



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 Flyover at Jhall Road Railway Crossing to Sahiwal City
(Wire & Cable Product Pvt. Ltd.)

Reference # CED/TFL **37496** (Dr. Rizwan Azam)
Reference of the request letter # 4116/SED/Sahiwal/WA/2021/06

Dated: 08-12-2021

Dated: 07-12-2021

Tension Test Report (Page -1/3)

Date of Test 13-12-2021

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)	GPa		
1	12.70 (1/2")	775.0	776.0	17400	170.69	18700	183.45	199	<3.50 Not ok	xx
1	12.70 (1/2")	775.0	778.0	17700	173.64	18400	180.50	199	<3.50 Not ok	xx
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

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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Note:

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NESPAK
Construction of Flyover at Jhall Road Railway Crossing to Sahiwal City
(Wire & Cable Product Pvt. Ltd.)

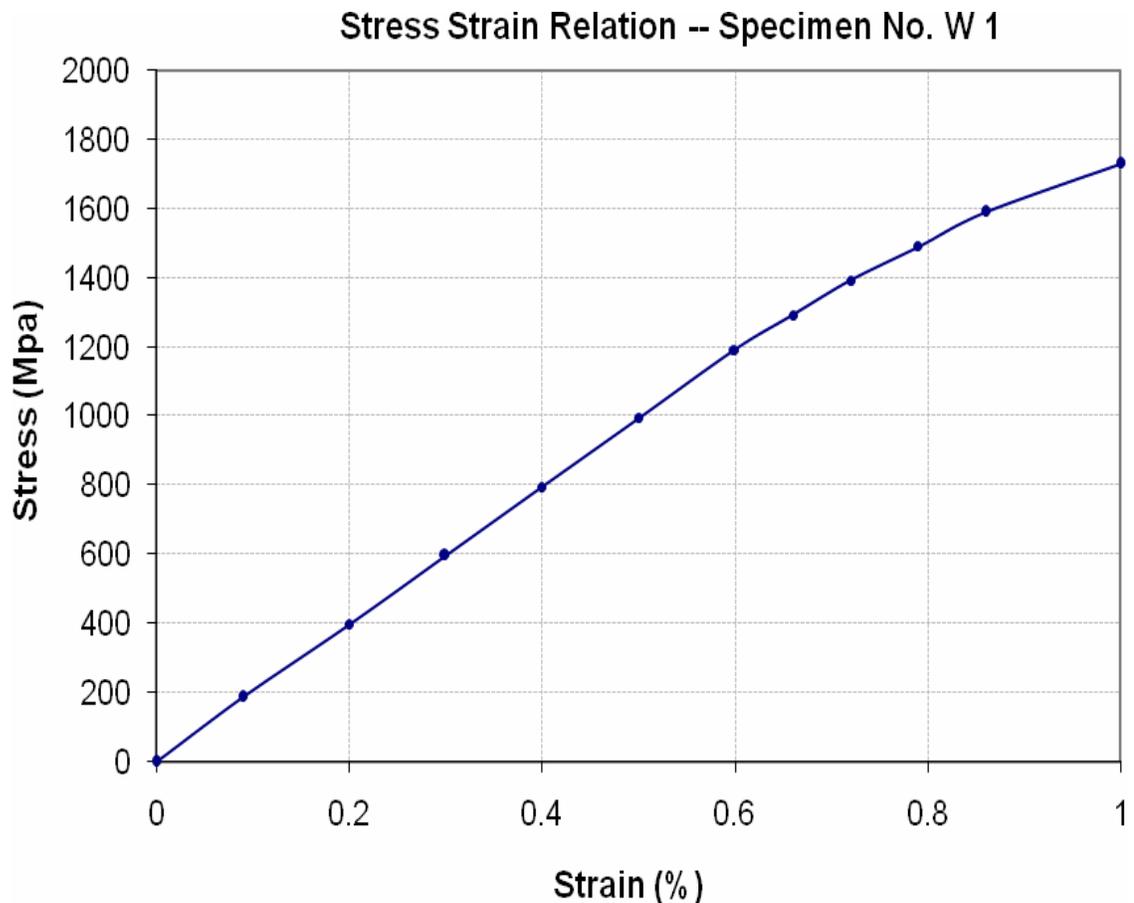
Reference # CED/TFL 37496 (Dr. Rizwan Azam)

Dated: 08-12-2021

Reference of the request letter # 4116/SED/Sahiwal/WA/2021/06

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Graph (Page – 2/3)



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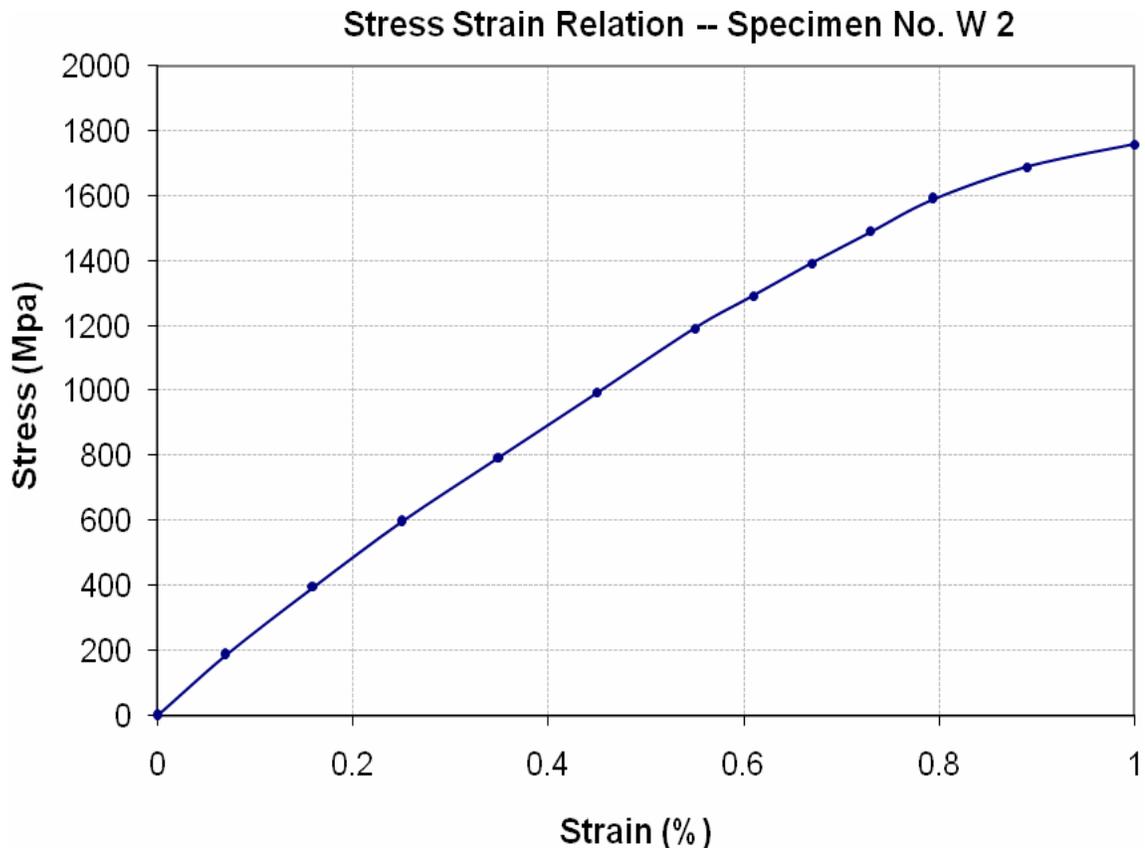
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NESPAK
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Graph (Page – 3/3)



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Ref: CED/TFL/12/37497
Dated of Test: 13-12-2021

Dated: 08-12-2021

To,
Resident Engineer
NESPAK
Construction of Flyover at Jhall Road Railway Crossing to Sahiwal City

Subject: - CALIBRATION OF PRESSURE GAUGE (MARK: TFL/12/37497) (Page -1/2)

Reference to your Letter No. 4116/SED/Sahiwal/WA/2021/05, Dated: 07/12/2021 on the subject cited above. One Pressure Gauge No. AES-310 as received by us has been calibrated. The results are tabulated as under:

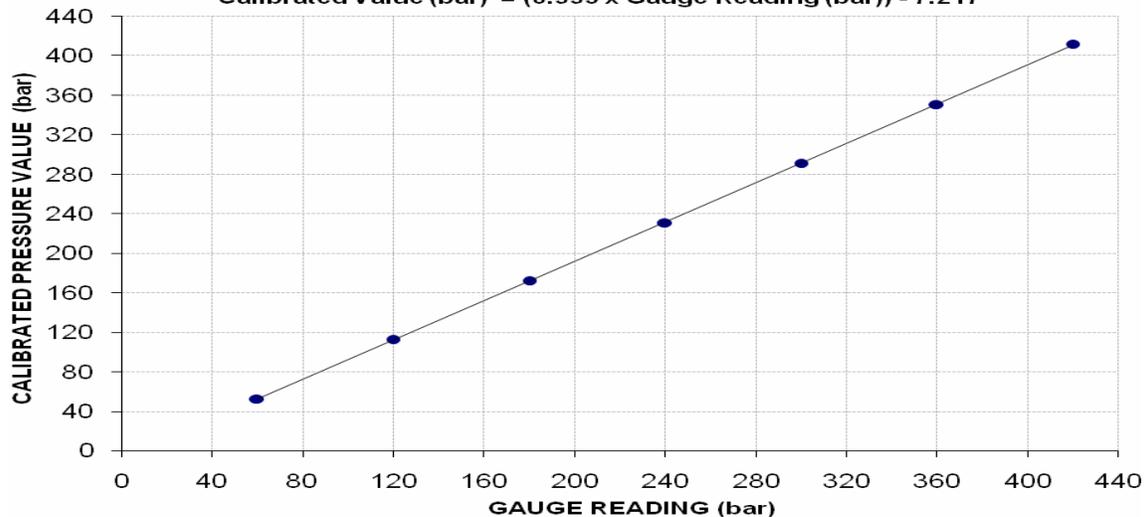
Total Range : Zero - 1000 (bar)
Calibrated Range : Zero - 420 (bar)

Pressure Gauge Reading (bar)	60	120	180	240	300	360	420
Calibrated Load (kg)	10600	22800	34800	46600	58800	70800	83200
Calibrated Pressure (bar)	53	113	172	231	291	351	412

The Ram Are use for Calibration = 198 cm^2

Calibration Curve for Pressure Gauge No. AES-310

Calibrated Value (bar) = $(0.995 \times \text{Gauge Reading (bar)}) - 7.217$



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Ref: CED/TFL/12/37497
Dated of Test: 13-12-2021

Dated: 08-12-2021

To,
Resident Engineer
NESPAK
Construction of Flyover at Jhall Road Railway Crossing to Sahiwal City

Subject: - CALIBRATION OF PRESSURE GAUGE (MARK: TFL/12/37497) (Page -2/2)

Reference to your Letter No. 4116/SED/Sahiwal/WA/2021/05, Dated: 07/12/2021 on the subject cited above. One Pressure Gauge No. AES-320 as received by us has been calibrated. The results are tabulated as under:

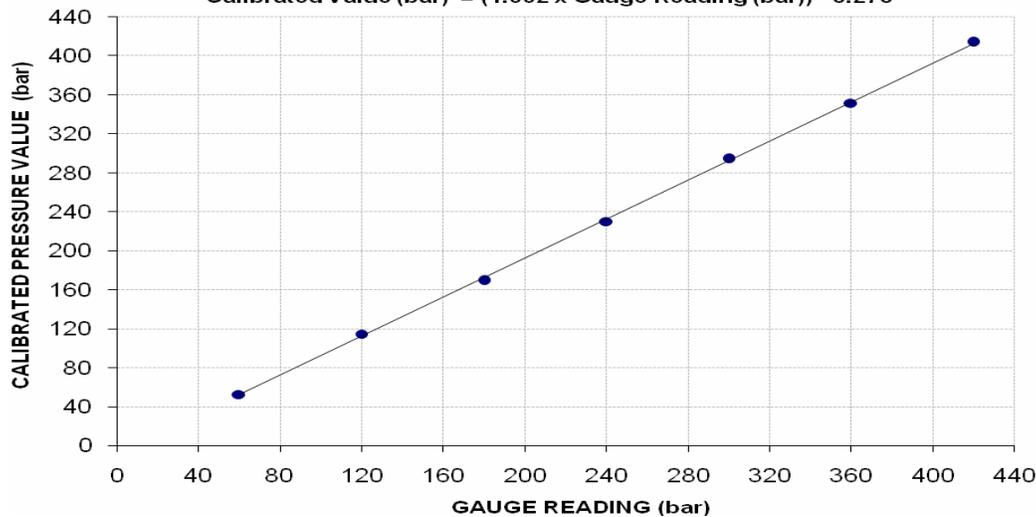
Total Range : Zero - 1000 (bar)
Calibrated Range : Zero - 420 (bar)

Pressure Gauge Reading (bar)	60	120	180	240	300	360	420
Calibrated Load (kg)	10600	23100	34200	46400	59400	71000	83600
Calibrated Pressure (bar)	53	114	169	230	294	352	414

The Ram Are use for Calibration = 198 cm²

Calibration Curve for Pressure Gauge No. AES-320

Calibrated Value (bar) = (1.002 x Gauge Reading (bar)) - 8.278



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To,
M/S Defence Housing Authority.
Lahore Cantt
(Infra Development Work Phase XI Sector Q Rahbar) – (M/s DHAC)

Reference # CED/TFL **37502, 504** (Dr. Rizwa Azam)
Reference of the request letter # 408/241/E/Lab/177/2640

Dated: 10-12-2021
Dated: 09-12-2021

Tension Test Report (Page -1/1)

Date of Test 13-12-2021
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	0.368	3	0.371	0.11	0.108	3840	4940	77000	78260	99000	100700	1.10	13.8	FF Steel
2	0.363	3	0.368	0.11	0.107	3740	4840	75000	77360	97000	100200	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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To,
M/S Muhammad Sdiq Associates
DHA, Lahore Cantt

Reference # CED/TFL **37503** (Dr. Rizwan Azam)
Reference of the request letter # Nil

Dated: 10-12-2021
Dated: 10-12-2021

Tension Test Report (Page -1/1)

Date of Test 13-12-2021
Gauge length 8 inches
Description Deformed Steel Bar Tensile 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	0.369	3	0.371	0.11	0.108	3330	5010	66800	67760	100400	102000	1.20	15.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only one sample for tensile test														
Bend Test														

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To,
 Project Manager
 Zaheer Associates
 Construction of Jamia Mosque "A" Block at Garden City Muridke

Reference # CED/TFL **37505** (Dr. Asad Ali)
 Reference of the request letter # Z.A/G.C/001-21

Dated: 13-12-2021
 Dated: 13-12-2021

Tension Test Report (Page -1/1)

Date of Test 13-12-2021
 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	0.343	3	0.358	0.11	0.101	2210	2880	44300	48330	57800	63000	2.00	25.0	Ravi Steel
2	0.362	3	0.368	0.11	0.106	2720	3640	54500	56420	73000	75500	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														

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