



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 China Gezhouba Group Company Limited
Pakistan
Construction of Mohmand Dam Hydropower Project – Contract No. ICB MDHP-01, Construction of Civil Works Including Design, Supply and Installation of Electrical and Mechanical Works and Hydraulic Steel Structures.

Reference # CED/TFL **37735** (Dr. Rizwan Riaz)

Dated: 20-01-2022

Reference of the request letter # MDSYS-143-A

Dated: 19-01-2022

Tension Test Report (Page – 1/10)

Date of Test 01-02-2022

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	% Elongation	Remarks / Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)	E, GPa		
1	15.24 (0.6")	1102.0	1135.0.0	23800	233.48	27800	272.72	199	>3.50	9957-1
2	15.24 (0.6")	1102.0	1132.0	24000	235.44	27200	266.83	199	>3.50	
3	15.24 (0.6")	1102.0	1129.0	24100	236.42	27300	267.81	199	>3.50	9936-1
4	15.24 (0.6")	1102.0	1134.0	25600	251.14	27700	271.74	199	>3.50	
5	15.24 (0.6")	1102.0	1122.0	23700	232.50	27100	265.85	198	>3.50	9903-1
6	15.24 (0.6")	1102.0	1134.0	25000	245.25	27500	269.78	199	>3.50	
7	15.24 (0.6")	1102.0	1140.0	24500	240.35	26900	263.9	198	>3.50	10646-49-1
8	15.24 (0.6")	1102.0	1139.0	24700	242.31	27700	271.7	199	>3.50	

Only Eight 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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Note:

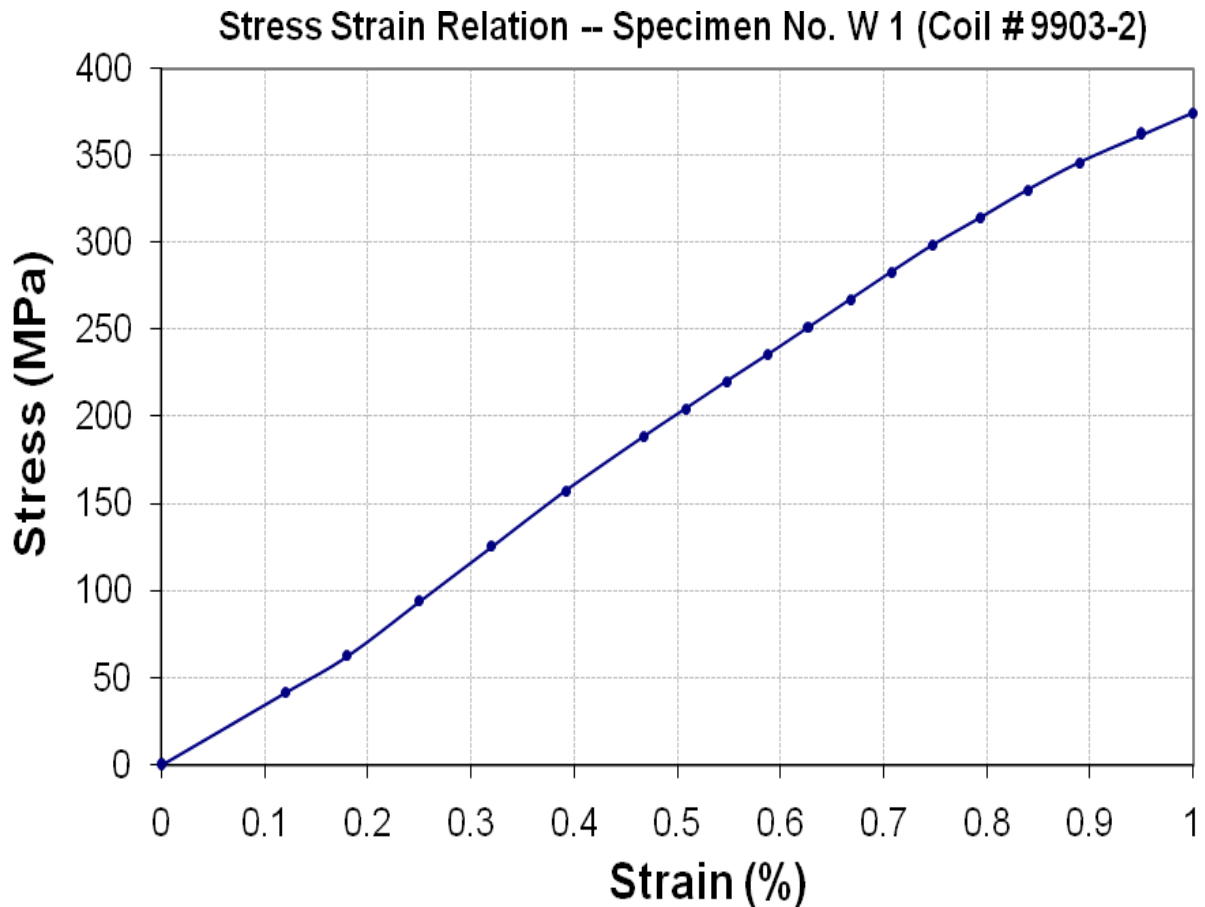
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Graph (Page – 2/10)



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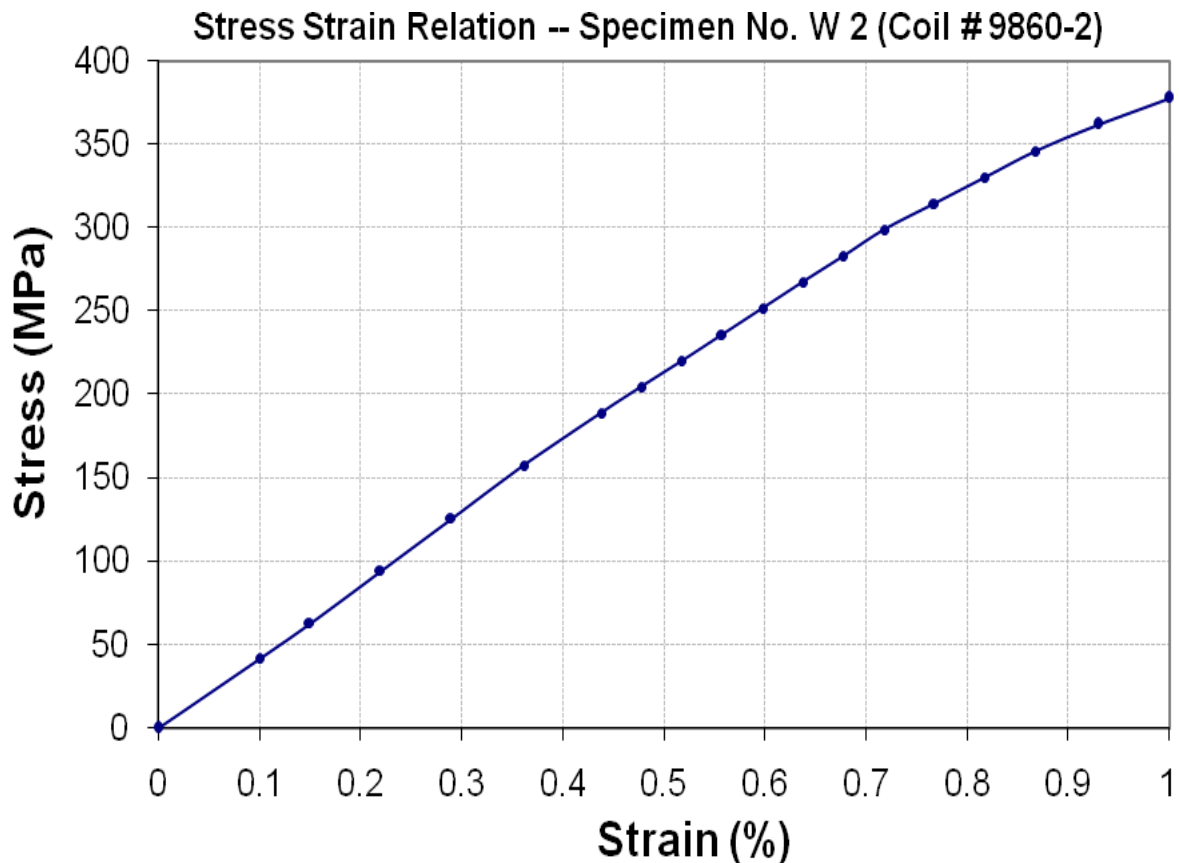
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Graph (Page – 3/10)



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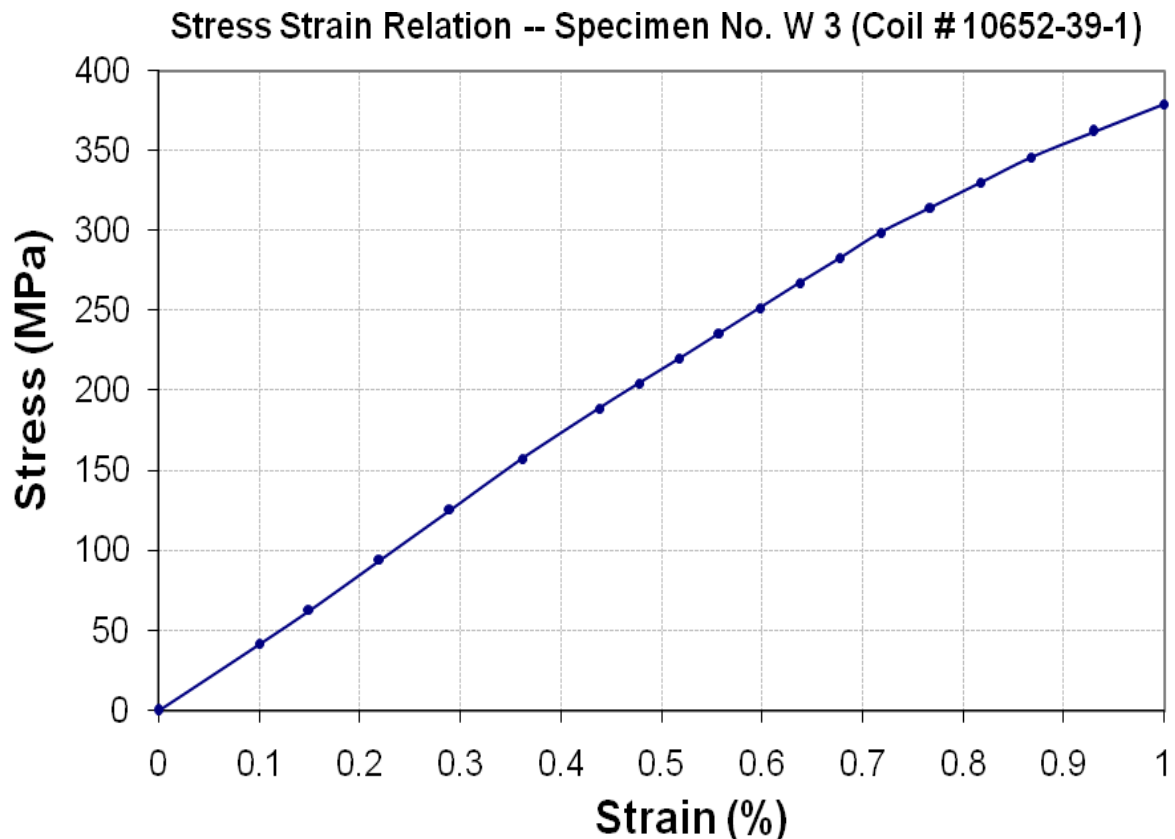
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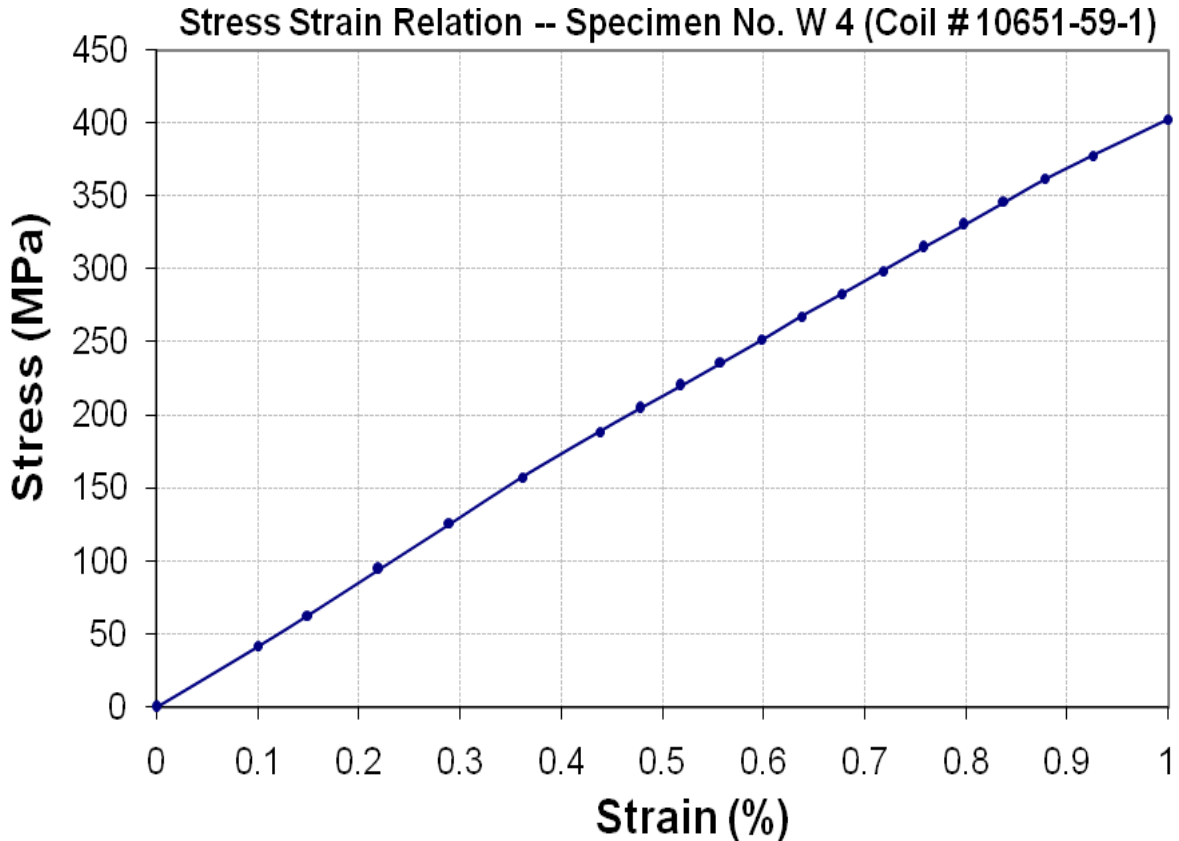
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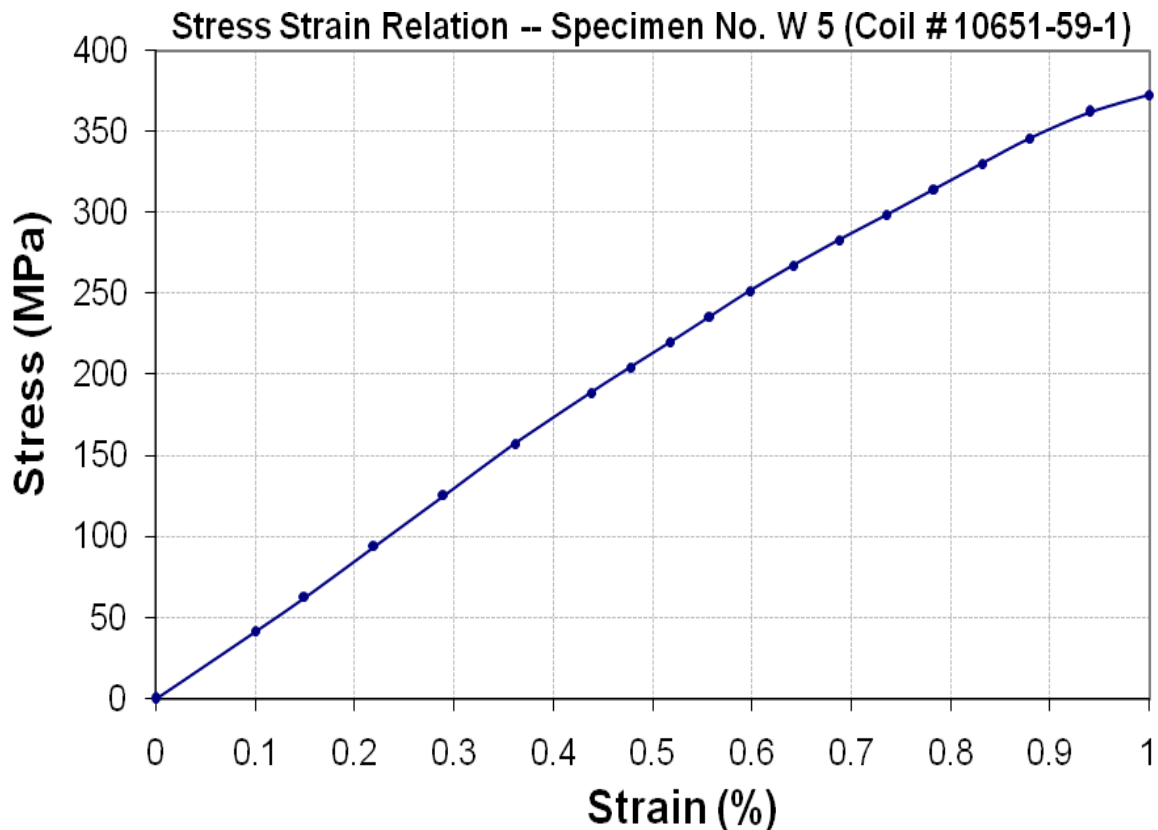
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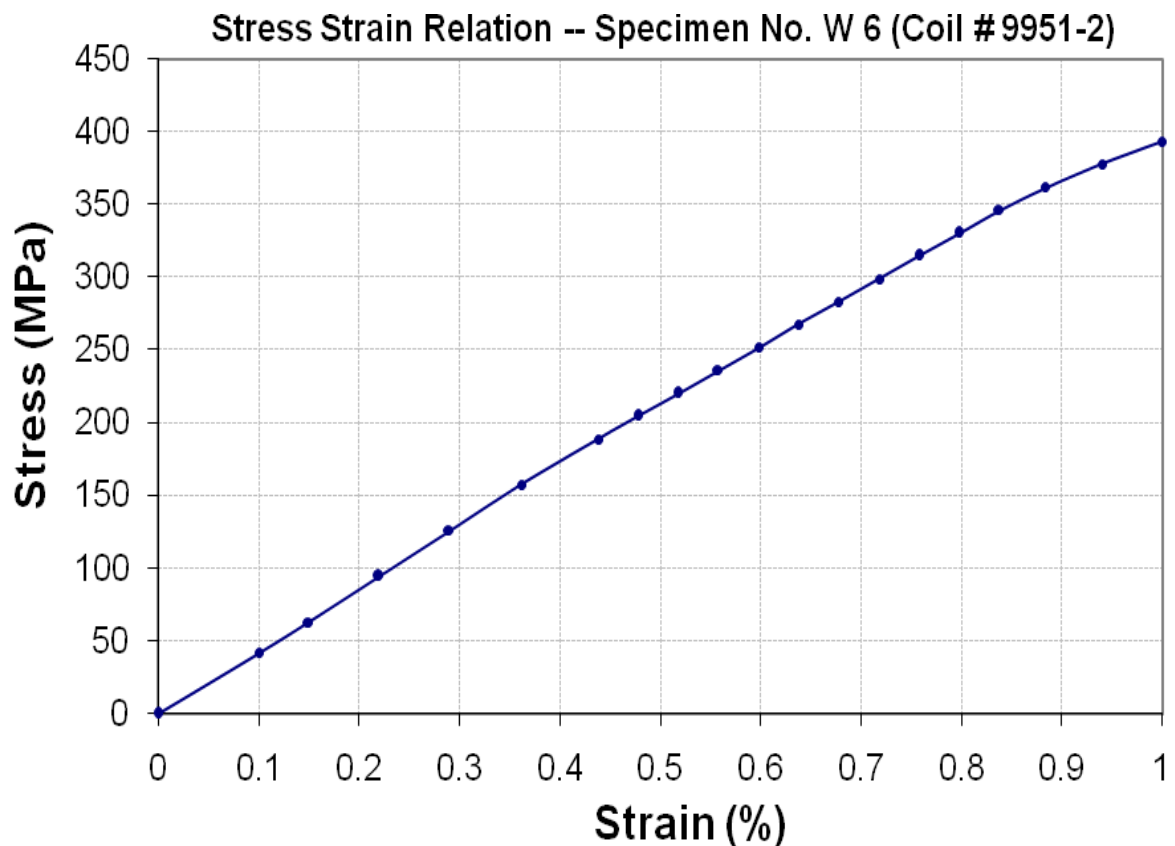
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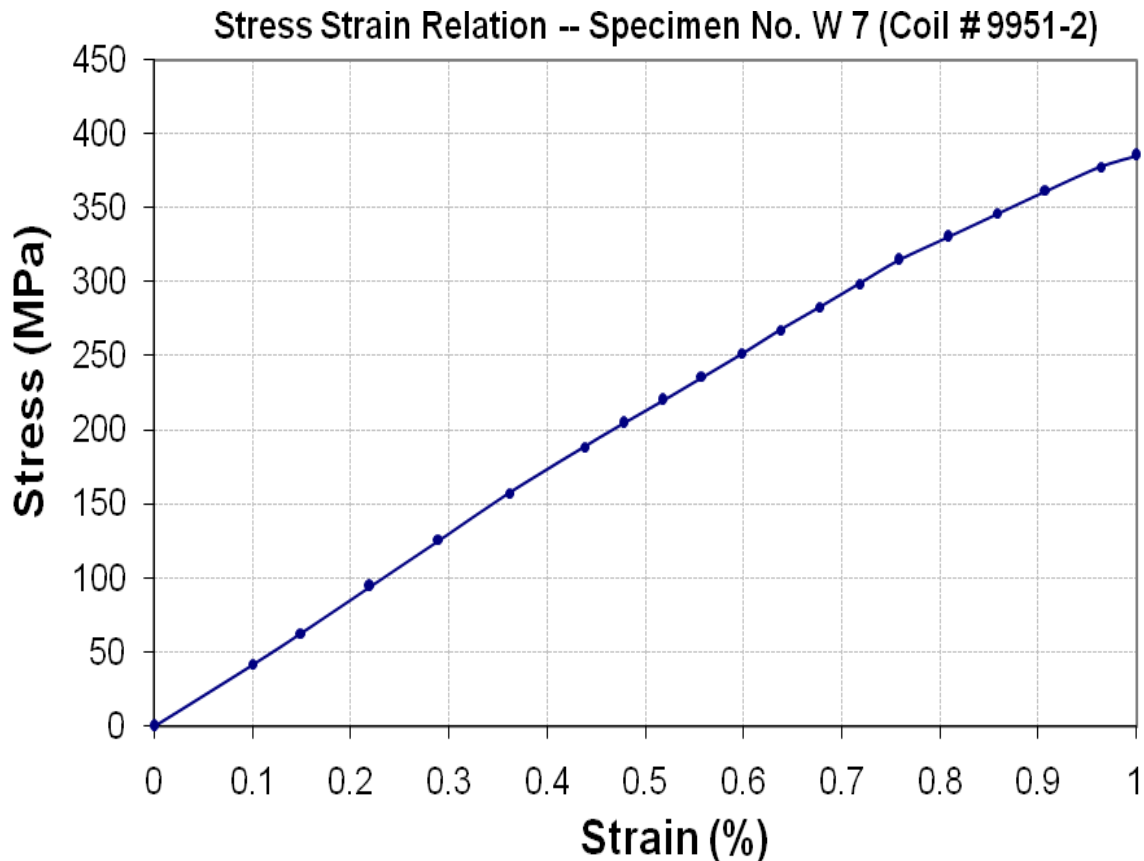
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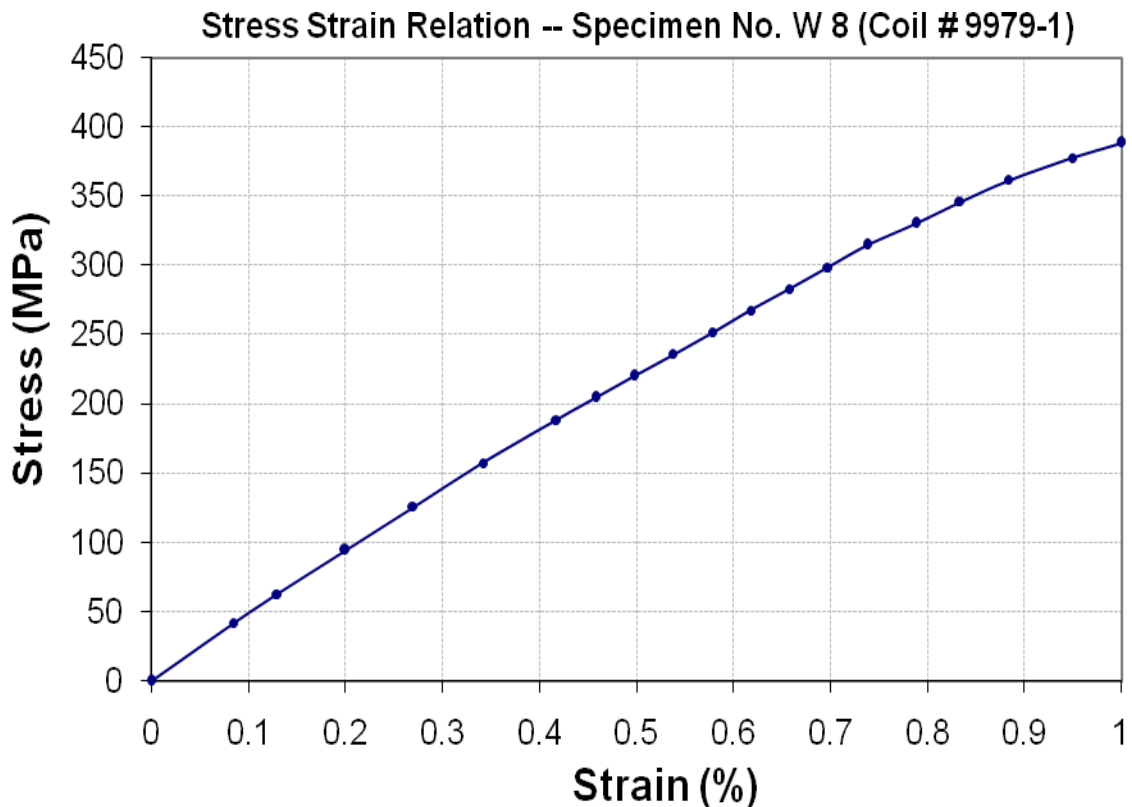
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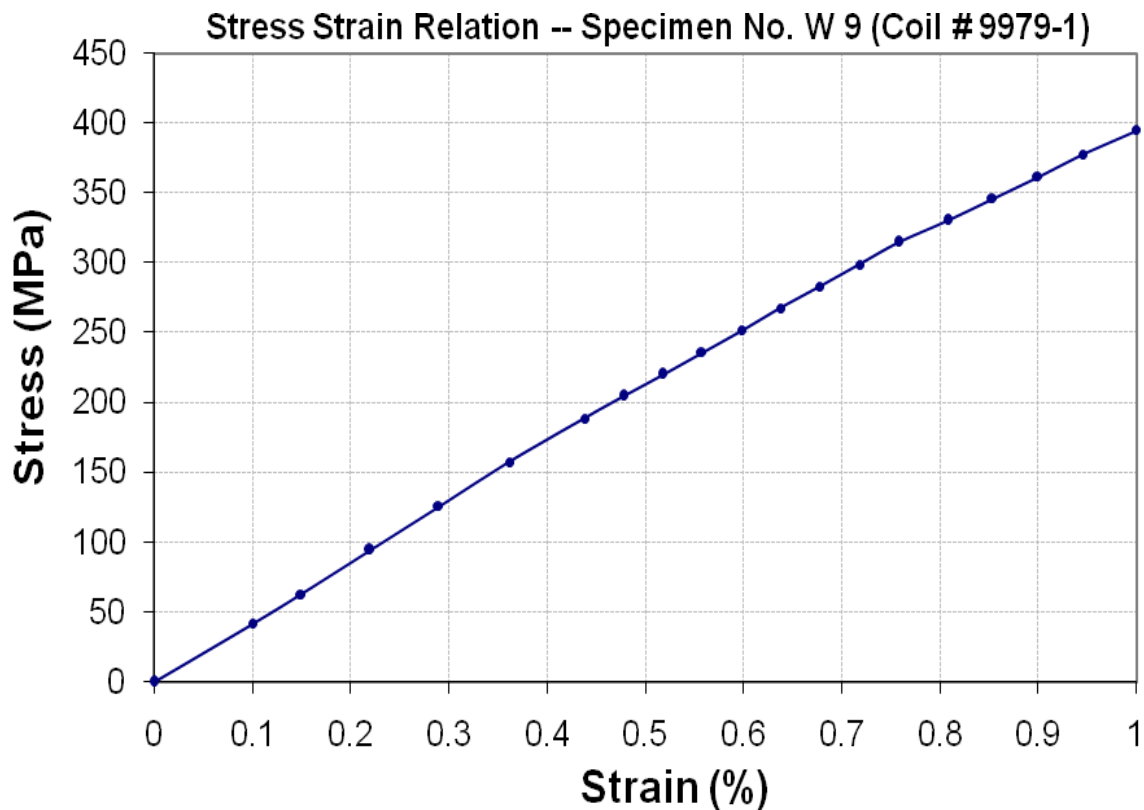
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Reference # CED/TFL **37736** (Dr. Rizwan Riaz)

Dated: 20-01-2022

Reference of the request letter # MDSYS-143-B

Dated: 19-01-2022

Tension Test Report (Page – 1/9)

Date of Test 01-02-2022

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	% Elongation	Remarks / Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)	E, GPa		
1	15.24 (0.6")	1102.0	1140.0	24200	237.40	27600	270.76	199	>3.50	9957-1
2	15.24 (0.6")	1102.0	1141.0	25100	246.23	27200	266.83	198	>3.50	
3	15.24 (0.6")	1102.0	1135.0	24600	241.33	27600	270.76	199	>3.50	9936-1
4	15.24 (0.6")	1102.0	1137.0	25500	250.16	27200	266.83	199	>3.50	
5	15.24 (0.6")	1102.0	1131.0	24000	235.44	27000	264.87	199	>3.50	9903-1
6	15.24 (0.6")	1102.0	1133.0	25100	246.23	27300	267.81	198	>3.50	
7	15.24 (0.6")	1102.0	1131.0	24900	244.27	27600	270.8	199	>3.50	10646-49-1
8	15.24 (0.6")	1102.0	1128.0	23500	230.54	27400	268.8	199	>3.50	

Only Eight 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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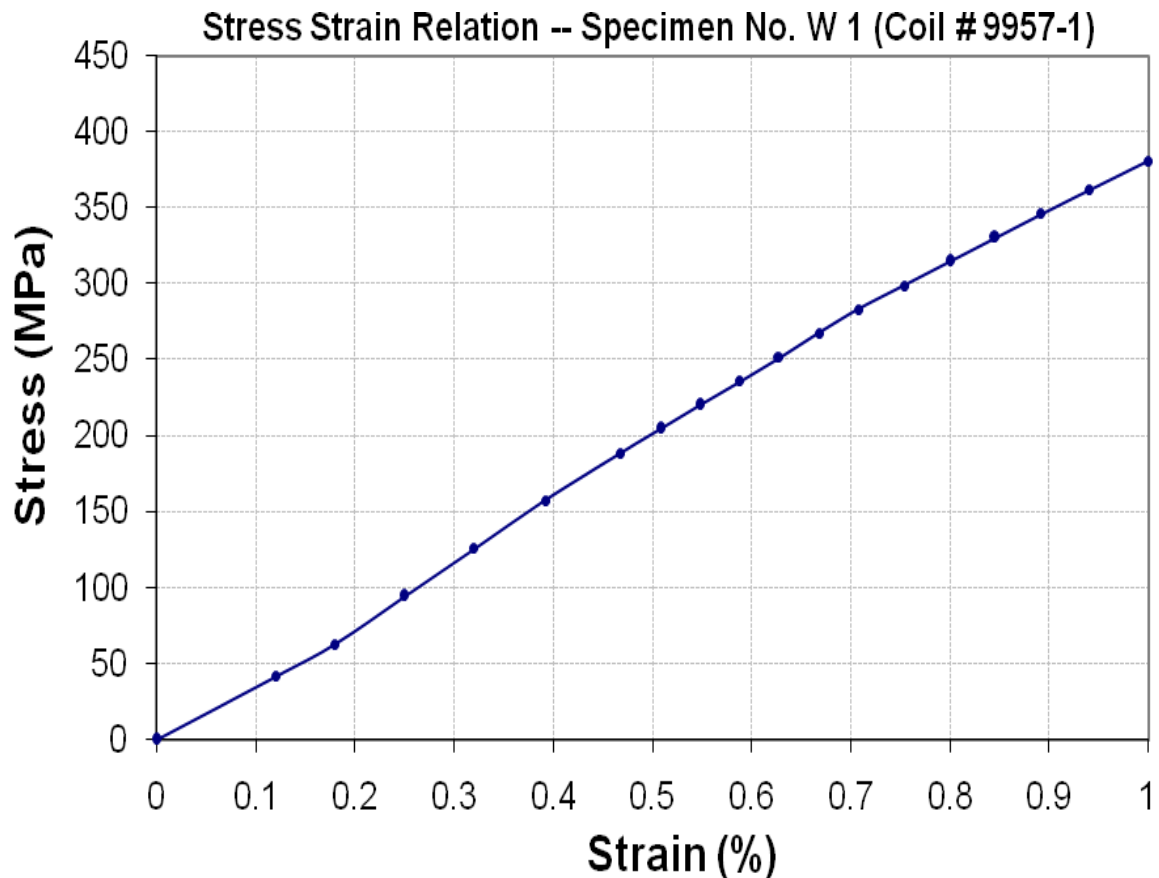
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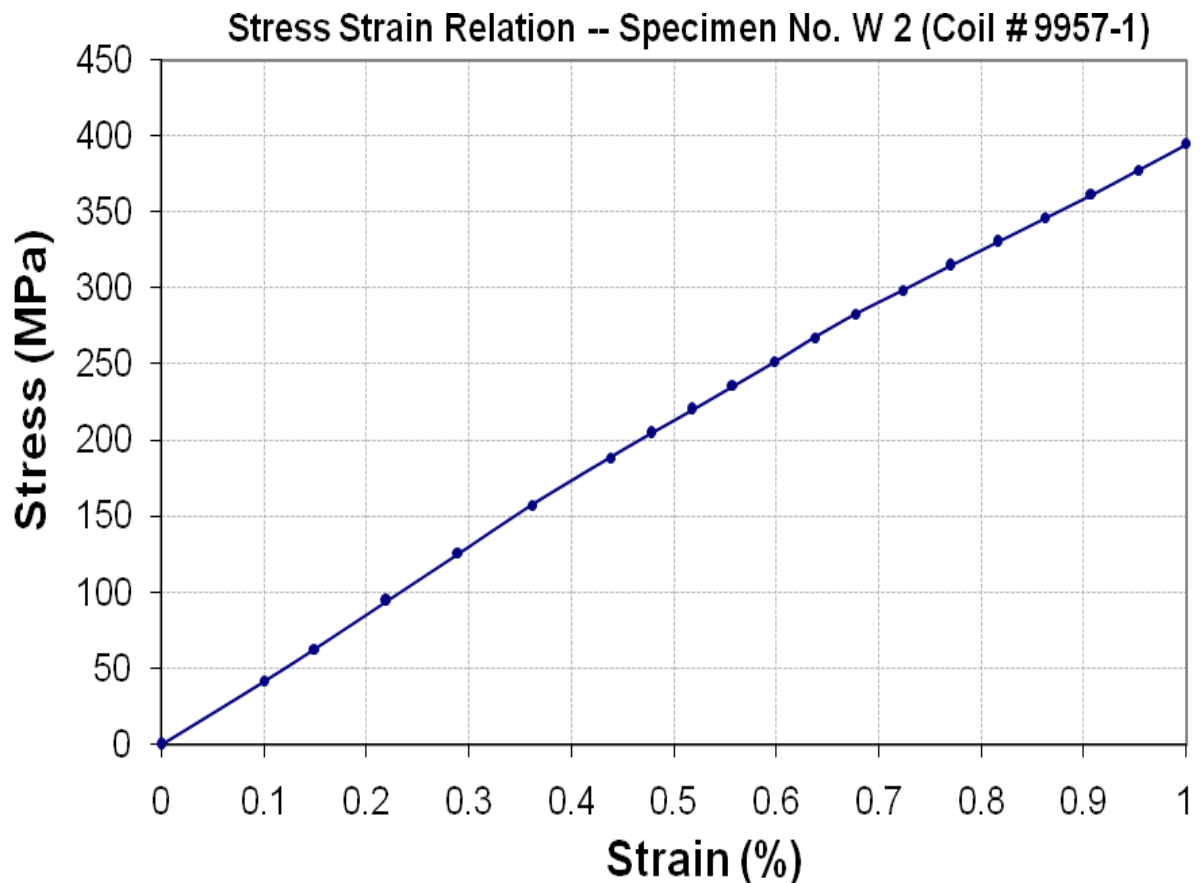
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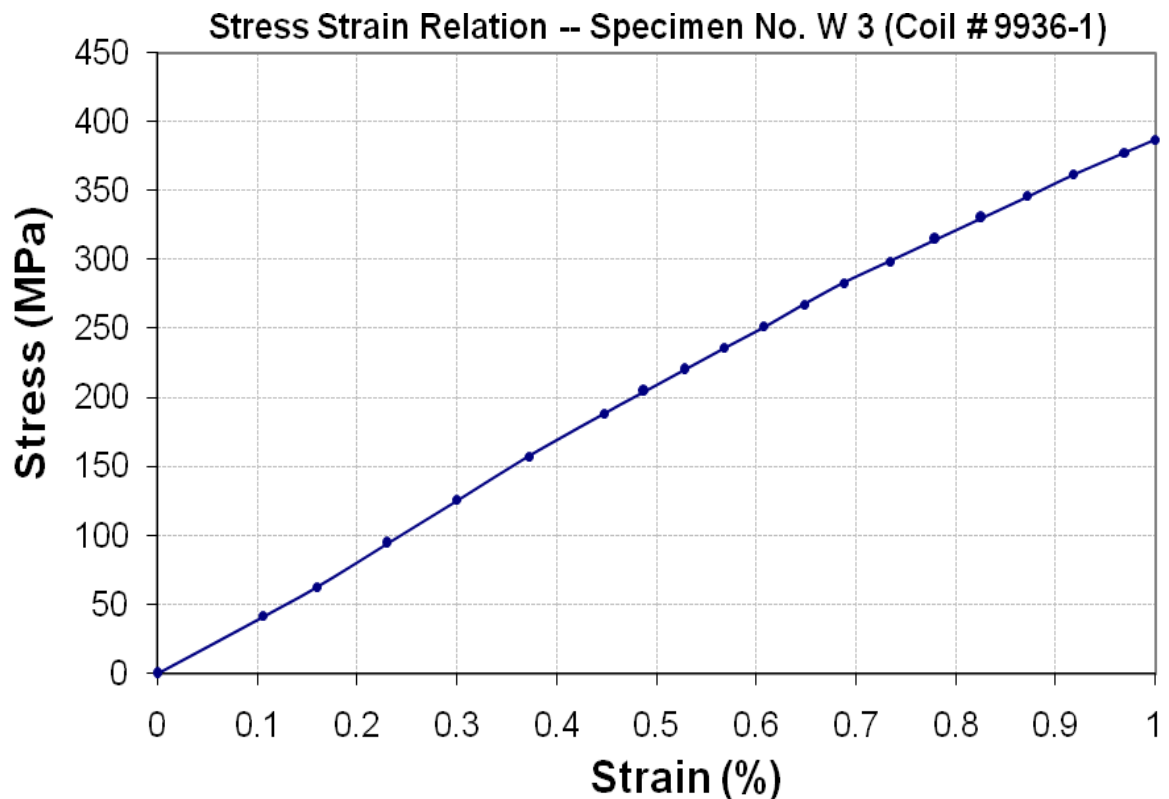
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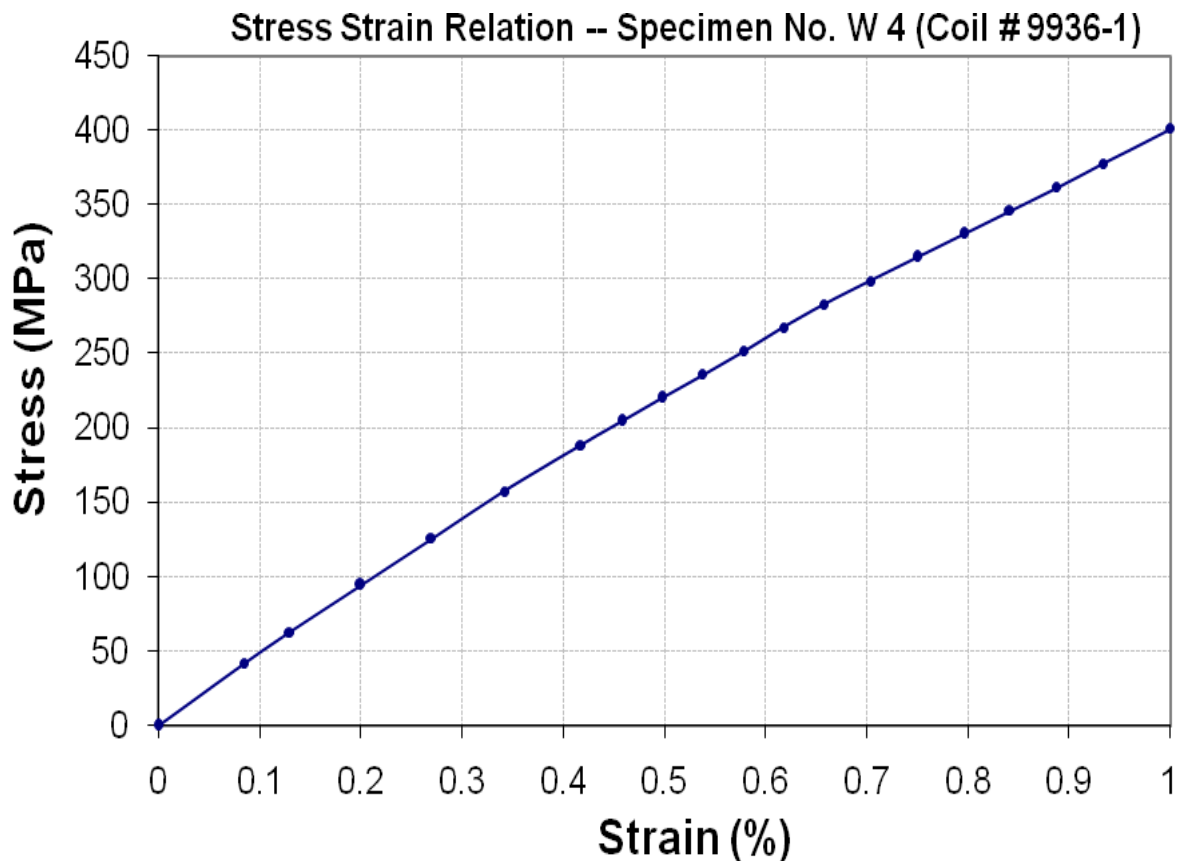
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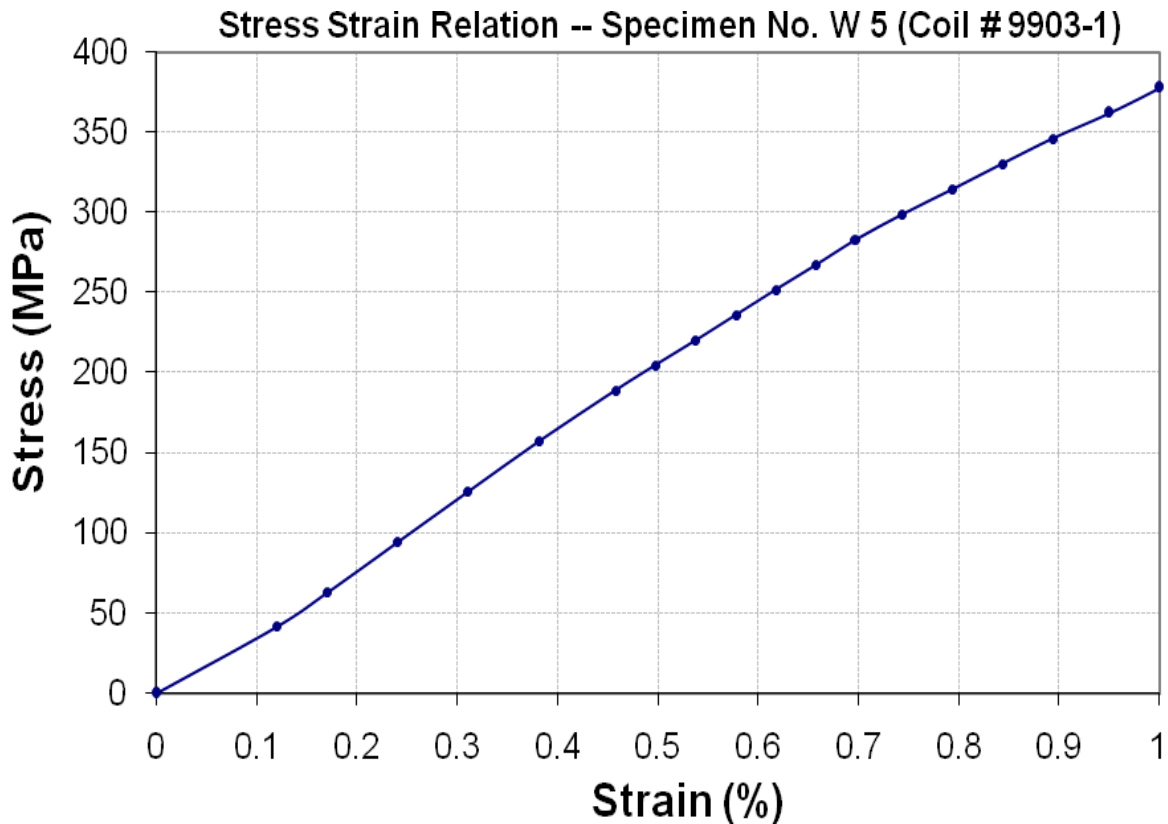
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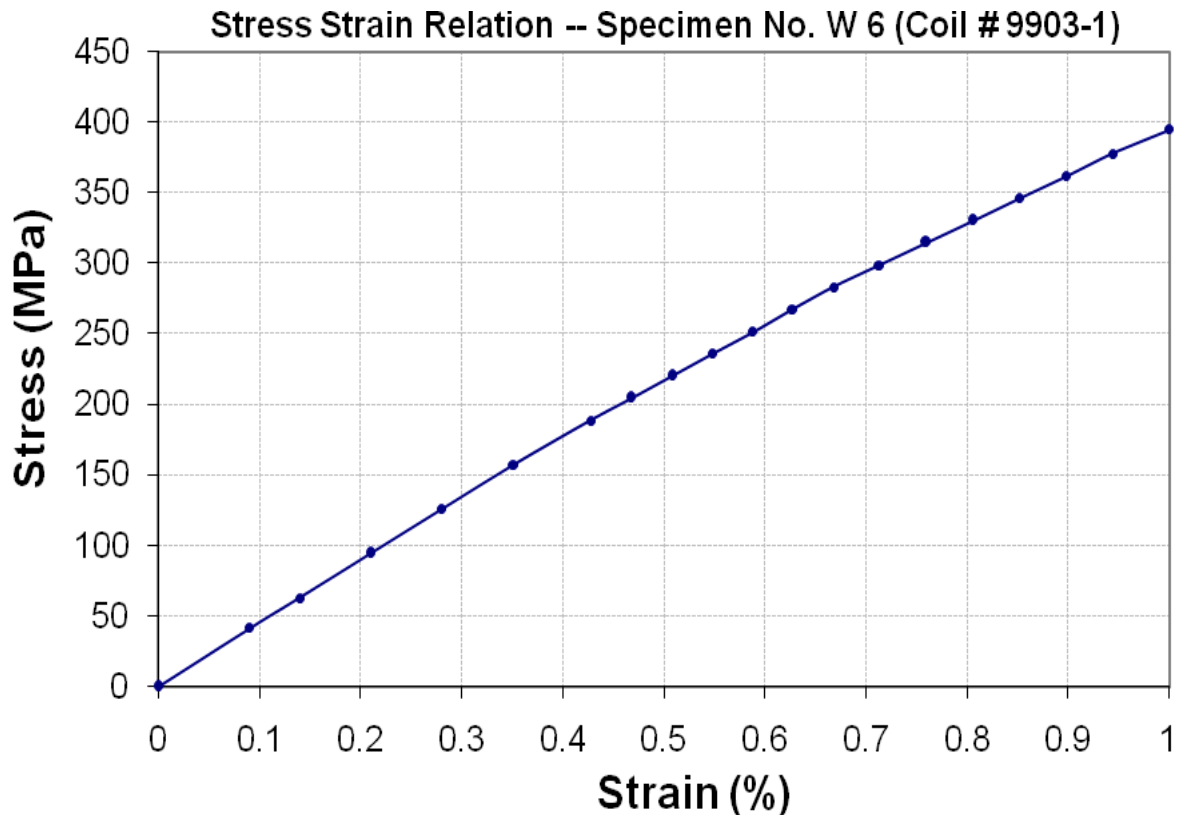
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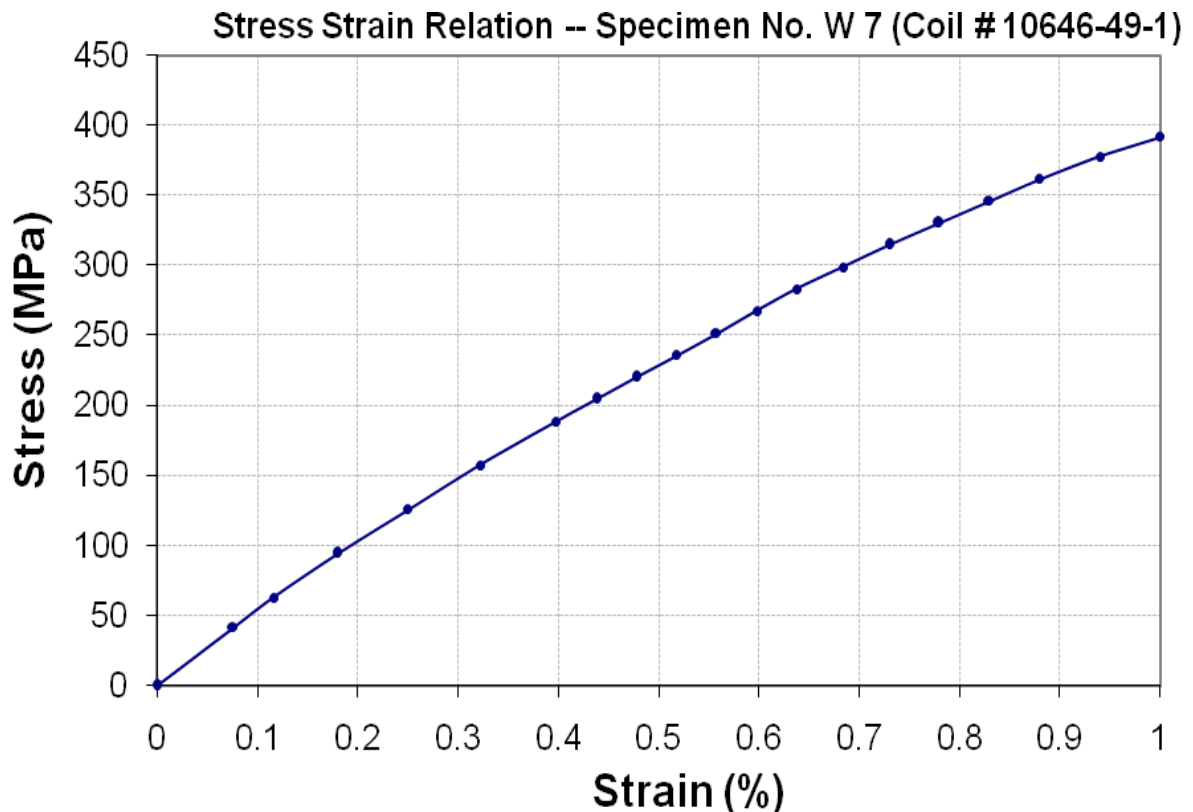
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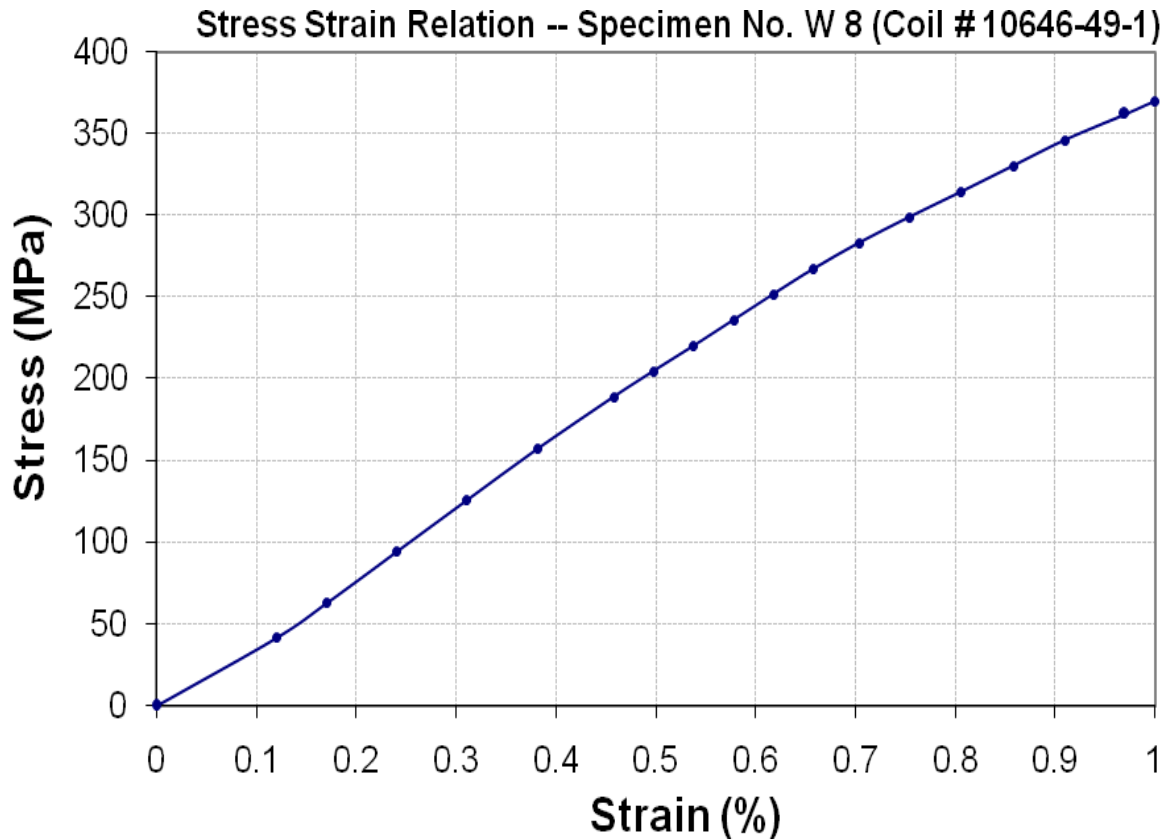
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Pakistan. Ph: 92-42-99029202

To,
M/S China Gezhouba Group Company Limited
Pakistan
Construction of Mohmand Dam Hydropower Project – Contract No. ICB MDHP-01, Construction of Civil Works Including Design, Supply and Installation of Electrical and Mechanical Works and Hydraulic Steel Structures.

Reference # CED/TFL **37737** (Dr. Rizwan Riaz)

Dated: 20-01-2022

Reference of the request letter # MDSYS-143-C

Dated: 19-01-2022

Tension Test Report (Page – 1/9)

Date of Test 01-02-2022

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	% Elongation	Remarks / Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)	E, GPa		
1	15.24 (0.6")	1102.0	1136.0	25000	245.25	27300	267.81	199	>3.50	9955-1
2	15.24 (0.6")	1102.0	1136.0	24200	237.40	26800	262.91	199	>3.50	
3	15.24 (0.6")	1102.0	1129.0	24600	241.33	27700	271.74	199	>3.50	10652-29-1
4	15.24 (0.6")	1102.0	1126.0	24300	238.38	26800	262.91	198	>3.50	
5	15.24 (0.6")	1102.0	1136.0	24100	236.42	27600	270.76	199	>3.50	9936-02
6	15.24 (0.6")	1102.0	1136.0	25000	245.25	27200	266.83	199	>3.50	
7	15.24 (0.6")	1102.0	1132.0	25400	249.17	27700	271.7	199	>3.50	9943-2
8	15.24 (0.6")	1102.0	1140.0	24900	244.27	27400	268.8	198	>3.50	
Only Eight 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:

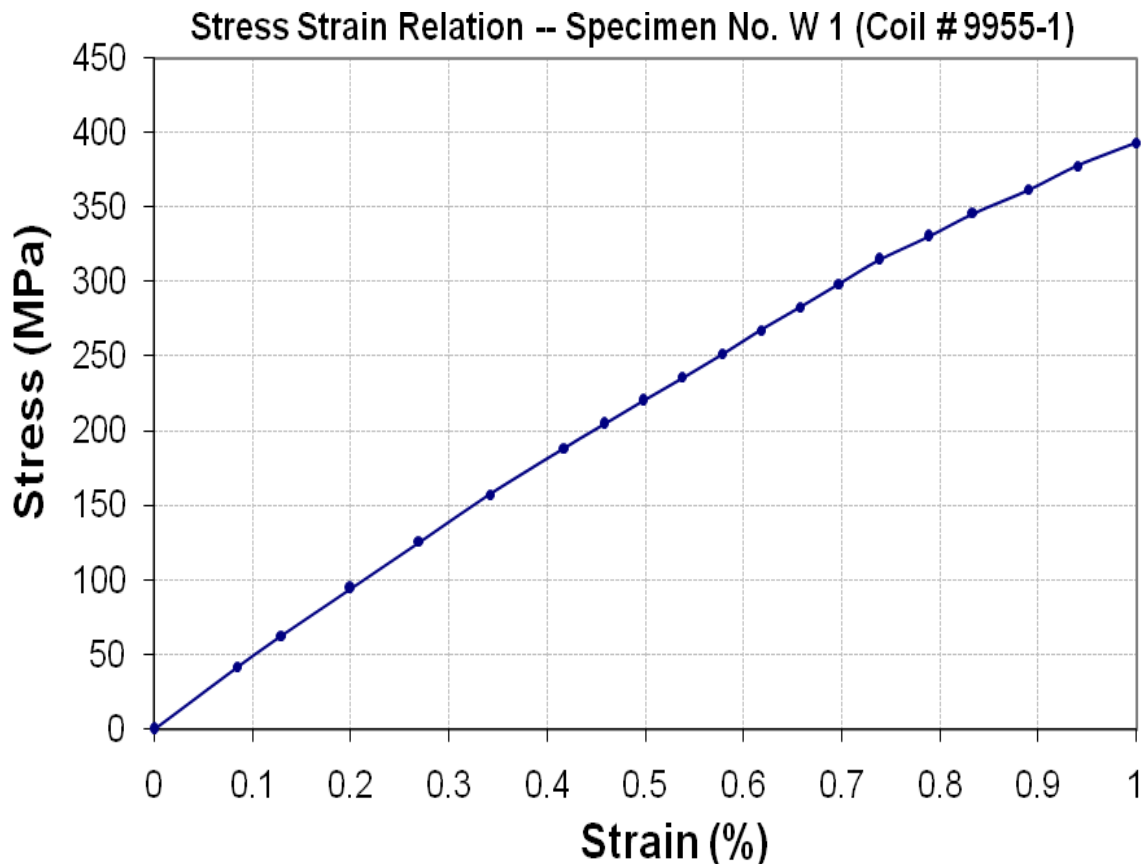
- 1- You can See your reports On Internet in the following web site
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STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
M/S China Gezhouba Group Company Limited
Pakistan
Construction of Mohmand Dam Hydropower Project – Contract No. ICB MDHP-01,
Construction of Civil Works Including Design, Supply and Installation of Electrical and
Mechanical Works and Hydraulic Steel Structures.
Reference # CED/TFL 37737 (Dr. Rizwan Riaz) Dated: 20-01-2022
Reference of the request letter # MDSYS-143-C Dated: 19-01-2022

Graph (Page – 2/9)



I/C Testing Laboratories
UET Lahore, Pakistan.

Note:

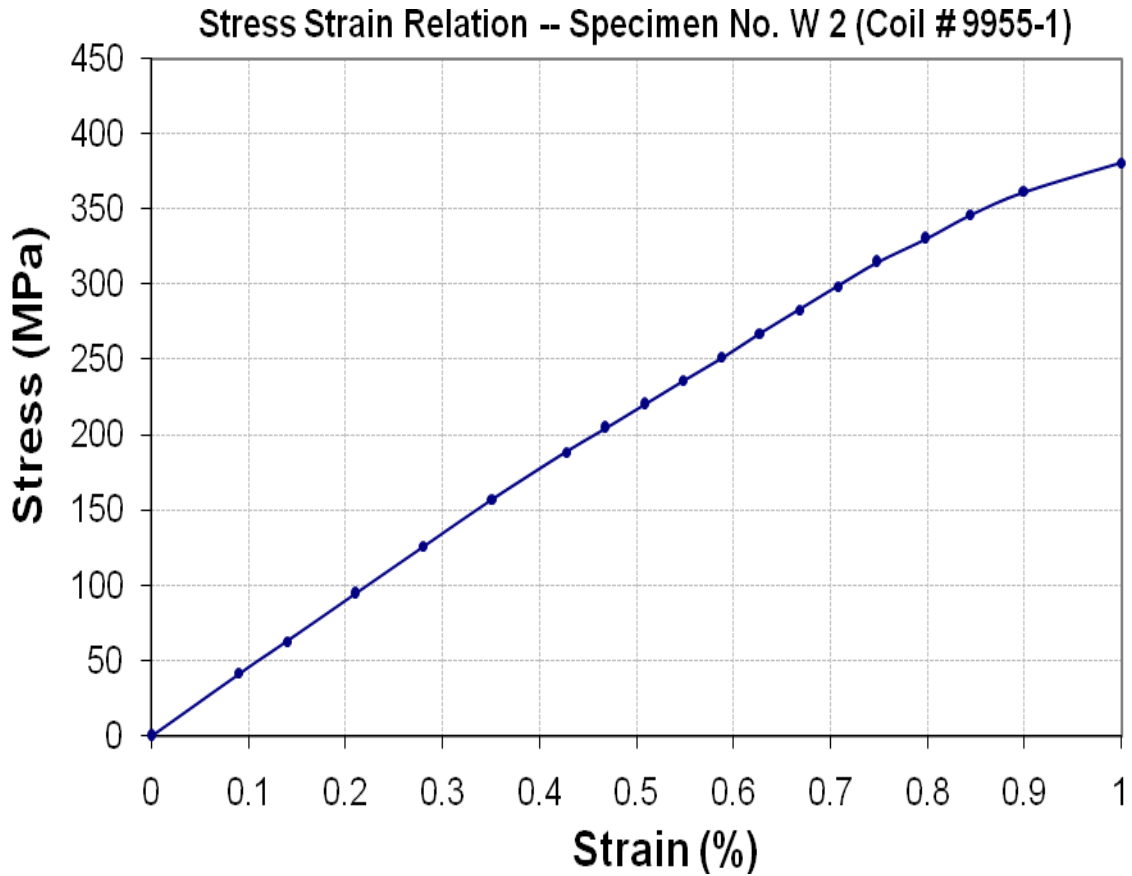
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Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
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Pakistan
Construction of Mohmand Dam Hydropower Project – Contract No. ICB MDHP-01,
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Reference # CED/TFL 37737 (Dr. Rizwan Riaz) Dated: 20-01-2022
Reference of the request letter # MDSYS-143-C Dated: 19-01-2022

Graph (Page – 3/9)



I/C Testing Laboratories
UET Lahore, Pakistan.

Note:

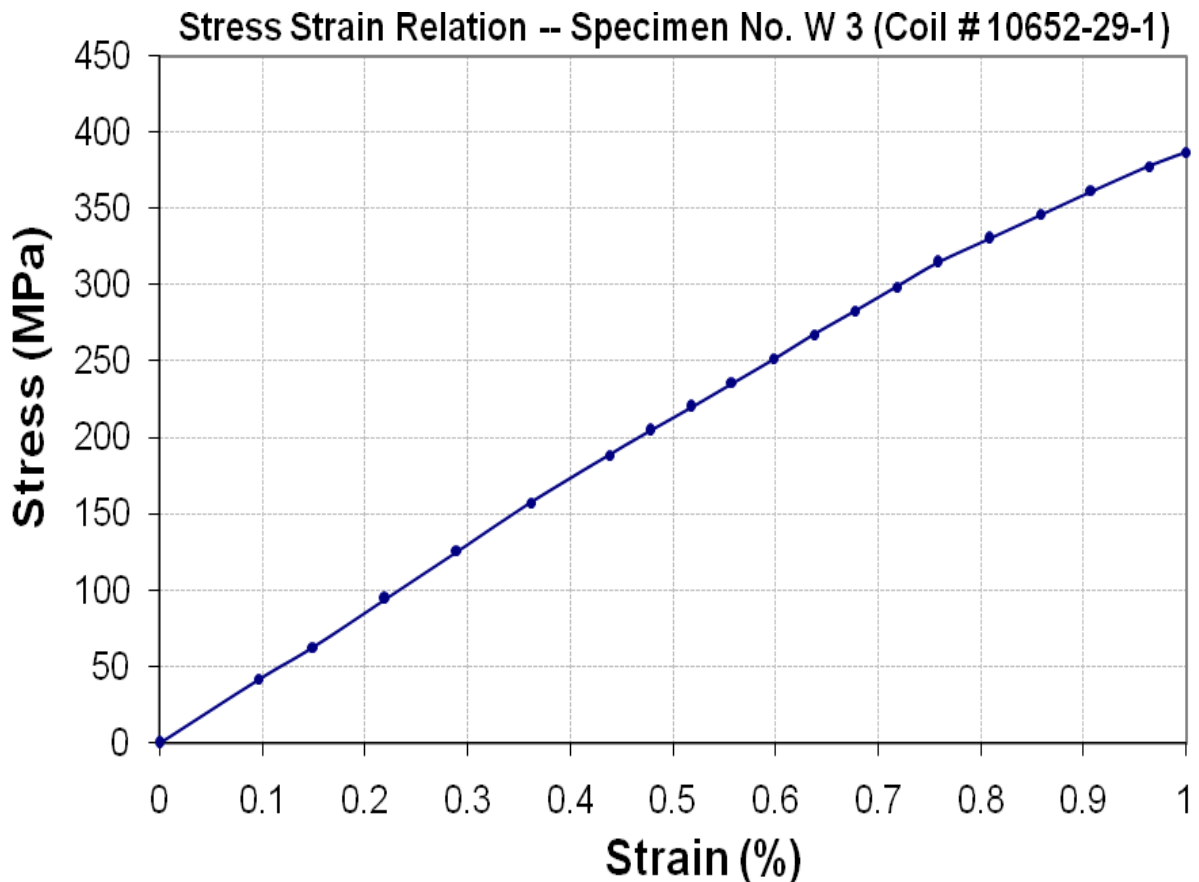
- 1- You can See your reports On Internet in the following web site
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STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
M/S China Gezhouba Group Company Limited
Pakistan
Construction of Mohmand Dam Hydropower Project – Contract No. ICB MDHP-01,
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Reference # CED/TFL 37737 (Dr. Rizwan Riaz) Dated: 20-01-2022
Reference of the request letter # MDSYS-143-C Dated: 19-01-2022

Graph (Page – 4/9)



I/C Testing Laboratories
UET Lahore, Pakistan.

Note:

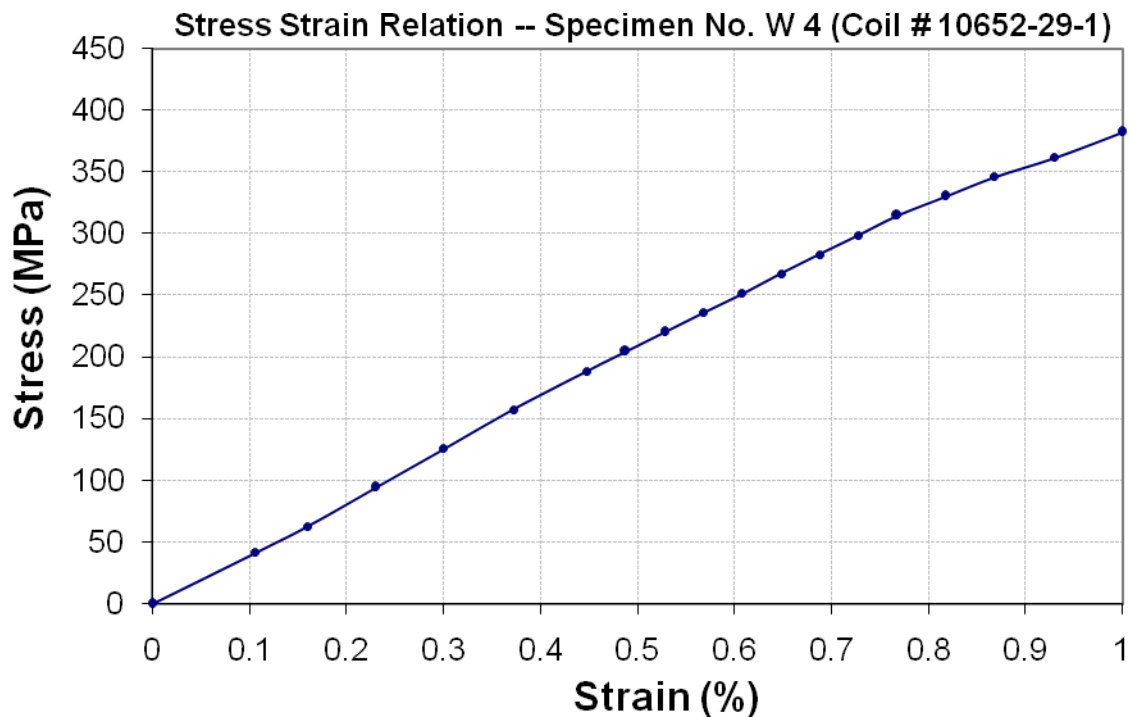
- 1- You can See your reports On Internet in the following web site
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STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
M/S China Gezhouba Group Company Limited
Pakistan
Construction of Mohmand Dam Hydropower Project – Contract No. ICB MDHP-01,
Construction of Civil Works Including Design, Supply and Installation of Electrical and
Mechanical Works and Hydraulic Steel Structures.
Reference # CED/TFL 37737 (Dr. Rizwan Riaz) Dated: 20-01-2022
Reference of the request letter # MDSYS-143-C Dated: 19-01-2022

Graph (Page – 5/9)



I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

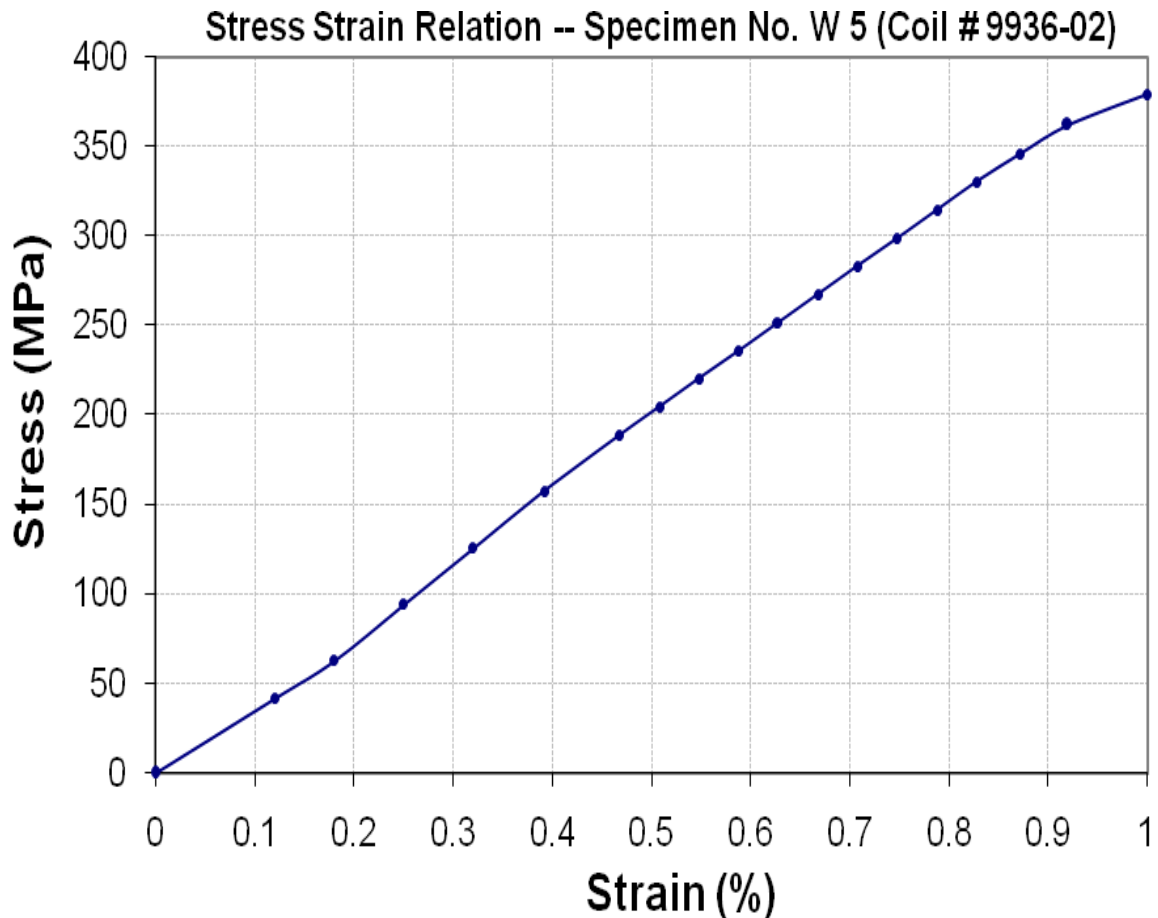
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STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
M/S China Gezhouba Group Company Limited
Pakistan
Construction of Mohmand Dam Hydropower Project – Contract No. ICB MDHP-01,
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Reference # CED/TFL 37737 (Dr. Rizwan Riaz) Dated: 20-01-2022
Reference of the request letter # MDSYS-143-C Dated: 19-01-2022

Graph (Page – 6/9)



I/C Testing Laboratories
UET Lahore, Pakistan.

Note:

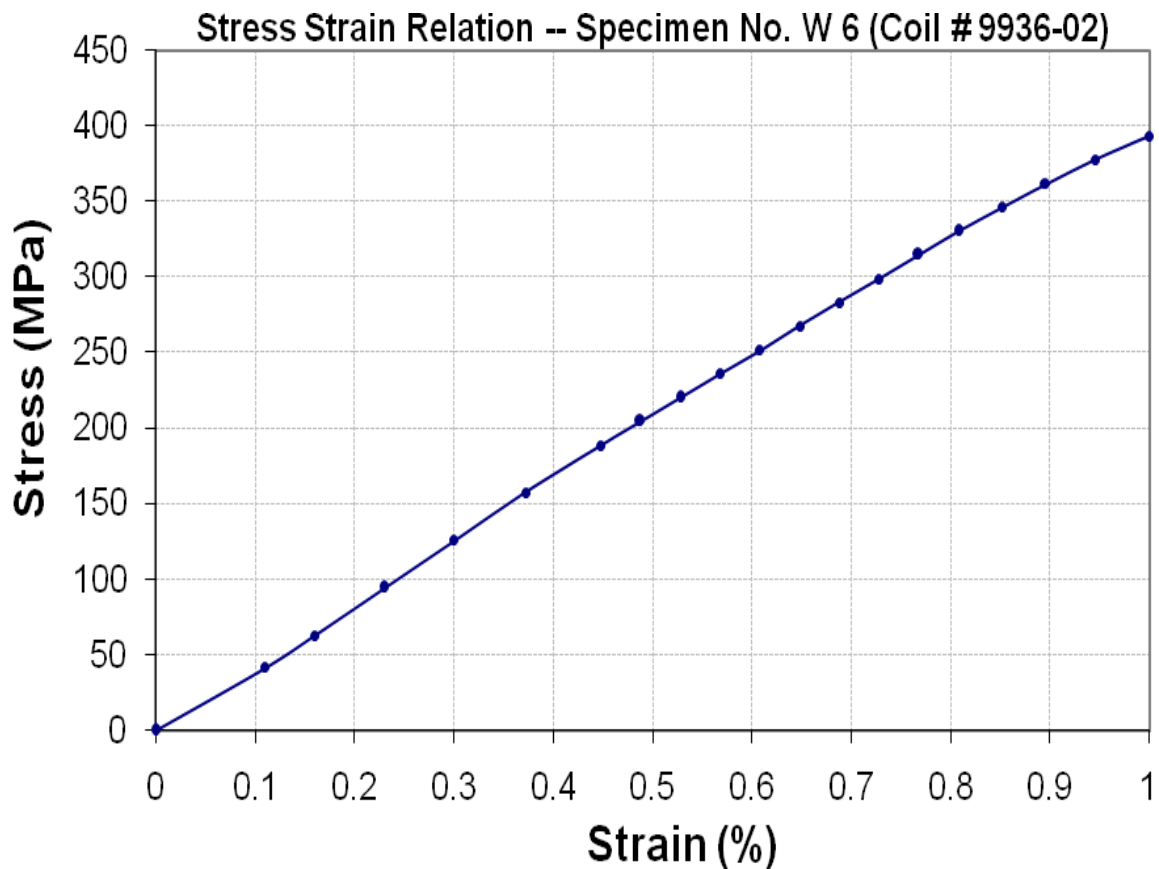
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STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
M/S China Gezhouba Group Company Limited
Pakistan
Construction of Mohmand Dam Hydropower Project – Contract No. ICB MDHP-01,
Construction of Civil Works Including Design, Supply and Installation of Electrical and
Mechanical Works and Hydraulic Steel Structures.
Reference # CED/TFL 37737 (Dr. Rizwan Riaz) Dated: 20-01-2022
Reference of the request letter # MDSYS-143-C Dated: 19-01-2022

Graph (Page – 7/9)



I/C Testing Laboratories
UET Lahore, Pakistan.

Note:

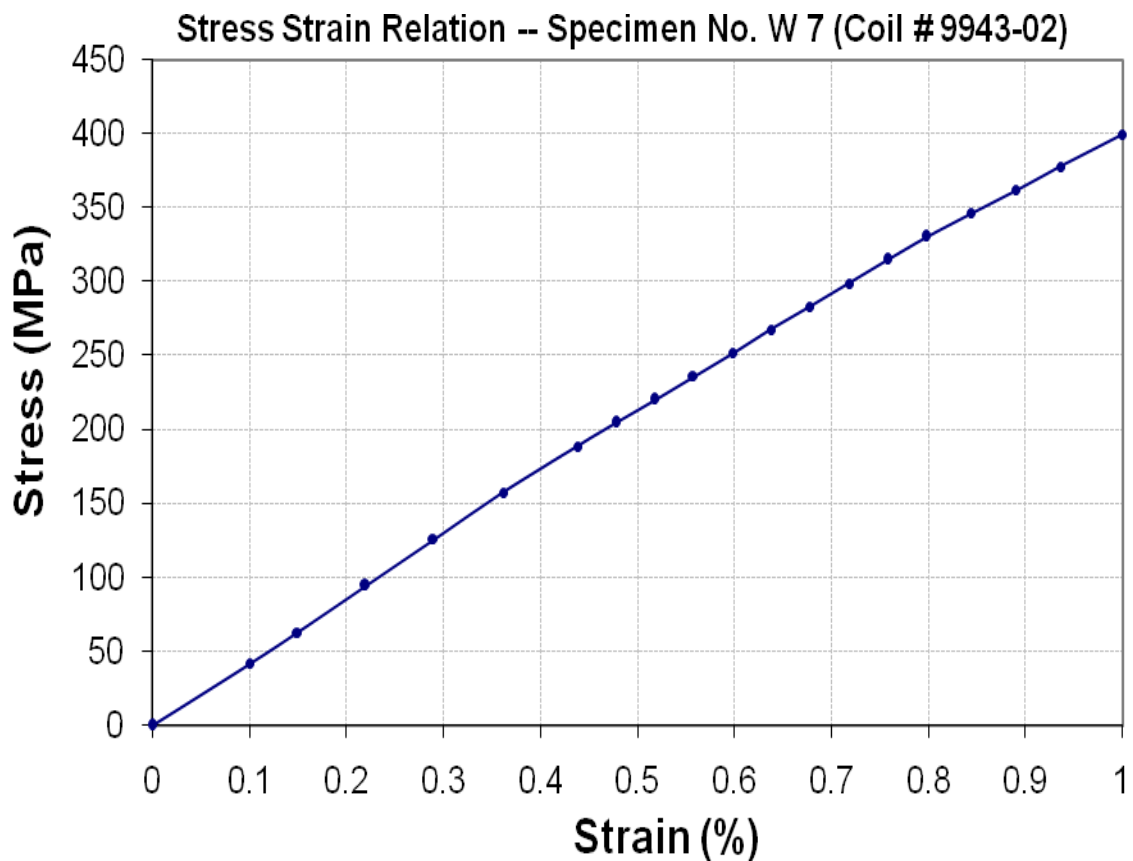
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STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
M/S China Gezhouba Group Company Limited
Pakistan
Construction of Mohmand Dam Hydropower Project – Contract No. ICB MDHP-01,
Construction of Civil Works Including Design, Supply and Installation of Electrical and
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Reference # CED/TFL 37737 (Dr. Rizwan Riaz) Dated: 20-01-2022
Reference of the request letter # MDSYS-143-C Dated: 19-01-2022

Graph (Page – 8/9)



I/C Testing Laboratories
UET Lahore, Pakistan.

Note:

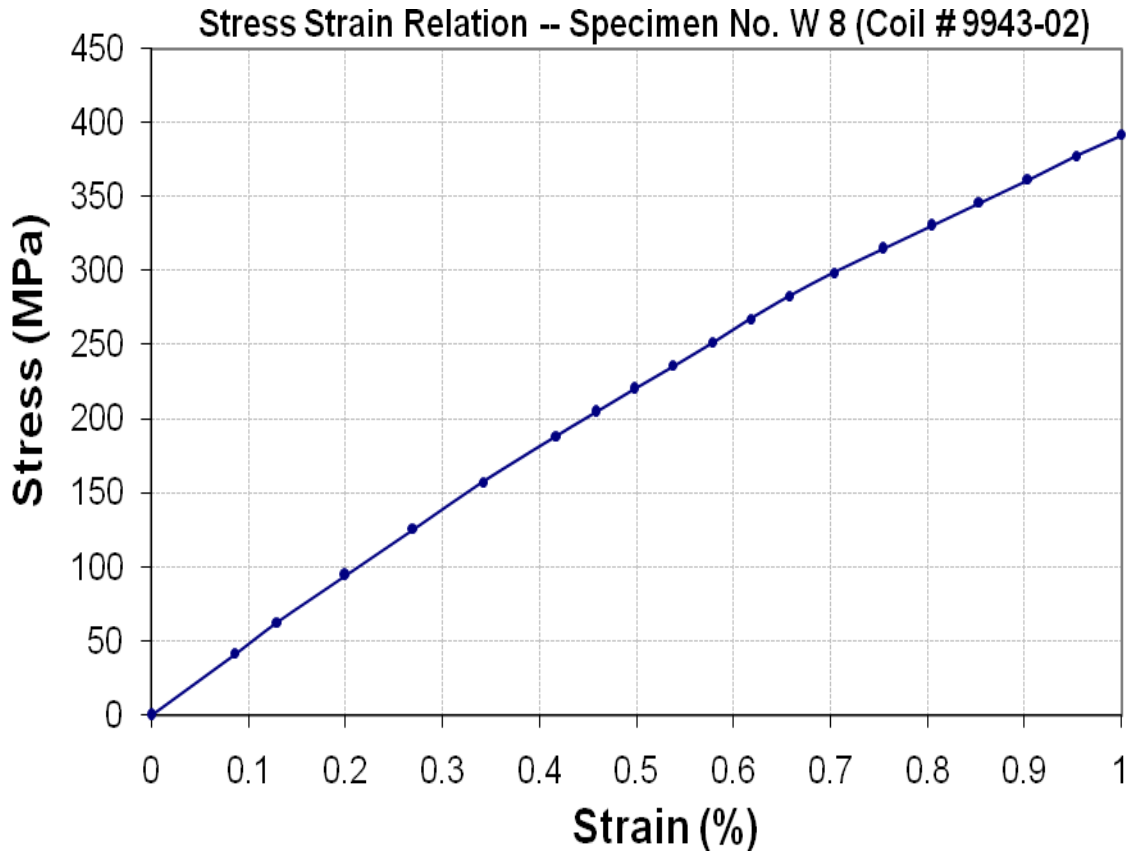
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STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
M/S China Gezhouba Group Company Limited
Pakistan
Construction of Mohmand Dam Hydropower Project – Contract No. ICB MDHP-01,
Construction of Civil Works Including Design, Supply and Installation of Electrical and
Mechanical Works and Hydraulic Steel Structures.
Reference # CED/TFL 37737 (Dr. Rizwan Riaz) Dated: 20-01-2022
Reference of the request letter # MDSYS-143-C Dated: 19-01-2022

Graph (Page – 9/9)



Ref: CED/TFL/01/37759

Dated: 21-01-2022

Date of Test: 01-02-2022

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
NESPAK

Construction of Road from Bahawalpur (N-5) Jhangra Sharqi Interchange Length 42.00km District Bahawalpur

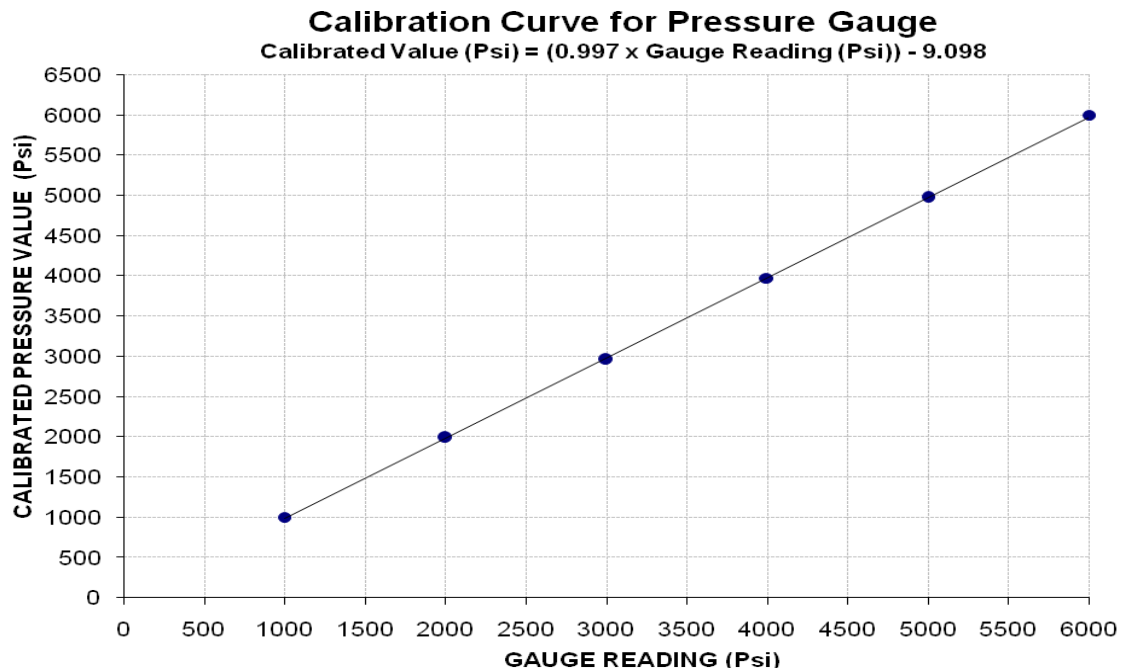
Subject: - CALIBRATION OF PRESSURE GAUGE (MARK: TFL/01/37759) (Page # 1/2)

Reference to your Letter No. RE/SA-467(B)/MSA/BWP-JS/11, Dated: 13/01/2022 on the subject cited above. One Pressure Gauge as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 10000 (Psi)
Calibrated Range : Zero - 6000 (Psi)

Pressure Gauge Reading (Psi)	1000	2000	3000	4000	5000	6000
Calibrated Load (kg)	14000	27700	41200	55300	69200	83500
Calibrated Pressure (Psi)	1006	1990	2960	3972	4971	5998

The Ram Area for Calibration = 198 cm²



I/C Testing Laboratories
UET Lahore, Pakistan.

Note:

- 1- You can See your reports On Internet in the following web site
http://www.uet.edu.pk/faculties/facultiesinfo/civil/index.html?RID=testing_reports
- 2- The above results pertain to sample /samples supplied to this laboratory.
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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/01/37759

Dated: 21-01-2022

Date of Test: 01-02-2022

To,

Resident Engineer

NESPAK

Construction of Road from Bahawalpur (N-5) Jhangra Sharqi Interchange Length 42.00km District Bahawalpur

Subject: - **CALIBRATION OF DIAL GAUGES (MARK: TFL/01/37759)** (Page # 2/2)

Reference to your Letter No. RE/SA-467(B)/MSA/BWP-JS/11, Dated: 13/01/2022 on the subject cited above. Three Dial Gauges as received by us have been calibrated on standard calibration device. The results are tabulated as under.

Total Range : Zero - 50 (mm)
Calibrated Range : Zero - 30 (mm)

Standard Reading	Dial Gauge Readings		
	Dial Gauge No. I (6310242)	Dial Gauge No. II (6310162)	Dial Gauge No. III (4324445)
200	196	196	196
400	394	396	394
600	594	594	594
800	793	793	793
1000	993	992	992
1200	1192	1191	1191
1400	1392	1391	1390
1600	1591	1590	1593
1800	1792	1789	1793
2000	1991	1990	1992
2200	2190	2190	2191
2400	2390	2391	2391
2600	2590	2591	2591
2800	2790	2791	2791
3000	2990	2991	2991

I/C Testing Laboratories
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,
M/S Consdriil (Pvt) Ltd
Lahore
(High-Q Tower - 3 Block -A Main Boulevard, Gulberg, Lahore)

Reference # CED/TFL **37797** (Dr. Ali Ahmed)
Reference of the request letter # CD/34-B/21/8755

Dated: 28-01-2022
Dated: 28-01-2022

Tension Test Report (Page – 1/1)

Date of Test 01-02-2022
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)		% Elongation	Remarks/ Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)		
1	12.70 (1/2")	775.0	788.0	17100	167.75	19600	192.28	>3.50	xx
-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	
Only one sampled for Test									

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,
Manager Procurement
Amin Brthers Eneiners Pak (Pvt) Ltd
Manufacturing of PCC Poles at Jhang Pole Plant

Reference # CED/TFL **37803** (Dr. Ali Ahmed)
Reference of the request letter # ABEL/UET/22-04

Dated: 28-01-2022
Dated: 28-01-2022

Tension Test Report (Page – 1/1)

Date of Test 01-02-2022
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)		% Elongation	Remarks/ Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)		
1	9.53 (3/8")	432.0	436.0	10200	100.06	11200	109.87	>3.50	xx
2	9.53 (3/8")	432.0	435.0	9600	94.18	11200	109.87	>3.50	xx
3	11.11 (7/16")	582.0	594.0	12800	125.57	14800	145.19	>3.50	xx
4	11.11 (7/16")	582.0	589.0	13300	130.47	14800	145.19	>3.50	xx
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-

Only four sampled for 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,
M/S S.A. Sheikh & Co.
Lahore

Reference # CED/TFL **37810** (Dr. Rizwan Azam)
Reference of the request letter # SASheikh/ABSCATEC/4

Dated: 31-01-2022

Dated: 31-01-2022

Tension Test Report (Page -1/1)

Date of Test 01-02-2022
Gauge length 8 inches
Description Plain Steel Bar 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 (inch)	Actual (mm)	Nominal	Actual							
1	8.868	1.5	37.93	-----	1129.7	49000	83600	426	726	1.50	18.8	
-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	
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,
 Construction Manager
 Deevar Developers Pvt. Ltd
 Construction of Zameen Opal, Plot No. 16, Sector-A, Land Breeze Housing Society, Raiwind Road, Lahore
 Reference # CED/TFL **37818** (Dr. Rizwan Riaz) Dated: 01-02-2022
 Reference of the request letter # ZD/ZO/L/045 Dated: 01-02-2022

Tension Test Report (Page -1/1)

Date of Test 01-02-2022
 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	0.379	3	0.377	0.11	0.111	3620	5120	72600	71660	102600	101400	1.20	15.0	
2	0.385	3	0.380	0.11	0.113	3690	5220	74000	71850	104600	101700	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 Laboratories
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,
 Construction Manager
 Zameen Aurum
 Construction of Zameen Aurum at Plot No. 15 Block L, Gulberg-III, Main Feroze Pur Road,
 Lahore
 Reference # CED/TFL **37819** (Dr. M Rizwan Riaz) Dated: 01-02-2022
 Reference of the request letter # ZD/ZA/STR023 Dated: 01-02-2022

Tension Test Report (Page -1/1)

Date of Test 01-02-2022
 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	0.408	3	0.391	0.11	0.120	3770	5400	75600	69230	108200	99200	1.10	13.8	SJ Steel
2	0.382	3	0.378	0.11	0.112	3670	5120	73600	72100	102600	100600	1.10	13.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

- 1- You can See your reports On Internet in the following web site
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