



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

To,
Project Engineer
Netracon Technologies (Pvt) Ltd.
Design Supply and Installation of 500kV Nowshera (New) Grid Station.

Reference # CED/TFL **1920** (Dr. Asad Ali)
Reference of the request letter # NTT-HO/WB05A-GS/021

Dated: 09-09-2022
Dated: 08-09-2022

Tension Test Report (Page -1/1)

Date of Test 16-09-2022
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	0.373	3	0.374	0.11	0.110	3620	5300	72600	72740	106200	106500	1.40	17.5	
2	0.374	3	0.374	0.11	0.110	3590	5250	72000	71910	105200	105200	1.10	13.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and two samples for bend test														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														
#3 Bar Bend Test Through 180° is Satisfactory														

Witness by Tariq Ilyas Cheema (J.E. (Barqaab Consultant)) and Inaam Ullah (CNTIC)

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

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To,
Resident Engineer
ESS-I-AAR ABM Engineers (Jv)
Construction of Malir Expressway under Design, Finance, Build, Maintain, Operate and Transfer
Basis (DFBOT)
Reference # CED/TFL **1953** (Engr. Ubaid Ahmed) Dated: 14-09-2022
Reference of the request letter # MEW/PE-RE/022/058(M.T) Dated: 14-09-2022

Tension Test Report (Page -1/2)

Date of Test 16-09-2022
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 "E" GPa	% Elongation	Remarks / Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)			
1	12.70 (1/2")	775.0	784.0	17200	168.73	19400	190.31	199	>3.50	xx
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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

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UET Lahore, Pakistan.

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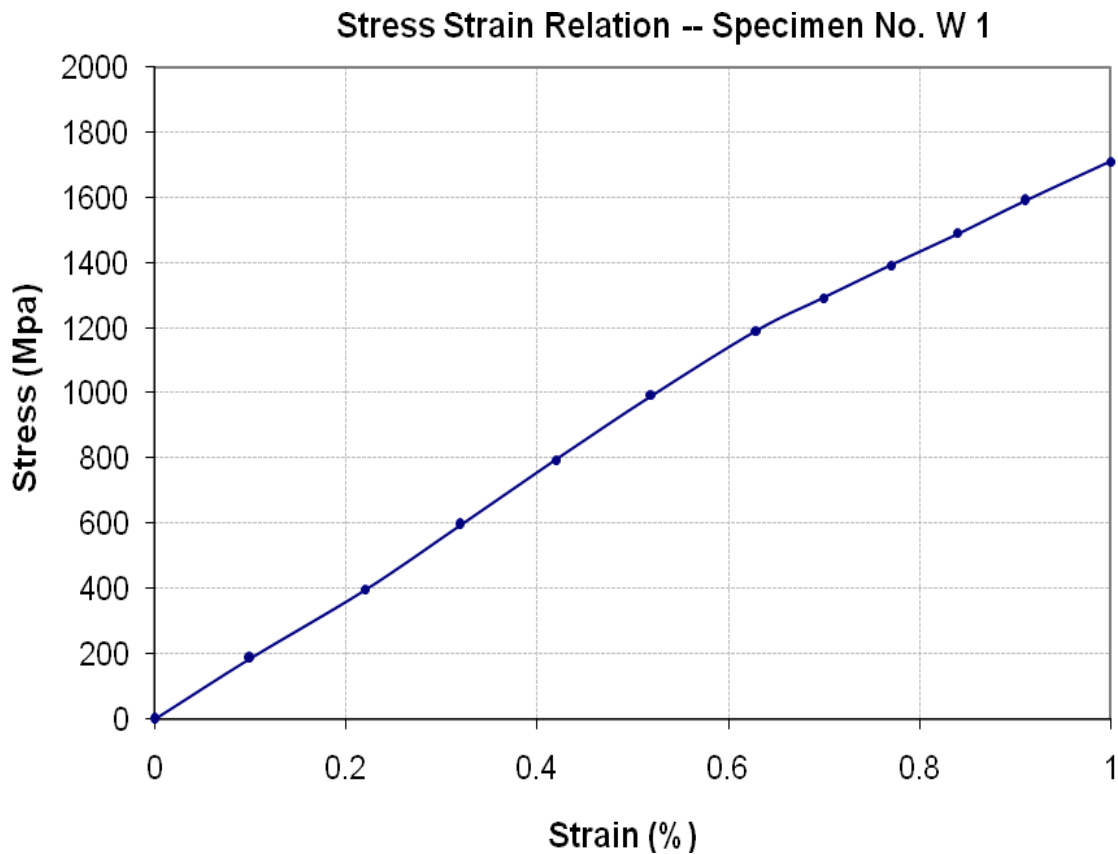
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To,
Resident Engineer
ESS-I-AAR ABM Engineers (Jv)
Construction of Malir Expressway under Design, Finance, Build, Maintain, Operate and Transfer
Basis (DFBOT)

Reference # CED/TFL **1953** (Engr. Ubaid Ahmed)
Reference of the request letter # MEW/PE-RE/022/058(M.T)

Dated: 14-09-2022
Dated: 14-09-2022

Graph (Page – 2/2)



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To,
 Resident Engineer
 Orbit Developers Private Limited
 The Springs, Gulberg Lahore

Reference # CED/TFL **1959** (Dr. Rashid Hameed)
 Reference of the request letter # Nil

Dated: 15-09-2022
 Dated: 15-09-2022

Tension Test Report (Page -1/1)

Date of Test 16-09-2022
 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	0.369	3	0.371	0.11	0.108	3500	4750	70200	71220	95200	96700	1.10	13.8	
2	0.368	3	0.371	0.11	0.108	3400	4700	68200	69230	94200	95700	1.20	15.0	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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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
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To,
 Project Manager
 Astral Constructors (Pvt) Ltd
 Construction of McDonald, Ettihad Town Lahore

Reference # CED/TFL **1960** (Dr. Rashid Hameed)
 Reference of the request letter # AST/McD/01

Dated: 15-09-2022
 Dated: 15-09-2022

Tension Test Report (Page -1/1)

Date of Test 16-09-2022
 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	0.370	10	9.45	0.12	0.109	3100	4850	56952	62900	89103	98500	1.10	13.8	
2	0.371	10	9.46	0.12	0.109	3200	4900	58789	64750	90021	99200	1.10	13.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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Note: only two samples for tensile and one sample for bend test														
Bend Test														
10mm Dia Bar Bend Test Through 180° is Satisfactory														

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