



**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/11/2267

Dated: 11-11-2022

Dated of Test: 15-11-2022

To

**Chief Engineer**  
**Zaitoon**  
**New Lahore City Phase-III (Iftikhar & Brothers)**

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

Reference to your letter No. NLC/CE/137, dated 07.11.2022 on the subject cited above. Two R.C.C. Pipes as received by us have 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	7.78	7.30	16.14	12.38	1.88	10500	14000	3071	4095
2	15	7.78	7.19	19.53	14.74	2.39	6500	10700	1624	2673

**I/C Testing Laboratoires**  
**UET Lahore, Pakistan.**

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**Pakistan. Ph: 92-42-99029202**

To,

M/S Beacon Impex  
 34 – km Sheikhpura Road, Faisalabad  
 (Construction of Multi Storey Polyester Building at Beacon Impex II.)  
 (M/s M. Saleem Construction Company)

Reference # CED/TFL **2275** (Dr. M Rizwan Riaz)  
 Reference of the request letter # Nil

Dated: 14-11-2022  
 Dated: 14-11-2022

**Tension Test Report** (Page -1/1)

Date of Test 15-11-2022  
 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 <sup>2</sup> )		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	0.367	3	0.371	0.11	0.108	3700	4900	74200	75540	98200	100100	1.00	12.5	Kisan Steel
2	0.369	3	0.372	0.11	0.108	4100	5100	82200	83340	102200	103700	0.90	11.3	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two samples for tensile and one sample for bend test</b>														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

**I/C Testing Laboratoires**  
**UET Lahore, Pakistan.**

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To,  
 Resident Engineer  
 NESPAK  
 Development of Under External Electrification Network in LDA City Housing Scheme,  
 Lahore  
 (Development Area-1) Package-3 & 8

Reference # CED/TFL **2277** (Dr. M Rizwan Riaz)  
 Reference of the request letter # 4047/13/MA/04/51

Dated: 14-11-2022  
 Dated: 12-11-2022

**Tension Test Report** (Page -1/1)

Date of Test 15-11-2022  
 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 <sup>2</sup> )		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	0.207	2	0.279	-----	0.061	2100	2500	-----	75900	-----	90400	0.70	8.8	Batala Premium Steel
2	0.197	2	0.272	-----	0.058	1600	2200	-----	60840	-----	83700	1.20	15.0	
3	0.363	3	0.369	0.11	0.107	3500	4900	70200	72310	98200	101300	1.20	15.0	
4	0.358	3	0.366	0.11	0.105	3500	5100	70200	73210	102200	106700	1.20	15.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only four samples for tensile and two samples for bend test</b>														
Bend Test														
#2 Bar Bend Test Through 180° is Satisfactory														
#3 Bar Bend Test Through 180° is Satisfactory														

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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 2279 (Dr. M Rizwan Riaz)

Dated: 14-11-2022

Reference of the request letter # MDSYS-201

Dated: 12-11-2022

**Tension Test Report** (Page – 1/19)

Date of Test 15-11-2022

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	% Elongation	Remarks / Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)	E, GPa		
1	15.24 (0.6")	1102.0	1126.0	24600	241.33	27500	269.78	198	>3.50	11682
2	15.24 (0.6")	1102.0	1127.0	25000	245.25	27500	269.78	199	>3.50	11682
3	15.24 (0.6")	1102.0	1135.0	25000	245.25	27500	269.78	199	>3.50	11701
4	15.24 (0.6")	1102.0	1128.0	24600	241.33	27500	269.78	198	>3.50	11701
5	15.24 (0.6")	1102.0	1139.0	24800	243.29	27600	270.76	199	>3.50	11713
6	15.24 (0.6")	1102.0	1136.0	24100	236.42	27500	269.78	199	>3.50	11713
7	15.24 (0.6")	1102.0	1134.0	24800	243.29	27700	271.7	198	>3.50	11741
8	15.24 (0.6")	1102.0	1134.0	25200	247.21	27800	272.7	199	>3.50	11741
9	15.24 (0.6")	1102.0	1133.0	24800	243.29	27700	271.7	199	>3.50	11744

**Only Nine 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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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 **2279** (Dr. M Rizwan Riaz)

Dated: 14-11-2022

Reference of the request letter # MDSYS-201

Dated: 12-11-2022

**Tension Test Report** (Page – 2/19)

Date of Test 15-11-2022

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	% Elongation	Remarks / Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)	E, GPa		
1	15.24 (0.6")	1102.0	1137.0	24400	239.36	27600	270.8	199	>3.50	11754
2	15.24 (0.6")	1102.0	1138.0	25000	245.25	27800	272.7	199	>3.50	11754
3	15.24 (0.6")	1102.0	1134.0	24900	244.27	27900	273.7	199	>3.50	11689
4	15.24 (0.6")	1102.0	1132.0	24400	239.36	27700	271.7	198	>3.50	11712
5	15.24 (0.6")	1102.0	1134.0	24900	244.27	27500	269.8	199	>3.50	11712
6	15.24 (0.6")	1102.0	1136.0	25000	245.25	27700	271.7	199	>3.50	11735
7	15.24 (0.6")	1102.0	1133.0	24700	242.31	27600	270.8	198	>3.50	11735
8	15.24 (0.6")	1102.0	1135.0	24200	237.40	27600	270.8	199	>3.50	11742

**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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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.

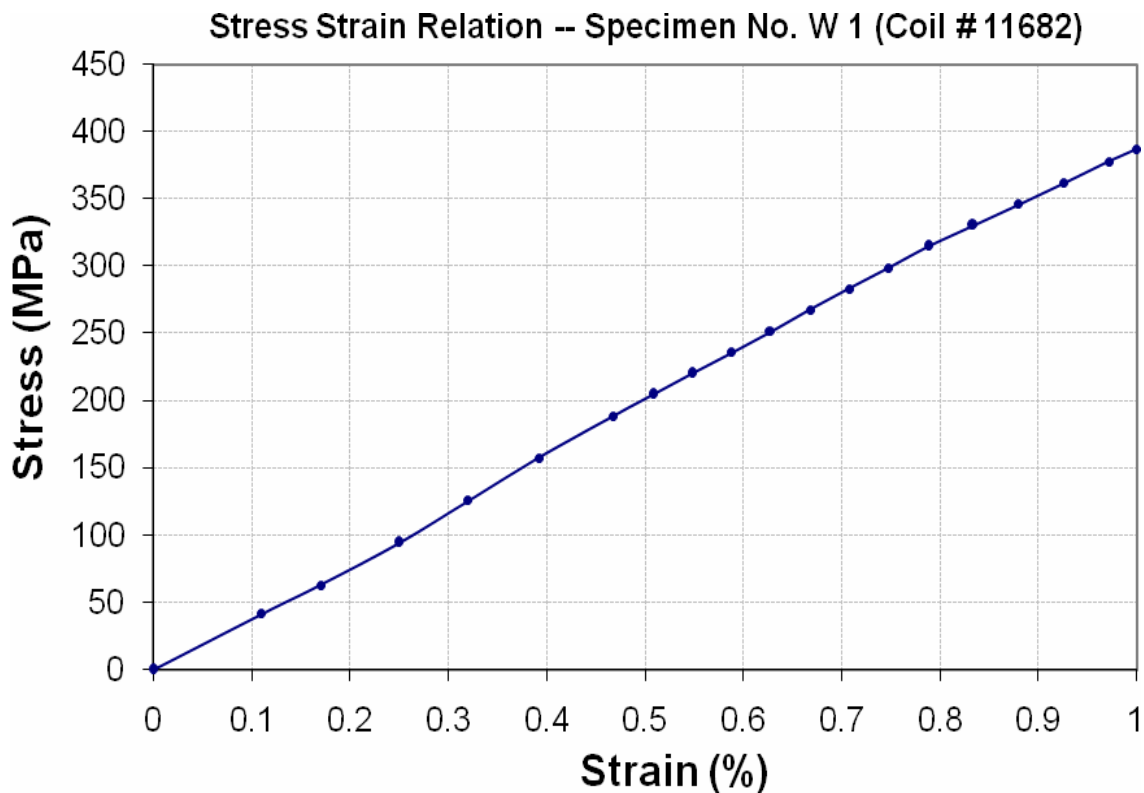
Reference # CED/TFL 2279 (Dr. M Rizwan Riaz)

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Reference of the request letter # MDSYS-201

Dated: 12-11-2022

**Graph** (Page – 3/19)



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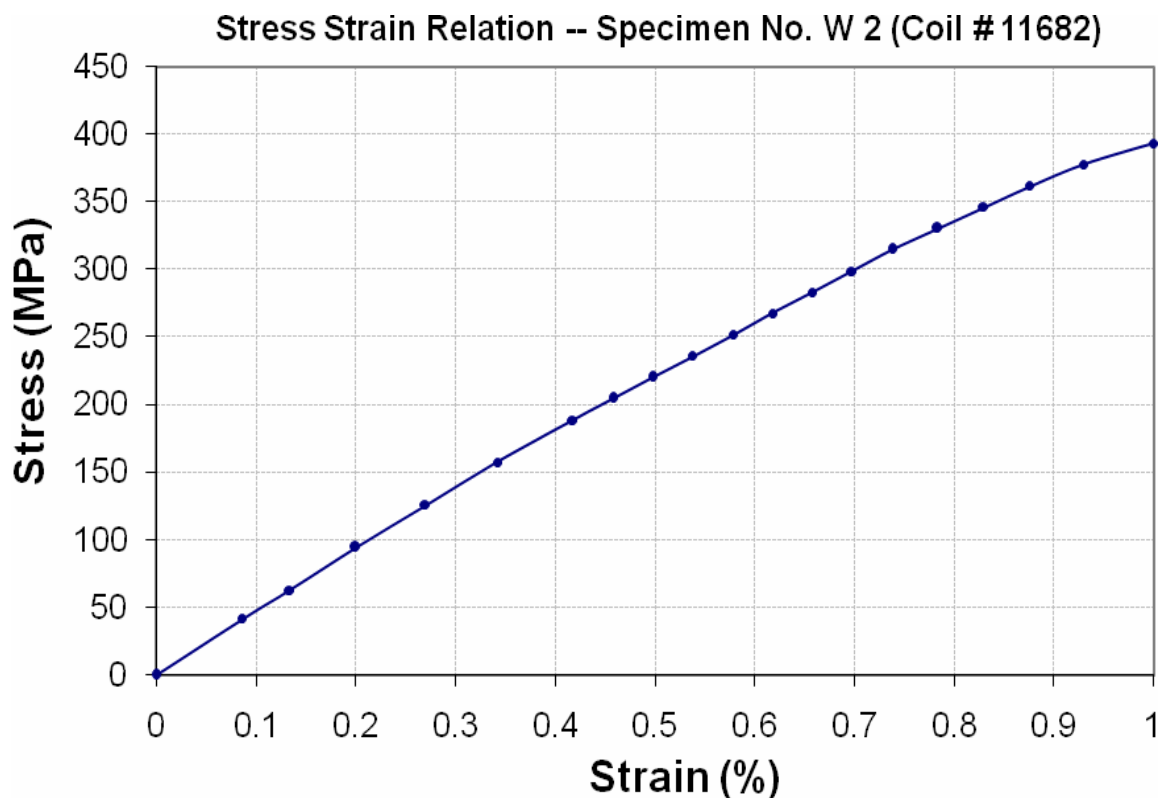
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**Graph** (Page – 4/19)



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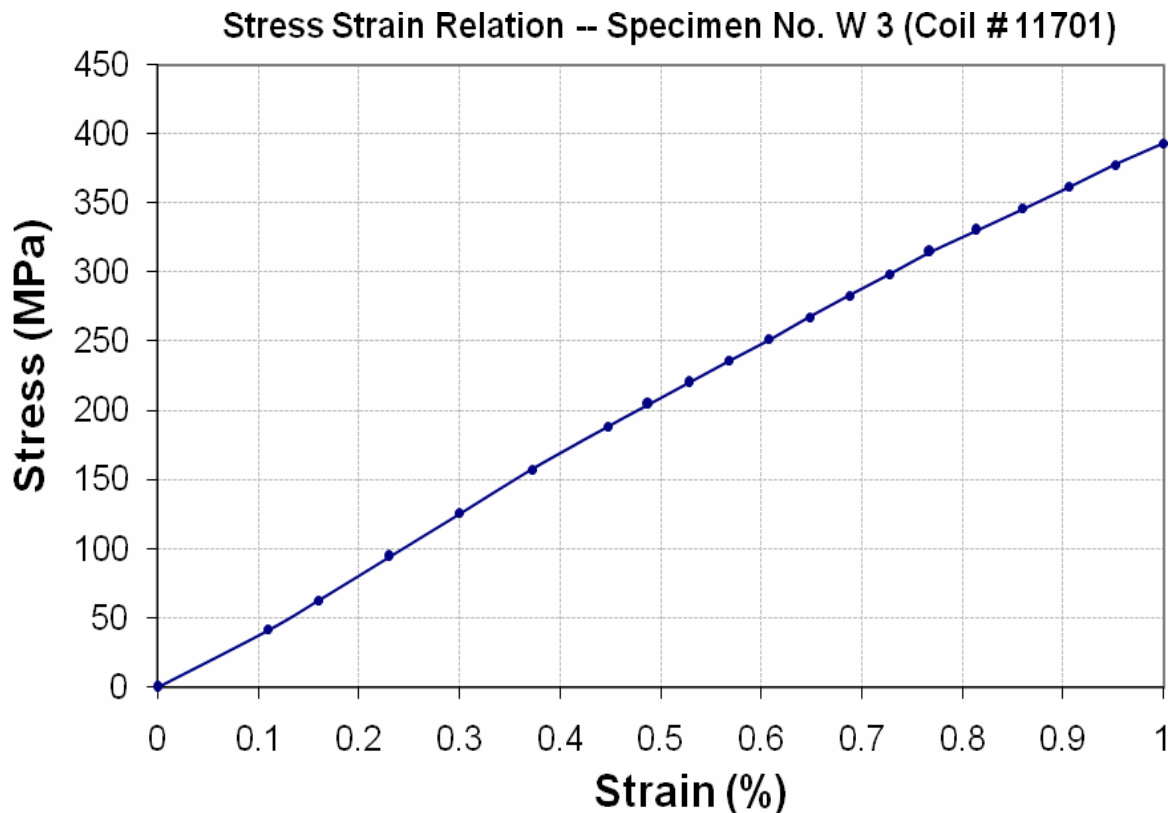
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**Graph** (Page – 5/19)



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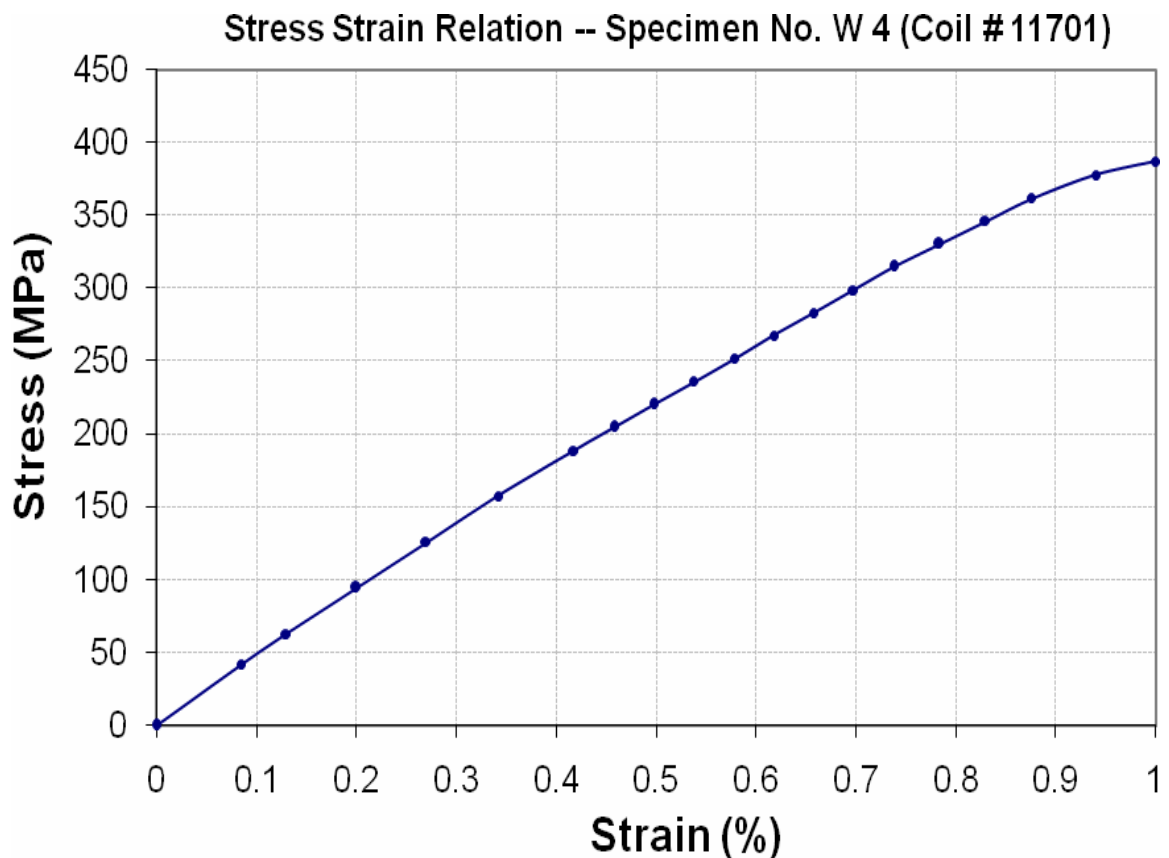
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**Graph** (Page – 6/19)



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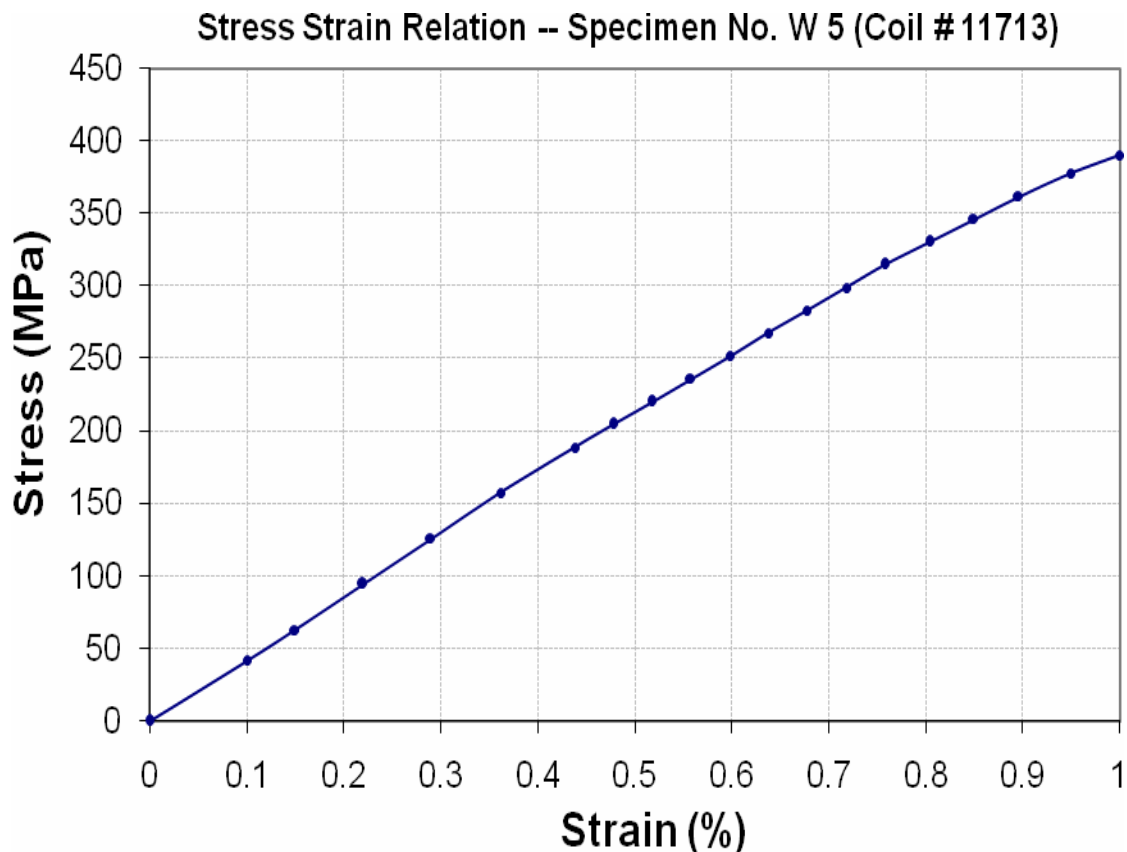
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**Graph** (Page – 7/19)



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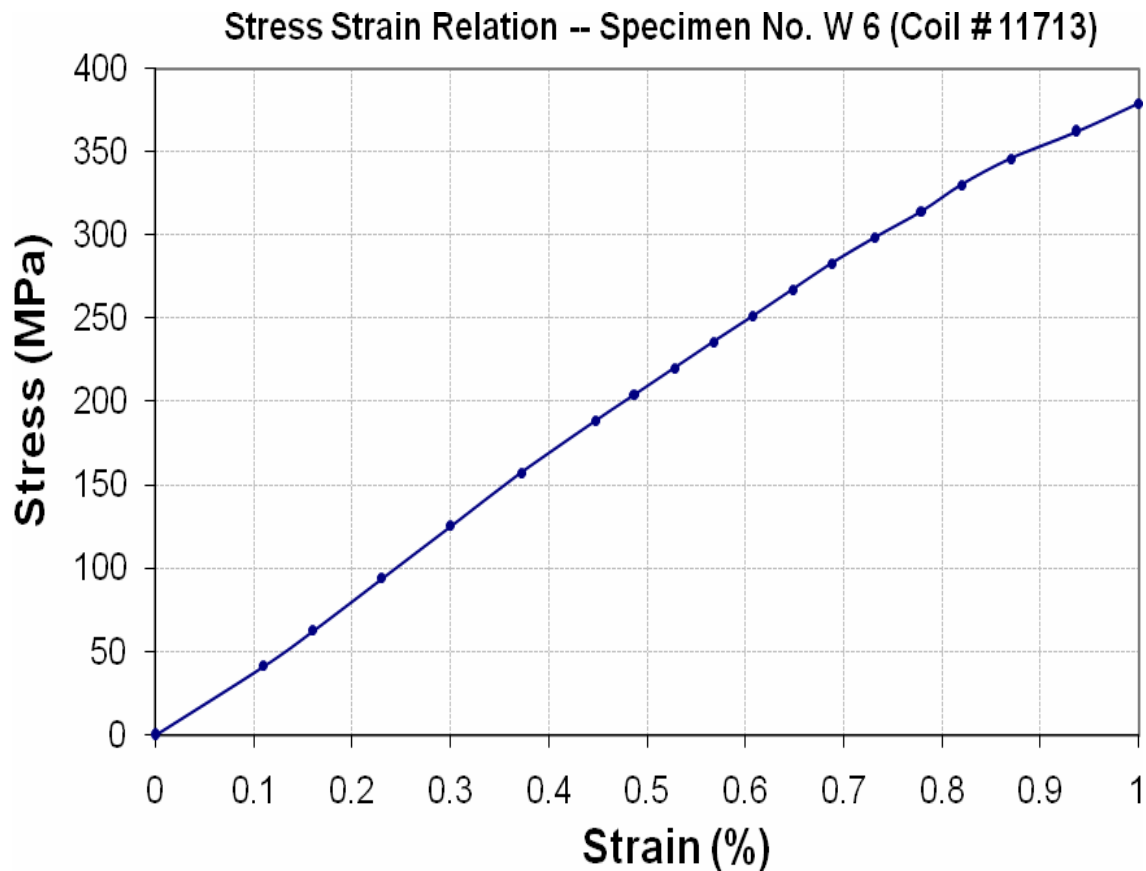
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**Graph** (Page – 8/19)



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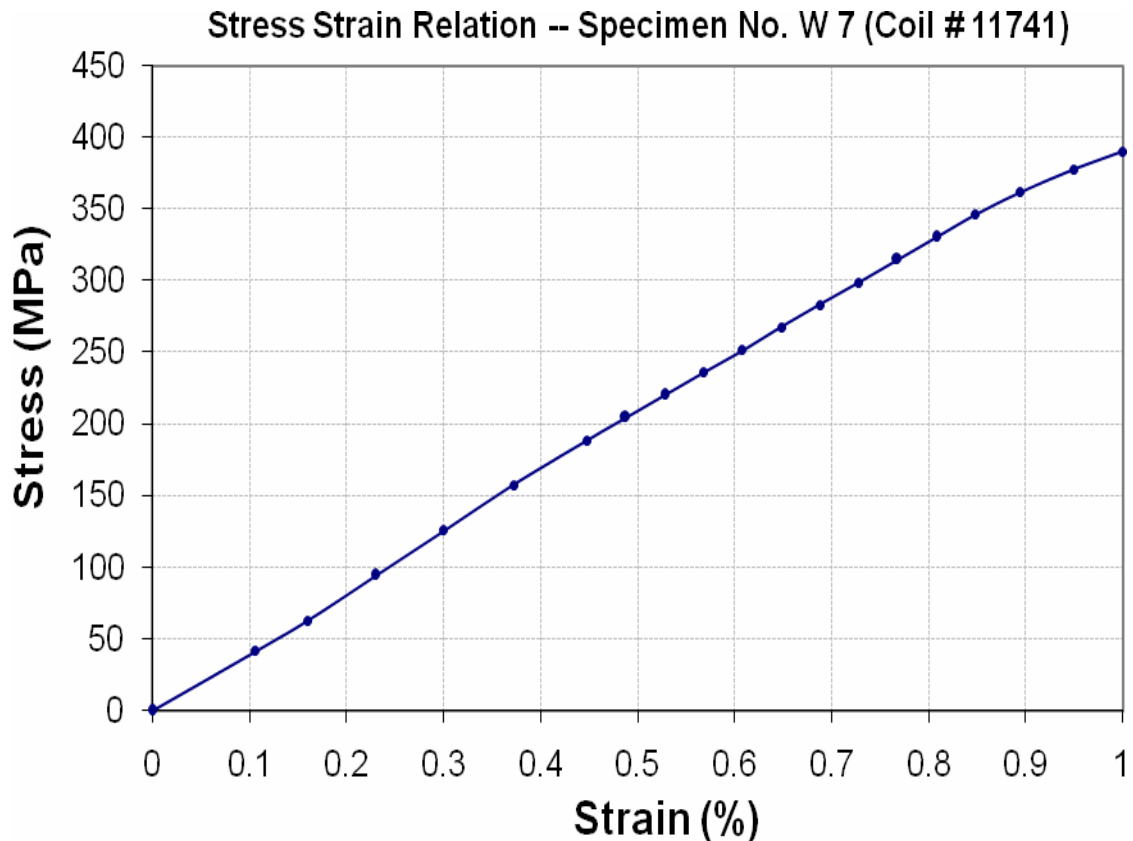
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**Graph** (Page – 9/19)



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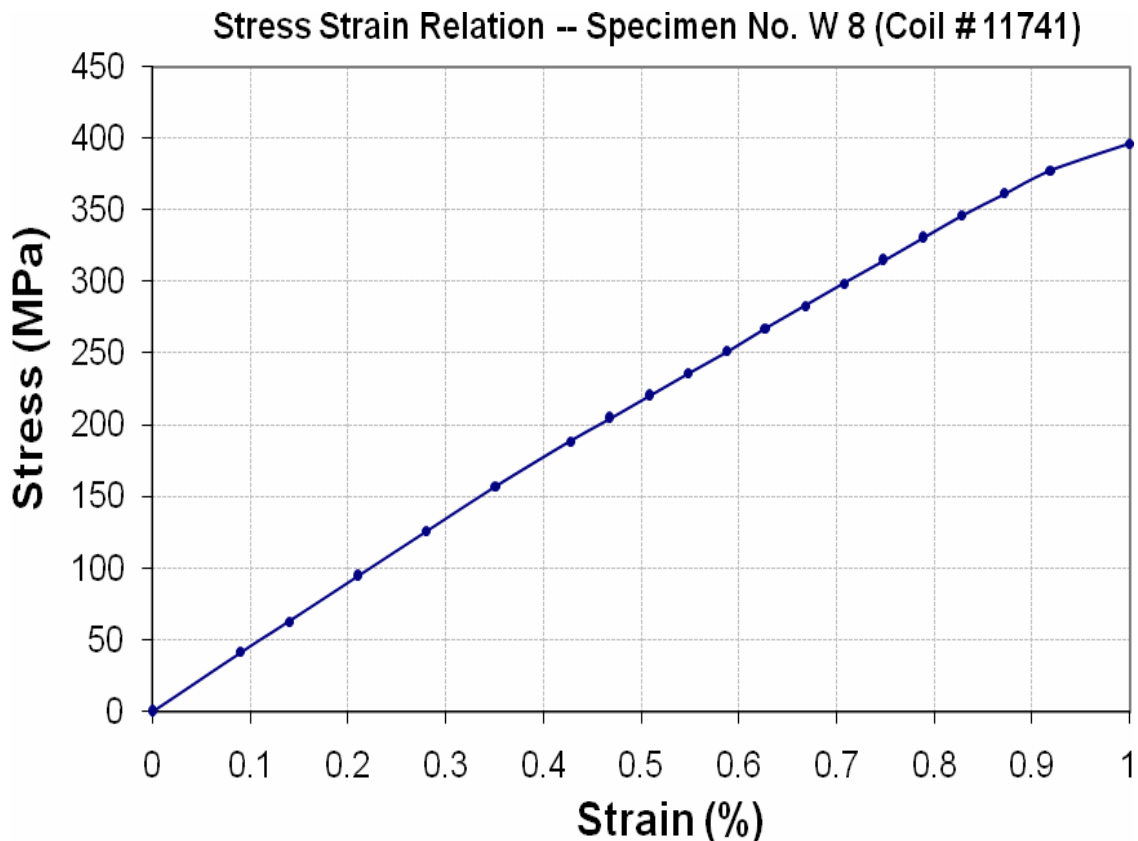
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**Graph** (Page – 10/19)



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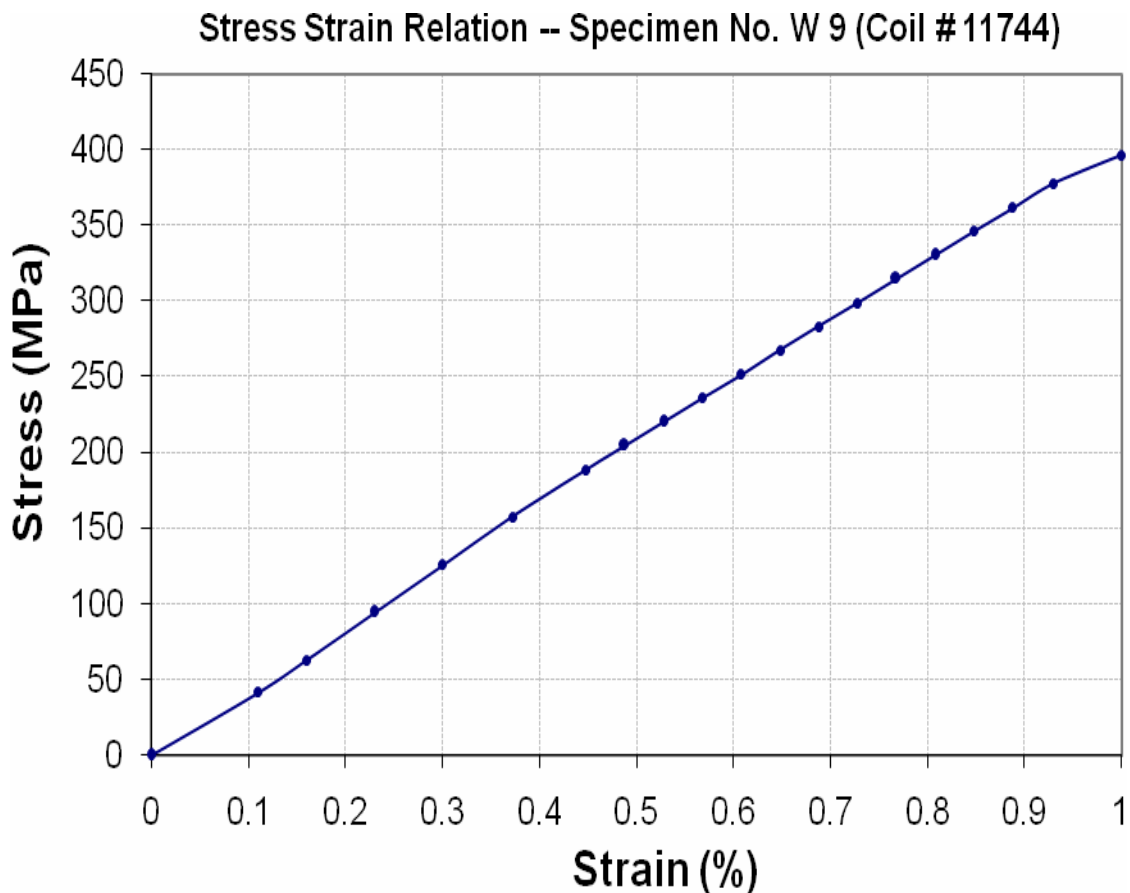
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**Graph** (Page – 11/19)



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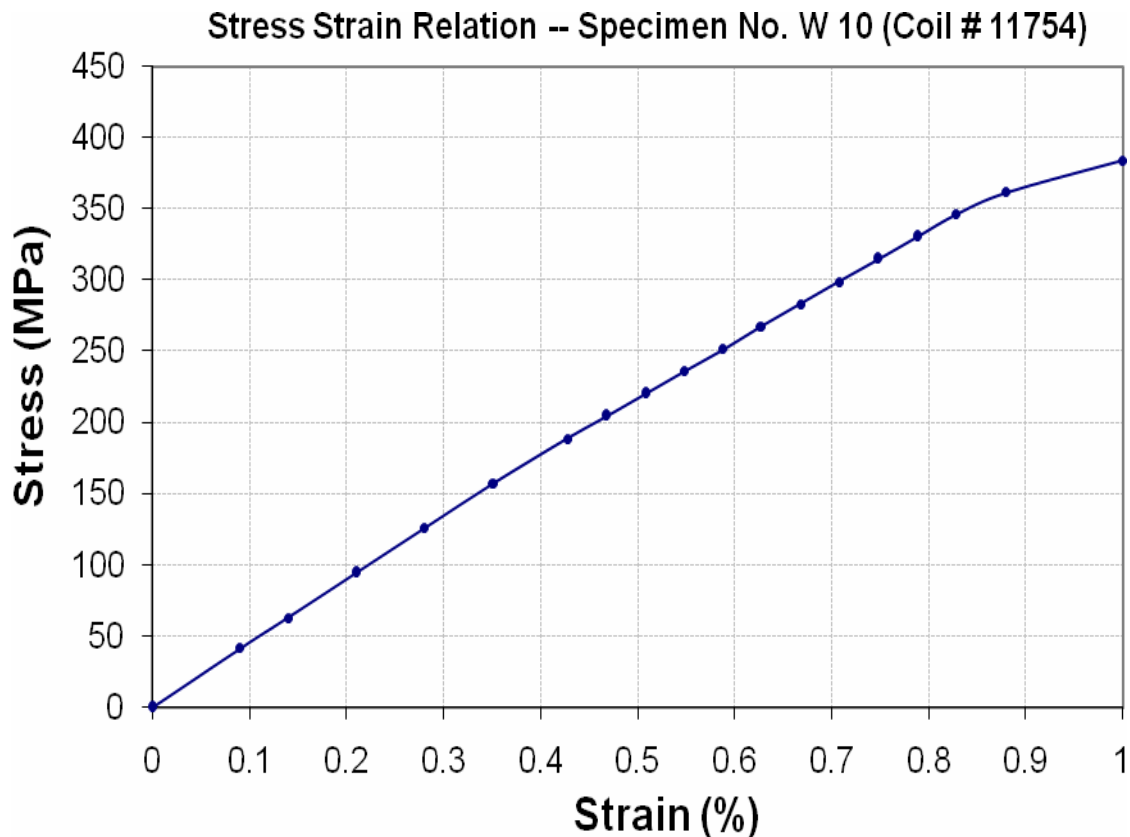
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**Graph** (Page – 12/19)



**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](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,

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.

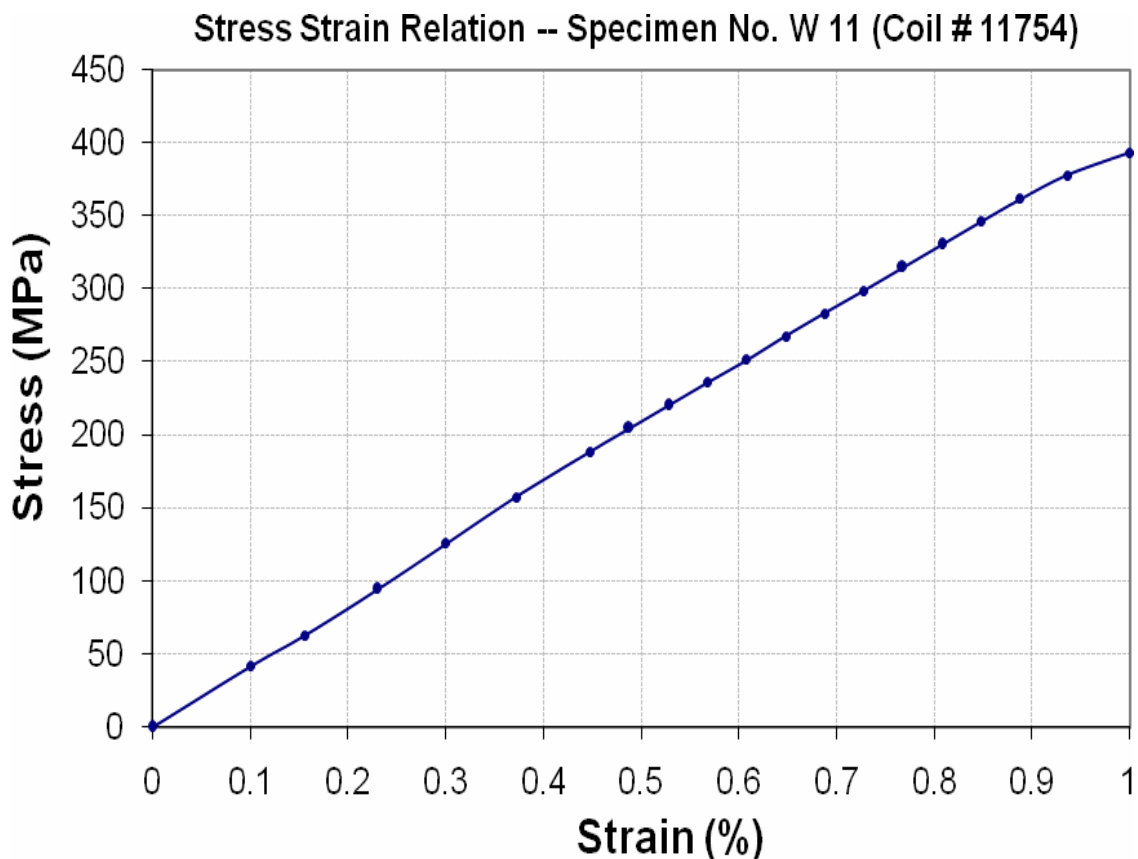
Reference # CED/TFL 2279 (Dr. M Rizwan Riaz)

Dated: 14-11-2022

Reference of the request letter # MDSYS-201

Dated: 12-11-2022

**Graph** (Page – 13/19)



**I/C Testing Laboratoires**  
**UET Lahore, Pakistan.**

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

To,

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Pakistan

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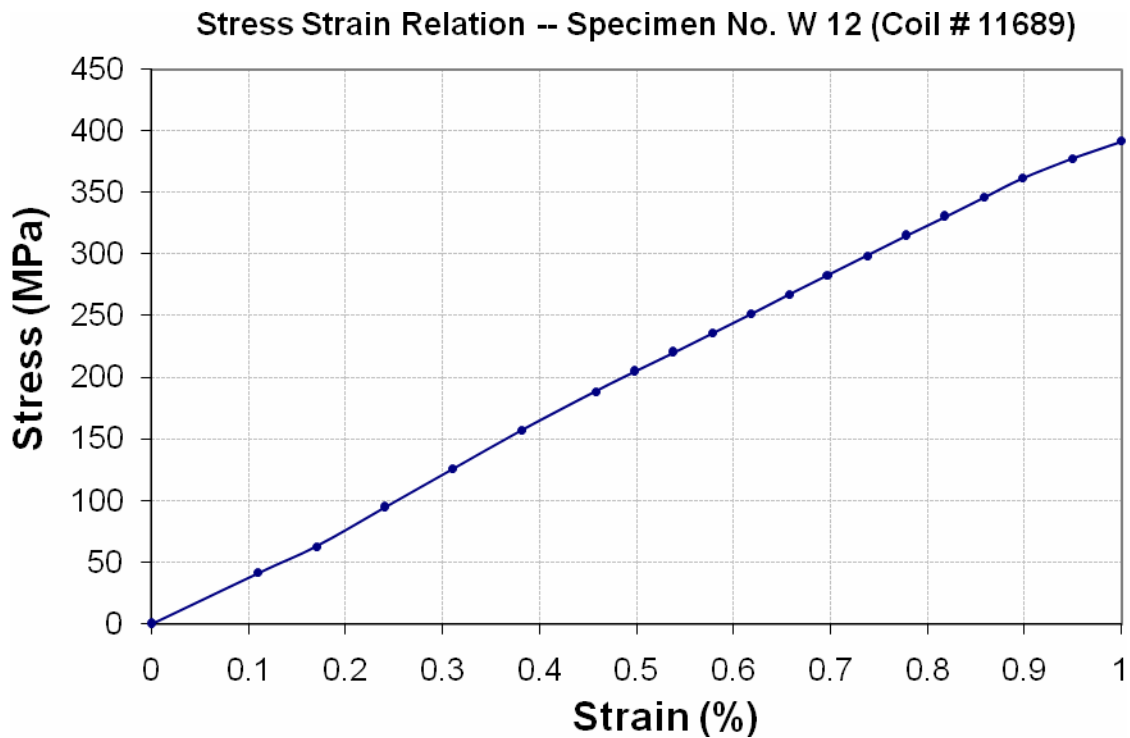
Reference # CED/TFL 2279 (Dr. M Rizwan Riaz)

Dated: 14-11-2022

Reference of the request letter # MDSYS-201

Dated: 12-11-2022

**Graph** (Page – 14/19)



**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**  
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To,

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Pakistan

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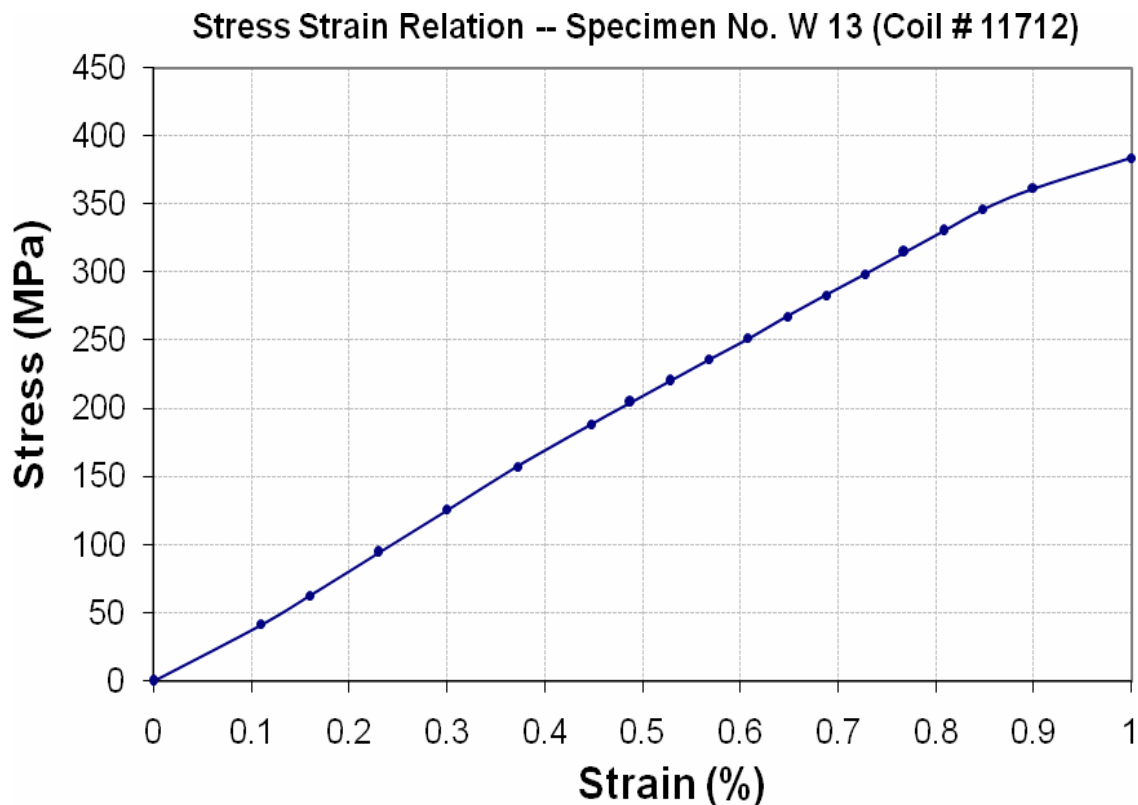
Reference # CED/TFL 2279 (Dr. M Rizwan Riaz)

Dated: 14-11-2022

Reference of the request letter # MDSYS-201

Dated: 12-11-2022

**Graph** (Page – 15/19)



**I/C Testing Laboratories**  
**UET Lahore, Pakistan.**

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

To,

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Pakistan

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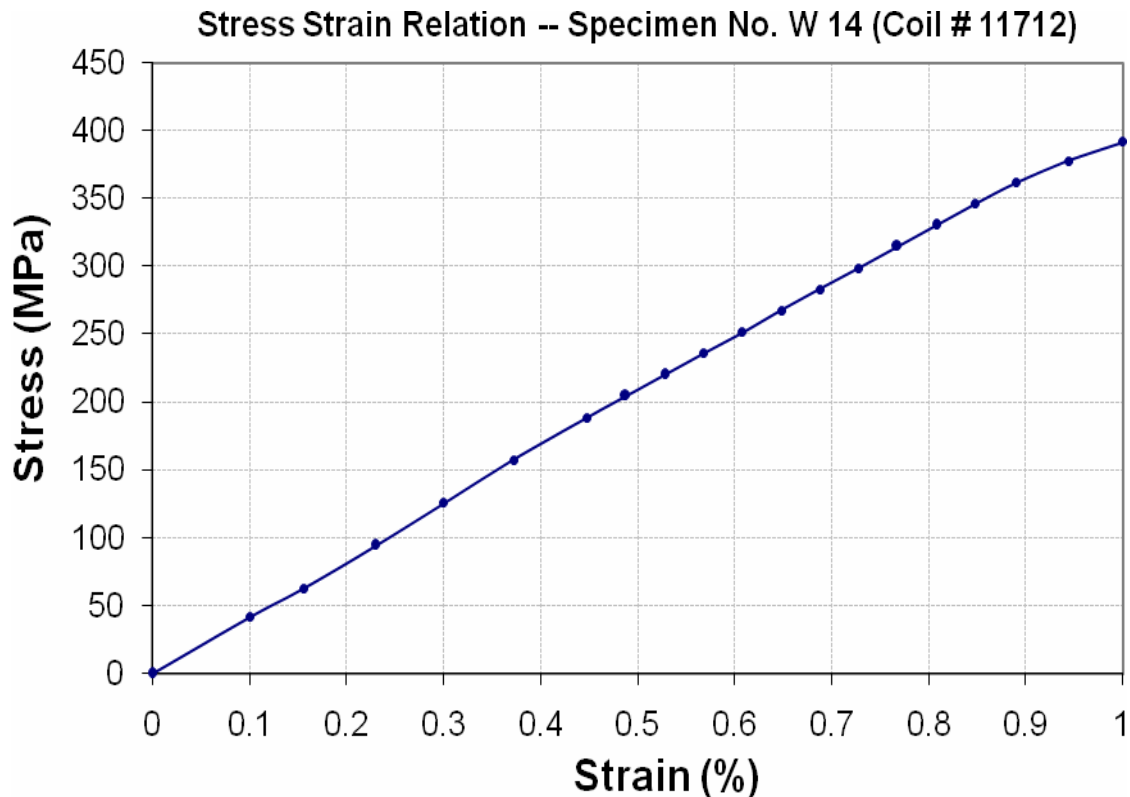
Reference # CED/TFL 2279 (Dr. M Rizwan Riaz)

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Reference of the request letter # MDSYS-201

Dated: 12-11-2022

**Graph** (Page – 16/19)



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**Department of Civil Engineering**  
**University of Engineering and Technology Lahore, 54890**  
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To,

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Reference # CED/TFL 2279 (Dr. M Rizwan Riaz)

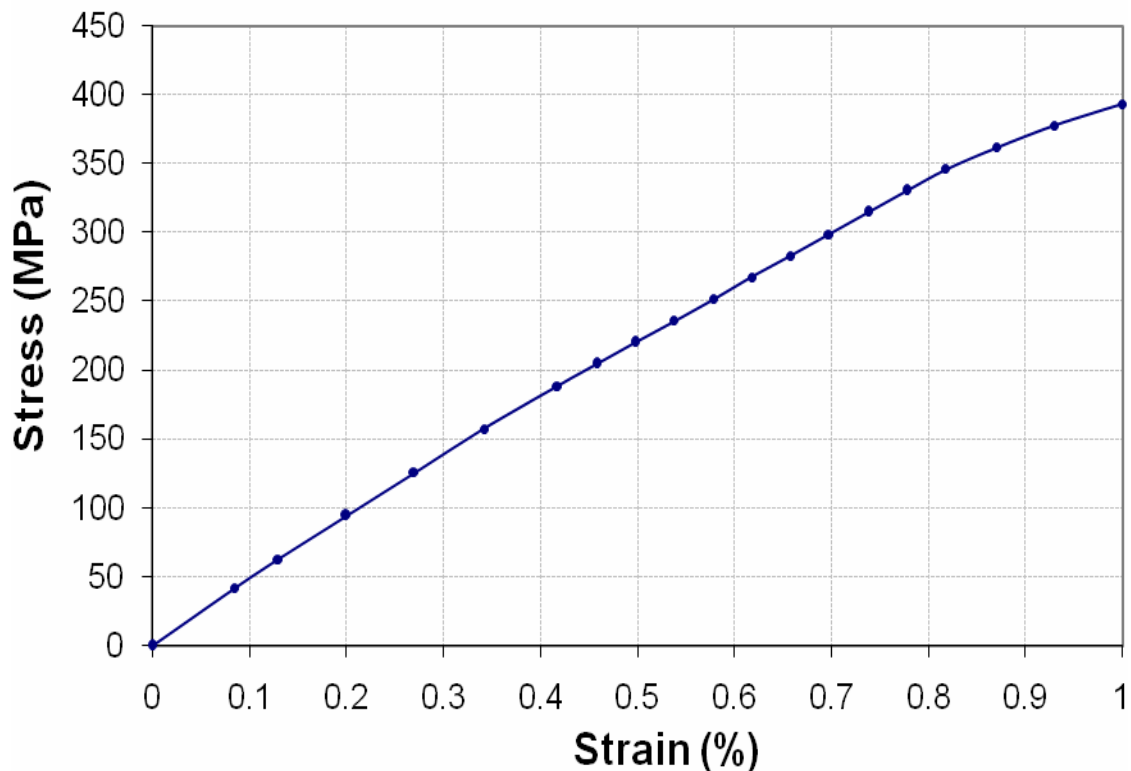
Dated: 14-11-2022

Reference of the request letter # MDSYS-201

Dated: 12-11-2022

**Graph** (Page – 17/19)

**Stress Strain Relation -- Specimen No. W 15 (Coil # 11735)**



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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 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.

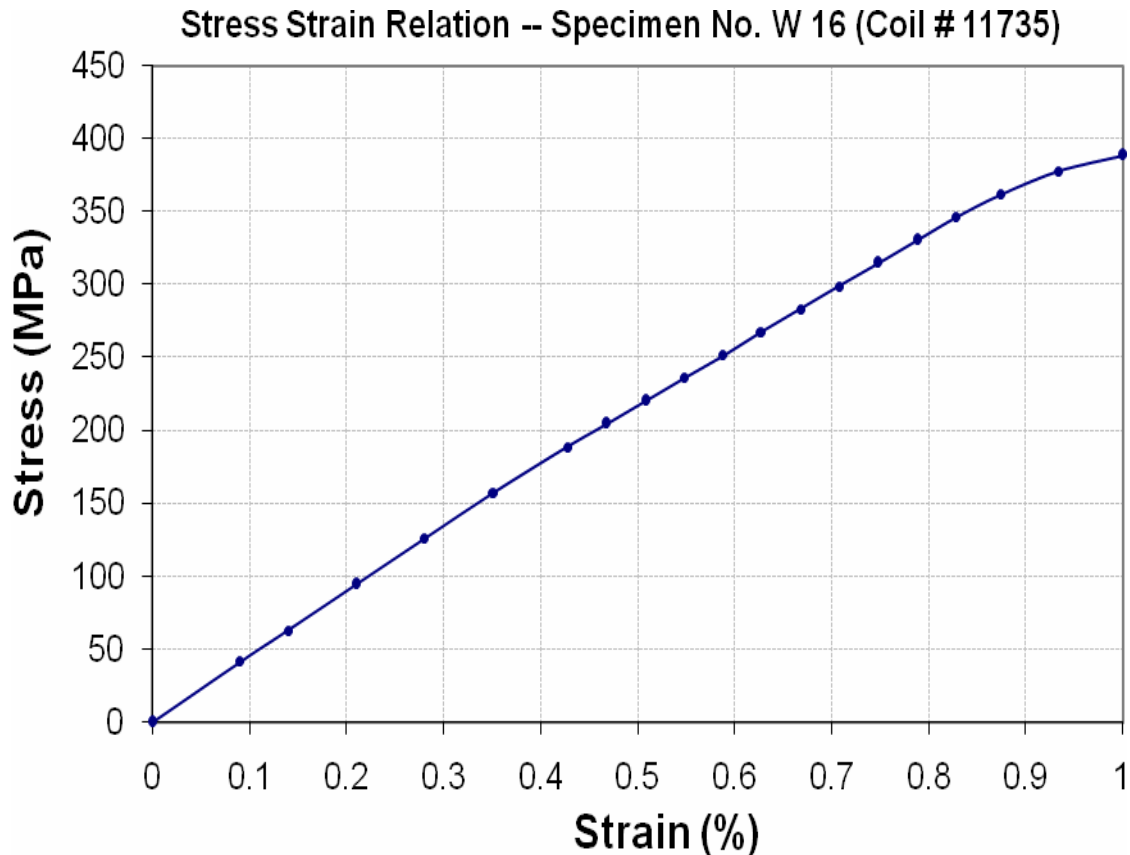
Reference # CED/TFL 2279 (Dr. M Rizwan Riaz)

Dated: 14-11-2022

Reference of the request letter # MDSYS-201

Dated: 12-11-2022

**Graph** (Page – 18/19)



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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 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.

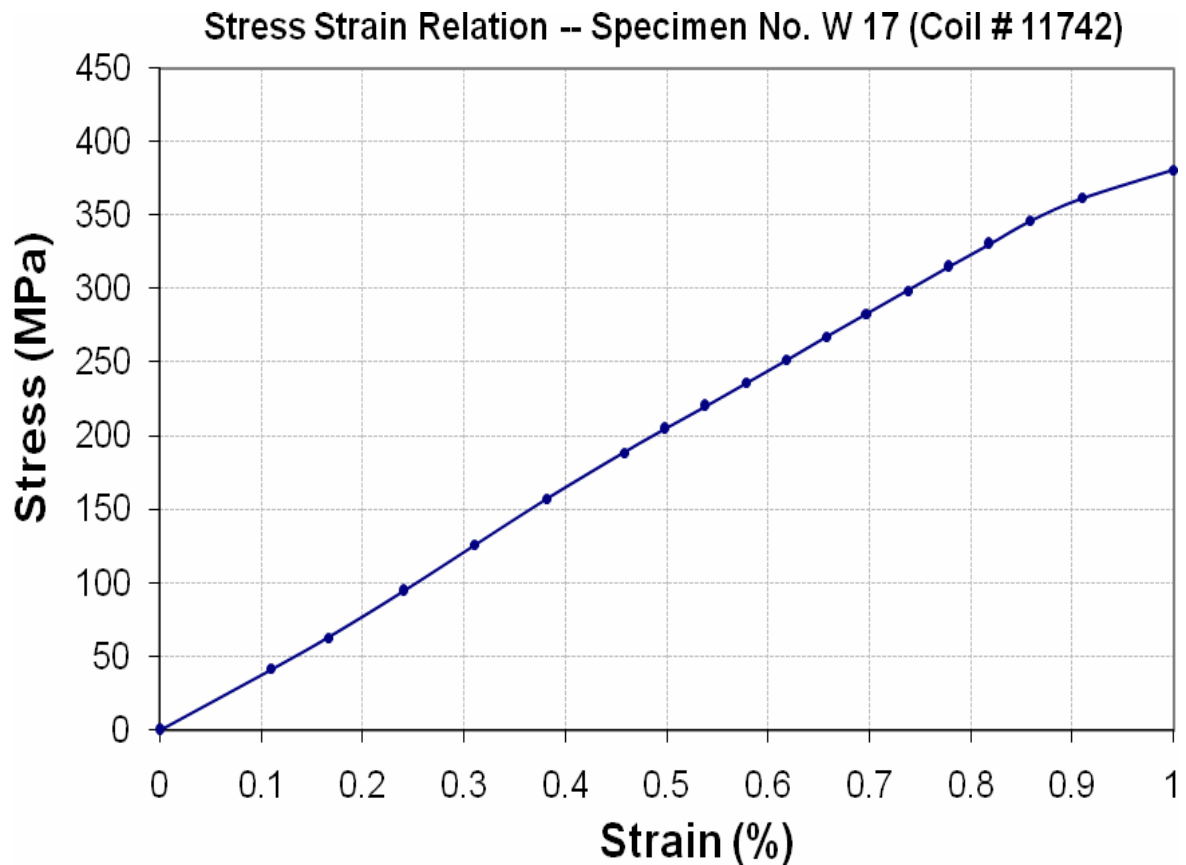
Reference # CED/TFL 2279 (Dr. M Rizwan Riaz)

Dated: 14-11-2022

Reference of the request letter # MDSYS-201

Dated: 12-11-2022

**Graph** (Page – 19/19)



**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  
 Design Matrix  
 E-Site Project

Reference # CED/TFL 2281 (Dr. M Rizwan Riaz)  
 Reference of the request letter # Nil

Dated: 14-11-2022  
 Dated: 10-11-2022

**Tension Test Report** (Page -1/1)

Date of Test 15-11-2022  
 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 <sup>2</sup> )		Yield load (kg)	Breaking Load (kg)	Yield Stress (psi)		Ultimate Stress (psi)		Elongation (inch)	% Elongation	Remarks
		Nominal (#)	Actual (inch)	Nominal	Actual			Nominal	Actual	Nominal	Actual			
1	0.372	3	0.373	0.11	0.109	3800	5000	76200	76500	100200	100700	0.80	10.0	
2	0.375	3	0.375	0.11	0.110	3700	5000	74200	74010	100200	100100	1.10	13.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two samples for tensile and one sample for bend test</b>														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

**I/C Testing Laboratoires**  
**UET Lahore, Pakistan.**

Note:

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

To,  
 Material Engineer  
 Engineering Consultancy Services Punjab (Pvt) Limited  
 Engineering Consultancy Services for Construction of Baba Guru Nanak University,  
 Nankana Sahib.

Reference # CED/TFL **2282** (Dr. M Rizwan Riaz)  
 Reference of the request letter # ECSP/BGNUME/01

Dated: 14-11-2022  
 Dated: 14-11-2022

**Tension Test Report** (Page -1/1)

Date of Test 15-11-2022  
 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 <sup>2</sup> )		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	0.371	3	0.373	0.11	0.109	3600	5300	72200	72710	106200	107100	1.10	13.8	SJ Steel
2	0.381	3	0.378	0.11	0.112	3300	5000	66200	64910	100200	98400	1.20	15.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two samples for tensile and one sample for bend test</b>														
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,  
 Chief Technical Officer  
 Sheekhoo Sugar Mills (Steel Division)  
 Anwar Abad Kot Addu, Muzaffargarh

Reference # CED/TFL **2286** (Dr. M Rizwan Riaz)  
 Reference of the request letter #Nil

Dated: 15-11-2022  
 Dated: 14-11-2022

**Tension Test Report** (Page -1/2)

Date of Test 15-11-2022  
 Gauge length 8 inches  
 Description Deformed Steel Bar Tensile Test as per ASTM-A615

Sr. No.	Weight (lbs/ft)	Diameter/ Size		Area (in <sup>2</sup> )		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	0.359	3	0.367	0.11	0.106	3000	4100	60200	62600	82200	85600	1.50	18.8	
2	0.362	3	0.368	0.11	0.106	2900	4100	58200	60150	82200	85100	1.80	22.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two samples for tensile test</b>														
Bend Test														

**I/C Testing Laboratoires**  
**UET Lahore, Pakistan.**

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

To,  
 Chief Technical Officer  
 Sheekhoo Sugar Mills (Steel Division)  
 Anwar Abad Kot Addu, Muzaffargarh

Reference # CED/TFL **2286** (Dr. M Rizwan Riaz)  
 Reference of the request letter #Nil

Dated: 15-11-2022  
 Dated: 14-11-2022

**Tension Test Report** (Page -2/2)

Date of Test 15-11-2022  
 Gauge length 8 inches  
 Description Deformed Steel Bar Tensile Test as per ASTM-A615

Sr. No.	Weight (lbs/ft)	Diameter/ Size (mm)		Area (in <sup>2</sup> )		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	0.406	10	9.90	0.12	0.119	3900	5100	71650	72010	93696	94200	1.40	17.5	
2	0.410	10	9.94	0.12	0.120	3800	5100	69812	69570	93696	93400	1.50	18.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two samples for tensile test</b>														
Bend Test														

**I/C Testing Laboratoires**  
**UET Lahore, Pakistan.**

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

To,  
 Construction Manager  
 Zameen Quadrangle  
 Construction of Zameen Quadrangle at Plot No. 49 Gulberg-V, Zafar Ali Road, Lahore

Reference # CED/TFL 2287 (Dr. M Rizwan Riaz)  
 Reference of the request letter # ZD/ZQ/GSW/035

Dated: 15-11-2022  
 Dated: 15-11-2022

**Tension Test Report** (Page -1/1)

Date of Test 15-11-2022  
 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 <sup>2</sup> )		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	0.407	3	0.390	0.11	0.120	3600	5400	72200	66290	108200	99500	1.10	13.8	SJ Steel
2	0.413	3	0.393	0.11	0.121	3600	5400	72200	65440	108200	98200	1.10	13.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Note: only two samples for tensile and one sample for bend test</b>														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

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