

APPENDIX A: GUARANTEED TECHNICAL PARTICULARS (GTPS) — NORMATIVE			
GALVANIZED STEEL STRUCTURES -PROPOSED BUMALA 33/11KV SUBSTATION.			
Tender No.			
Description			Bidder’s offer
1. Manufacturer’s Name & Country of manufacture			
2. Name of item to be supplied			
3. Type of galvanized steel structure			
Clause	Description		
1	Scope		
2	Applicable Standards		
4.1	Service conditions		
4.2.1	General Requirements		
4.2.1.1	Manufacturing standards		
4.2.1.2	Surface integrity of hot-rolled sections for use in the manufacture of steel structures		
4.2.1.3	Angle sections, channels and flats are hot-rolled and complies with the requirements of Kenya Standard KS 02-572		
4.2.1.4	Tensile strength of the steel		
	Yield stress of the steel		
4.2.1.5	Mechanical Properties		
Table 1	A. ANGLES		
	Sr.No	Material Parameter	KPLC Requirements
	1	Tensile strength	>430<460 N/mm2
	2	Yield strength	255 N/mm2
	3	Tolerances	
		mass	4%
		Leg Length	± 1mm to 3mm
		Thickness	± 0.5mm
		Out of square	Max deviation 2mm
		straightness	0.3 % of length
	4	Elongation	24-26%
	5	Galvanizing Thickness	>110 Microns
	6	Modulus of Elasticity	20 x 10*9
	7	Density	7860kg/m3
	8	Nominal length	±0.4%
	B. CHANNELS		
	1	Tensile strength	>430<460 N/mm2
	2	Yield strength	255 N/mm2
	3	Tolerances	
		depth	1.5-3mm
		width of flange	2.5mm
		flange thickness	-0.5mm
		thickness of web	±5mm
		flange out of square	Max deviation 2mm
		flatness of web	Concave –max 15%
	4	Elongation	24-26%

	C. HOLLOW SECTIONS			
	1	Tensile strength	>430<460 N/mm2	
	2	Yield strength	255 N/mm2	
	3	Tolerances		
		Length	4%	
		Thickness	± 1mm to 3mm	
		Out of square	± 0.5mm	
		straightness	Max deviation 2mm	
			0.3 % of length	
	4	Elongation	24-26%	
	5	Galvanizing Thickness	>85 Microns	
	6	Modulus of Elasticity	20 x 10*9	
	7	Density	7860 kg/m3	
	8	Nominal Length	±0.4%	
	D. BOLTS,NUTS,WASHER			
	1	Safe working shear stress	120 N/mm2	
	2	Grade (Bolts/Nuts)	4.6/4	
	3	Tolerances		
		threads	0.01mm	
	4	Galvanizing Thickness	>85	
4.2.1.6	Materials before and after fabrication are straight and free from twists			
4.2.1.7	Sheared or cropped edge are dressed to a neat finish and are free from distortion			
4.2.1.8	All holes are drilled in one operation and burrs are removed			
	Holes are not be formed by a gas cutting process			
	All matching holes for bolts registers with each other so that a gauge 2mm less in diameter than the diameter of the bolt passes freely through the assembled members in a direction at right angle to such members			
4.2.1.9	Erection clearances for cleated ends of members connecting steel to steel			
4.2.1.10	Bending of flat straps are carried out cold			
4.2.2	Welding			
4.2.2.1	Type of welding			
4.2.2.2	Mode of cleaning of welds			
4.2.3	Galvanizing			
4.2.3.1	All punching, cutting, drilling, screw tapping and the removal of burrs are completed before the galvanizing process commences			
4.2.3.2	Type of galvanization			
4.2.3.3	Bolts are completely galvanized including the threads, and the threads are left uncoated in the case of nuts			
4.2.3.4	Uniformity of the zinc coating			
4.2.4	CONTRACTOR COMPLIANCE SHEET			
Table 2	No.	Item	KPLC Requirements	
	1	Confirm supply of shop drawings ‘As fabricated, upon award successful bid in portable device	2 No’s	
	2	Supply of additional bolts/nuts/washers (both connection and anchor)	Extra 2%	
	3	Supply calibrated coating thickness measuring equipment	2 no.	
4.3	Drawings-(fill list as per the Kinanie order list)			
	Table 3	No.	Item Description	
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