



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

To,

Project Manager
AJK Engineering (Pvt) Ltd
Construction of Capital Tower, Plot No 59, F-6/G-6. Blue Area, Islamabad

Reference # CED/TFL **3954** (Dr. Usman Akmal)
Reference of the request letter # AJK/UET/2023/09/001

Dated: 22-09-2023
Dated: 21-08-2023

Tension Test Report (Page -1/2)

Date of Test 27-09-2023
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")	780.0	784	18300	179.52	20000	196.20	199	>3.50	xx
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
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

I/C Testing Laboratoires
UET Lahore, Pakistan.

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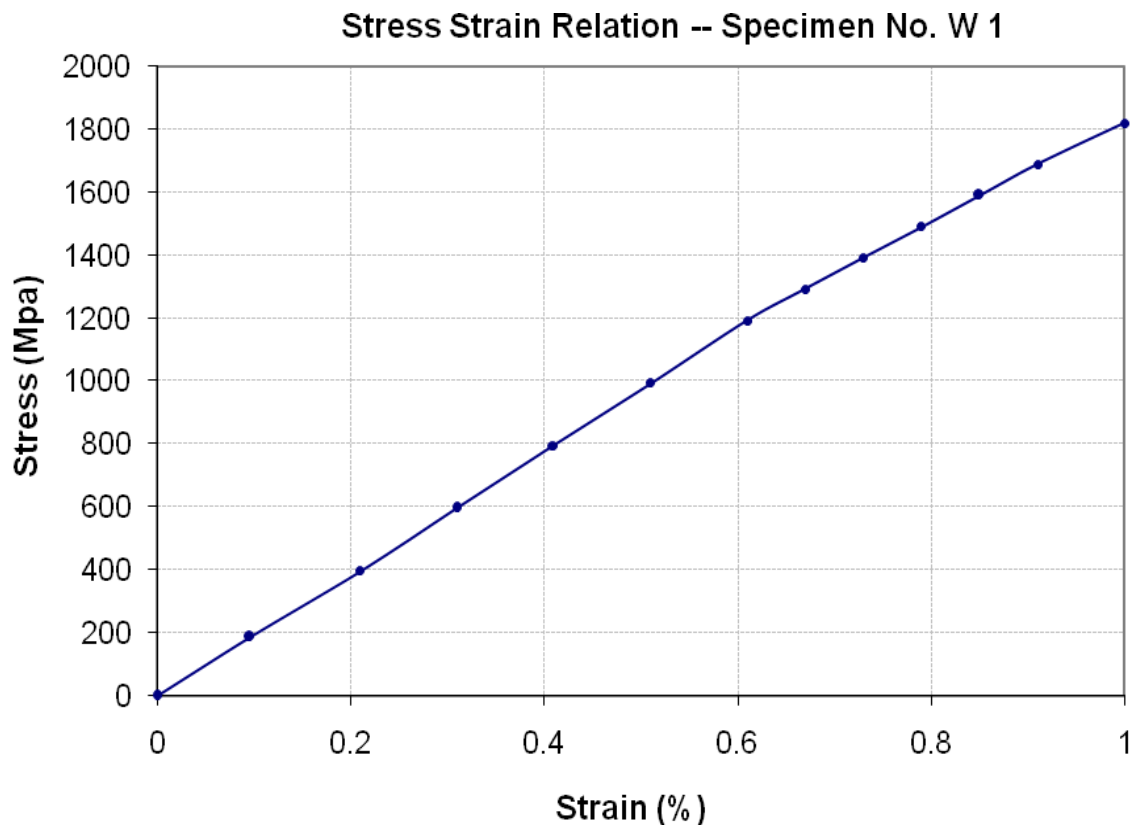
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Construction of Capital Tower, Plot No 59, F-6/G-6. Blue Area, Islamabad

Reference # CED/TFL **3954** (Dr. Usman Akmal)
Reference of the request letter # AJK/UET/2023/09/001

Dated: 22-09-2023
Dated: 21-08-2023

Graph (Page – 2/2)



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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 Pakistan Wire Industries (Pvt) Limited
Karachi

Reference # CED/TFL **3957** (Dr. Asif Hameed)
Reference of the request letter # WRD/010/LAB012

Dated: 22-09-2023

Dated: 22-09-2023

Tension Test Report (Page – 1/1)

Date of Test 27-09-2023

Description Steel Wire Rope (IWRC Ungalvanized) Tensile Test

Sr. No.	Nominal Diameter	Measured weight	Breaking Load	Remarks / Coil No.
	(mm)	(kg/m)	(kg)	
1	18	1.13	18400	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
Only one sample for Test				

Witness by Muhammad Wasim Khan (Pakistan Wire Industries)

I/C Testing Laboratoires
UET Lahore, Pakistan.

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To,
M/S Pakistan Wire Industries (Pvt) Limited
Karachi

Reference # CED/TFL **3958** (Dr. Asif Hameed)
Reference of the request letter # WRD/010/LAB016

Dated: 22-09-2023
Dated: 22-09-2023

Tension Test Report (Page – 1/1)

Date of Test 27-09-2023
Description Steel Wire Rope (HC Galvanized) Tensile Test

Sr. No.	Nominal Diameter	Measured weight	Breaking Load	Remarks / Coil No.
	(mm)	(kg/m)	(kg)	
1	25	2.36	28600	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
Only one sample for Test				

Witness by Muhammad Wasim Khan (Pakistan Wire Industries)

I/C Testing Laboratoires
UET Lahore, Pakistan.

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To,

M/S Pakistan Wire Industries (Pvt) Limited
Karachi

Reference # CED/TFL **3959** (Dr. Asif Hameed)
Reference of the request letter # WRD/010/LAB015

Dated: 22-09-2023

Dated: 22-09-2023

Tension Test Report (Page – 1/1)

Date of Test

27-09-2023

Description

Steel Wire Rope (HC Galvanized) Tensile Test

Sr. No.	Nominal Diameter	Measured weight	Breaking Load	Remarks / Coil No.
	(mm)	(kg/m)	(kg)	
1	18	1.28	20200	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
Only one sample for Test				

Witness by Muhammad Wasim Khan (Pakistan Wire Industries)

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UET Lahore, Pakistan.

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Karachi

Reference # CED/TFL **3960** (Dr. Asif Hameed)
Reference of the request letter # WRD/010/LAB014

Dated: 22-09-2023
Dated: 22-09-2023

Tension Test Report (Page – 1/1)

Date of Test 27-09-2023
Description Steel Wire Rope (IWRC Ungalvanized) Tensile Test

Sr. No.	Nominal Diameter	Measured weight	Breaking Load	Remarks / Coil No.
	(mm)	(kg/m)	(kg)	
1	22	1.88	25900	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
Only one sample for Test				

Witness by Muhammad Wasim Khan (Pakistan Wire Industries)

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UET Lahore, Pakistan.

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To,

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Karachi

Reference # CED/TFL **3961** (Dr. Asif Hameed)
Reference of the request letter # WRD/010/LAB013

Dated: 22-09-2023
Dated: 22-09-2023

Tension Test Report (Page – 1/1)

Date of Test 27-09-2023
Description Steel Wire Rope (IWRC Ungalvanized) Tensile Test

Sr. No.	Nominal Diameter	Measured weight	Breaking Load	Remarks / Coil No.
	(mm)	(kg/m)	(kg)	
1	20	1.60	23000	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
Only one sample for Test				

Witness by Muhammad Wasim Khan (Pakistan Wire Industries)

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UET Lahore, Pakistan.

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To,

Resident Engineer
 NESPAK

Construction of 8-Lane Overhead Bridge at Imamia Colony.

Reference # CED/TFL **3965** (Dr. Usman Akmal)

Dated: 25-09-2023

Reference of the request letter # RE/SA-543/02/MH/104

Dated: 16-09-2023

Tension Test Report (Page # 1/4)

Date of Test 27-09-2023

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	4.223	10	1.257	1.27	1.241	41800	60000	72600	74230	104200	106600	1.50	18.8	FF Steel
2	4.309	10	1.270	1.27	1.267	39400	54000	68400	68570	93800	94000	1.80	22.5	
3	4.280	10	1.266	1.27	1.258	40000	56800	69500	70080	98600	99600	1.60	20.0	
4	4.251	10	1.261	1.27	1.250	38200	52400	66300	67380	91000	92500	1.70	21.3	
5	4.301	10	1.269	1.27	1.264	40800	55600	70900	71130	96500	97000	1.70	21.3	
6	4.160	10	1.248	1.27	1.223	40200	58600	69800	72470	101700	105700	1.30	16.3	
7	4.262	10	1.263	1.27	1.253	42000	60000	72900	73900	104200	105600	1.40	17.5	
8	4.356	10	1.277	1.27	1.280	43200	59000	75000	74370	102400	101600	1.40	17.5	
9	4.287	10	1.267	1.27	1.260	40000	54000	69500	69970	93800	94500	1.70	21.3	
10	4.291	10	1.267	1.27	1.261	43800	59600	76100	76540	103500	104200	1.40	17.5	
Note: only ten samples for tensile and five 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														
#10 Bar Bend Test Through 180° is Satisfactory														
#10 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,

Resident Engineer
 NESPAK

Construction of 8-Lane Overhead Bridge at Imamia Colony.

Reference # CED/TFL **3965** (Dr. Usman Akmal)

Dated: 25-09-2023

Reference of the request letter # RE/SA-543/02/MH/104

Dated: 16-09-2023

Tension Test Report (Page # 2/4)

Date of Test 27-09-2023

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	4.360	10	1.277	1.27	1.281	41200	58000	71500	70870	100700	99800	1.60	20.0	FF Steel
2	4.355	10	1.277	1.27	1.280	43800	61000	76100	75420	105900	105100	1.50	18.8	
3	4.233	10	1.259	1.27	1.244	41000	59600	71200	72630	103500	105600	1.20	15.0	
4	4.270	10	1.264	1.27	1.255	40200	54200	69800	70600	94100	95200	1.60	20.0	
5	4.224	10	1.257	1.27	1.241	41400	58800	71900	73500	102100	104400	1.50	18.8	
6	4.310	10	1.270	1.27	1.267	42200	58600	73300	73410	101700	102000	1.40	17.5	
7	4.266	10	1.264	1.27	1.254	41200	59200	71500	72420	102800	104100	1.30	16.3	
8	4.204	10	1.254	1.27	1.236	39400	57200	68400	70280	99300	102100	1.40	17.5	

Note: only eight samples for tensile and four 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														
#10 Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
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Pakistan. Ph: 92-42-99029202

To,

Resident Engineer
 NESPAK

Construction of 8-Lane Overhead Bridge at Imamia Colony.

Reference # CED/TFL **3965** (Dr. Usman Akmal)

Dated: 25-09-2023

Reference of the request letter # RE/SA-543/02/MH/103

Dated: 16-09-2023

Tension Test Report (Page # 3/4)

Date of Test 27-09-2023

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	4.242	10	1.260	1.27	1.247	37400	55600	65000	66110	96500	98300	1.70	21.3	Kamran Steel
2	4.208	10	1.255	1.27	1.237	40000	55600	69500	71290	96500	99100	1.60	20.0	
3	4.197	10	1.253	1.27	1.234	41000	56800	71200	73250	98600	101500	1.30	16.3	
4	4.192	10	1.252	1.27	1.232	38200	54800	66300	68340	95200	98100	1.60	20.0	
5	4.295	10	1.268	1.27	1.263	42000	58400	72900	73320	101400	102000	1.40	17.5	
6	4.224	10	1.257	1.27	1.241	39600	55800	68800	70310	96900	99100	1.60	20.0	
7	4.230	10	1.258	1.27	1.243	40200	55800	69800	71260	96900	99000	1.60	20.0	
8	4.257	10	1.262	1.27	1.251	38000	55800	66000	66940	96900	98300	1.70	21.3	

Note: only eight samples for tensile and four 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														
#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.

Reference # CED/TFL **3965** (Dr. Usman Akmal)
 Reference of the request letter # RE/SA-543/02/MH/102

Dated: 25-09-2023
 Dated: 16-09-2023

Tension Test Report (Page # 4/4)

Date of Test 27-09-2023
 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	4.220	10	1.257	1.27	1.240	39000	52600	67700	69310	91300	93500	1.70	21.3	Mughal Steel
2	4.171	10	1.249	1.27	1.226	37600	50600	65300	67600	87900	91000	1.70	21.3	
3	4.180	10	1.251	1.27	1.229	37800	51000	65600	67820	88600	91500	1.50	18.8	
4	4.213	10	1.256	1.27	1.238	37600	51200	65300	66920	88900	91200	1.70	21.3	
5	4.213	10	1.256	1.27	1.238	38200	52000	66300	67990	90300	92600	1.70	21.3	
6	4.231	10	1.258	1.27	1.244	37200	51400	64600	65920	89300	91100	1.50	18.8	
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														

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NESPAK
Construction of 8-Lane Overhead Bridge at Imamia Colony.

Reference # CED/TFL **3970** (Dr. M Kashif)
Reference of the request letter # RE/SA-543/02/MH/111

Dated: 25-09-2023
Dated: 20-09-2023

Tension Test Report (Page -1/4)

Date of Test 27-09-2023
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")	780.0	784	17900	175.60	19600	192.28	199	>3.50	xx
2	12.70 (1/2")	780.0	784	17500	171.68	19600	192.28	198	>3.50	xx
3	12.70 (1/2")	780.0	785	18100	177.56	19700	193.26	199	>3.50	xx
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
Only three samples for Test										

Witness by Mr. Shafqar (NESPAK)

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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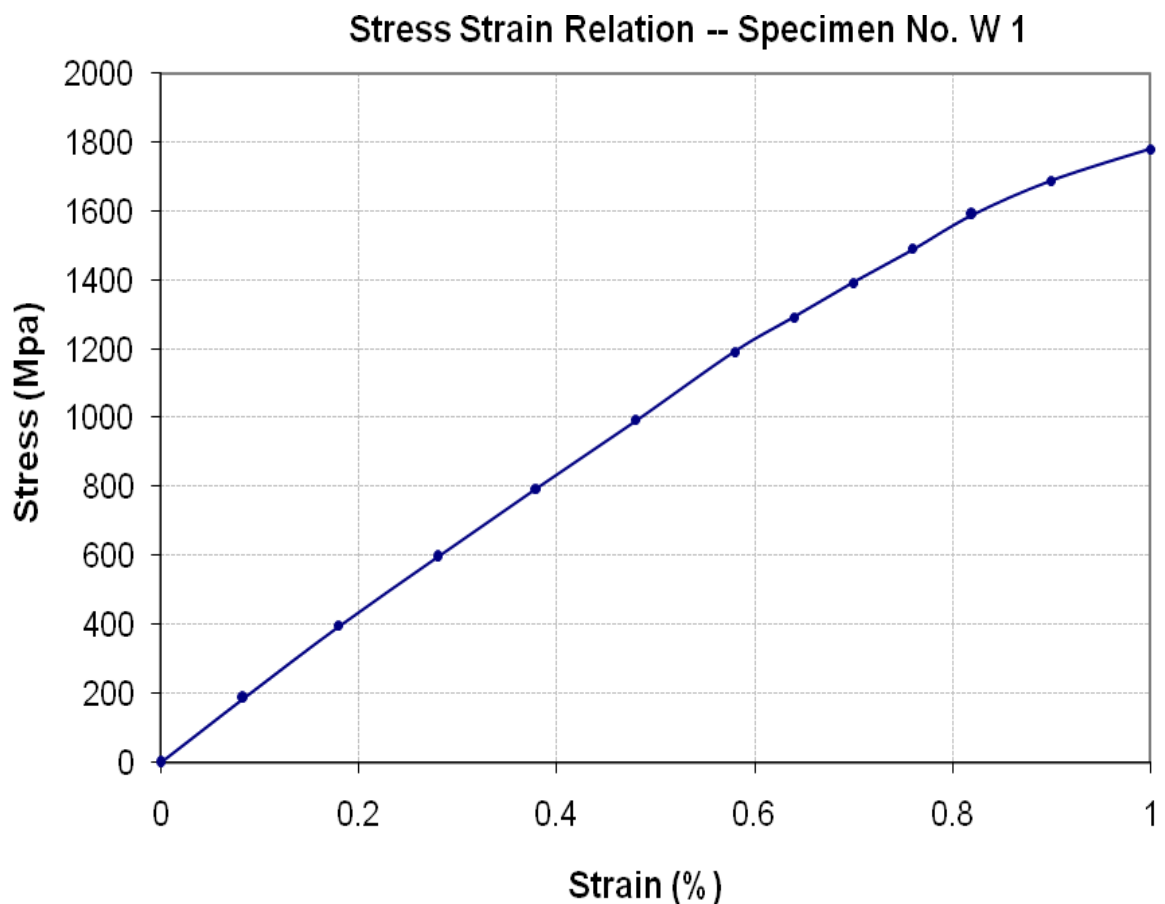
To,

Resident Engineer
NESPAK
Construction of 8-Lane Overhead Bridge at Imamia Colony.

Reference # CED/TFL **3970** (Dr. M Kashif)
Reference of the request letter # RE/SA-543/02/MH/111

Dated: 25-09-2023
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Graph (Page – 2/4)



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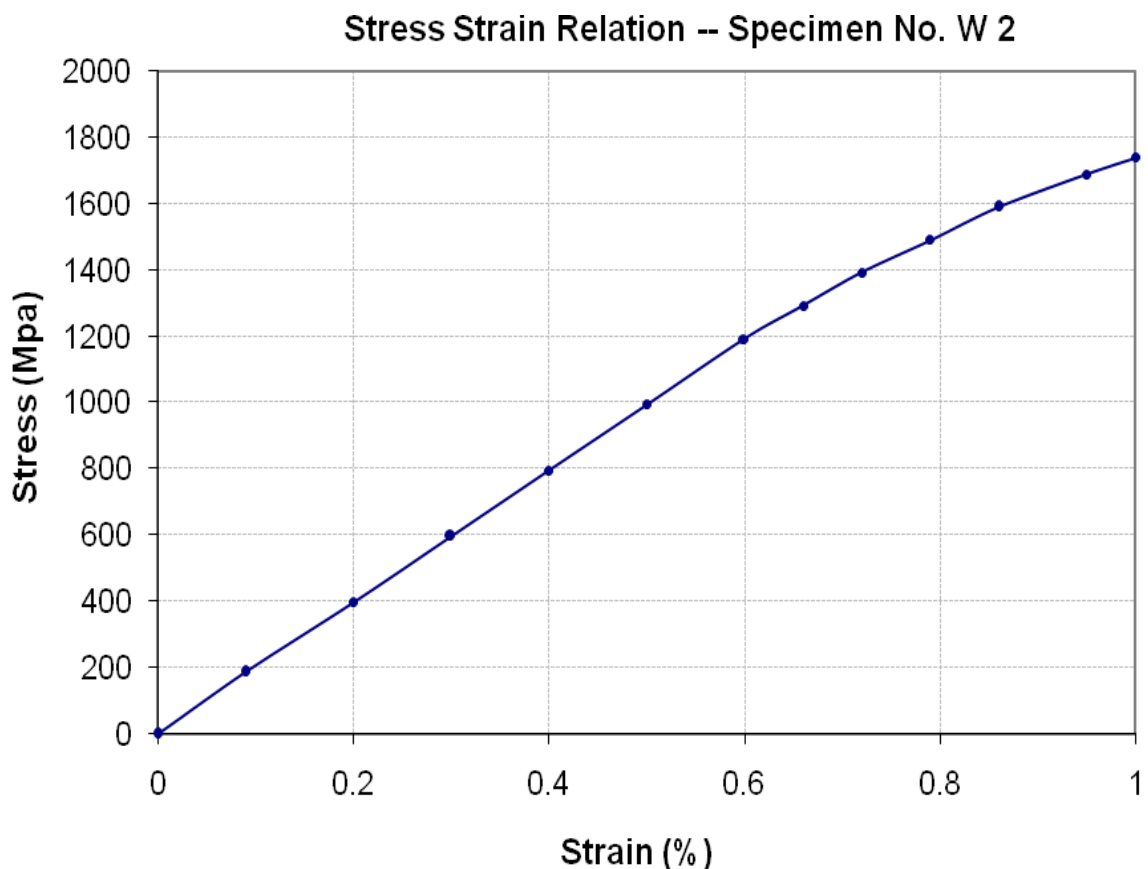
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Dated: 25-09-2023
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Graph (Page – 3/4)



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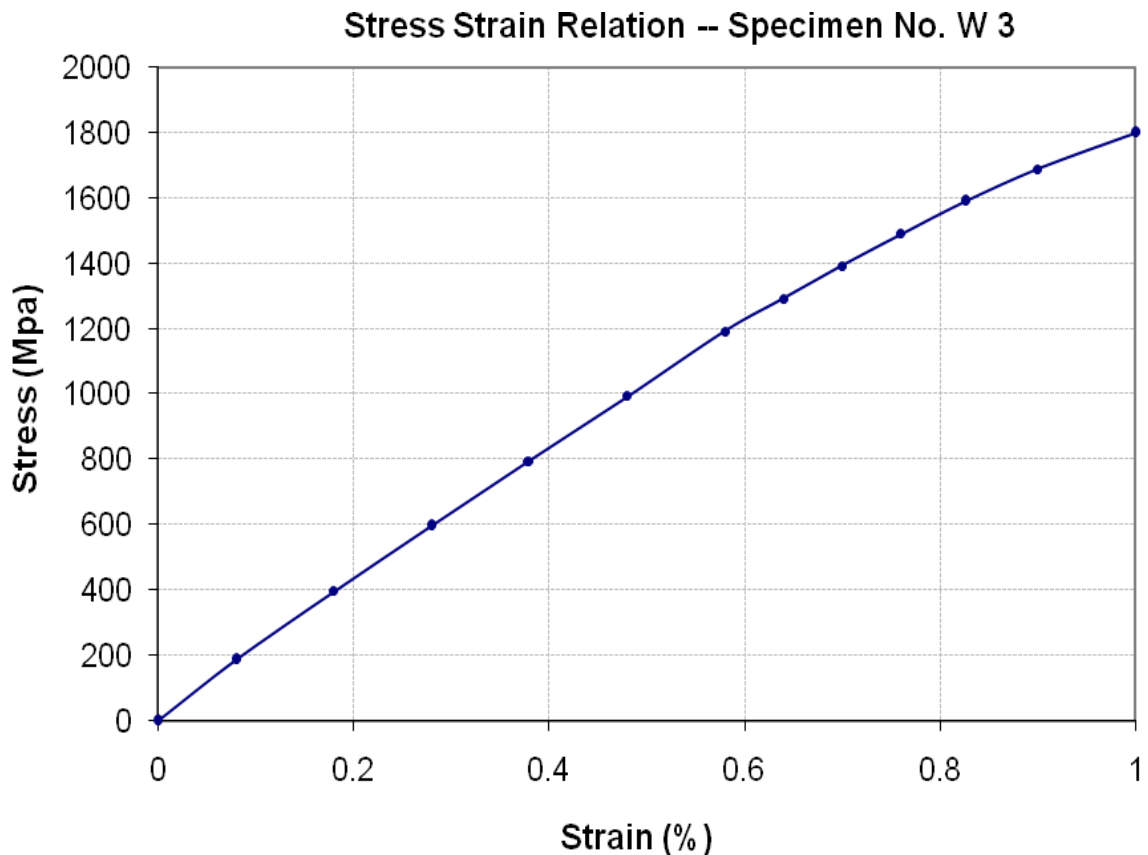
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Dated: 25-09-2023
Dated: 20-09-2023

Graph (Page – 4/4)



I/C Testing Laboratories
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,

Manager
ABL - UML P-199 & 200
Allied Bank
Construction of ABL, Upper Mall Lahore Plot No. 199, 200

Reference # CED/TFL **3972** (Dr. M Kashif)

Dated: 26-09-2023

Reference of the request letter # ABL-UML-AMC-QAQC-31

Dated: 25-09-2023

Tension Test Report (Page -1/1)

Date of Test 27-09-2023

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	4.108	32	31.49	1.25	1.207	42000	54800	74075	76670	96650	100100	1.40	17.5	Naveena Steel
2	4.111	32	31.51	1.25	1.208	41800	54600	73722	76250	96297	99600	1.20	15.0	
3	4.129	32	31.57	1.25	1.214	37200	51000	65609	67570	89948	92700	1.40	18.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only three samples for tensile and one sample for bend test														
Bend Test														
32mm Dia 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,

Resident Engineer
NESPAK
Construction of Underpass along Bedian Road at Roundabout Near Lahore Ring Road
(LRP), Lahore

Reference # CED/TFL **3978** (Dr. Usman Akmal)
Reference of the request letter # 3772/103/BU/MHK/04/79

Dated: 27-09-2023
Dated: 25-09-2023

Tension Test Report (Page -1/1)

Date of Test 27-09-2023
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)		% Elongation	Remarks / Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)		
1	12.70 (1/2")	780.0	783.0	-----	-----	12000	117.72	<3.50 Not ok	24808
-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	

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 Underpass along Bedian Road at Roundabout Near Lahore Ring Road
(LRP), Lahore (WMI)

Reference # CED/TFL **3980** (Dr. Asif Hameed)
Reference of the request letter # 3772/103/BU/MHK/04/84

Dated: 27-09-2023
Dated: 27-09-2023

Tension Test Report (Page -1/1)

Date of Test 27-09-2023
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)		% Elongation	Remarks / Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)		
1	12.70 (1/2")	780.0	785.0	17900	175.60	19600	192.28	>3.50	24808
2	12.70 (1/2")	780.0	785.0	17900	175.60	19500	191.30	>3.50	24808
-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	
Only two samples for Test									

I/C Testing Laboratoires
UET Lahore, Pakistan.

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

To,

M/S Batala Steel Industries
Lahore
(ZK Premier Dairy.)

Reference # CED/TFL **3981** (Dr. Qasim Khan)
Reference of the request letter # Nil

Dated: 27-09-2023
Dated: 27-09-2023

Tension Test Report (Page -1/1)

Date of Test 27-09-2023
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	0.392	3	0.383	0.11	0.115	3520	5610	70600	67280	112500	107300	1.00	12.5	Batala Gold
2	0.395	3	0.384	0.11	0.116	3490	5660	70000	66330	113500	107600	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														

I/C Testing Laboratoires
UET Lahore, Pakistan.

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