



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
ECC-UET Peshawar
Construction of Jamrud Bypass Road Project Bridge (Package II)

Reference # CED/TFL **2305** (Dr. Rizwan Azam)
Reference of the request letter # ECC-UET/FIP/JBR/2022/010

Dated: 18-11-2022
Dated: 07-10-2022

Tension Test Report (Page -1/2)

Date of Test 21-11-2022
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	783.0	17900	175.60	19600	192.28	199	>3.50	24130
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
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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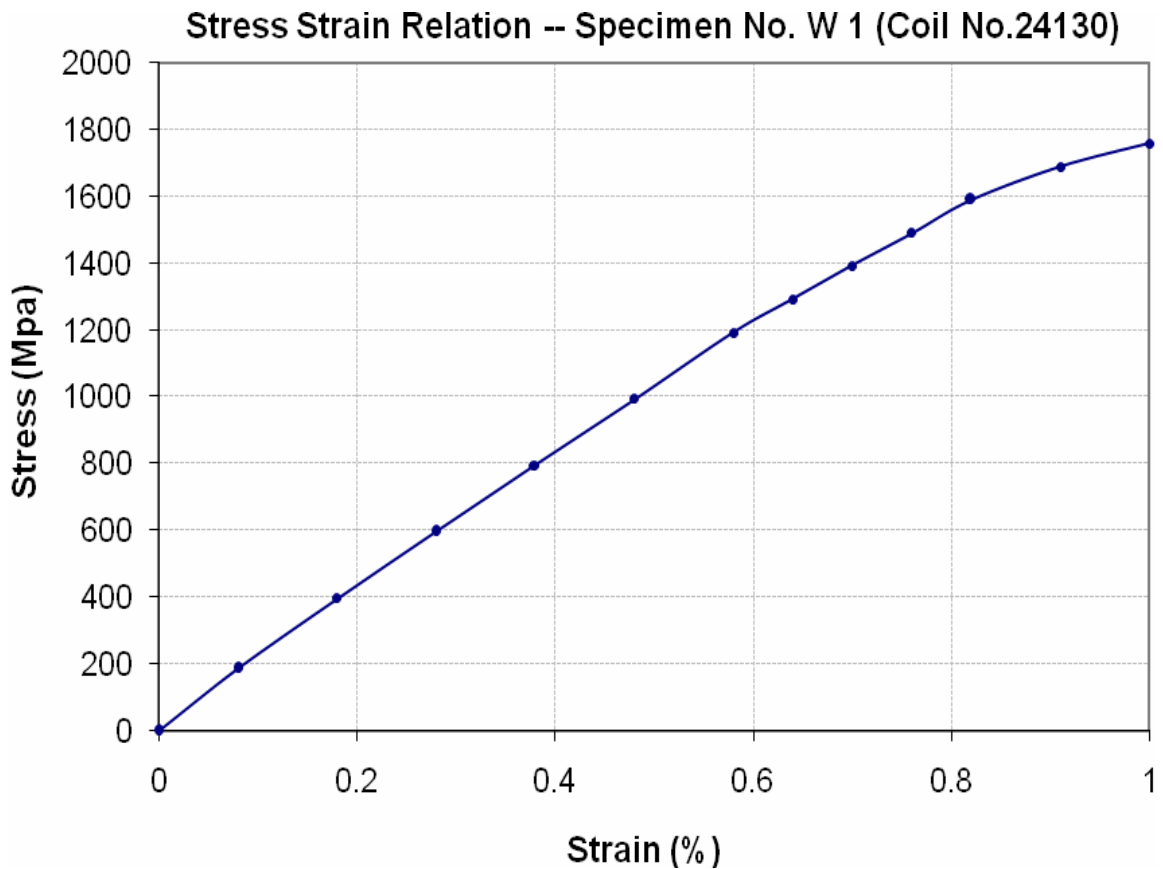
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Test Floor Laboratory
Department of Civil Engineering
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To,
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ECC-UET Peshawar
Construction of Jamrud Bypass Road Project Bridge (Package II)

Reference # CED/TFL **2305** (Dr. Rizwan Azam)
Reference of the request letter # ECC-UET/FIP/JBR/2022/010

Dated: 18-11-2022
Dated: 07-10-2022

Graph (Page – 2/2)



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UET Lahore, Pakistan.

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To,

Resident Engineer
 NESPAK
 Infrastructure Development of Quaid-E-Azam Business Park on Motorway M-2, District
 Sheikhpura

Reference # CED/TFL **2307** (Dr. Rizwan Azam)
 Reference of the request letter # 4163/11/MY/03/383

Dated: 18-11-2022
 Dated: 02-11-2022

Tension Test Report (Page -1/1)

Date of Test 21-11-2022
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile and Bend Test

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	0.095	5/32	0.188	-----	0.028	760	1190	-----	60200	-----	94300	0.80	10.0	
2	0.096	5/32	0.189	-----	0.028	870	1200	-----	68250	-----	94200	0.80	10.0	
3	0.168	3/16	0.251	-----	0.049	1350	2090	-----	60280	-----	93400	1.30	16.3	
4	0.166	3/16	0.249	-----	0.049	1380	2100	-----	62360	-----	94900	1.40	17.5	
5	0.266	2/8	0.315	-----	0.078	2190	3440	-----	61850	-----	97200	0.80	10.0	
6	0.264	2/8	0.314	-----	0.078	2290	3540	-----	65060	-----	100600	0.80	10.0	
Note: only six samples for tensile and three samples for bend test														
Bend Test														
5/32" Dia Bar Bend Test Through 180° is Satisfactory														
3/16" Dia Bar Bend Test Through 180° is Satisfactory														
2/8" Dia Bar Bend Test Through 180° is Satisfactory														

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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 Best Builders
 Lahore
 (TCF High School, Chak No. 236, Jaranwala)

Reference # CED/TFL **2308** (Dr. Rizwan Azam)
 Reference of the request letter # Nil

Dated: 18-11-2022
 Dated: 18-11-2022

Tension Test Report (Page -1/1)

Date of Test 21-11-2022
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile and Bend Test

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	0.366	3	0.370	0.11	0.108	3570	5270	71600	73080	105600	107900	1.20	15.0	Ittefaq Steel	
-	-	-	-	-	-	-	-	-	-	-	-	-	-		
-	-	-	-	-	-	-	-	-	-	-	-	-	-		
-	-	-	-	-	-	-	-	-	-	-	-	-	-		
-	-	-	-	-	-	-	-	-	-	-	-	-	-		
-	-	-	-	-	-	-	-	-	-	-	-	-	-		
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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STRUCTURAL ENGINEERING DIVISION
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University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
 M/S Riaz Construction Company
 Lahore
 (TCF Primary School, Sham Kay Bhattian, Kala Shah Kaku

Reference # CED/TFL **2309** (Dr. Rizwan Azam)
 Reference of the request letter # Nil

Dated: 18-11-2022
 Dated: 18-11-2022

Tension Test Report (Page -1/1)

Date of Test 21-11-2022
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile and Bend Test

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	0.369	3	0.371	0.11	0.108	3570	5250	71600	72600	105200	106800	1.00	12.5	Ittefaq Steel
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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 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 PMU
 University of Management and Technology Lahore
 4th and 5th floor slab beam
 (Ikram Amjad Trader & Engineering Works)(Ittefaq Steel)

Reference # CED/TFL **2310** (Dr. Rizwan Azam)
 Reference of the request letter # CB-2/25/22

Dated: 18-11-2022
 Dated: 18-11-2022

Tension Test Report (Page -1/1)

Date of Test 21-11-2022
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile and Bend Test

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	0.369	3	0.372	0.11	0.109	3360	4860	67400	68260	97400	98800	1.20	15.0	
2	0.370	3	0.372	0.11	0.109	3380	4940	67800	68550	99000	100200	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.

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STRUCTURAL ENGINEERING DIVISION
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To,

M/S Bridgeway Developers Pvt Ltd
 Pearl Residencies by Bridge way Developers
 26 Block-C M.M Alam Gulberg III Lahore

Reference # CED/TFL 2312 (Dr. Rizwan Azam)
 Reference of the request letter # Nil

Dated: 18-11-2022
 Dated: 18-11-2022

Tension Test Report (Page -1/1)

Date of Test 21-11-2022
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile and Bend Test

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	0.369	3	0.372	0.11	0.109	3310	4710	66400	67210	94400	95700	1.30	16.3	Batala Premium Steel	
-	-	-	-	-	-	-	-	-	-	-	-	-	-		
-	-	-	-	-	-	-	-	-	-	-	-	-	-		
-	-	-	-	-	-	-	-	-	-	-	-	-	-		
-	-	-	-	-	-	-	-	-	-	-	-	-	-		
-	-	-	-	-	-	-	-	-	-	-	-	-	-		
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 Laboratoires
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STRUCTURAL ENGINEERING DIVISION
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To,
Planning & Coordination Engineer
Ittefaq Building Solutions (Pvt) Ltd
Diamond Denim by Sapphire, Ferozewattwan.

Reference # CED/TFL **2313** (Dr. Rizwan Azam)
Reference of the request letter # IBS/SD/ST

Dated: 18-11-2022
Dated: 17-11-2022

Tension Test Report (Page -1/1)

Date of Test 18-11-2022
Gauge length 8 inches
Description Deformed Steel Bar Tensile and Bend Test

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	0.369	3	0.372	0.11	0.109	3890	4560	78000	78990	91400	92600	1.00	12.5	
2	0.377	3	0.376	0.11	0.111	3690	4490	74000	73370	90000	89300	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														

Witness by Imran Ashfaq Sapphire Diamond

I/C Testing Laboratoires
UET Lahore, Pakistan.

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To,
Project Manager
Citi Housing (Pvt) Ltd, Sialkot
Development of Citi Housing (Pvt) Ltd.

Reference # CED/TFL **2314** (Dr. Rizwan Azam)
Reference of the request letter # Citi Housing (Pvt) Ltd/05/03

Dated: 18-11-2022
Dated: 10-11-2022

Tension Test Report (Page -1/1)

Date of Test 21-11-2022
Gauge length 8 inches
Description Deformed Steel Bar Tensile and Bend Test

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	0.376	3	0.375	0.11	0.110	4640	5520	93000	92600	110700	110200	0.80	10.0	Afco Steel
2	0.372	3	0.373	0.11	0.109	4150	5150	83200	83600	103200	103800	0.80	10.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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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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 Sherjan Mosakhail & Sons Jv SKC
Karachi
(Construction of Flyover & Underpass at Johar Chowrangi Intersection.)

Reference # CED/TFL **2315** (Dr. Rizwan Azam)
Reference of the request letter # Nil

Dated: 18-11-2022
Dated: 18-11-2022

Tension Test Report (Page -1/4)

Date of Test 21-11-2022
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)			
1	12.70 (1/2")	775.0	783.0	17900	175.60	19300	189.33	199	>3.50	24179
2	12.70 (1/2")	775.0	781.0	17500	171.68	19300	189.33	199	>3.50	24188
3	12.70 (1/2")	775.0	785.0	17700	173.64	19300	189.33	199	>3.50	24198
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
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

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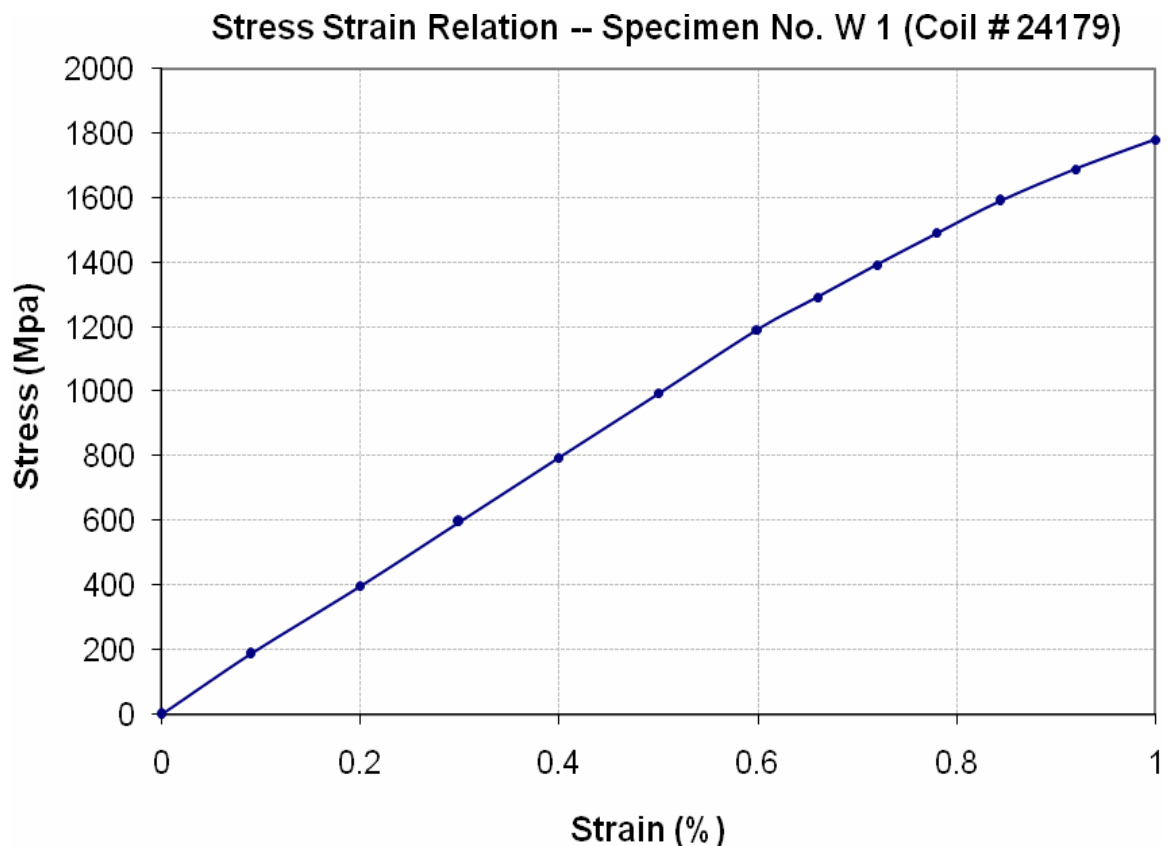
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To,
M/S Sherjan Mosakhail & Sons Jv SKC
Karachi
(Construction of Flyover & Underpass at Johar Chowrangi Intersection.)

Reference # CED/TFL **2315** (Dr. Rizwan Azam)
Reference of the request letter # Nil

Dated: 18-11-2022
Dated: 18-11-2022

Graph (Page – 2/4)



I/C Testing Laboratories
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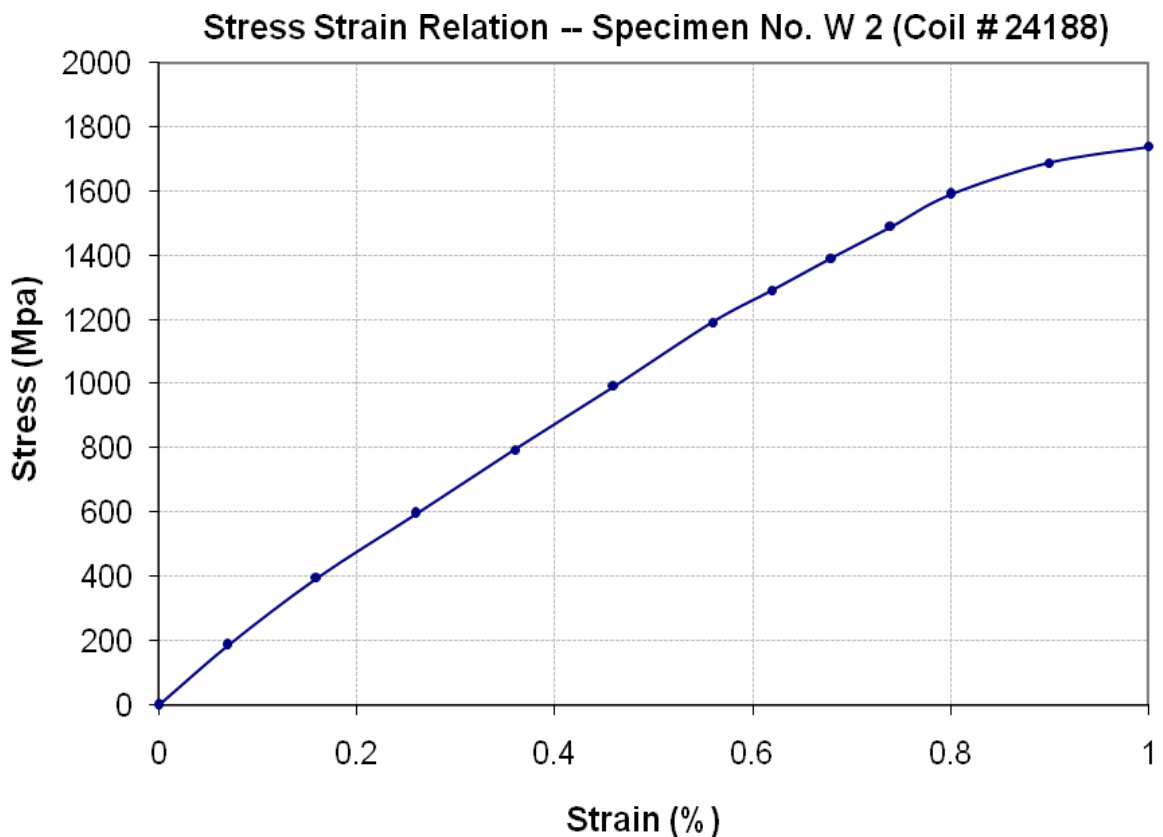
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M/S Sherjan Mosakhail & Sons Jv SKC
Karachi
(Construction of Flyover & Underpass at Johar Chowrangi Intersection.)

Reference # CED/TFL **2315** (Dr. Rizwan Azam)
Reference of the request letter # Nil

Dated: 18-11-2022
Dated: 18-11-2022

Graph (Page – 3/4)



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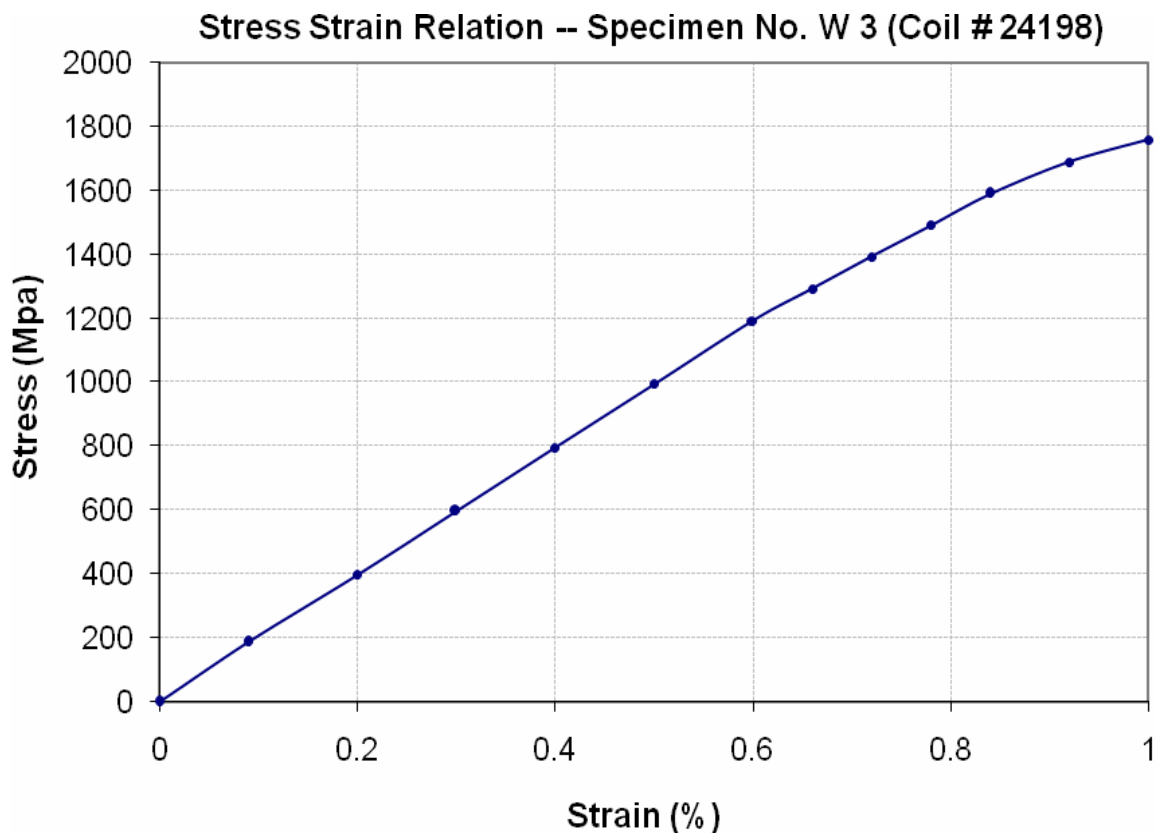
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To,
M/S Sherjan Mosakhail & Sons Jv SKC
Karachi
(Construction of Flyover & Underpass at Johar Chowrangi Intersection.)

Reference # CED/TFL **2315** (Dr. Rizwan Azam)
Reference of the request letter # Nil

Dated: 18-11-2022
Dated: 18-11-2022

Graph (Page – 4/4)



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To,
 Resident Engineer
 Orbit Housing
 The Springs Apartment Homes

Reference # CED/TFL 2322 (Dr. Irfanul Hussan)
 Reference of the request letter # Nil

Dated: 21-11-2022
 Dated: 21-11-2022

Tension Test Report (Page -1/1)

Date of Test 21-11-2022
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile and Bend Test

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	3260	4860	65400	64670	97400	96400	1.10	13.8	
2	0.382	3	0.378	0.11	0.112	3280	4940	65800	64380	99000	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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