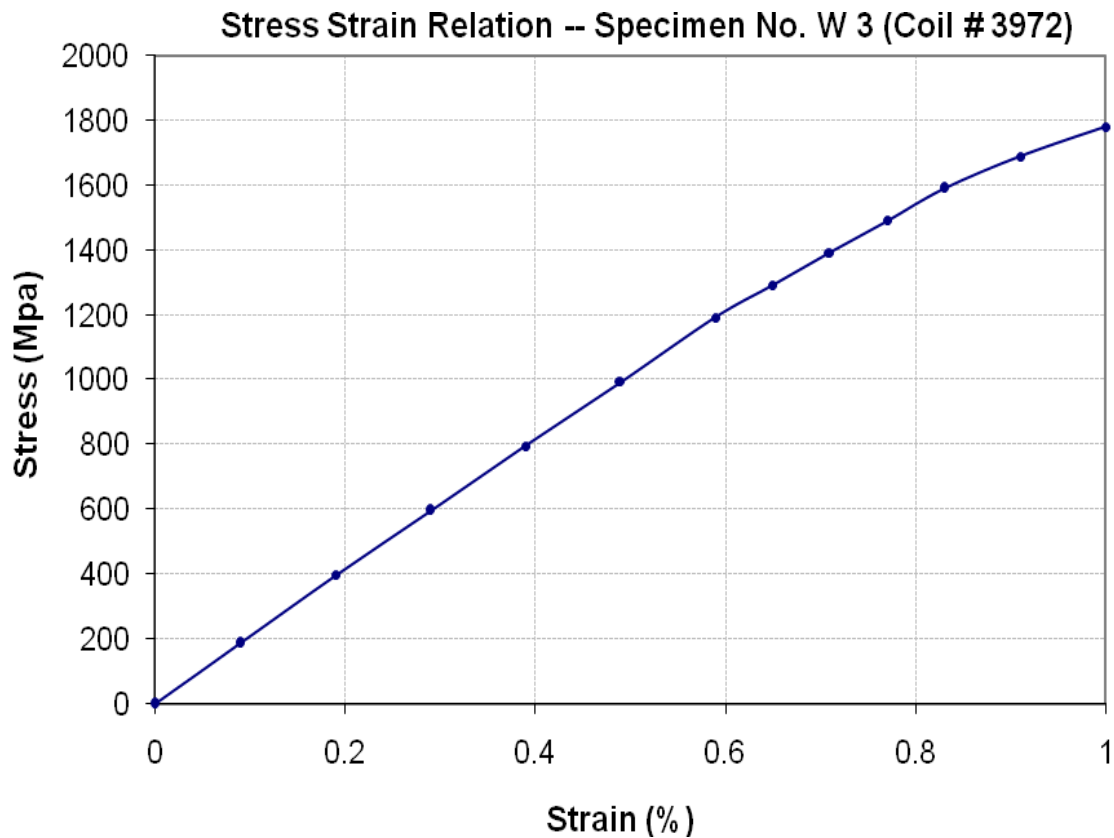
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M/S ZEERUK – LOYA – MHA JV
Development of Islamabad Expressway PWD Underpass to GT – Road including
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(United Wire Industries).

Reference # CED/TFL **3746** (Dr. M Rizwan Riaz)
Reference of the request letter # ZI/RE/FWO/P-N-5/23/144

Dated: 15-08-2023

Dated: 07-08-2023

Graph (Page – 4/7)



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

To,

Resident Engineer
M/S ZEERUK – LOYA – MHA JV
Development of Islamabad Expressway PWD Underpass to GT – Road including
Bhander Bridge, Japan Road Underpass & Soan Bridge.

Reference # CED/TFL **3746** (Dr. Waseem Abbass)
Reference of the request letter # ZI/RE/FWO/P-N-5/23/146

Dated: 15-08-2023
Dated: 11-08-2023

Tension Test Report (Page – 5/7)

Date of Test 28-08-2023
Gauge length 2 inches
Description MS Plate Steel Strip Tensile Test

Sr. No.	Designation	Size of Strip	X Section Area	Yield load	Breaking Load	Yield Stress	Ultimate Stress	Elongation	% Elongation	Remarks
	(mm)	(mm)	(mm ²)	(kN)	(kN)	(MPa)	(MPa)	(in)		
1	MS Plate	26.00x32.80	852.80	190.00	269.00	222.80	315.43	1.40	70.00	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
Only One Sample for Tensile Test										
Bend Test										

I/C Testing Laboratoires
UET Lahore, Pakistan.

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

To,

Resident Engineer
M/S ZEERUK – LOYA – MHA JV
Development of Islamabad Expressway PWD Underpass to GT – Road including
Bhander Bridge, Japan Road Underpass & Soan Bridge.
(United Wire Industries).

Reference # CED/TFL **3746** (Dr. M Rizwan Riaz)

Dated: 15-08-2023

Reference of the request letter # ZI/RE/FWO/P-N-5/23/146

Dated: 11-08-2023

Size Test Report (Page – 6/7)

Date of Test 28-08-2023

Description MS Plate (Trumpet Cone) Size Test

Sr. No.	Designation	Thickness	Remark
		(mm)	
1	MS Plate	32.80	
-	-	-	
-	-	-	
-	-	-	
-	-	-	
-	-	-	
-	-	-	
-	-	-	
Only One Sample for Test			

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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
ZEERUK – LOYA – MIHA Jv
Development of Islamabad Expressway PWD Underpass to GT - Road Including Bhandar
Bridge, Japan Road Underpass & Soan Bridge.

Reference # CED/TFL **3746** (Dr. M Rizwan Riaz)
Reference of the request letter # ZI/RE/FWO/P-N-5/23/147

Dated: 15-08-2023

Dated: 11-08-2023

Size Test Report (Page – 7/7)

Date of Test 25-08-2023

Description Corrugated Sheath Pipe Size Test

Sr. No.	Designation	External Diameter	Wall Thickness	Remark
1	Corrugated Sheath Pipe	67.30	0.30	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
Only One Sample for Test				

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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
 NESPAK
 Construction of Flyover / Underpass at Akbar Chowk Lahore.
 (Revised: Signal Free Corridor)

Reference # CED/TFL **3749** (Dr. M Rizwan Riaz)
 Reference of the request letter # 3772/103/ACF/SA/04/169

Dated: 16-08-2023
 Dated: 09-08-2023

Tension Test Report (Page # 1/1)

Date of Test 18-08-2023
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile 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	0.363	3	0.369	0.11	0.107	3640	5220	73000	75140	104600	107800	1.10	13.8	Batala Premium
2	0.362	3	0.368	0.11	0.106	3440	4890	69000	71320	98000	101400	1.00	12.5	
3	4.143	10	1.245	1.27	1.218	35200	54600	61100	63710	94800	98900	1.40	17.5	
4	4.142	10	1.245	1.27	1.218	35000	54400	60800	63360	94500	98500	1.50	18.8	
5	5.309	11	1.410	1.56	1.560	46000	72000	65000	64970	101800	101700	1.30	16.3	
6	5.320	11	1.411	1.56	1.564	47000	72400	66500	66250	102300	102100	1.30	16.3	
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.

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Ref: CED/TFL/08/3755. 3756

Dated: 16-08-2023

Dated: 18-08-2023

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/08/3755) (Page -1/4)

Reference to your Letter No. DBCG/Lab/PF JV/2023/046, dated: 15/08/2023 on the subject cited above. One Hydraulic Jack (Jack No. 1707052, Gauge No. HT37292229) as received by us has been calibrated. The results are tabulated as under:

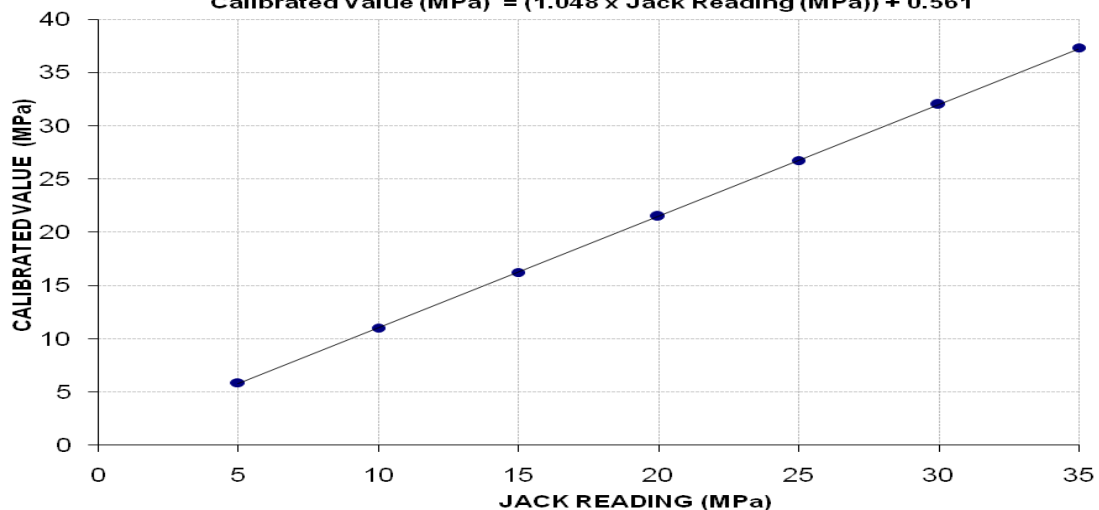
Total Range : Zero - 60 (MPa)
Calibrated Range : Zero - 35 (MPa)

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35
Calibrated Load (kg)	27600	51600	76000	100600	125200	149800	174800
Calibrated Pressure (Mpa)	5.89	11.02	16.23	21.48	26.74	31.99	37.33

The Ram Area of Jack = 459.2 cm²

Calibration Curve For Jack No. 1707052 (Gauge # HT37292229)

Calibrated Value (MPa) = (1.048 x Jack Reading (MPa)) + 0.561



I/C Testing Laboratories
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

Ref: CED/TFL/08/3755. 3756

Dated: 16-08-2023

Dated: 18-08-2023

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/08/3755)** (Page -2/4)

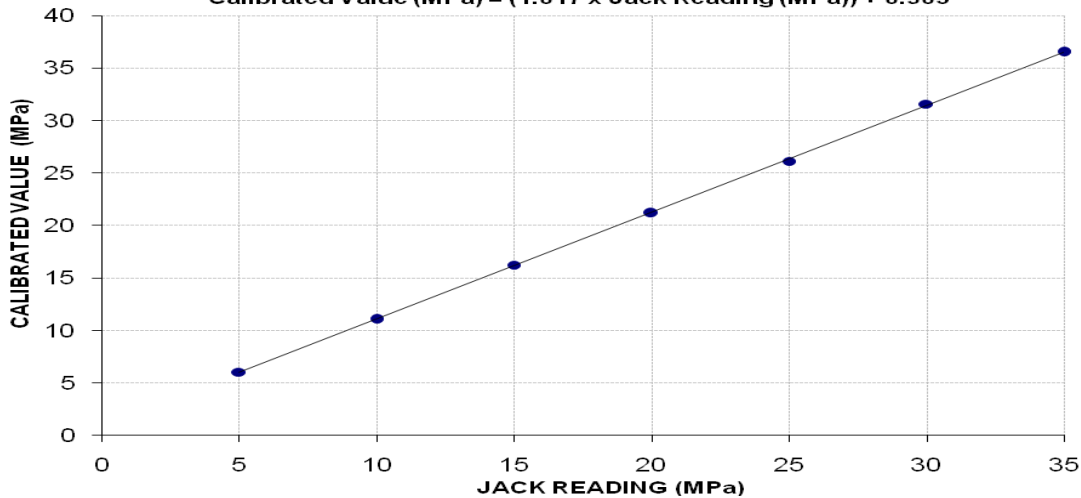
Reference to your Letter No. DBCG/Lab/PF JV/2023/046, dated: 15/08/2023 on the subject cited above. One Hydraulic Jack (Jack No. 1707052, Gauge No. HT37292161) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 60 (MPa)
Calibrated Range : Zero - 35 (MPa)

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35
Calibrated Load (kg)	28200	51800	76000	99200	122400	147800	171000
Calibrated Pressure (Mpa)	6.02	11.06	16.23	21.19	26.14	31.57	36.52

The Ram Area of Jack = 459.2 cm²

Calibration Curve For Jack No. 1707052 (Gauge # HT37292161)
Calibrated Value (MPa) = (1.017 x Jack Reading (MPa)) + 0.903



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Ref: CED/TFL/08/3755. 3756

Dated: 16-08-2023

Dated: 18-08-2023

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/08/3755) (Page -3/4)

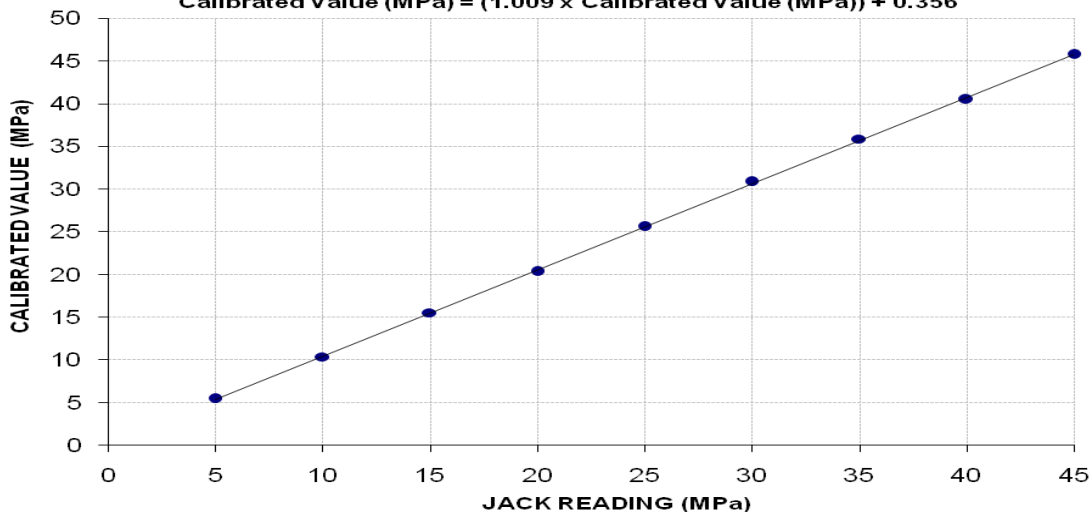
Reference to your Letter No. DBCG/Lab/PF JV/2023/046, dated: 15/08/2023 on the subject cited above. One Hydraulic Jack (Jack No. 1707051, Gauge No. IE0756875) as received by us has been calibrated. The results are tabulated as under:

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)	2650	5050	7550	9900	12450	15000	17450	19700	22250
Calibrated Pressure (Mpa)	5.45	10.38	15.52	20.35	25.60	30.84	35.88	40.50	45.75

The Ram Area of Jack = 47.70 cm²

Calibration Curve For Jack No. 1707051 (Gauge # IE0756875)
Calibrated Value (MPa) = (1.009 × Calibrated Value (MPa)) + 0.356



I/C Testing Laboratories
UET Lahore, Pakistan.

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Ref: CED/TFL/08/3755. 3756

Dated: 16-08-2023

Dated: 18-08-2023

To

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

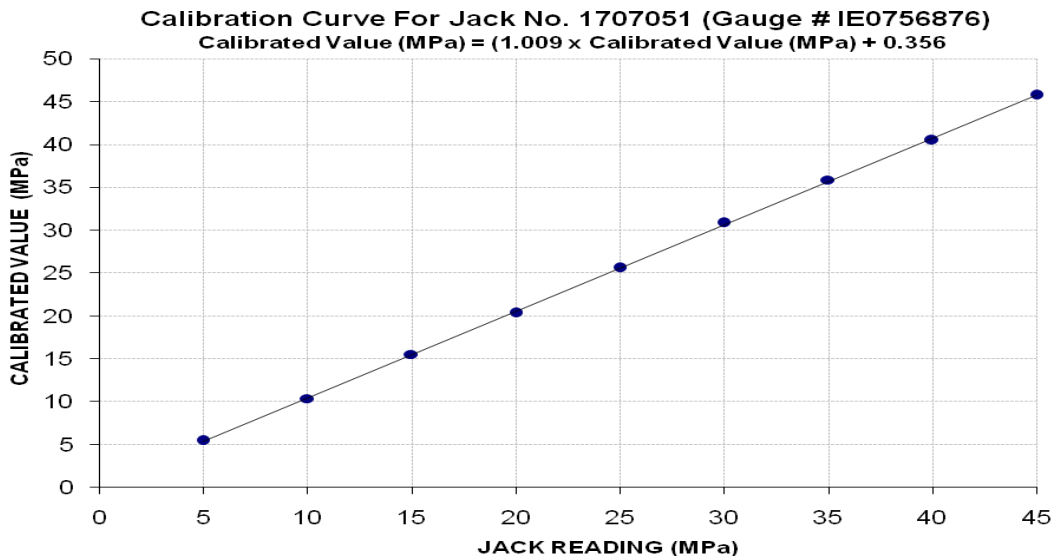
Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/08/3755) (Page -4/4)**

Reference to your Letter No. DBCG/Lab/PF JV/2023/046, dated: 15/08/2023 on the subject cited above. One Hydraulic Jack (Jack No. 1707051, Gauge No. IE0756876) 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)	2050	4450	6850	9550	11700	14350	16900	19350	21650
Calibrated Pressure (Mpa)	4.21	9.15	14.08	19.63	24.05	29.50	34.75	39.78	44.51

The Ram Area of Jack = 47.70 cm²



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,
 Waris Iqbal
 General Manager

Reference # CED/TFL **3758** (Dr. M Rizwan Riaz)
 Reference of the request letter # Nil

Dated: 17-08-2023
 Dated: 16-08-2023

Tension Test Report (Page -1/1)

Date of Test 18-08-2023
 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	0.381	3	0.377	0.11	0.112	3720	4740	74600	73290	95000	93400	0.80	10.0	AF Steel
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only one sample for tensile test														
Bend Test														

I/C Testing Laboratories
UET Lahore, Pakistan.

Note:

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

Ref: CED/TFL/08/3760

Dated: 17-08-2023

Dated of Test: 18-08-2023

To

XEN (E&M)
GE (Army) SVCS Oka
(CA No. CEA-CZ-07/2023 - Provn of Swg Sys for Offrs, BOQs and JCOs.Sldrs
Accn 92 Sig, 98 Sig and HQ 2 ALRG at Oka Cantt.)

Subject: TESTING OF R.C.C. PIPE [ASTM-C76 - 08a]

Reference to your letter No. 6597/15/E-6, dated 16.08.2023 on the subject cited above. One R.C.C. Pipe as received by us has been tested. The results are tabulated as under.

Sr. No	Nominal Size	Total Length	Loaded Length	External Diameter	Internal Diameter	Wall Thickness	Proof load	Ultimate Load	Proof Stress	Ultimate Stress
	(inch)	(foot)	(foot)	(inch)	(inch)	(inch)	(kg)	(kg)	Pound/Linear foot/foot	Pound/Linear foot/foot
1	12	7.71	7.29	16.14	12.20	1.97	9500	11000	2824	3270

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 Al-Tariq Construction (Pvt) Ltd.
 Karachi
 (Parco MCR 4th LPG Sphere Project (945-TK54)
 (M/S Pak Arab Refinery Ltd.)

Reference # CED/TFL **3761** (Dr. M Rizwan Riaz)
 Reference of the request letter # ATL-INS-0012-B

Dated: 18-08-2023
 Dated: 17-08-2023

Tension Test Report (Page -1/1)

Date of Test 18-08-2023
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

Sr. No.	Weight (lbs/ft)	Diameter/ Size (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	0.416	10	10.03	0.12	0.122	3840	5320	70547	69180	97737	95900	1.40	17.5	Sheikho Steel
2	0.416	10	10.02	0.12	0.122	3840	5320	70547	69220	97737	95900	1.60	20.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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.

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Pakistan. Ph: 92-42-99029202

To,

Project Engineer
OZ Developers Pvt Ltd
Construction a High-Rise Building “Bahria Sky” at Bahria Orchard Phase 4 Lahore

Reference # CED/TFL 3762 (Dr. Asad Ali)
Reference of the request letter # Nil

Dated: 18-08-2023
Dated: 18-08-2023

Tension Test Report (Page -1/1)

Date of Test 18-08-2023
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	0.394	3	0.384	0.11	0.116	3470	5020	69600	66010	100600	95500	1.00	12.5	
2	0.388	3	0.381	0.11	0.114	3520	5050	70600	68090	101200	97700	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 Laboratories
UET Lahore, Pakistan.

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