



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

To,
 Assistant Garrison Engineer (Army)
 Pasrur Cantt
 CA No. CEA-CZ-59/2021 – Const of 8 x JCOs Flats (G+3) at Pasrur Cantt

Reference # CED/TFL **37037** (Dr. Waseem Abbass)
 Reference of the request letter # 6050/12/E-6

Dated: 13-09-2021
 Dated: 27-08-2021

Tension Test Report (Page -1/1)

Date of Test 14-09-2021
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

Sr. No.	Weight (lbs/ft)	Diameter/ Size (inch)		Area (in ²)		Yield load (kg)	Breaking Load (kg)	Yield Stress (psi)		Ultimate Stress (psi)		Elongation (inch)	% Elongation	Remarks
		Nominal	Actual	Nominal	Actual			Nominal	Actual	Nominal	Actual			
1	0.386	3/8	0.380	0.11	0.113	4280	5880	85800	83130	117900	114200	1.10	13.8	AF Steel
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only one sample for tensile and one sample for bend test														
Bend Test														
3/8 Dia Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

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To,
 Assistant Resident Engineer
 Engineering Consultancy Services Punjab (Pvt) Limited
 Supply, Construction, Installation of Water Filtration Plants in Multan Division

Reference # CED/TFL **37039** (Dr. Waseem Abbass)
 Reference of the request letter # ECSP/PAPA/SZ-MUL-19

Dated: 13-09-2021
 Dated: 06-09-2021

Tension Test Report (Page -1/)

Date of Test 14-09-2021
 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	0.383	3	0.378	0.11	0.112	3890	4790	78000	76250	96000	93900	1.10	13.8	
2	0.384	3	0.379	0.11	0.113	3920	4760	78600	76610	95400	93100	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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Department of Civil Engineering
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Ref: CED/TFL/09/37041

Dated: 13-09-2021

Dated: 14-09-2021

To
M/S AF Steel Re Rolling Mills
Lahore

Subject:- CALIBRATION OF UNIVERSAL TESTING MACHINE OF 1000 kN
(Scale 0-200 kN)(MARK: CED/TFL/09/37041) (Page – 1/6)

Reference to your letter No. Nil, dated: 13/09/2021 on the subject cited above. One Universal Testing Machine has been calibrated by using standard calibration device. The results are tabulated as under:

Total Range : Zero - 200 (kN)

Calibrated Range : Zero - 180 (kN)

Machine Reading (kN)	Corrected Load Value (kN)
10	9
20	20
30	33
40	42
50	50
60	60
70	69
80	81
90	90

Machine Reading (kN)	Corrected Load Value (kN)
100	101
110	108
120	118
130	130
140	140
150	149
160	160
170	169
180	178

I/C Testing Laboratoires
UET Lahore, Pakistan.

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Ref: CED/TFL/09/37041

Dated: 13-09-2021

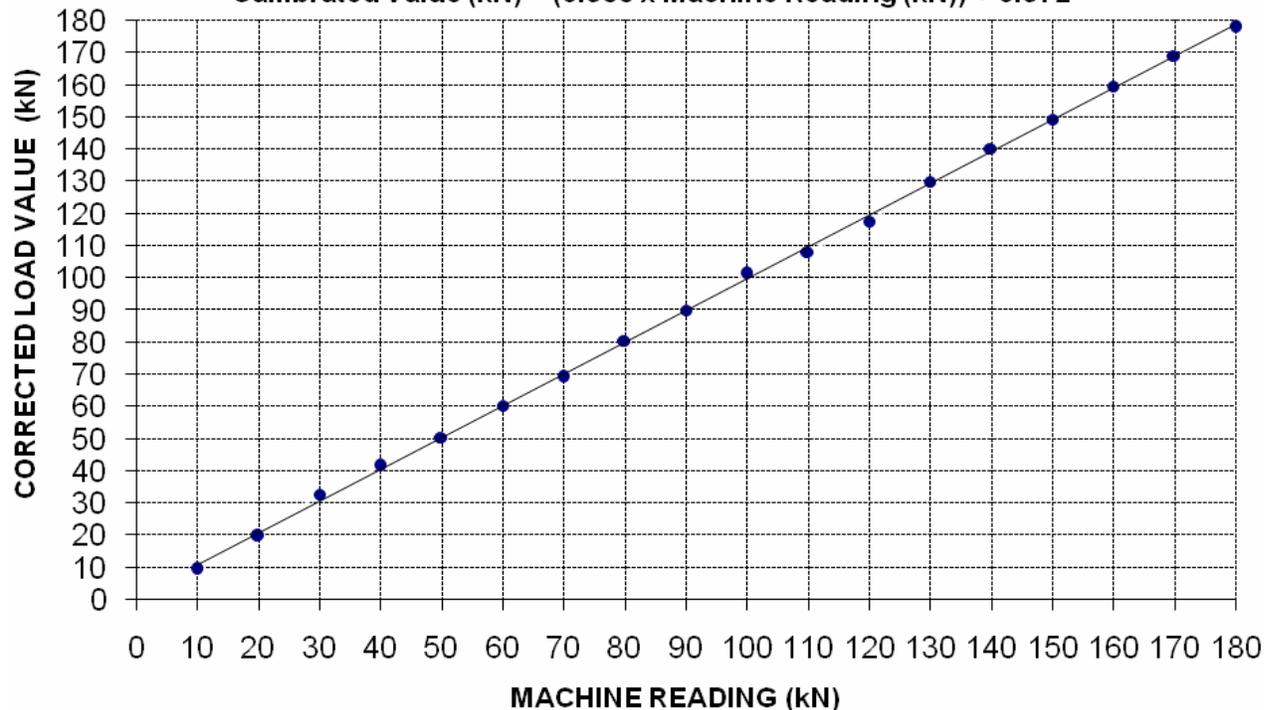
Dated: 14-09-2021

To
M/S AF Steel Re Rolling Mills
Lahore

Subject:- **CALIBRATION OF UNIVERSAL TESTING MACHINE OF 1000 kN**
(Scale 0-200 kN)(MARK: CED/TFL/09/37041) (Page – 2/6)

CALIBRATION CURVE FOR UNIVERSAL TESTING MACHINE
(0-200 kN)

$$\text{Callibrated Value (kN)} = (0.988 \times \text{Machine Reading (kN)}) + 0.972$$



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Ref: CED/TFL/09/37041

Dated: 13-09-2021

Dated: 14-09-2021

To
M/S AF Steel Re Rolling Mills
Lahore

Subject:- CALIBRATION OF UNIVERSAL TESTING MACHINE OF 1000 kN
(Scale 0-500 kN)(MARK: CED/TFL/09/37041) (Page – 3/6)

Reference to your letter No. Nil, dated: 13/09/2021 on the subject cited above. One Universal Testing Machine has been calibrated by using standard calibration device. The results are tabulated as under:

Total Range : Zero - 500 (kN)

Calibrated Range : Zero - 400 (kN)

Machine Reading (kN)	Corrected Load Value (kN)
20	22
40	43
60	61
80	81
100	103
120	122
140	140
160	160
180	182
200	204

Machine Reading (kN)	Corrected Load Value (kN)
220	222
240	243
260	263
280	285
300	305
320	325
340	347
360	367
380	387
400	408

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Ref: CED/TFL/09/37041

Dated: 13-09-2021

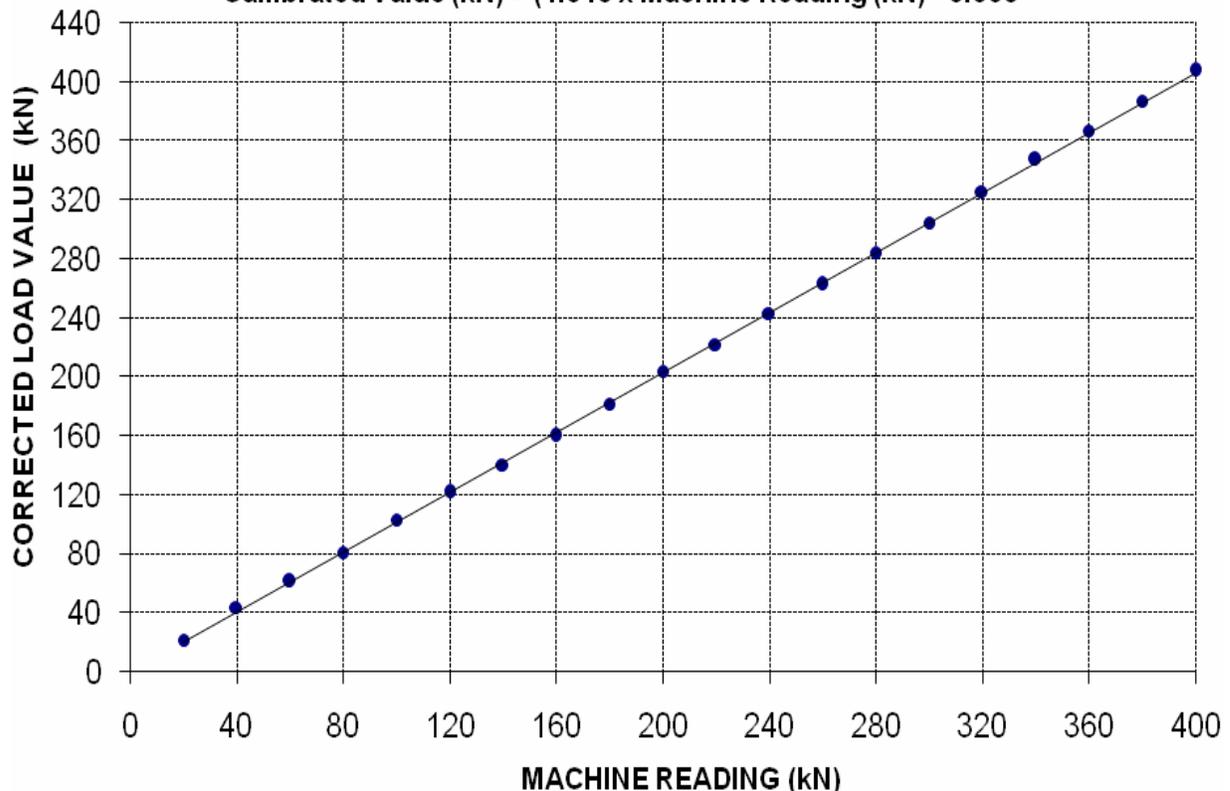
Dated: 14-09-2021

To
M/S AF Steel Re Rolling Mills
Lahore

Subject:- CALIBRATION OF UNIVERSAL TESTING MACHINE OF 1000 kN
(Scale 0-500 kN)(MARK: CED/TFL/09/37041) (Page – 4/6)

CALIBRATION CURVE FOR UNIVERSAL TESTING MACHINE
(0 - 500 kN)

$$\text{Callibrated Value (kN)} = (1.016 \times \text{Machine Reading (kN)}) - 0.003$$



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Ref: CED/TFL/09/37041

Dated: 13-09-2021

Dated: 14-09-2021

To
M/S AF Steel Re Rolling Mills
Lahore

Subject:- CALIBRATION OF UNIVERSAL TESTING MACHINE OF 1000 kN
(Scale 0-1000 kN)(MARK: CED/TFL/09/37041) (Page – 5/6)

Reference to your letter No. Nil, dated: 13/09/2021 on the subject cited above. One Universal Testing Machine has been calibrated by using standard calibration device. The results are tabulated as under:

Total Range : Zero - 1000 (kN)

Calibrated Range : Zero - 750 (kN)

Machine Reading (kN)	Corrected Load Value (kN)
50	51
100	103
150	154
200	202
250	256
300	304
350	352
400	402

Machine Reading (kN)	Corrected Load Value (kN)
450	453
500	502
550	555
600	605
650	653
700	706
750	755

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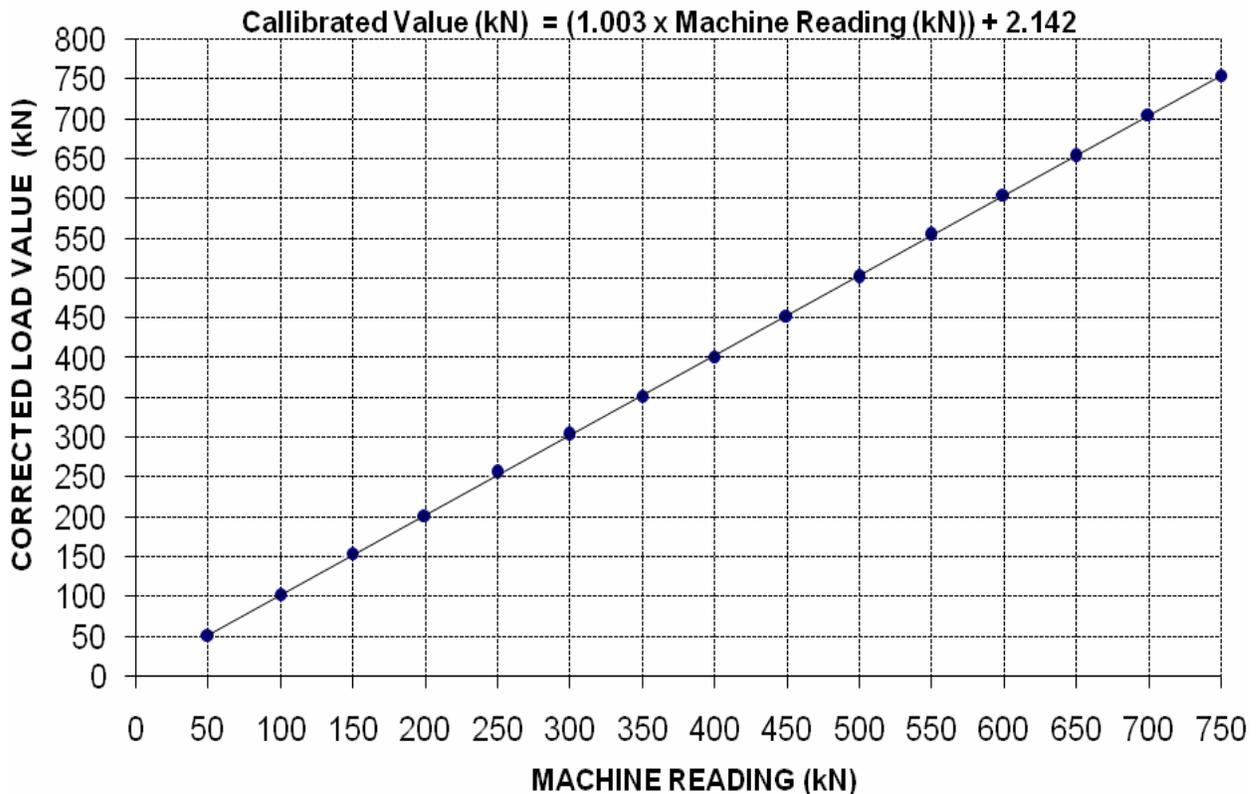
Dated: 13-09-2021

Dated: 14-09-2021

To
M/S AF Steel Re Rolling Mills
Lahore

Subject:- CALIBRATION OF UNIVERSAL TESTING MACHINE OF 1000 kN
(Scale 0-1000 kN)(MARK: CED/TFL/09/37041) (Page – 6/6)

CALIBRATION CURVE FOR UNIVERSAL TESTING MACHINE
(0 - 1000 kN)



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STRUCTURAL ENGINEERING DIVISION
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To,
 Chief Resident Engineer
 MM Pakistan (Pvt) Ltd
 Kachhi Canal Project - Contract KC-06B(4R) Construction of Main Canal and Distribution System (Earth Work, Structures and Lining of Main Canal & Distributaries) from RD 1286+000 to RD 1322+000
 Reference # CED/TFL **37042** (Dr. Waseem Abbass) Dated: 14-09-2021
 Reference of the request letter # KCP/CRE/KC-6B(4R)/UET/20 Dated: 11-09-2021

Tension Test Report (Page -1/1)

Date of Test 14-09-2021
 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	0.381	3	0.378	0.11	0.112	4230	5150	84800	83160	103200	101300	0.90	11.3	Mughal Steel
2	0.382	3	0.378	0.11	0.112	4230	5150	84800	82990	103200	101100	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														

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STRUCTURAL ENGINEERING DIVISION
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To,
 Project Manager
 Engineering Management and Construction Company
 Construction of Lecole School Johar Town Lahore

Reference # CED/TFL **37043** (Dr. Waseem Abbass)
 Reference of the request letter # Nil

Dated: 14-09-2021
 Dated: 14-09-2021

Tension Test Report (Page -1/)

Date of Test 14-09-2021
 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	0.371	3	0.373	0.11	0.109	3520	4690	70600	71060	94000	94700	1.40	17.5	
2	0.376	3	0.375	0.11	0.111	3620	4760	72600	72140	95400	94900	1.40	17.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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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To,
Deputy General Manager Projects
Habib Rafiq Engineering (Pvt) Limited
Construction of Sky Gardens Tower, Lahore

Reference # CED/TFL **37044** (Dr. Waseem Abbass)
Reference of the request letter # HRLE/SKG/2021/021

Dated: 14-09-2021
Dated: 13-09-2021

Tension Test Report (Page -1/3)

Date of Test 14-09-2021
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	780.0	17300	169.71	19400	190.31	198	>3.50	1
2	12.70 (1/2")	775.0	782.0	17100	167.75	19100	187.37	199	>3.50	2
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

Only two samples for Test

Note:

1. Modulus of Elasticity is based on nominal steel area of the steel strand vide clause 13.3 of ASTM – A416a
2. Load versus percentage strain graphs are attached

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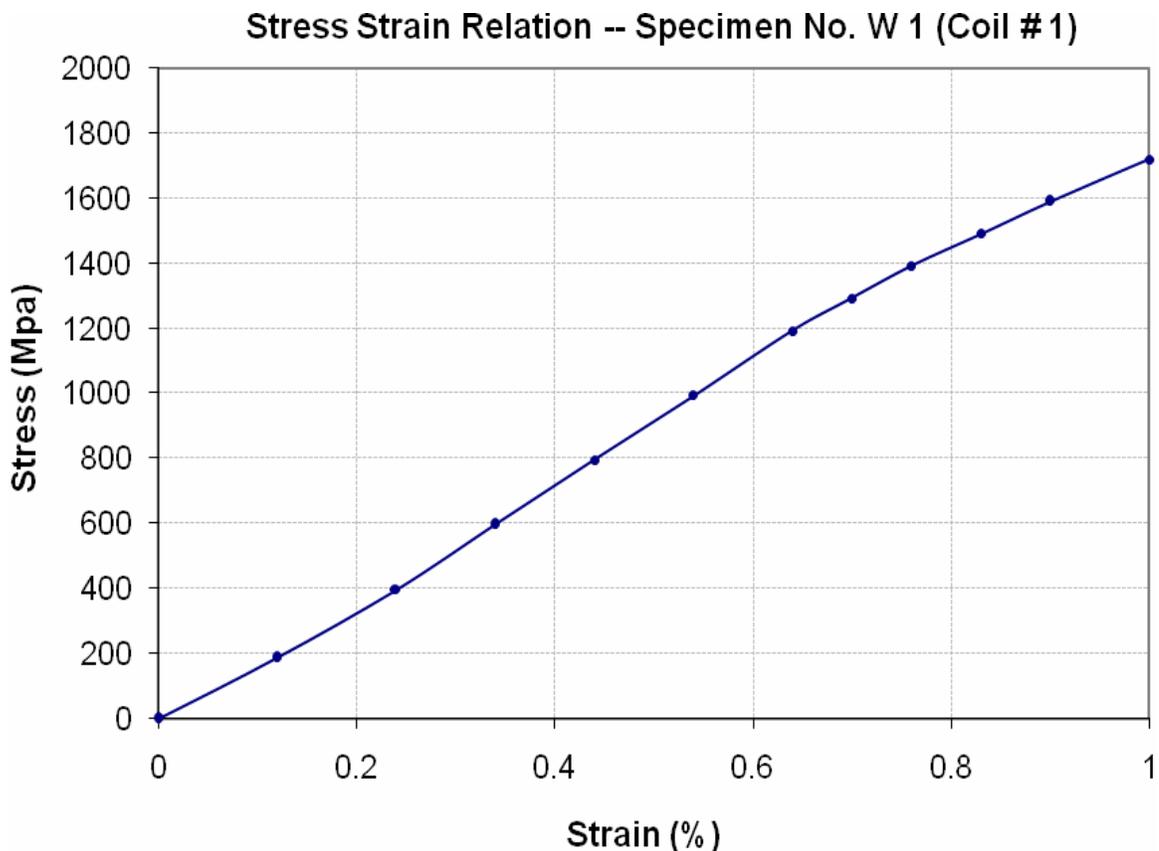
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To,
Deputy General Manager Projects
Habib Rafiq Engineering (Pvt) Limited
Construction of Sky Gardens Tower, Lahore

Reference # CED/TFL **37044** (Dr. Waseem Abbass)
Reference of the request letter # HRLE/SKG/2021/021

Dated: 14-09-2021
Dated: 13-09-2021

Graph (Page – 2/3)



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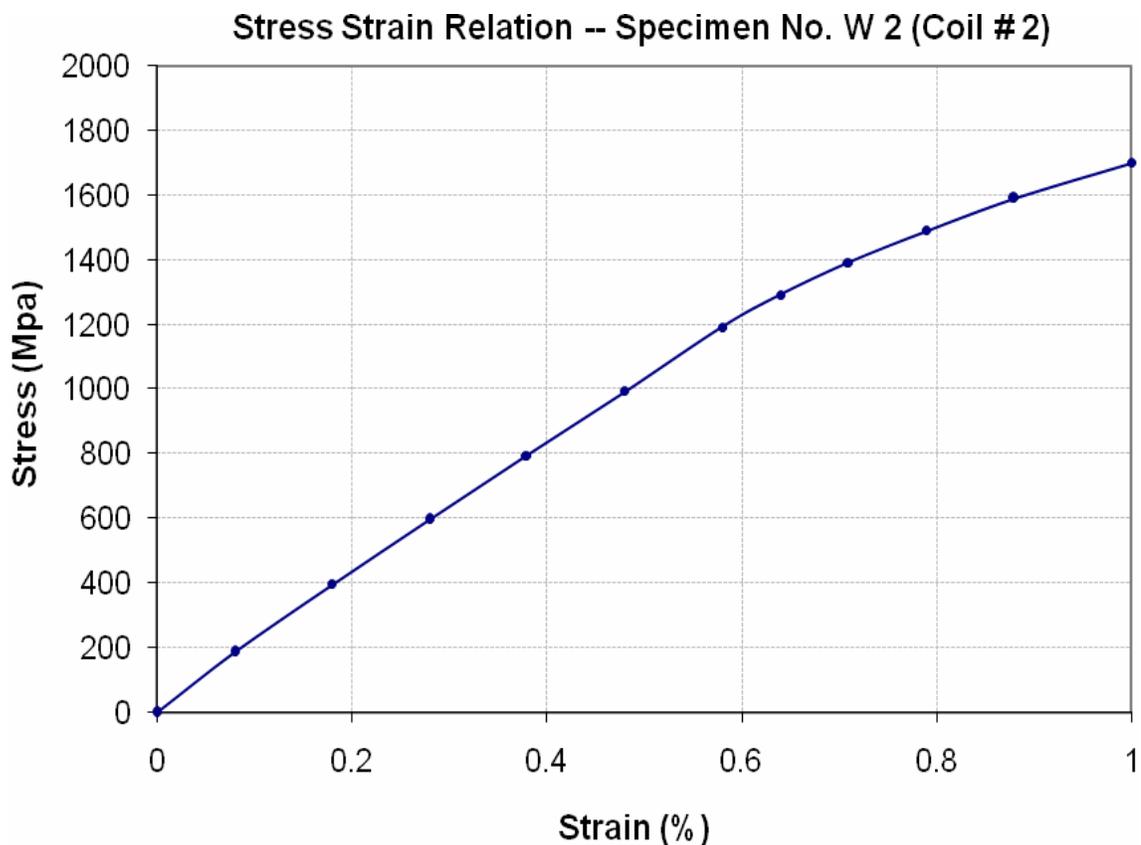
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Construction of Sky Gardens Tower, Lahore

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Graph (Page – 3/3)



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