



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

To,
 Chief Engineer (HVDC) NTDC
 National Transmission & Despatch Company Ltd
 +600 kV HVDC Matiari Lahore Transmission Project (Lot-7 & 8)
 (SPO-06-Lot-07 Pakpattan)(SJ Steel)
 Reference # CED/TFL **34585** (Dr. Ali Ahmed)
 Reference of the request letter # 8981-84/CE/HVDC/LHR

Dated: 30-01-2020
 Dated: 29-01-2020

Tension Test Report (Page -1/2)

Date of Test 04-02-2020
 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	4200	6800	84200	84940	136300	137600	0.75	9.4	
2	0.385	3	0.380	0.11	0.113	4300	7000	86200	83650	140300	136200	0.80	10.0	
3	0.368	3	0.371	0.11	0.108	3800	6800	76200	77520	136300	138800	0.65	8.1	
4	4.031	10	1.228	1.27	1.185	46200	57000	80200	85940	99000	106100	1.20	15.0	
5	4.057	10	1.232	1.27	1.193	46200	57200	80200	85380	99300	105800	1.30	16.3	
6	4.058	10	1.232	1.27	1.193	46600	57400	80900	86100	99700	106100	1.20	15.0	

Note: only six samples for tensile and six samples for bend test

Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														
#3 Bar Bend Test Through 180° is Satisfactory														
#3 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														

Witness by Noman Abdul Khaliq (A.D (HVDC) o/o P.D), M. Bilal Butt (OE) & Dr. Ali Adnan
 (CET Lot 7 & 8)

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

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To,
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 National Transmission & Despatch Company Ltd
 +600 kV HVDC Matiari Lahore Transmission Project (Lot-7 & 8)
 (SPO-09-Lot-08 Balloki)(Kamran Steel)

Reference # CED/TFL **34585** (Dr. Ali Ahmed)
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Dated: 30-01-2020
 Dated: 29-01-2020

Tension Test Report (Page -2/2)

Date of Test 04-02-2020
 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	0.398	3	0.386	0.11	0.117	3600	5200	72200	67740	104200	97900	1.30	16.3	
2	0.400	3	0.387	0.11	0.117	3700	5300	74200	69410	106200	99500	1.20	15.0	
3	0.433	3	0.402	0.11	0.127	3800	5300	76200	65830	106200	91900	1.40	17.5	
4	4.229	10	1.258	1.27	1.243	40400	55200	70200	71640	95800	97900	1.50	18.8	
5	4.135	10	1.244	1.27	1.216	37600	53400	65300	68180	92700	96900	1.40	17.5	
6	4.219	10	1.257	1.27	1.240	39600	55000	68800	70390	95500	97800	1.50	18.8	

Note: only six samples for tensile and six samples for bend test

Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														
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#10 Bar Bend Test Through 180° is Satisfactory														
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Witness by Noman Abdul Khaliq (A.D (HVDC) o/o P.D), M. Bilal Butt (OE) & Dr. Ali Adnan
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To,
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 National Transmission & Despatch Company Ltd
 +600 kV HVDC Matiari Lahore Transmission Project
 (Lot-07)(SJ Steel)
 Reference # CED/TFL **34592** (Dr. Ali Ahmed)
 Reference of the request letter # 8985-88/CE/HVDC/LHR

Dated: 31-01-2020
 Dated: 29-01-2020

Tension Test Report (Page -1/2)

Date of Test 04-02-2020
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 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	0.377	3	0.376	0.11	0.111	3200	4600	64200	63680	92200	91600	1.30	16.3	
2	0.379	3	0.377	0.11	0.111	3200	4800	64200	63320	96200	95000	1.30	16.3	
3	0.373	3	0.374	0.11	0.110	3100	4700	62200	62260	94200	94400	1.40	17.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only three samples for tensile and three samples for bend test														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														
#3 Bar Bend Test Through 180° is Satisfactory														
#3 Bar Bend Test Through 180° is Satisfactory														

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		Nominal (#)	Actual (inch)	Nominal	Actual			Nominal	Actual	Nominal	Actual			
1	4.173	10	1.250	1.27	1.226	45200	58800	78500	81230	102100	105700	1.50	18.8	
2	4.167	10	1.249	1.27	1.225	45200	58400	78500	81330	101400	105100	1.30	16.3	
3	4.198	10	1.253	1.27	1.234	46400	59200	80600	82890	102800	105800	1.30	16.3	
4	4.198	10	1.253	1.27	1.234	45200	58400	78500	80740	101400	104400	1.40	17.5	
5	4.180	10	1.251	1.27	1.229	45800	59200	79500	82170	102800	106300	1.30	16.3	
6	4.237	10	1.259	1.27	1.246	45600	58600	79200	80700	101700	103700	1.10	13.8	

Note: only six samples for tensile and six samples for bend test

Bend Test														
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