

Johannesburg Water (SOC) Ltd



CONTRACT JW14340

CROSBY BULK INFRASTRUCTURE PROJECT

VOLUME 4

DATA SHEETS



TITLE
HURSTHILL SPLIT CASING PUMP DATA SHEET

CLIENT N°.

PAGE

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ZUTARI N°.

113503-3000-DST-MM-0001

REV.

T0

TI: TYPE OF ISSUE		A - PRELIMINARY	C – FOR TENDER	E – FOR CONSTRUCTION		G – AS BUILT		
		B – FOR APPROVAL	D – FOR QUOTATION	F – AS PURCHASED		H - CANCELLED		
Rev.	TI	Description		By	Ckd	APP.	Aut.	Date
A	B	FOR APPROVAL		L.v.V.	E.L.	R.B.	.	27.03.2023
T0	C	FOR TENDER		L.v.V.	E.L.	R.B.	.	31.01.2024

Instructions on Filling Out This Form

I - Potential Suppliers should fill out the left column of the "Proposed" field with one of the following options: "MR" (Meets Requirements) or "D" (Deviation).

II - Suppliers must list any items marked "D" and any other clarifications in the "Deviations List", of the Technical Requisition. To include information in addition to the contents of this datasheet, suppliers should proceed in the same manner.

III - The explanatory notes at the end of the Data Sheet are to be filled out by the Issuer and not by Suppliers.

Supplier:	Proposal:
Identification (TAG):	Quantity: Refer to BOQ

Item	Description	Unit	Specified	Proposed
1	MEDIUM DETAILS			
1.1	Water quality	-	Potable	
1.2	SG	-	1.0	
1.3	PH	pH	6.5 to 8.5	
1.4	Operating Temperature	°C	20	
2	PUMP DETAILS			
2.1	Manufacturer	-	KSB / Grundfos / Sulzer or similar approved	
2.2	Model	-	(Specify)	
2.3	Specific speed	-	(Specify)	
2.4	Type of Pump		Horizontal split casing centrifugal	
2.5	Number of stages	No	1	
2.6	Rotational speed (at design duty point)	rpm	1135	
2.7	DE bearing type (sleeve, roller, ball, etc.)	-	(Specify)	
2.8	NDE bearing type (sleeve, roller, ball, etc.)	-	(Specify)	
2.9	Bearings are bi-directional	Yes/No	Yes	
2.10	Bearing Cooling Method	-	(Specify)	
2.11	Method of lubrication (oil, grease, etc.)	-	(Specify)	
2.12	Solids size handling capability (minimum)	mm	N/A	
2.13	Suction Diameter	mm	300	
2.14	Suction Flange Drilling		SANS 1123 T1600/1, RF	
2.15	Discharge Diameter	mm	250	
2.16	Discharge Flange Drilling		SANS 1123 T1600/1, RF	
2.17	Max. diameter solids that can be pumped	mm	(Specify)	
2.18	Seal type		Mechanical	
2.19	Type of coupling	-	Rigid	
2.20	Load speed-torque characteristics (square torque law, constant torque, etc.)	-	(Specify)	
2.21	Breakaway Torque	Nm	(Specify)	
2.22	Inertia of Rotating Element with water (incl. couplings)	kg.m ²	(Specify)	
2.23	Total end float on rotating element	mm	(Specify)	
2.24	DE bearings temperature probe fitted (PT100)	Yes/No	Yes	
2.25	NDE bearings temperature probe fitted (PT100)	Yes/No	Yes	
2.26	DE bearings vibration sensor fitted	Yes/No	Yes	
2.27	Shaft float electrical measuring fitted (if applicable)	Yes/No	No	
2.28	Shaft balance disc temperature probe fitted (if applicable)	Yes/No	No	
2.29	Suction & Discharge pressure gauges	Yes/No	Yes	
2.30	Type of interior lining	-	FBE	
2.31	Type of exterior coating	-	FBE	



TITLE
HURSTHILL SPLIT CASING PUMP DATA SHEET

CLIENT N°.

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ZUTARI N°.

113503-3000-DST-MM-0001

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Item	Description	Unit	Specified	Proposed	
3	MOTOR DETAILS				
3.1	Manufacturer	-	WEG or similar approved		
3.2	Type of Motor	-	Induction (TEFC)		
3.3	Motor shaft output at site conditions (P ₂)	kW	96		
3.4	Rotational speed (operating speed)	rpm	1135		
3.5	Number of poles	-	4		
3.6	Full Load Current (FLC)	A	(Specify)		
3.7	DOL starting current (..... x FLC)	A	(Specify)		
3.8	Voltage	V	380		
3.9	Enclosure rating	-	IP65		
3.10	Recommended type of starter	-	VSD		
3.11	Power factor at duty point	cos Ø	(Specify)		
3.12	Motor Efficiency (Full Load, 75% Load and 50% Load)	%	(Specify)		
3.13	Motor Efficiency Class	-	IE3 (Premium)		
3.14	Thermal protection fitted (thermistor/ PT100)	Yes/No	Yes (PT 100)		
3.15	Anti-condensation Heaters fitted	Yes/No	Yes		
3.16	DE bearing type (sleeve, roller, ball, etc.)	-	(Specify)		
3.17	NDE bearing type (sleeve, roller, ball, etc.)	-	(Specify)		
3.18	Bearings are bi-directional	Yes/No	Yes		
3.19	Bearing Cooling Method	-	(Specify)		
3.20	Method of lubrication (oil, grease, etc.)	-	(Specify)		
3.21	DE bearings temperature probe fitted (PT100)	Yes/No	Yes		
3.22	NDE bearings temperature probe fitted (PT100)	Yes/No	Yes		
3.23	DE bearings vibration sensor fitted	Yes/No	Yes		
3.24	Zorc's Fitted	Yes/No	No		
3.25	Motor Painting	Yes/No	Yes (Colour TBA)		
3.26	Guard Painting	Yes/No	Yes (Colour TBA)		
3.27	Class of Insulation	-	(Specify)		
3.28	VSD driven motor	Yes/No	Yes		
3.29	Method of cooling the Motor	-	Air (TEFC)		
3.30	External motor cooling fan & motor	Yes/No	No		
3.31	External motor cooling fan & motor voltage	V	-		
3.32	Instrumentation voltage	V	220		
3.33	Electrical cable length	m	(Specify)		
4	PUMP CHARACTERISTICS				
4.1	Delivery at design duty point	m ³ /hr	720		
4.2	Head at design duty point	m	36.4		
4.3	Guaranteed Minimum Efficiency at design duty point	%	85.0		
4.4	Power absorbed at duty point (P _H)	kW	84.0		
4.5	Impeller Diameter at duty point	mm	(Specify)		
4.6	Impeller Diameter - Full Size	mm	(Specify)		
4.7	Guaranteed Minimum Pump best efficiency (BEP)	%	(Specify)		
4.8	Delivery at best efficiency point (BEP)	m ³ /hr	(Specify)		
4.9	Head at best efficiency point (BEP)	m	(Specify)		
4.10	NPSHreq (Max)	m	(Specify)		
4.11	Suction Reprime Lift (Min)	m	N/A		
4.12	Maximum Casing Pressure	m	1.5 x Design Pressure		
4.13	Cross Connection Pumping				
4.13.1	Delivery at duty point	m ³ /hr	450		
4.13.2	Head at duty point	m	42		
4.13.3	Power absorbed at duty point (P _H)	kW	60.0		

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE - PRIORITY 1	
TITLE HURSTHILL SPLIT CASING PUMP DATA SHEET				CLIENT N°.	PAGE 3/3
				ZUTARI N°. 113503-3000-DST-MM-0001	REV. T0

Item	Description	Unit	Specified	Proposed	
5	PUMP CONSTRUCTION MATERIALS				
5.1	Pump casing	-	High-grade cast steel or grey iron No 30		
5.2	Impeller	-	Stainless Steel		
5.3	Casing Wear Rings	-	(Specify)		
5.4	Shaft	-	EN57 or similar approved		
5.5	Shaft Sleeve (Bronze, Stainless Steel, etc.)	-	(Specify)		
5.6	Gland Packing material	-	N/A		
5.7	Mechanical seal faces (stationary)	-	(Specify)		
5.8	Mechanical seal faces (rotating)	-	(Specify)		
6	GENERAL DETAILS				
6.1	Total weight of pump, motor and base-frame	kg	(Specify)		
6.2	Plinth size required	m x m	(Specify)		
6.3	Performance Test STD	-	ISO 9906 (grade 2B)		
6.4	Noise Level (measured at 3m from pump)	dBA	75		
6.5	Vibration (radial direction)	mm/s	4.5		
6.6	Vibration (axial direction)	mm/s	4.5		
6.7	Local content for pump	%	70		
7	FINANCIAL DETAILS				
7.1	Cost per unit (Pump, motor, base frame & coupling)	ZAR			Price in BOQ
7.2	Performance testing cost per unit	ZAR			Price in BOQ
7.3	Cost per vacuum unit (If self-priming)	ZAR	N/A		
7.4	Cost per pressure gauge	ZAR			Price in BOQ
7.5	Cost per Zorc	ZAR	N/A		
7.6	Total cost per pump	ZAR			Price in BOQ
7.7	Delivery time	Weeks	(Specify)		

Explanatory Notes 01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification. 02 - Supplier shall confirm and/or provide all equipment data while filing the proposed column.	
REFERENCE DOCUMENTS Drawing: 113503-3110-DRG-MM-0001 ZUT 5019: Horizontally Split Case Centrifugal Pump. ZUT 0001: General Mechanical Requirements.	

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE - PRIORITY 1			
TITLE BRIXTON SPLIT CASING PUMP DATA SHEET				CLIENT N°.		PAGE 1/3	
				ZUTARI N°. 113503-3000-DST-MM-0002		REV. T0	

TI: TYPE OF ISSUE		A - PRELIMINARY	C - FOR TENDER	E - FOR CONSTRUCTION	G - AS BUILT		
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Rev.	TI	Description	By	Ckd	APP.	Aut.	Date
A	B	FOR APPROVAL	L.V.	E.L.	R.B.	.	27.03.2023
T0	C	FOR TENDER	L.V.	E.L.	R.B.	.	31.01.2024

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Supplier:	Proposal:
Identification (TAG):	Quantity: Refer to BOQ

Item	Description	Unit	Specified	Proposed	
1	MEDIUM DETAILS				
1.1	Water quality	-	Potable		
1.2	SG	-	1.0		
1.3	PH	pH	6.5 to 8.5		
1.4	Operating Temperature	°C	20		
2	PUMP DETAILS				
2.1	Manufacturer	-	KSB / Grundfos / Sulzer or similar approved		
2.2	Model	-	(Specify)		
2.3	Specific speed	-	(Specify)		
2.4	Type of Pump		Horizontal split casing centrifugal		
2.5	Number of stages	No	1		
2.6	Rotational speed (at design duty point)	rpm	1400		
2.7	DE bearing type (sleeve, roller, ball, etc.)	-	(Specify)		
2.8	NDE bearing type (sleeve, roller, ball, etc.)	-	(Specify)		
2.9	Bearings are bi-directional	Yes/No	Yes		
2.10	Bearing Cooling Method	-	(Specify)		
2.11	Method of lubrication (oil, grease, etc.)	-	(Specify)		
2.12	Solids size handling capability (minimum)	mm	N/A		
2.13	Suction Diameter	mm	300		
2.14	Suction Flange Drilling		SANS 1123 T1600/1, RF		
2.15	Discharge Diameter	mm	250		
2.16	Discharge Flange Drilling		SANS 1123 T1600/1, RF		
2.17	Max. diameter solids that can be pumped	mm	(Specify)		
2.18	Seal type		Mechanical		
2.19	Type of coupling	-	Rigid		
2.20	Load speed-torque characteristics (square torque law, constant torque, etc.)	-	(Specify)		
2.21	Breakaway Torque	Nm	(Specify)		
2.22	Inertia of Rotating Element with water (incl. couplings)	kg.m ²	(Specify)		
2.23	Total end float on rotating element	mm	(Specify)		
2.24	DE bearings temperature probe fitted (PT100)	Yes/No	Yes		
2.25	NDE bearings temperature probe fitted (PT100)	Yes/No	Yes		
2.26	DE bearings vibration sensor fitted	Yes/No	Yes		
2.27	Shaft float electrical measuring fitted (if applicable)	Yes/No	No		
2.28	Shaft balance disc temperature probe fitted (if applicable)	Yes/No	No		
2.29	Suction & Discharge pressure gauges	Yes/No	Yes		
2.30	Type of interior lining	-	FBE		
2.31	Type of exterior coating	-	FBE		



TITLE
BRIXTON SPLIT CASING PUMP DATA SHEET

CLIENT N°.

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ZUTARI N°.

113503-3000-DST-MM-0002

REV.



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Item	Description	Unit	Specified	Proposed
3	MOTOR DETAILS			
3.1	Manufacturer	-	WEG or similar approved	
3.2	Type of Motor	-	Induction (TEFC)	
3.3	Motor shaft output at site conditions (P ₂)	kW	198	
3.4	Rotational speed (operating speed)	rpm	1400	
3.5	Number of poles	-	4	
3.6	Full Load Current (FLC)	A	(Specify)	
3.7	DOL starting current (..... x FLC)	A	(Specify)	
3.8	Voltage	V	380	
3.9	Enclosure rating	-	IP65	
3.10	Recommended type of starter	-	VSD	
3.11	Power factor at duty point	cos Ø	(Specify)	
3.12	Motor Efficiency (Full Load, 75% Load and 50% Load)	%	(Specify)	
3.13	Motor Efficiency Class	-	IE3 (Premium)	
3.14	Thermal protection fitted (thermistor/ PT100)	Yes/No	Yes (PT 100)	
3.15	Anti-condensation Heaters fitted	Yes/No	Yes	
3.16	DE bearing type (sleeve, roller, ball, etc.)	-	(Specify)	
3.17	NDE bearing type (sleeve, roller, ball, etc.)	-	(Specify)	
3.18	Bearings are bi-directional	Yes/No	Yes	
3.19	Bearing Cooling Method	-	(Specify)	
3.20	Method of lubrication (oil, grease, etc.)	-	(Specify)	
3.21	DE bearings temperature probe fitted (PT100)	Yes/No	Yes	
3.22	NDE bearings temperature probe fitted (PT100)	Yes/No	Yes	
3.23	DE bearings vibration sensor fitted	Yes/No	Yes	
3.24	Zorc's Fitted	Yes/No	No	
3.25	Motor Painting	Yes/No	Yes (Colour TBA)	
3.26	Guard Painting	Yes/No	Yes (Colour TBA)	
3.27	Class of Insulation	-	(Specify)	
3.28	VSD driven motor	Yes/No	Yes	
3.29	Method of cooling the Motor	-	Air (TEFC)	
3.30	External motor cooling fan & motor	Yes/No	No	
3.31	External motor cooling fan & motor voltage	V	-	
3.32	Instrumentation voltage	V	380	
3.33	Electrical cable length	m	(Specify)	
4	PUMP CHARACTERISTICS			
4.1	Delivery at design duty point	m ³ /hr	1065	
4.2	Head at design duty point	m	51	
4.3	Guaranteed Minimum Efficiency at design duty point	%	86.0	
4.4	Power absorbed at duty point (P _H)	kW	173.0	
4.5	Impeller Diameter at duty point	mm	(Specify)	
4.6	Impeller Diameter - Full Size	mm	(Specify)	
4.7	Guaranteed Minimum Pump best efficiency (BEP)	%	(Specify)	
4.8	Delivery at best efficiency point (BEP)	m ³ /hr	(Specify)	
4.9	Head at best efficiency point (BEP)	m	(Specify)	
4.10	NPSHreq (Max)	m	(Specify)	
4.11	Suction Reprime Lift (Min)	m	N/A	
4.12	Maximum Casing Pressure	m	1.5 x Design Pressure	
4.13	Cross Connection Pumping			
4.13.1	Delivery at duty point	m ³ /hr	720	
4.13.2	Head at duty point	m	36.4	
4.13.3	Power absorbed at duty point (P _H)	kW	83.0	

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE - PRIORITY 1	
TITLE BRIXTON SPLIT CASING PUMP DATA SHEET				CLIENT N°.	PAGE 3/3
				ZUTARI N°. 113503-3000-DST-MM-0002	REV. T0

Item	Description	Unit	Specified	Proposed	
5	PUMP CONSTRUCTION MATERIALS				
5.1	Pump casing	-	High-grade cast steel or grey iron No 30		
5.2	Impeller	-	Stainless Steel		
5.3	Casing Wear Rings	-	(Specify)		
5.4	Shaft	-	EN57 or similar approved		
5.5	Shaft Sleeve (Bronze, Stainless Steel, etc.)	-	(Specify)		
5.6	Gland Packing material	-	N/A		
5.7	Mechanical seal faces (stationary)	-	(Specify)		
5.8	Mechanical seal faces (rotating)	-	(Specify)		
6	GENERAL DETAILS				
6.1	Total weight of pump, motor and base-frame	kg	(Specify)		
6.2	Plinth size required	m x m	(Specify)		
6.3	Performance Test STD	-	ISO 9906 (grade 2B)		
6.4	Noise Level (measured at 3m from pump)	dBA	75		
6.5	Vibration (radial direction)	mm/s	4.5		
6.6	Vibration (axial direction)	mm/s	4.5		
6.7	Local content for pump	%	70		
7	FINANCIAL DETAILS				
7.1	Cost per unit (Pump, motor, base frame & coupling)	ZAR			Price in BOQ
7.2	Performance testing cost per unit	ZAR			Price in BOQ
7.3	Cost per vacuum unit (If self-priming)	ZAR	N/A		
7.4	Cost per pressure gauge	ZAR			Price in BOQ
7.5	Cost per Zorc	ZAR	N/A		
7.6	Total cost per pump	ZAR			Price in BOQ
7.7	Delivery time	Weeks	(Specify)		

Explanatory Notes	
01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification.	
02 - Supplier shall confirm and/or provide all equipment data while filing the proposed column.	
REFERENCE DOCUMENTS	
Drawing: 113503-3020-DRG-MM-0006	
ZUT 5019: Horizontally Split Case Centrifugal Pump.	
ZUT 0001: General Mechanical Requirements.	

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE	
TITLE NON-RETURN VALVE (DN400 PN16) DATA SHEET				CLIENT N°. 	
				PAGE 1/2	
				ZUTARI N°. 113503-3000-DST-MM-0003	
				REV. T0	

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Rev.	TI	Description			By	Ckd	APP.	Aut.	Date
A	B	FOR APPROVAL			L.vv.	E.L.	R.B.	.	29.03.2023
T0	C	FOR TENDER			L.vv.	E.L.	R.B.	.	05.04.2023

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Supplier:	Proposal:
Identification (TAG):	Quantity: Refer to BOQ

Item	Description	Unit	Specified	Proposed
1	MEDIUM DETAILS			
1.1	Water quality (potable, raw, sewage, etc.)	-	Potable	
1.2	SG	-	1.0	
1.3	PH	pH	6.5 to 8.5	
1.4	Operating Temperature	°C	20	
2	VALVE DETAILS			
2.1	Manufacturer	-	AVK, Premier Valves, VOSA or similar approved	
2.2	Model #	-	(Specify)	
2.3	Country of Manufacture	-	South Africa	
2.4	Nominal Size DN	mm	400	
2.5	Door Type	-	Single Door Swing Type	
2.6	Method of closing	-	Gravity, with counterweight	
2.7	Inspection/Cleaning Cover	Yes/No	Yes	
2.8	Suitable for horizontal/vertical installation	Yes/No	Horizontal installation	
2.9	Counterweight guard required	Yes/No	Yes	
2.10	Operating Pressure	kPa	-	
2.11	Rated Pressure	kPa	1600	
2.12	Body Test pressure	kPa	1.5 x WP _{max}	
2.13	Seat Test pressure	kPa	1.1 x WP _{max}	
2.14	Flanges	-	SANS 1123 T1600/1	
2.15	Raised Faced Flanges	Yes/No	Yes	
2.16	Face to Face distance	mm	(Specify)	
2.17	Actual inner bore	mm	(Specify)	
2.18	Loss coefficient K = (hm)/(v ² /(2g))	K	(Specify)	
3	CONSTRUCTION MATERIALS			
3.1	Body material	-	Ductile Iron/Cast Steel	
3.2	Body Seat Trim	-	Stainless Steel	
3.3	Door material	-	Ductile Iron/Cast Steel	
3.4	Door Seat Trim	-	(Specify)	
3.5	Shaft	-	Stainless Steel	
3.6	Shaft Bearings/Bushes	-	Bronze	
3.7	Type of interior lining	-	FBE	
3.8	Type of exterior coating	-	FBE	

		113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE	
TITLE NON-RETURN VALVE (DN400 PN16) DATA SHEET		CLIENT N°. 	PAGE 2/2
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Item	Description	Unit	Specified	Proposed	
4	GENERAL DETAILS				
4.1	Total weight of valve (valve and actuator)	kg	(Specify)		
4.2	Main dimensions of valve (L x W x H)	mm	(Specify)		
4.3	Life expectancy (# open/close cycles)	No	(Specify)		
4.4	Percentage local production and content	%	70		
5	FINANCIAL DETAILS				
5.1	Cost per unit	ZAR			Price in BOQ
5.2	Pressure testing cost per unit	ZAR			Price in BOQ
5.3	Assembly delivery time	Weeks	(Specify)		

Explanatory Notes					
01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification.					
02 - Supplier shall confirm and/or provide all equipment data while filing the proposed column.					
REFERENCE DOCUMENTS					
Drawing: 113503-3020-DRG-MM-0006					
ZUT 7004: Valves for Water and Wastewater Installations.					
ZUT 7005: Corrosion Protection for Valves.					
ZUT 7017: Slanted Seat Check Valves.					
ZUT 0001: General Mechanical Requirements.					

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE			
TITLE WEDGE GATE VALVE >=DN250 DATA SHEET				CLIENT N°.		PAGE 1/2	
				ZUTARI N°. 113503-3000-DST-MM-0004		REV. T0	

TI: TYPE OF ISSUE		A - PRELIMINARY	C - FOR TENDER	E - FOR CONSTRUCTION	G - AS BUILT		
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Rev.	TI	Description	By	Ckd	APP.	Aut.	Date
A	B	FOR APPROVAL	L.VV.	E.L.	R.B.	.	29.03.2023
T0	C	FOR TENDER	L.VV.	E.L.	R.B.	.	31.01.2024

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Supplier:	Proposal:
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Item	Description	Unit	Specified	Proposed
1	MEDIUM DETAILS			
1.1	Water quality	-	Potable	
1.2	SG	-	1.0	
1.3	PH	pH	6.5 to 8.5	
1.4	Operating Temperature	°C	20	
2	VALVE DETAILS			
2.1	Manufacturer	-	AVK, Premier Valves, VOSA or similar approved	
2.2	Model #	-	(Specify)	
2.3	Country of Manufacture	-	South Africa	
2.4	Nominal Size DN	mm	Greater than or equal to DN250	
2.5	Gate Type	-	Wedge	
2.6	Rated Pressure	kPa	1600	
2.7	Body Test pressure	kPa	1.5 x WP _{max}	
2.8	Seat Test pressure	kPa	1.1 x WP _{max}	
2.9	Flanges	-	SANS 1123 T1600/1	
2.10	Raised Faced Flanges	(Yes/No)	Yes	
2.11	Flange Pattern	-	Short	
2.12	Face to Face distance	mm	(Specify)	
2.13	Hand wheel operated	(Yes/No)	Yes	
2.14	Gearbox	(Yes/No)	Yes	
2.15	Gear Ratio	-	4:1 for DN300 - DN400 6:1 for DN450 - DN900	
2.16	Hand wheel effort req'd on rim to open valve	N	(Specify)	
2.17	Hand wheel position	-	To be verified at installation for access	
2.18	Rising-, non-rising spindle	-	Non-rising spindle	
2.19	Welded-, bolted bonnet	-	Bolted	
2.20	Actual inner bore	mm	(Specify)	
2.21	Loss coefficient K = (hm)/(v ² /(2g))	K	(Specify)	
3	ACTUATOR DETAILS			
3.1	Manufacturer	-	(Specify)	
3.2	Type of Actuation	-	Manual	
3.3	Closing direction	-	Anti-clockwise	

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE	
TITLE WEDGE GATE VALVE >=DN250 DATA SHEET				CLIENT N°.	PAGE 2/2
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Item	Description	Unit	Specified	Proposed	
4	CONSTRUCTION MATERIALS				
4.1	Body material	-	Ductile Iron or Cast Steel		
4.2	Bonnet/Stuffing Box material	-	Ductile Iron		
4.3	Gate material	-	Ductile Iron		
4.4	Body Seat Trim	-	Stainless Steel		
4.5	Gate Seat Trim	-	Stainless Steel		
4.6	Spindle	-	Stainless Steel		
4.7	Spindle Nut	-	Bronze		
4.8	Scrapers	-	N/A		
4.9	Gland Packing	-	(Specify)		
4.10	Handwheel	-	Ductile Iron or Cast Steel		
4.11	Type of interior lining	-	FBE		
4.12	Type of exterior coating	-	FBE		
5	GENERAL DETAILS				
5.1	Total weight of valve (valve and actuator)	kg	(Specify)		
5.2	Main dimensions of valve (L x W x H)	mm	(Specify)		
5.3	Life expectancy (# open/close cycles)	No	(Specify)		
5.4	Percentage local production and content (valve and gearbox)	%	70		
6	FINANCIAL DETAILS				
6.1	Cost per unit	ZAR			Price in BOQ
6.2	Pressure testing cost per unit	ZAR			Price in BOQ
6.3	Cost per actuator	ZAR	N/A		
6.4	Assembly delivery time	Weeks	(Specify)		

Explanatory Notes

- 01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification.
- 02 - Supplier shall confirm and/or provide all equipment data while filing the proposed column.

REFERENCE DOCUMENTS



Drawing: 113503-3020-DRG-MM-0007

ZUT 7004: Valves for Water and Wastewater Installations.

ZUT 7005: Corrosion Protection for Valves.

ZUT 7015: Metal Seated Wedge Gate Valves.

ZUT 0001: General Mechanical Requirements.

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE			
TITLE WEDGE GATE VALVE <DN250 DATA SHEET				CLIENT N°.		PAGE 1/2	
				ZUTARI N°. 113503-3000-DST-MM-0005		REV. T0	

TI: TYPE OF ISSUE		A - PRELIMINARY	C – FOR TENDER	E – FOR CONSTRUCTION	G – AS BUILT		
		B – FOR APPROVAL	D – FOR QUOTATION	F – AS PURCHASED	H - CANCELLED		
Rev.	TI	Description	By	Ckd	APP.	Aut.	Date
A	B	FOR APPROVAL	L.vv.	E.L.	R.B.	.	29.03.2023
T0	C	FOR TENDER	L.vv.	E.L.	R.B.	.	05.04.2023

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III - The explanatory notes at the end of the Data Sheet are to be filled out by the Issuer and not by Suppliers.

Supplier:	Proposal:
Identification (TAG):	Quantity: Refer to BOQ

Item	Description	Unit	Specified	Proposed	
1	MEDIUM DETAILS				
1.1	Water quality	-	Potable		
1.2	SG	-	1.0		
1.3	PH	pH	6.5 to 8.5		
1.4	Operating Temperature	°C	20		
2	VALVE DETAILS				
2.1	Manufacturer	-	AVK, Premier Valves, VOSA or similar approved		
2.2	Model #	-	(Specify)		
2.3	Country of Manufacture	-	South Africa		
2.4	Nominal Size DN	mm	200		
2.5	Gate Type	-	Wedge		
2.6	Rated Pressure	kPa	1600		
2.7	Body Test pressure	kPa	1.5 x WP _{max}		
2.8	Seat Test pressure	kPa	1.1 x WP _{max}		
2.9	Flanges	-	SANS 1123 T1600/1		
2.10	Raised Faced Flanges	(Yes/No)	Yes		
2.11	Flange Pattern	-	Short		
2.12	Face to Face distance	mm	(Specify)		
2.13	Hand wheel operated	(Yes/No)	Yes		
2.14	Gearbox	(Yes/No)	No		
2.15	Hand wheel effort req'd on rim to open valve	N	(Specify)		
2.16	Rising-, non-rising spindle	-	Non-rising spindle		
2.17	Welded-, bolted bonnet	-	Bolted		
2.18	Actual inner bore	mm	(Specify)		
2.19	Loss coefficient K = (hm)/(v ² /(2g))	K	(Specify)		
3	ACTUATOR DETAILS				
3.1	Manufacturer	-	(Specify)		
3.2	Type of Actuation	-	Manual		
3.3	Closing direction	-	Anti-clockwise		

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE	
TITLE WEDGE GATE VALVE <DN250 DATA SHEET				CLIENT N°.	PAGE 2/2
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Item	Description	Unit	Specified	Proposed	
4	CONSTRUCTION MATERIALS				
4.1	Body material	-	Ductile Iron or Cast Steel		
4.2	Bonnet/Stuffing Box material	-	Ductile Iron		
4.3	Gate material	-	Ductile Iron		
4.4	Body Seat Trim	-	Stainless Steel		
4.5	Gate Seat Trim	-	Stainless Steel		
4.6	Spindle	-	Stainless Steel		
4.7	Spindle Nut	-	Bronze		
4.8	Scrapers	-	N/A		
4.9	Gland Packing	-	(Specify)		
4.10	Handwheel	-	Ductile Iron or Cast Steel		
4.11	Type of interior lining	-	FBE		
4.12	Type of exterior coating	-	FBE		
5	GENERAL DETAILS				
5.1	Total weight of valve (valve and actuator)	kg	(Specify)		
5.2	Main dimensions of valve (L x W x H)	mm	(Specify)		
5.3	Life expectancy (# open/close cycles)	No	(Specify)		
5.4	Percentage local production and content (valve and gearbox)	%	70		
6	FINANCIAL DETAILS				
6.1	Cost per unit	ZAR			Price in BOQ
6.2	Pressure testing cost per unit	ZAR			Price in BOQ
6.3	Cost per actuator	ZAR	N/A		
6.4	Assembly delivery time	Weeks	(Specify)		
Explanatory Notes					
01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification.					
02 - Supplier shall confirm and/or provide all equipment data while filing the proposed column.					
REFERENCE DOCUMENTS					
Drawing: 113503-3030-DRG-MM-0002					
ZUT 7004: Valves for Water and Wastewater Installations.					
ZUT 7005: Corrosion Protection for Valves.					
ZUT 7015: Metal Seated Wedge Gate Valves.					
ZUT 0001: General Mechanical Requirements.					

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE	
TITLE BALL VALVE (PN16) DATA SHEET				CLIENT N°.	PAGE
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				ZUTARI N°.	REV.
				113503-3000-DST-MM-0006	T0

TI: TYPE OF ISSUE		A - PRELIMINARY	C – FOR TENDER	E – FOR CONSTRUCTION	G – AS BUILT				
		B – FOR APPROVAL	D – FOR QUOTATION	F – AS PURCHASED	H - CANCELLED				
Rev.	TI	Description			By	Ckd	APP.	Aut.	Date
T0	C	FOR TENDER			L.v.V.	E.L.	R.B.	.	31.01.2024

Instructions on Filling Out This Form



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Supplier:	Proposal:
Identification (TAG):	Quantity: Refer to BOQ

Item	Description	Unit	Specified	Proposed
1	MEDIUM DETAILS			
1.1	Manufacturer	-	(Specify)	
1.2	Model/ Series Clasification	-	(Specify)	
1.3	Country of Manufacture	-	South Africa	
1.4	Nominal Size DN	mm	DN 25 / DN 50 as per drawings	
1.5	Connection type	-	BSP Female Threaded, unless stated otherwise in drawings	
1.6	Seat	-	Soft-seated	
1.7	Rated Pressure	kPa	1600	
1.8	Body Test pressure	kPa	1.5 x WP _{max}	
1.9	Seat Test pressure	kPa	1.1 x WP _{max}	
1.10	Type of flanges	-	N/A	
1.11	Raised Faced Flanges	(Yes/No)	N/A	
1.12	Face to Face Distance	mm	(Specify)	
1.13	Hand wheel/Lever operated	(Yes/No)	Yes	
1.14	Gearbox	(Yes/No)	No	
1.15	Loss coefficient K = (hm)/(v ² /(2g))	K	(Specify)	
2	VALVE CHARACTERISTICS AND PERFORMANCE			
2.1	Rated flow rate (max)	l/sec	(Specify)	
2.2	Reduced/ Full bore	-	Full Bore	
2.3	Actuation Torque	Nm	(Specify)	
3	MATERIAL OF CONSTRUCTION			
3.1	Body	-	Stainless steel	
3.2	Lever	-	Stainless steel	
3.3	Ball	-	Stainless steel	
3.4	Seals	-	(Specify)	
3.5	Trunnion	-	Stainless steel	
3.6	Stem	-	Stainless steel	
3.7	Type of interior lining	-	N/A	
3.8	Type of exterior coating	-	N/A	
4	GENERAL DETAILS			
4.1	Total weight of valve (valve and actuator)	kg	(Specify)	
4.2	Main dimensions of valve (L x W x H)	mm	(Specify)	
4.3	Life expectancy (# open/close cycles)	No	(Specify)	
4.4	Percentage local production and content	%	70	

		113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE	
TITLE BALL VALVE (PN16) DATA SHEET		CLIENT N°.	PAGE 2/2
		ZUTARI N°. 113503-3000-DST-MM-0006	REV. T0

Item	Description	Unit	Specified	Proposed
5	FINANCIAL DETAILS			
5.1	Cost per unit	ZAR		Price in BOQ
5.2	Pressure testing cost per unit	ZAR		Price in BOQ
5.3	Cost per actuator	ZAR	N/A	
5.4	Assembly delivery time	Weeks	(Specify)	

Explanatory Notes				
01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification.				
02 - Supplier shall confirm and/or provide all equipment data while filing the proposed column.				
REFERENCE DOCUMENTS				
Drawing: 113503-3020-DRG-MM-0006				
ZUT 7004: Valves for Water and Wastewater Installations.				
ZUT 7005: Corrosion Protection for Valves.				
ZUT 0001: General Mechanical Requirements.				

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE	
TITLE AIR VALVE (PN16) DATA SHEET				CLIENT N°.	PAGE
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				ZUTARI N°. 113503-3000-DST-MM-0007	REV. T0

TI: TYPE OF ISSUE		A – PRELIMINARY	C – FOR TENDER	E – FOR CONSTRUCTION	G – AS BUILT		
		B – FOR APPROVAL	D – FOR QUOTATION	F – AS PURCHASED	H – CANCELLED		

Rev.	TI	Description	By	Ckd	APP.	Aut.	Date
A	B	FOR APPROVAL	L.VV.	E.L.	R.B.	.	29.03.2023
T0	C	FOR TENDER	L.VV.	E.L.	R.B.	.	05.04.2023

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Supplier:	Proposal:
Identification (TAG):	Quantity: Refer to BOQ

Item	Description	Unit	Specified	Proposed	
1	MEDIUM DETAILS				
1.1	Water quality	-	Potable		
1.2	SG	-	1.0		
1.3	PH	pH	6.5 to 8.5		
1.4	Operating Temperature	°C	20		
2	VALVE DETAILS				
2.1	Manufacturer	-	ent-o-Mat, ARI or similar approv		
2.2	Model #	-	(Specify)		
2.3	Country of Manufacture	-	South Africa		
2.4	Nominal Size DN	mm	DN100 to DN200 Refer to drawings		
2.5	Valve Type	-	Double Acting, anti-shock		
2.6	Operating Pressure	kPa	-		
2.7	Pressure Rating	kPa	1600		
2.8	Connection type		Flanged or threaded		
2.9	Flanges		SANS 1123 1600/3, RF		
2.10	Bleeding Nipple (1/4" BSP/NPT connection)	Yes/No	Yes		
3	VALVE CHARACTERISTICS (HYDRAULIC DATA)				
3.1	Large intake and exhaust orifice size same as valve DN?	Yes/No	Yes		
3.2	Intake Capacity Curve to be submitted with this data sheet?	Yes/No	Yes		
3.3	Min. guaranteed sealing pressure	m	5		
3.4	Max. guaranteed sealing pressure	kPa	1.5 x WP _{max}		
3.5	Small orifice size	mm	(Specify)		
3.6	Anti-shock orifice size	mm	(Specify)		
4	CONSTRUCTION MATERIALS				
4.1	Body material	-	Stainless steel		
4.2	Cylinder Float (High Density Polyethylene, etc.)	-	(Specify)		
4.3	Ball Float (Polypropylene, PVDF, etc.)	-	(Specify)		
4.4	Seals (Nitrile, Neoprene, Viton, etc.)	-	(Specify)		
4.5	Stem and guide components	-	Stainless steel		

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE	
TITLE AIR VALVE (PN16) DATA SHEET				CLIENT N°.	PAGE
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Item	Description	Unit	Specified	Proposed
5	GENERAL DETAILS			
5.1	Total weight of valve	kg	(Specify)	
5.2	Main dimensions of valve (L x W x H)	mm	(Specify)	
5.3	Life expectancy (# open/close cycles)	No	(Specify)	
5.4	Percentage local production and content	%	70	
6	FINANCIAL DETAILS			
6.1	Cost per unit	ZAR		Price in BOQ
6.2	Expected delivery time	Weeks	(Specify)	

Explanatory Notes				
01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification.				
02 - Supplier shall confirm and/or provide all equipment data while filing the proposed column.				
REFERENCE DOCUMENTS				
Drawing: 113503-3030-DRG-MM-0002				
ZUT 7004: Valves for Water and Wastewater Installations.				
ZUT 7005: Corrosion Protection for Valves.				
ZUT 7022: Air Valves for Air Release and Vacuum Break on Pipelines.				
ZUT 0001: General Mechanical Requirements.				

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE			
TITLE DISMANTLING JOINT (DN200 to DN600 PN16) DATA SHEET				CLIENT N°. 		PAGE 1/2	
				ZUTARI N°. 113503-3000-DST-MM-0008		REV. T0	

TI: TYPE OF ISSUE		A - PRELIMINARY	C – FOR TENDER	E – FOR CONSTRUCTION	G – AS BUILT			
		B – FOR APPROVAL	D – FOR QUOTATION	F – AS PURCHASED	H - CANCELLED			
Rev.	TI	Description		By	Ckd	APP.	Aut.	Date
A	B	FOR APPROVAL		L.vv.	E.L.	R.B.	.	29.03.2023
T0	C	FOR TENDER		L.vv.	E.L.	R.B.	.	31.01.2024

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Supplier:	Proposal:
Identification (TAG):	Quantity: Refer to BOQ

Item	Description	Unit	Specified	Proposed
1	MEDIUM DETAILS			
1.1	Water quality	-	Potable	
1.2	SG	-	1.0	
1.3	PH	pH	6.5 to 8.5	
1.4	Operating Temperature	°C	20	
2	FLANGE ADAPTOR DETAILS			
2.1	Manufacturer	-	Klamflex or similar approved	
2.2	Model #	-	(Specify)	
2.3	Country of Manufacture	-	South Africa	
2.4	D/J Type	-	Restrained	
2.5	Type of pipe	-	SANS 719	
2.6	Pipe nominal bore	mm	DN200 to DN600, refer to drawings	
2.7	Pipe Outside Diameter (O.D.)	mm	As per SANS 719	
2.8	Rated Pressure	kPa	1600	
2.9	Flanges	-	SANS 1123 T1600/3	
2.10	Raised Faced Flanges	Yes/No	Yes	
2.11	Recommended setting gap	mm	(Specify)	
2.12	Face to Face distance	mm	(Specify)	
2.13	Coating material	-	FBE	
2.14	Lining material	-	FBE	
3	CONSTRUCTION MATERIALS			
3.1	Spigot Piece	-	Ductile Iron or Mild Steel	
3.2	Clamping Ring	-	Ductile Iron	
3.3	Clamping bolts	-	High tensile, HDG	
3.4	Tie rods	-	High tensile, HDG	
3.5	Rubber Ring (EPDM, etc.)	-	(Specify)	
3.6	Gaskets (EPDM, Non-asbestos, etc.)	-	(Specify)	
4	GENERAL DETAILS			
4.1	Total weight of device	kg	(Specify)	
4.2	Length of device	mm	(Specify)	

		113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE	
TITLE DISMANTLING JOINT (DN200 to DN600 PN16) DATA SHEET		CLIENT N°.	PAGE 2/2
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Item	Description	Unit	Specified	Proposed
5	FINANCIAL DETAILS			
5.1	Cost per unit	ZAR		Price in BOQ
5.2	Expected delivery time	Weeks	(Specify)	

Explanatory Notes				
01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification.				
02 - Supplier shall confirm and/or provide all equipment data while filing the proposed column.				
REFERENCE DOCUMENTS				
Drawing: 113503-3030-DRG-MM-0001				
Drawing: 113503-3020-DRG-MM-0006				
ZUT 7023: Couplings and Flange Adapters.				
ZUT 0001: General Mechanical Requirements.				

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE	
TITLE ULTRASONIC FLOWMETER DATA SHEET				CLIENT N°.	PAGE 1/3
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TI: TYPE OF ISSUE		A - PRELIMINARY	C – FOR TENDER	E – FOR CONSTRUCTION	G – AS BUILT			
		B – FOR APPROVAL	D – FOR QUOTATION	F – AS PURCHASED	H - CANCELLED			
Rev.	TI	Description		By	Ckd	APP.	Aut.	Date
T0	C	FOR TENDER		L.V.V.	E.L.	R.B.	.	31.01.2024

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Supplier:	Proposal:
Identification (TAG):	Quantity: Refer to BOQ

Item	Description	Unit	Specified	Proposed
1	MEDIUM DETAILS			
1.1	Water quality	-	Potable	
1.2	SG	-	1.0	
1.3	Solid content	%	Less than 5%	
1.4	PH	pH	7	
1.5	Operating Temperature	°C	-10 to 50	
2	METER DETAILS			
2.1	Manufacturer	-	(Specify)	
2.2	Model #	-	(Specify)	
2.3	Type of flow meter	-	Ultrasonic	
2.4	Type of installation	-	Clamp-on	
2.5	Required flowrate range	l/s	200 - 600	
2.6	Nominal Size DN	mm	500 and 600	
2.7	Pressure Rating	kPa	1600	
2.8	Flange (face-to-face) dimension	mm	N/A	
2.9	Version	-	Compact	
2.10	Connection type	-	Clamp-on	
2.11	Flanges	-	N/A	
2.12	Flowrate measuring range capability	l/s	(Specify)	



TITLE
ULTRASONIC FLOWMETER DATA SHEET

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T0

Item	Description	Unit	Specified	Proposed	
3	FLOW SENSOR				
3.1	Type of flow device	-	Transducers		
3.2	Degree of Protection	IP	68		
3.3	Min. Upstream straight lengths required	mm	2DN		
3.4	Min. Downstream straight lengths required	mm	2DN		
3.5	Corrosion Protection (FBE, Epoxy, PU, etc.)	-	N/A		
3.6	Materials of Construction:				
3.6.1	- Flanges	-	N/A		
3.6.2	- Measuring Tube	-	Stainless Steel		
3.6.3	- Type of liner	-	N/A		
3.6.4	- Housing	-	CS and Coated		
3.6.5	- Connection Box (SS, DCA, etc.)	-	(Specify)		
3.6.6	- Electrodes	-	N/A		
3.6.7	- Grounding Rings	-	N/A		
4	TRANSMITTER				
4.1	Type	-	Compact (Inclined)		
4.2	Measuring Accuracy	%	1% of Site Measured Value		
4.3	Calibrated range	-	(Specify)		
4.4	Maximum Solids	%	Less than 5%		
4.5	Display:				
4.5.1	- Display and User Interface	-	4-line display with back light		
4.5.2	- Display Function	-	Flowrate and Totalizer		
4.5.3	- Language options	-	English		
4.5.4	- Units	-	Metric, British, US selectable		
4.6	Communication		Profibus DP or Modbus RS48		
4.7	Electrical Connection:				
4.7.1	- Voltage	V	230		
4.7.2	- Cable	-	4 core cable for signal, 3 core cable for power		
4.7.3	- Cable entries	-	M20 x 1		
4.7.4	- Degree of Protection	IP	65 - field mount		
4.8	Materials of Construction:				
4.8.1	- Transmitter Housing (Al, Polycarbonate plastic, etc)		(Specify)		
4.8.2	- Window (Glass, Plastic)		(Specify)		
5	GENERAL DETAILS				
5.1	Insulating Kit included	Yes/No	Yes		
5.2	Total weight of meter	kg	(Specify)		
5.3	Main dimensions of meter (L x W x H)	mm	(Specify)		

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE	
TITLE ULTRASONIC FLOWMETER DATA SHEET				CLIENT N°.	PAGE
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Item	Description	Unit	Specified	Proposed
6	FINANCIAL DETAILS			
6.1	Cost per unit	ZAR		Price in BOQ
6.2	Expected delivery time	Weeks	(Specify)	

Explanatory Notes



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02 - Supplier shall confirm and/or provide all equipment data while filling the proposed column.

REFERENCE DOCUMENTS

ZUT 8010: Clamp-On Ultrasonic Flow Meters

Drawing: 113503-3020-DRG-MM-0007

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE			
TITLE ALTITUDE LEVEL CONTROL VALVE (DN400 PN16) DATA SHEET				CLIENT N°. 		PAGE 1/2	
				ZUTARI N°. 113503-3000-DST-MM-0010		REV. T0	

TI: TYPE OF ISSUE		A - PRELIMINARY		C – FOR TENDER		E – FOR CONSTRUCTION		G – AS BUILT		
		B – FOR APPROVAL		D – FOR QUOTATION		F – AS PURCHASED		H - CANCELLED		
Rev.	TI	Description				By	Ckd	APP.	Aut.	Date
T0	C	FOR TENDER				L.V.V.	E.L.	R.B.	.	31.01.2024

Instructions on Filling Out This Form



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III - The explanatory notes at the end of the Data Sheet are to be filled out by the Issuer and not by Suppliers.

Supplier:	Proposal:
Identification (TAG):	Quantity: Refer to BOQ

Item	Description	Unit	Specified	Proposed	
1	VALVE DETAILS				
1.1	Manufacturer	-	AVK (Premier Valves) or similar		
1.2	Model #	-	(Specify)		
1.3	Country of Manufacture	-	South Africa		
1.4	Type of valve	-	Altitude level control valve with pilot		
1.5	Nominal Size DN	mm	400		
1.6	Rated Pressure	kPa	1600		
1.7	Body Test pressure	kPa	1.5 x WP _{max}		
1.8	Seat Test pressure	kPa	1.1 x WP _{max}		
1.9	Flanges (BS, SABS, ANSI, etc.)	-	SANS 1123 T1600/3		
1.10	Raised Faced Flanges	Yes/No	Yes		
2	VALVE CHARACTERISTICS (HYDRAULIC DATA)				
2.1	Max. Upstream Pressure	m	5		
2.2	Valve design / body pattern	-	Globe		
2.3	Min. flow rate through valve	l/s	100		
2.4	Max. flow rate through valve	l/s	400		
2.5	Valve Flow Coefficient (C _v)	l/s	(Specify)		
2.6	Max. allowable differential pressure across valve (ΔP)	kPa	(Specify)		
2.7	Loss coefficient K = (hm)/(v ² /(2g)) @ Max. Flowrate	K	(Specify)		
2.8	Seat subject to cavitation	Yes/No	No		
2.9	Altitude adjustment range	m	(Specify)		
3	CONSTRUCTION MATERIALS				
3.1	Body and cover material (CI, DI, CS, etc.)	-	Ductile Iron or Cast Steel		
3.2	Body seat and guide	-	Stainless Steel		
3.3	Sealing Ring	-	(Specify)		
3.4	Diaphragm	-	(Specify)		
3.5	Guide rod and bolts	- -	Stainless Steel		
3.6	Pilot valve	-	Stainless Steel		
3.7	Pilot circuit fittings	-	Stainless Steel		
3.8	Fasteners and Studs	-	Stainless Steel		
3.9	Type of lining and coating (2-pack Epoxy, FBE, etc.)	-	FBE		

		113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE	
TITLE ALTITUDE LEVEL CONTROL VALVE (DN400 PN16) DATA SHEET		CLIENT N°.	PAGE 2/2
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4	GENERAL DETAILS				
4.1	Total weight of valve (valve and float arm)	kg	(Specify)		
4.2	Main dimensions of valve (L x W x H)	mm	(Specify)		
4.3	Life expectancy (# open/close cycles)	No	(Specify)		
4.4	Percentage local production and content	%	70		
5	FINANCIAL DETAILS				
5.1	Cost per unit	ZAR			Price in BOQ
5.2	Pressure testing cost per unit	ZAR			Price in BOQ
5.3	Cost per actuator	ZAR			Price in BOQ
5.4	Assembly delivery time	Weeks	(Specify)		

Explanatory Notes

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02 - Supplier shall confirm and/or provide all equipment data while filing the proposed column.

REFERENCE DOCUMENTS

Drawing: 113503-3310-DRG-MM-0001

ZUT 7004: Valves for Water and Wastewater Installations.

ZUT 7005: Corrosion Protection for Valves.

ZUT 0001: General Mechanical Requirements.

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE	
TITLE STRAINER DATA SHEET				CLIENT N°.	PAGE 1/2
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TI: TYPE OF ISSUE		A - PRELIMINARY	C – FOR TENDER	E – FOR CONSTRUCTION	G – AS BUILT				
		B – FOR APPROVAL	D – FOR QUOTATION	F – AS PURCHASED	H - CANCELLED				
Rev.	TI	Description			By	Ckd	APP.	Aut.	Date
T0	C	FOR TENDER			L.vv	E.L.	R.B	.	31.01.2024

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Supplier:	Proposal:
Identification (TAG):	Quantity: Refer to BOQ

Item	Description	Unit	Specified	Proposed	
1	VALVE DETAILS				
1.1	Manufacturer	-	BERMAD or similar		
1.2	Model #	-	(Specify)		
1.3	Country of Manufacture	-	South Africa		
1.4	Nominal Size DN	mm	As per drawings		
1.5	Rated Pressure	kPa	As per drawings		
1.6	Body Test pressure	kPa	1.5 x Design Pressure		
1.7	Seat Test pressure	kPa	N/A		
1.8	Selected valve is suitable for operation under settled raw water	Yes/No	No (Potable Water)		
1.9	Pressure gauges up/downstream of valve	Yes/No	Yes		
1.10	Valve Type	-	Y-type basket strainer		
1.11	Basket Mesh Size	-	Max 5 mm		
1.12	Flanges (BS, SABS, ANSI, etc.)	-	SANS 1123		
1.13	Raised Face Flanges	Yes/No	Yes		
1.14	Face to Face distance	mm	(Specify)		
1.15	Method to Remove Basket	-	Bolted Connection		
1.16	Vertical Distance Required to Remove Basket	mm	(Specify)		
2	VALVE CHARACTERISTICS (HYDRAULIC DATA)				
2.1	Nominal Flow	L/s	200		
2.2	Loss coefficient K = (hm)/(v ² /(2g)) @ nominal flowrate	K	Refer to Data Sheet Notes		

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE	
TITLE STRAINER DATA SHEET				CLIENT N°.	PAGE
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Item	Description	Unit	Specified	Proposed	
3	CONSTRUCTION MATERIALS				
3.1	Body and cap material (CI, DI, CS, etc.)	-	Ductile Iron		
3.2	Drain plug		Stainless Steel		
3.3	O-ring		(Specify)		
3.4	Basket		Stainless Steel		
3.5	Fasteners		Stainless Steel		
3.6	Type of interior lining (2-pack Epoxy, FBE, etc.)	-	Fusion-bonded Epoxy Coating (200 microns DFT)		
3.7	Type of exterior coating (2-pack Epoxy, FBE, etc.)	-	Fusion-bonded Epoxy Coating (200 microns DFT)		
4	GENERAL DETAILS				
4.1	Total weight of valve	kg	(Specify)		
4.2	Hydraulic Power Pack (if required)	kg	N/A		
4.3	Main dimensions of valve (L x W x H)	mm	(Specify)		
4.4	Life expectancy (# open/close cycles)	No	(Specify)		
4.5	Percentage local production and content	%	(Specify)		
5	FINANCIAL DETAILS				
5.1	Cost per unit	ZAR			Price in BOQ
5.2	Pressure testing cost per unit	ZAR			Price in BOQ
5.3	Cost per actuator	ZAR	N/A		
5.4	Assembly delivery time	Weeks	(Specify)		

Explanatory Notes



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REFERENCE DOCUMENTS

ZUT 0001: ZUTARI Specification - General Mechanical Requirements

113503-3100-MFD-MM-0001

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE			
TITLE BUTTERFLY VALVE DATA SHEET				CLIENT N°. 		PAGE 1/2	
				ZUTARI N°. 113503-3000-DST-MM-0012		REV. T0	

TI: TYPE OF ISSUE		A - PRELIMINARY B - FOR APPROVAL		C - FOR TENDER D - FOR QUOTATION		E - FOR CONSTRUCTION F - AS PURCHASED		G - AS BUILT H - CANCELLED	
Rev.	TI	Description			By	Ckd	APP.	Aut.	Date
T0	C	FOR TENDER			L.W	E.L.	R.B.	.	31.01.2024
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Supplier:	Proposal:
Identification (TAG):	Quantity: Refer to BoQ

Item	Description	Unit	Specified	Proposed	
1	MEDIUM DETAILS				
1.1	Water quality	-	Potable Water		
1.2	SG	-	1		
1.3	PH	pH	6 to 8		
1.4	Operating Temperature	°C	-5 to 40		
2	VALVE DETAILS				
2.1	Manufacturer	-	OZ-KAN, VOSA, VAG or similar approved		
2.2	Model #	-	(Specify)		
2.3	Country of Manufacture	-	(Specify)		
2.4	Nominal Size DN	mm	As per drawings		
2.5	Butterfly Valve Seat Design	-	Double eccentric		
2.6	Seat	-	Soft-seated		
2.7	Bi-directional tightness	Yes/No	Yes		
2.8	Valve opening position indicator	Yes/No	Yes		
2.9	Hand wheel operated and operation direction	Yes/No	Yes, anti-clockwise Closing (with maximum peripheral force of 250 N)		
2.10	Gearbox	Yes/No	Yes (for DN250 and larger)		
2.11	Gearbox/handwheel arrangement + projection	-	As per drawings		
2.12	Rated Pressure	kPa	As per drawings		
2.13	Angle of rotation (disc)	degrees	90		
2.14	Body Test pressure	kPa	1.5 x Design Pressure		
2.15	Seat Test pressure	kPa	1.1 x Design Pressure		
2.16	Flanges	-	SANS 1123		
2.17	Raised Faced Flanges	-	Yes		
2.18	Flange Pattern	-	Short		
2.19	Face to Face distance	mm	(Specify)		
2.20	Loss coefficient K = (hm)/(v ² /(2g))	K	(Specify)		
3	ACTUATOR DETAILS				
3.1	Manufacturer	-	(Specify)		
3.2	Type of Actuation	-	Manual		
3.3	Electrical Operated:				
3.3.1	- Motor shaft output at site conditions	kW	N/A		
3.3.2	- Motor torque	N.m	N/A		
3.3.3	- Rotational speed	rpm	N/A		
3.3.4	- Full load current	A	N/A		
3.3.5	- Voltage	V	N/A		
3.3.6	- Enclosure rating	IP	N/A		
3.3.7	- Communication Module	-	N/A		

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE			
TITLE BUTTERFLY VALVE DATA SHEET				CLIENT N°. 		PAGE 2/2	
				ZUTARI N°. 113503-3000-DST-MM-0012		REV. T0	

Item	Description	Unit	Specified	Proposed	
3.4	Pneumatic Operated:				
3.4.1	- Mode of Operation	-	N/A		
3.4.2	- Position indicator	Yes/No	N/A		
3.4.3	- Closing direction	-	N/A		
3.4.4	- Operating pressure range	bar	N/A		
3.4.5	- Nominal Operating Pressure	bar	N/A		
3.4.6	- Operating time at 4.5 bar pressure supply	s	N/A		
3.4.7	- Operating Medium	-	N/A		
3.4.8	- Torque at Rated Operating Pressure	Nm	N/A		
3.4.9	- Air Consumption at 6 bar per cycle 0°-90°-0°	l	N/A		
4	CONSTRUCTION MATERIALS				
4.1	Body material	-	Ductile Iron or Cast Steel		
4.2	Valve Disc	-	Ductile Iron or Cast Steel		
4.3	Retainer ring	-	Stainless Steel		
4.4	Disc Seal	-	EPDM		
4.5	Shaft	-	Stainless Steel		
4.6	Type of interior lining	-	FBE (200 microns DFT)		
4.7	Type of exterior coating	-	FBE (200 microns DFT)		
4.8	Bearings	-	Bronze		
4.9	Handwheel	-	Cast Iron		
5	GENERAL DETAILS				
5.1	Total weight of valve	kg	(Specify)		
5.2	Lifting lugs	Yes/No	Yes (for DN300 or larger and/or above 75 kg)		
5.3	Nameplate	Yes/No	Yes		
5.4	Main dimensions of valve	mm	(Specify)		
5.5	Life expectancy (# open/close cycles)	No	(Specify)		
5.6	Valve support feet required	No	No		
5.7	Local content	%	70		
6	FINANCIAL DETAILS				
6.1	Cost per unit	ZAR			Price in BOQ
6.2	Pressure testing cost per unit	ZAR			Price in BOQ
6.3	Cost per actuator	ZAR	N/A		
6.4	Assembly delivery time	Weeks	(Specify)		

Explanatory Notes

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REFERENCE DOCUMENTS

ZUT 7001: ZUTARI Specification - Steel Specials

ZUT 7004: ZUTARI Specification - Valves for Water and Wastewater Installations



ZUT 7014: ZUTARI Specification - Eccentric Axis Butterfly Valves

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE	
TITLE PRESSURE GAUGES (0 TO 1600 KPA) DATA SHEET				CLIENT N°.	PAGE 1/1
				ZUTARI N°. 113503-3000-DST-MM-0013	REV. T0

TI: TYPE OF ISSUE		A - PRELIMINARY	C - FOR TENDER	E - FOR CONSTRUCTION	G - AS BUILT		
		B - FOR APPROVAL	D - FOR QUOTATION	F - AS PURCHASED	H - CANCELLED		
Rev.	TI	Description	By	Ckd	APP.	Aut.	Date
A	B	FOR APPROVAL	L.V.V.	E.L.	R.B.	.	03.04.2023
T0	C	FOR TENDER	L.V.V.	E.L.	R.B.	.	05.04.2023
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Supplier:			Proposal:				
Identification (TAG):			Quantity: Refer to BOQ				

Item	Description	Unit	Specified	Proposed	
1	GAUGE DETAILS				
1.1	Type of medium	-	Water		
1.2	Fitting size	-	BSP Male Threaded		
1.3	Type	-	Pressure		
1.4	Manufacturer	-	(Specify)		
1.5	Model #	-	(Specify)		
1.6	Dial medium	-	Glycerine filled		
1.7	Dial units	-	kPa		
1.8	Operating pressure range	kPa	0 to 1600		
1.9	Gauge Scale Diameter	mm	100		
1.10	Accuracy	%	(Specify)		
1.11	Fitted with air-relief cock valve	Yes/No	Yes		
1.12	Supplied with stainless steel 1" BSP 3-way cock valve?	Yes/No	Yes		
1.13	Are gauges fitted with diaphragm seals?	Yes/No	Yes		
1.14	Gauge casing material	-	Stainless steel		
1.15	Mounting type	-	direct radially		
1.16	Do gauges comply with SANS 1062?	Yes/No	Yes		

Explanatory Notes 01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification. 02 - Supplier shall confirm and/or provide all equipment data while filing the proposed column.
REFERENCE DOCUMENTS ZUT 5019: Horizontally Split Case Centrifugal Pump. ZUT 0001: General Mechanical Requirements. Drawing: 113503-3020-DRG-MM-0006

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE			
TITLE STEEL PIPE (> DN150) DATA SHEET				CLIENT N°. 		PAGE 1/2	
				ZUTARI N°. 113503-3000-DST-MM-0014		REV. T0	

TI: TYPE OF ISSUE		A - PRELIMINARY	C – FOR TENDER	E – FOR CONSTRUCTION	G – AS BUILT				
		B – FOR APPROVAL	D – FOR QUOTATION	F – AS PURCHASED	H - CANCELLED				
Rev.	TI	Description			By	Ckd	APP.	Aut.	Date
A	B	FOR APPROVAL			L.vV.	E.L.	R.B.	.	30.03.2023
T0	C	FOR TENDER			L.vV.	E.L.	R.B.	.	05.04.23

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Supplier:	Proposal:
Identification (TAG):	Quantity: Refer to BOQ

Item	Description	Unit	Specified	Proposed
1	PIPE DETAILS			
1.1	Type of pipe	-	SANS 719	
1.2	Pipe nominal bore	mm	> DN150	
1.3	Pipe wall thickness	mm	Refer to drawings	
1.4	Actual outer diameter	mm	As per SANS 719	
1.5	Actual inner diameter	mm	As per SANS 719	
1.6	Material grade	-	SANS 719 Grade C (X42)	
1.7	Operating pressure rating	kPa	1600	
1.8	Pipe ends	-	Flanged	
1.9	Connection Type	-	SANS 1123 T1600/3	
2	COATING & LINER DETAILS			
2.1	Linings (All pipes)			
2.1.1	Type of lining	-	Solvent free liquid epoxy	
2.1.3	Lining thickness (DFT)	microns	500	
2.2	Coatings (Pipes under water)			
2.2.1	Pipe material	-	Stainless steel 304L	
2.2.2	Coating thickness (DFT)	microns	Pickle and Passivate	
2.2	Coatings (Pipes above ground or pipes inside chambers)			
2.2.1	First Layer of Coating	-	Solvent free epoxy	
2.2.2	Coating thickness (DFT)	microns	250	
2.2.3	Second Layer of Coating	-	Single pack pure acrylic	
2.2.4	Coating thickness (DFT)	microns	50	
2.3	Coatings (Pipes below ground)			
2.3.1	First Layer of Coating	-	Polyisobutene Visco-elastic (Stopaq or similar approved)	
2.3.2	Coating thickness (DFT)	microns	850 min	
2.3.3	Second Layer of Coating	-	Polyurea spray elastomer	
2.3.4	Coating thickness (DFT)	microns	2000 (for pipes up to 800 mm) 2500 - 3000 (pipes greater than 800 mm)	
2.3.5	Additional protection for flange joints	-	Profiling putty and Petrolatum Wrapping (System 10)	
2.4	Coatings (Field joints)			
2.4.1	First Layer of Coating	-	Polyisobutene Visco-elastic (Stopaq or similar approved)	
2.4.2	Coating thickness (DFT)	microns	850 min	
2.4.3	Second Layer of Coating	-	Mechanical tape wrapping (PVC, PE or similar approved)	

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE	
TITLE STEEL PIPE (> DN150) DATA SHEET				CLIENT N°.	PAGE 2/2
				ZUTARI N°. 113503-3000-DST-MM-0014	REV. T0

3	PIPE TESTING				
3.1	Hydraulic pipe testing	Yes/No	Yes		
3.2	Test pressure	kPa	2 X WP		
3.3	Radiographic testing	Yes/No	Yes		
4	GENERAL DETAILS				
4.1	Total length of pipe required	m	Refer to BOQ		
4.2	Pipe lengths	m	(Specify)		
4.3	Allowable tolerance on pipe length	mm	Refer to Specs		
4.4	Total weight of pipe per meter (pipe and coating)	kg/m	(Specify)		
5	FINANCIAL DETAILS				
5.1	Cost per meter (uncoated)	ZAR			Price in BOQ
5.2	Cost per meter (coating and lining)	ZAR			Price in BOQ
5.3	Expected delivery time	Weeks	(Specify)		
Explanatory Notes					
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02 - Supplier shall confirm and/or provide all equipment data while filing the proposed column.					
REFERENCE DOCUMENTS					
Drawing: 113503-3020-DRG-MM-0007					
ZUT 7001: Design and Manufacturing of Medium-pressure Steel Specials.					
ZUT 7002: Manufacture of Medium-pressure Steel Pipelines.					
ZUT 7003: Laying and Jointing of Medium-pressure Steel Pipelines and Specials.					
ZUT 0003: General Corrosion Protection for Pipelines, Water and Waste Water Works.					
ZUT 7024: Pipework Supports.					
ZUT 0001: General Mechanical Requirements.					

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE	
TITLE STEEL PIPE (≤ DN150) DATA SHEET				CLIENT N°.	PAGE
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				113503-3000-DST-MM-0015	T0

TI: TYPE OF ISSUE		A - PRELIMINARY	C – FOR TENDER	E – FOR CONSTRUCTION	G – AS BUILT				
		B – FOR APPROVAL	D – FOR QUOTATION	F – AS PURCHASED	H - CANCELLED				
Rev.	TI	Description			By	Ckd	APP.	Aut.	Date
A	B	FOR APPROVAL			L.vV.	E.L.	R.B.	.	30.03.2023
T0	C	FOR TENDER			L.vV.	E.L.	R.B.	.	05.04.2023

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Supplier:	Proposal:
Identification (TAG):	Quantity: Refer to BOQ

Item	Description	Unit	Specified	Proposed	
1	PIPE DETAILS				
1.1	Type of pipe	-	SANS 62		
1.2	Pipe nominal bore	mm	≤ DN150		
1.3	Pipe wall thickness	mm	Refer to drawings		
1.4	Actual outer diameter	mm	As per SANS 62		
1.5	Actual inner diameter	mm	As per SANS 62		
1.6	Material grade	-	SANS 62 (X42)		
1.7	Operating pressure rating	kPa	1600		
1.8	Pipe ends	-	Flanged		
1.9	Connection Type	-	SANS 1123 T1600/3		
2	COATING & LINER DETAILS				
2.1	Type of Coating and Lining	-	Hot Dip Galvanized		
2.2	Coating and lining thickness/ application	-	SANS 121 Heavy duty		
2.3	Additional coating	-	Not required		
2.4	Coating thickness (DFT)	microns	N/A		
2.5	Coatings (Pipes below ground)				
2.5.1	First Layer of Coating	-	Polyisobutene Visco-elastic (Stopaq or similar approved)		
2.5.2	Coating thickness (DFT)	microns	850 min		
2.5.3	Second Layer of Coating	-	Polyurea spray elastomer		
2.5.4	Coating thickness (DFT)	microns	2000		
2.5.5	Additional protection for flange joints	-	Profiling putty and Petrolatum Wrapping (System 10)		
3	PIPE TESTING				
3.1	Hydraulic pipe testing	Yes/No	Yes		
3.2	Test pressure	kPa	2 X WP		
3.3	Radiographic testing	Yes/No	Yes		
4	GENERAL DETAILS				
4.1	Total length of pipe required	m	Refer to BOQ		
4.2	Pipe lengths	m	(Specify)		
4.3	Allowable tolerance on pipe length	mm	Refer to Specs		
4.4	Total weight of pipe per meter (pipe and coating)	kg/m	(Specify)		



113503

**PERTH EMPIRE CORRIDOR OF FREEDOM
WATER MAINS UPGRADE**

TITLE

STEEL PIPE (\leq DN150) DATA SHEET

CLIENT N°.

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ZUTARI N°.

113503-3000-DST-MM-0015

REV.

T0**5****FINANCIAL DETAILS**

5.1	Cost per meter (uncoated)	ZAR			Price in BOQ
5.2	Cost per meter (coating and lining)	ZAR			Price in BOQ
5.3	Expected delivery time	Weeks	(Specify)		

Explanatory Notes

01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification.

02 - Supplier shall confirm and/or provide all equipment data while filing the proposed column.

REFERENCE DOCUMENTS

Drawing: 113503-3030-DRG-MM-0002

ZUT 7001: Design and Manufacturing of Medium-pressure Steel Specials.



ZUT 7002: Manufacture of Medium-pressure Steel Pipelines.

ZUT 7003: Laying and Jointing of Medium-pressure Steel Pipelines and Specials.

ZUT 0003: General Corrosion Protection for Pipelines, Water and Waste Water Works.

ZUT 7024: Pipework Supports.

ZUT 0001: General Mechanical Requirements.

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE - PRIORITY 1			
TITLE BRIXTON INTERIM SPLIT CASING PUMP DATA SHEET				CLIENT N°. 		PAGE 1/3	
				ZUTARI N°. 113503-3110-DST-MM-0001		REV. T0	

TI: TYPE OF ISSUE		A - PRELIMINARY	C - FOR TENDER	E - FOR CONSTRUCTION	G - AS BUILT		
		B - FOR APPROVAL	D - FOR QUOTATION	F - AS PURCHASED	H - CANCELLED		
Rev.	TI	Description	By	Ckd	APP.	Aut.	Date
T0	C	FOR TENDER	L.v.V.	E.L.	R.B.	.	31.01.2024

Instructions on Filling Out This Form

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III - The explanatory notes at the end of the Data Sheet are to be filled out by the Issuer and not by Suppliers.

Supplier:	Proposal:
Identification (TAG):	Quantity: Refer to BOQ

Item	Description	Unit	Specified	Proposed	
1	MEDIUM DETAILS				
1.1	Water quality	-	Potable		
1.2	SG	-	1.0		
1.3	PH	pH	6.5 to 8.5		
1.4	Operating Temperature	°C	20		
2	PUMP DETAILS				
2.1	Manufacturer	-	KSB / Grundfos / Sulzer or similar approved		
2.2	Model	-	(Specify)		
2.3	Specific speed	-	(Specify)		
2.4	Type of Pump		Horizontal split casing centrifugal		
2.5	Number of stages	No	1		
2.6	Rotational speed (at design duty point)	rpm	1135		
2.7	DE bearing type (sleeve, roller, ball, etc.)	-	(Specify)		
2.8	NDE bearing type (sleeve, roller, ball, etc.)	-	(Specify)		
2.9	Bearings are bi-directional	Yes/No	Yes		
2.10	Bearing Cooling Method	-	(Specify)		
2.11	Method of lubrication (oil, grease, etc.)	-	(Specify)		
2.12	Solids size handling capability (minimum)	mm	N/A		
2.13	Suction Diameter	mm	300		
2.14	Suction Flange Drilling		SANS 1123 T1600/1, RF		
2.15	Discharge Diameter	mm	250		
2.16	Discharge Flange Drilling		SANS 1123 T1600/1, RF		
2.17	Max. diameter solids that can be pumped	mm	(Specify)		
2.18	Seal type		Mechanical		
2.19	Type of coupling	-	Rigid		
2.20	Load speed-torque characteristics (square torque law, constant torque, etc.)	-	(Specify)		
2.21	Breakaway Torque	Nm	(Specify)		
2.22	Inertia of Rotating Element with water (incl. couplings)	kg.m ²	(Specify)		
2.23	Total end float on rotating element	mm	(Specify)		
2.24	DE bearings temperature probe fitted (PT100)	Yes/No	Yes		
2.25	NDE bearings temperature probe fitted (PT100)	Yes/No	Yes		
2.26	DE bearings vibration sensor fitted	Yes/No	Yes		
2.27	Shaft float electrical measuring fitted (if applicable)	Yes/No	No		
2.28	Shaft balance disc temperature probe fitted (if applicable)	Yes/No	No		
2.29	Suction & Discharge pressure gauges	Yes/No	Yes		
2.30	Type of interior lining	-	FBE		
2.31	Type of exterior coating	-	FBE		



TITLE
BRIXTON INTERIM SPLIT CASING PUMP DATA SHEET

CLIENT N°.

PAGE

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ZUTARI N°.

113503-3110-DST-MM-0001

REV.

T0

Item	Description	Unit	Specified	Proposed	
3	MOTOR DETAILS				
3.1	Manufacturer	-	WEG or similar approved		
3.2	Type of Motor	-	Induction (TEFC)		
3.3	Motor shaft output at site conditions (P ₂)	kW	108		
3.4	Rotational speed (operating speed)	rpm	1165		
3.5	Number of poles	-	4		
3.6	Full Load Current (FLC)	A	(Specify)		
3.7	DOL starting current (..... x FLC)	A	(Specify)		
3.8	Voltage	V	380		
3.9	Enclosure rating	-	IP65		
3.10	Recommended type of starter	-	VSD		
3.11	Power factor at duty point	cos Ø	(Specify)		
3.12	Motor Efficiency (Full Load, 75% Load and 50% Load)	%	(Specify)		
3.13	Motor Efficiency Class	-	IE3 (Premium)		
3.14	Thermal protection fitted (thermistor/ PT100)	Yes/No	Yes (PT 100)		
3.15	Anti-condensation Heaters fitted	Yes/No	Yes		
3.16	DE bearing type (sleeve, roller, ball, etc.)	-	(Specify)		
3.17	NDE bearing type (sleeve, roller, ball, etc.)	-	(Specify)		
3.18	Bearings are bi-directional	Yes/No	Yes		
3.19	Bearing Cooling Method	-	(Specify)		
3.20	Method of lubrication (oil, grease, etc.)	-	(Specify)		
3.21	DE bearings temperature probe fitted (PT100)	Yes/No	Yes		
3.22	NDE bearings temperature probe fitted (PT100)	Yes/No	Yes		
3.23	DE bearings vibration sensor fitted	Yes/No	Yes		
3.24	Zorc's Fitted	Yes/No	No		
3.25	Motor Painting	Yes/No	Yes (Colour TBA)		
3.26	Guard Painting	Yes/No	Yes (Colour TBA)		
3.27	Class of Insulation	-	(Specify)		
3.28	VSD driven motor	Yes/No	Yes		
3.29	Method of cooling the Motor	-	Air (TEFC)		
3.30	External motor cooling fan & motor	Yes/No	No		
3.31	External motor cooling fan & motor voltage	V	-		
3.32	Instrumentation voltage	V	220		
3.33	Electrical cable length	m	(Specify)		
4	PUMP CHARACTERISTICS				
4.1	Delivery at design duty point	m ³ /hr	805		
4.2	Head at design duty point	m	37		
4.3	Guaranteed Minimum Efficiency at design duty point	%	86.0		
4.4	Power absorbed at duty point (P _H)	kW	94.0		
4.5	Impeller Diameter at duty point	mm	(Specify)		
4.6	Impeller Diameter - Full Size	mm	(Specify)		
4.7	Guaranteed Minimum Pump best efficiency (BEP)	%	(Specify)		
4.8	Delivery at best efficiency point (BEP)	m ³ /hr	(Specify)		
4.9	Head at best efficiency point (BEP)	m	(Specify)		
4.10	NPSHreq (Max)	m	(Specify)		
4.11	Suction Reprime Lift (Min)	m	N/A		
4.12	Maximum Casing Pressure	m	1.5 x Design Pressure		
4.13	Cross Connection Pumping				
4.13.1	Delivery at duty point	m ³ /hr	450		
4.13.2	Head at duty point	m	42		
4.13.3	Power absorbed at duty point (P _H)	kW	60.0		

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE - PRIORITY 1	
TITLE BRIXTON INTERIM SPLIT CASING PUMP DATA SHEET				CLIENT N°.	PAGE 3/3
				ZUTARI N°. 113503-3110-DST-MM-0001	REV. T0

Item	Description	Unit	Specified	Proposed	
5	PUMP CONSTRUCTION MATERIALS				
5.1	Pump casing	-	High-grade cast steel or grey iron No 30		
5.2	Impeller	-	Stainless Steel		
5.3	Casing Wear Rings	-	(Specify)		
5.4	Shaft	-	EN57 or similar approved		
5.5	Shaft Sleeve (Bronze, Stainless Steel, etc.)	-	(Specify)		
5.6	Gland Packing material	-	N/A		
5.7	Mechanical seal faces (stationary)	-	(Specify)		
5.8	Mechanical seal faces (rotating)	-	(Specify)		
6	GENERAL DETAILS				
6.1	Total weight of pump, motor and base-frame	kg	(Specify)		
6.2	Plinth size required	m x m	(Specify)		
6.3	Performance Test STD	-	ISO 9906 (grade 2B)		
6.4	Noise Level (measured at 3m from pump)	dBA	75		
6.5	Vibration (radial direction)	mm/s	4.5		
6.6	Vibration (axial direction)	mm/s	4.5		
6.7	Local pump content	%	70		
7	FINANCIAL DETAILS				
7.1	Cost per unit (Pump, motor, base frame & coupling)	ZAR			Price in BOQ
7.2	Performance testing cost per unit	ZAR			Price in BOQ
7.3	Cost per vacuum unit (If self-priming)	ZAR	N/A		
7.4	Cost per pressure gauge	ZAR			Price in BOQ
7.5	Cost per Zorc	ZAR	N/A		
7.6	Total cost per pump	ZAR			Price in BOQ
7.7	Delivery time	Weeks	(Specify)		

Explanatory Notes	
01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification.	
02 - Supplier shall confirm and/or provide all equipment data while filing the proposed column.	
REFERENCE DOCUMENTS	
Drawing: 113503-3110-DRG-MM-0007	
ZUT 5019: Horizontally Split Case Centrifugal Pump.	
ZUT 0001: General Mechanical Requirements.	



TITLE INTERIM NON-RETURN VALVE (DN500 PN16) DATA SHEET	CLIENT N°.	PAGE 1/2
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TI: TYPE OF ISSUE		A - PRELIMINARY	C – FOR TENDER	E – FOR CONSTRUCTION	G – AS BUILT		
		B – FOR APPROVAL	D – FOR QUOTATION	F – AS PURCHASED	H - CANCELLED		
Rev.	TI	Description	By	Ckd	APP.	Aut.	Date
T0	C	FOR TENDER	L.v.V.	E.L.	R.B.	.	21.06.23

Instructions on Filling Out This Form



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Supplier:	Proposal:
Identification (TAG):	Quantity: Refer to BOQ

Item	Description	Unit	Specified	Proposed
1	MEDIUM DETAILS			
1.1	Water quality (potable, raw, sewage, etc.)	-	Potable	
1.2	SG	-	1.0	
1.3	PH	pH	6.5 to 8.5	
1.4	Operating Temperature	°C	20	
2	VALVE DETAILS			
2.1	Manufacturer	-	AVK, Premier Valves, VOSA or similar approved	
2.2	Model #	-	(Specify)	
2.3	Country of Manufacture	-	South Africa	
2.4	Nominal Size DN	mm	500	
2.5	Door Type	-	Single Door Swing Type	
2.6	Method of closing	-	Gravity, with counterweight	
2.7	Inspection/Cleaning Cover	Yes/No	Yes	
2.8	Suitable for horizontal/vertical installation	Yes/No	Horizontal installation	
2.9	Counterweight guard required	Yes/No	Yes	
2.10	Operating Pressure	kPa	-	
2.11	Rated Pressure	kPa	1600	
2.12	Body Test pressure	kPa	1.5 x WP _{max}	
2.13	Seat Test pressure	kPa	1.1 x WP _{max}	
2.14	Flanges	-	SANS 1123 T1600/1	
2.15	Raised Faced Flanges	Yes/No	Yes	
2.16	Face to Face distance	mm	(Specify)	
2.17	Actual inner bore	mm	(Specify)	
2.18	Loss coefficient K = (hm)/(v ² /(2g))	K	(Specify)	
3	CONSTRUCTION MATERIALS			
3.1	Body material	-	Ductile Iron/Cast Steel	
3.2	Body Seat Trim	-	Stainless Steel	
3.3	Door material	-	Ductile Iron/Cast Steel	
3.4	Door Seat Trim	-	(Specify)	
3.5	Shaft	-	Stainless Steel	
3.6	Shaft Bearings/Bushes	-	Bronze	
3.7	Type of interior lining	-	FBE	
3.8	Type of exterior coating	-	FBE	

		113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE	
TITLE INTERIM NON-RETURN VALVE (DN500 PN16) DATA SHEET		CLIENT N°. 	PAGE 2/2
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Item	Description	Unit	Specified	Proposed
4	GENERAL DETAILS			
4.1	Total weight of valve (valve and actuator)	kg	(Specify)	
4.2	Main dimensions of valve (L x W x H)	mm	(Specify)	
4.3	Life expectancy (# open/close cycles)	No	(Specify)	
4.4	Percentage local production and content	%	70	
5	FINANCIAL DETAILS			
5.1	Cost per unit	ZAR		Price in BOQ
5.2	Pressure testing cost per unit	ZAR		Price in BOQ
5.3	Assembly delivery time	Weeks	(Specify)	

Explanatory Notes				
01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification.				
02 - Supplier shall confirm and/or provide all equipment data while filing the proposed column.				
REFERENCE DOCUMENTS				
Drawing: 113503-3310-DRG-MM-0007				
ZUT 7004: Valves for Water and Wastewater Installations.				
ZUT 7005: Corrosion Protection for Valves.				
ZUT 7017: Slanted Seat Check Valves.				
ZUT 0001: General Mechanical Requirements.				



TITLE
INTERIM BALL VALVE (PN16) DATA SHEET

CLIENT N°.

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ZUTARI N°.

113503-3110-DST-MM-0003

REV.

T0

TI: TYPE OF ISSUE A – PRELIMINARY C – FOR TENDER E – FOR CONSTRUCTION G – AS BUILT
B – FOR APPROVAL D – FOR QUOTATION F – AS PURCHASED H – CANCELLED

Rev.	Ti	Description	By	Ckd	APP.	Aut.	Date
T0	C	FOR TENDER	L.V.V.	E.L.	R.B.	.	21.06.2023

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Supplier:	Proposal:
Identification (TAG):	Quantity: Refer to BOQ

Item	Description	Unit	Specified	Proposed
1	MEDIUM DETAILS			
1.1	Manufacturer	-	(Specify)	
1.2	Model/ Series Clasification	-	(Specify)	
1.3	Country of Manufacture	-	South Africa	
1.4	Nominal Size DN	mm	DN 25 as per drawings	
1.5	Connection type	-	BSP Female Threaded	
1.6	Seat	-	Soft-seated	
1.7	Rated Pressure	kPa	1600	
1.8	Body Test pressure	kPa	1.5 x WP _{max}	
1.9	Seat Test pressure	kPa	1.1 x WP _{max}	
1.10	Type of flanges	-	N/A	
1.11	Raised Faced Flanges	(Yes/No)	N/A	
1.12	Face to Face Distance	mm	(Specify)	
1.13	Hand wheel/Lever operated	(Yes/No)	Yes	
1.14	Gearbox	(Yes/No)	No	
1.15	Loss coefficient K = (hm)/(v ² /(2g))	K	(Specify)	
2	VALVE CHARACTERISTICS AND PERFORMANCE			
2.1	Rated flow rate (max)	l/sec	(Specify)	
2.2	Reduced/ Full bore	-	Full Bore	
2.3	Actuation Torque	Nm	(Specify)	
3	MATERIAL OF CONSTRUCTION			
3.1	Body	-	Stainless steel	
3.2	Lever	-	Stainless steel	
3.3	Ball	-	Stainless steel	
3.4	Seals	-	(Specify)	
3.5	Trunnion	-	Stainless steel	
3.6	Stem	-	Stainless steel	
3.7	Type of interior lining	-	N/A	
3.8	Type of exterior coating	-	N/A	
4	GENERAL DETAILS			
4.1	Total weight of valve (valve and actuator)	kg	(Specify)	
4.2	Main dimensions of valve (L x W x H)	mm	(Specify)	
4.3	Life expectancy (# open/close cycles)	No	(Specify)	
4.4	Percentage local production and content	%	70	

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE	
TITLE INTERIM BALL VALVE (PN16) DATA SHEET				CLIENT N°.	PAGE 2/2
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Item	Description	Unit	Specified	Proposed
5	FINANCIAL DETAILS			
5.1	Cost per unit	ZAR		Price in BOQ
5.2	Pressure testing cost per unit	ZAR		Price in BOQ
5.3	Cost per actuator	ZAR	N/A	
5.4	Assembly delivery time	Weeks	(Specify)	

Explanatory Notes				
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02 - Supplier shall confirm and/or provide all equipment data while filing the proposed column.				
REFERENCE DOCUMENTS				
Drawing: 113503-3310-DRG-MM-0007				
ZUT 7004: Valves for Water and Wastewater Installations.				
ZUT 7005: Corrosion Protection for Valves.				
ZUT 0001: General Mechanical Requirements.				



TITLE
INTERIM ULTRASONIC FLOWMETER (DN500 PN16) DATA SHEET

CLIENT N°.

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113503-3110-DST-MM-0004

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TI: TYPE OF ISSUE A - PRELIMINARY C - FOR TENDER E - FOR CONSTRUCTION G - AS BUILT
B - FOR APPROVAL D - FOR QUOTATION F - AS PURCHASED H - CANCELLED

Rev.	TI	Description	By	Ckd	APP.	Aut.	Date
T0	C	FOR TENDER	L.V.V.	E.L.	R.B.	.	21.06.23

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Supplier:	Proposal:
Identification (TAG):	Quantity: Refer to BOQ

Item	Description	Unit	Specified	Proposed
1	MEDIUM DETAILS			
1.1	Water quality	-	Potable	
1.2	SG	-	1.0	
1.3	Solid content	%	Less than 5%	
1.4	PH	pH	7	
1.5	Operating Temperature	°C	-10 to 50	
2	METER DETAILS			
2.1	Manufacturer	-	(Specify)	
2.2	Model #	-	(Specify)	
2.3	Type of flow meter	-	Ultrasonic	
2.4	Type of installation	-	Clamp-on	
2.5	Required flowrate range	l/s	447	
2.6	Nominal Size DN	mm	500	
2.7	Pressure Rating	kPa	1600	
2.8	Flange (face-to-face) dimension	mm	N/A	
2.9	Version	-	Compact	
2.10	Connection type	-	Clamp-on	
2.11	Flanges	-	N/A	
2.12	Flowrate measuring range capability	l/s	(Specify)	
3	FLOW SENSOR			
3.1	Type of flow device	-	Transducers	
3.2	Degree of Protection	IP	68	
3.3	Min. Upstream straight lengths required	mm	5DN	
3.4	Min. Downstream straight lengths required	mm	3DN	
3.5	Corrosion Protection (FBE, Epoxy, PU, etc.)	-	N/A	
3.6	Materials of Construction:			
3.6.1	- Flanges	-	N/A	
3.6.2	- Measuring Tube	-	Stainless Steel	
3.6.3	- Type of liner	-	N/A	
3.6.4	- Housing	-	CS and Coated	
3.6.5	- Connection Box (SS, DCA, etc.)	-	(Specify)	
3.6.6	- Electrodes	-	N/A	
3.6.7	- Grounding Rings	-	N/A	



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INTERIM ULTRASONIC FLOWMETER (DN500 PN16) DATA SHEET

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Item	Description	Unit	Specified	Proposed
4	TRANSMITTER			
4.1	Type	-	Compact (Inclined)	
4.2	Measuring Accuracy	%	1% of Site Measured Value	
4.3	Calibrated range	-	(Specify)	
4.4	Maximum Solids	%	Less than 5%	
4.5	Display:			
4.5.1	- Display and User Interface	-	4-line display with back light	
4.5.2	- Display Function	-	Flowrate and Totalizer	
4.5.3	- Language options	-	English	
4.5.4	- Units	-	Metric, British, US selectable	
4.6	Communication		Profibus DP or Modbus RS48	
4.7	Electrical Connection:			
4.7.1	- Voltage	V	230	
4.7.2	- Cable	-	4 core cable for signal, 3 core cable for power	
4.7.3	- Cable entries	-	M20 x 1	
4.7.4	- Degree of Protection	IP	65 - field mount	
4.8	Materials of Construction:			
4.8.1	- Transmitter Housing (Al, Polycarbonate plastic, etc)		(Specify)	
4.8.2	- Window (Glass, Plastic)		(Specify)	
5	GENERAL DETAILS			
5.1	Insulating Kit included	Yes/No	Yes	
5.2	Total weight of meter	kg	(Specify)	
5.3	Main dimensions of meter (L x W x H)	mm	(Specify)	
6	FINANCIAL DETAILS			
6.1	Cost per unit	ZAR		Price in BOQ
6.2	Expected delivery time	Weeks	(Specify)	
Explanatory Notes				
01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification.				
02 - Supplier shall confirm and/or provide all equipment data while filing the proposed column.				
REFERENCE DOCUMENTS				
ZUT 8010: Clamp-On Ultrasonic Flow Meters				
Drawing: 113503-3310-DRG-MM-0007				

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE	
TITLE INTERIM BUTTERFLY VALVE DATA SHEET				CLIENT N°. 	
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				REV. T0	

TI: TYPE OF ISSUE		A - PRELIMINARY B - FOR APPROVAL	C - FOR TENDER D - FOR QUOTATION	E - FOR CONSTRUCTION F - AS PURCHASED	G - AS BUILT H - CANCELLED		
Rev.	TI	Description		By	Ckd	APP.	Aut.
T0	C	FOR TENDER		L.VV	E.L.	R.B.	.
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Supplier:	Proposal:
Identification (TAG):	Quantity: Refer to BoQ

Item	Description	Unit	Specified	Proposed
1	MEDIUM DETAILS			
1.1	Water quality	-	Potable Water	
1.2	SG	-	1	
1.3	PH	pH	6 to 8	
1.4	Operating Temperature	°C	-5 to 40	
2	VALVE DETAILS			
2.1	Manufacturer	-	OZ-KAN, VOSA, VAG or similar approved	
2.2	Model #	-	(Specify)	
2.3	Country of Manufacture	-	(Specify)	
2.4	Nominal Size DN	mm	As per drawings	
2.5	Butterfly Valve Seat Design	-	Double eccentric	
2.6	Seat	-	Soft-seated	
2.7	Bi-directional tightness	Yes/No	Yes	
2.8	Valve opening position indicator	Yes/No	Yes	
2.9	Hand wheel operated and operation direction	Yes/No	Yes, anti-clockwise Closing (with maximum peripheral force of 250 N)	
2.10	Gearbox	Yes/No	Yes (for DN250 and larger)	
2.11	Gearbox/handwheel arrangement + projection	-	As per drawings	
2.12	Rated Pressure	kPa	As per drawings	
2.13	Angle of rotation (disc)	degrees	90	
2.14	Body Test pressure	kPa	1.5 x Design Pressure	
2.15	Seat Test pressure	kPa	1.1 x Design Pressure	
2.16	Flanges	-	SANS 1123	
2.17	Raised Faced Flanges	-	Yes	
2.18	Flange Pattern	-	Short	
2.19	Face to Face distance	mm	(Specify)	
2.20	Loss coefficient K = (hm)/(v ² (2g))	K	(Specify)	
3	ACTUATOR DETAILS			
3.1	Manufacturer	-	(Specify)	
3.2	Type of Actuation	-	Manual	
3.3	Electrical Operated:			
3.3.1	- Motor shaft output at site conditions	kW	N/A	
3.3.2	- Motor torque	N.m	N/A	
3.3.3	- Rotational speed	rpm	N/A	
3.3.4	- Full load current	A	N/A	
3.3.5	- Voltage	V	N/A	
3.3.6	- Enclosure rating	IP	N/A	
3.3.7	- Communication Module	-	N/A	

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE			
TITLE INTERIM BUTTERFLY VALVE DATA SHEET				CLIENT N°. 		PAGE 2/2	
				ZUTARI N°. 113503-3110-DST-MM-0005		REV. T0	

Item	Description	Unit	Specified	Proposed	
3.4	Pneumatic Operated:				
3.4.1	- Mode of Operation	-	N/A		
3.4.2	- Position indicator	Yes/No	N/A		
3.4.3	- Closing direction	-	N/A		
3.4.4	- Operating pressure range	bar	N/A		
3.4.5	- Nominal Operating Pressure	bar	N/A		
3.4.6	- Operating time at 4.5 bar pressure supply	s	N/A		
3.4.7	- Operating Medium	-	N/A		
3.4.8	- Torque at Rated Operating Pressure	Nm	N/A		
3.4.9	- Air Consumption at 6 bar per cycle 0°-90°-0°	l	N/A		
4	CONSTRUCTION MATERIALS				
4.1	Body material	-	Ductile Iron or Cast Steel		
4.2	Valve Disc	-	Ductile Iron or Cast Steel		
4.3	Retainer ring	-	Stainless Steel		
4.4	Disc Seal	-	EPDM		
4.5	Shaft	-	Stainless Steel		
4.6	Type of interior lining	-	FBE (200 microns DFT)		
4.7	Type of exterior coating	-	FBE (200 microns DFT)		
4.8	Bearings	-	Bronze		
4.9	Handwheel	-	Cast Iron		
5	GENERAL DETAILS				
5.1	Total weight of valve	kg	(Specify)		
5.2	Lifting lugs	Yes/No	Yes (for DN300 or larger and/or above 75 kg)		
5.3	Nameplate	Yes/No	Yes		
5.4	Main dimensions of valve	mm	(Specify)		
5.5	Life expectancy (# open/close cycles)	No	(Specify)		
5.6	Valve support feet required	No	No		
6	FINANCIAL DETAILS				
6.1	Cost per unit	USD			Price in BOQ
6.2	Pressure testing cost per unit	USD			Price in BOQ
6.3	Cost per actuator	USD	N/A		
6.4	Assembly delivery time	Weeks	(Specify)		

Explanatory Notes

01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification.



02 - Supplier shall confirm and/or provide all equipment data while filing the proposed column.

REFERENCE DOCUMENTS

ZUT 7001: ZUTARI Specification - Steel Specials

ZUT 7004: ZUTARI Specification - Valves for Water and Wastewater Installations

ZUT 7014: ZUTARI Specification - Eccentric Axis Butterfly Valves

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE	
TITLE INTERIM PRESSURE GAUGES (0 TO 1600 KPA) DATA SHEET				CLIENT N°. 	
				PAGE 1/1	
				ZUTARI N°. 113503-3310-DST-MM-0006	
				REV. T0	

TI: TYPE OF ISSUE		A - PRELIMINARY	C - FOR TENDER	E - FOR CONSTRUCTION	G - AS BUILT		
		B - FOR APPROVAL	D - FOR QUOTATION	F - AS PURCHASED	H - CANCELLED		
Rev.	TI	Description	By	Ckd	APP.	Aut.	Date
T0	C	FOR TENDER	L.V.V.	E.L.	R.B.	.	21.06.23

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III - The explanatory notes at the end of the Data Sheet are to be filled out by the Issuer and not by Suppliers.

Supplier:	Proposal:
Identification (TAG):	Quantity: Refer to BOQ

Item	Description	Unit	Specified	Proposed	
1	GAUGE DETAILS				
1.1	Type of medium	-	Water		
1.2	Fitting size	-	BSP Male Threaded		
1.3	Type	-	Pressure		
1.4	Manufacturer	-	(Specify)		
1.5	Model #	-	(Specify)		
1.6	Dial medium	-	Glycerine filled		
1.7	Dial units	-	kPa		
1.8	Operating pressure range	kPa	0 to 1600		
1.9	Gauge Scale Diameter	mm	100		
1.10	Accuracy	%	(Specify)		
1.11	Fitted with air-relief cock valve	Yes/No	Yes		
1.12	Supplied with stainless steel 1" BSP 3-way cock valve?	Yes/No	Yes		
1.13	Are gauges fitted with diaphragm seals?	Yes/No	Yes		
1.14	Gauge casing material	-	Stainless steel		
1.15	Mounting type	-	direct radially		
1.16	Do gauges comply with SANS 1062?	Yes/No	Yes		

Explanatory Notes

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REFERENCE DOCUMENTS

ZUT 5019: Horizontally Split Case Centrifugal Pump.

ZUT 0001: General Mechanical Requirements.

Drawing: 113503-3310-DRG-MM-0007

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE	
TITLE INTERIM STEEL PIPE (> DN150) DATA SHEET				CLIENT N°. 	
				PAGE 1/2	
				ZUTARI N°. 113503-3000-DST-MM-0007	
				REV. T0	

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Supplier:	Proposal:
Identification (TAG):	Quantity: Refer to BOQ

Item	Description	Unit	Specified	Proposed
1	PIPE DETAILS			
1.1	Type of pipe	-	SANS 719	
1.2	Pipe nominal bore	mm	> DN150	
1.3	Pipe wall thickness	mm	Refer to drawings	
1.4	Actual outer diameter	mm	As per SANS 719	
1.5	Actual inner diameter	mm	As per SANS 719	
1.6	Material grade	-	SANS 719 Grade C (X42)	
1.7	Operating pressure rating	kPa	1600	
1.8	Pipe ends	-	Flanged	
1.9	Connection Type	-	SANS 1123 T1600/3	
2	COATING & LINER DETAILS			
2.1	Linings (All pipes)			
2.1.1	Type of lining	-	Solvent free liquid epoxy	
2.1.3	Lining thickness (DFT)	microns	500	
2.2	Coatings (Pipes under water)			
2.2.1	Pipe material	-	Stainless steel 304L	
2.2.2	Coating thickness (DFT)	microns	Pickle and Passivate	
2.2	Coatings (Pipes above ground or pipes inside chambers)			
2.2.1	First Layer of Coating	-	Solvent free epoxy	
2.2.2	Coating thickness (DFT)	microns	250	
2.2.3	Second Layer of Coating	-	Single pack pure acrylic	
2.2.4	Coating thickness (DFT)	microns	50	
2.3	Coatings (Pipes below ground)			
2.3.1	First Layer of Coating	-	Polyisobutene Visco-elastic (Stopaq or similar approved)	
2.3.2	Coating thickness (DFT)	microns	850 min	
2.3.3	Second Layer of Coating	-	Polyurea spray elastomer	
2.3.4	Coating thickness (DFT)	microns	2000 (for pipes up to 800 mm) 2500 - 3000 (pipes greater than 800 mm)	
2.3.5	Additional protection for flange joints	-	Profiling putty and Petrolatum Wrapping (System 10)	
2.4	Coatings (Field joints)			
2.4.1	First Layer of Coating	-	Polyisobutene Visco-elastic (Stopaq or similar approved)	
2.4.2	Coating thickness (DFT)	microns	850 min	
2.4.3	Second Layer of Coating	-	Mechanical tape wrapping (PVC, PE or similar approved)	

				113503 PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE			
TITLE INTERIM STEEL PIPE (> DN150) DATA SHEET				CLIENT N°.		PAGE 2/2	
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3	PIPE TESTING					
3.1	Hydraulic pipe testing	Yes/No	Yes			
3.2	Test pressure	kPa	2 X WP			
3.3	Radiographic testing	Yes/No	Yes			
4	GENERAL DETAILS					
4.1	Total length of pipe required	m	Refer to BOQ			
4.2	Pipe lengths	m	(Specify)			
4.3	Allowable tolerance on pipe length	mm	Refer to Specs			
4.4	Total weight of pipe per meter (pipe and coating)	kg/m	(Specify)			
5	FINANCIAL DETAILS					
5.1	Cost per meter (uncoated)	ZAR				Price in BOQ
5.2	Cost per meter (coating and lining)	ZAR				Price in BOQ
5.3	Expected delivery time	Weeks	(Specify)			
Explanatory Notes						
01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification.						
02 - Supplier shall confirm and/or provide all equipment data while filing the proposed column.						
REFERENCE DOCUMENTS						
Drawing: 113503-3310-DRG-MM-0007						
ZUT 7001: Design and Manufacturing of Medium-pressure Steel Specials.						
ZUT 7002: Manufacture of Medium-pressure Steel Pipelines.						
ZUT 7003: Laying and Jointing of Medium-pressure Steel Pipelines and Specials.						
ZUT 0003: General Corrosion Protection for Pipelines, Water and Waste Water Works.						
ZUT 7024: Pipework Supports.						
ZUT 0001: General Mechanical Requirements.						

		PERTH EMPIRE CORRIDOR OF FREEDOM WATER MAINS UPGRADE 113503																																																																																																																																																											
TITLE HDPE PIPE (DN500) DATASHEET				CLIENT N°. 		PAGE 1/1																																																																																																																																																							
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TITLE INTERIM STEEL PIPE (≤ DN150) DATA SHEET				CLIENT N°.	PAGE
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Supplier:	Proposal:
Identification (TAG):	Quantity: Refer to BOQ

Item	Description	Unit	Specified	Proposed	
1	PIPE DETAILS				
1.1	Type of pipe	-	SANS 62		
1.2	Pipe nominal bore	mm	≤ DN150		
1.3	Pipe wall thickness	mm	Refer to drawings		
1.4	Actual outer diameter	mm	As per SANS 62		
1.5	Actual inner diameter	mm	As per SANS 62		
1.6	Material grade	-	SANS 62 (X42)		
1.7	Operating pressure rating	kPa	1600		
1.8	Pipe ends	-	Flanged		
1.9	Connection Type	-	SANS 1123 T1600/3		
2	COATING & LINER DETAILS				
2.1	Type of Coating and Lining	-	Hot Dip Galvanized		
2.2	Coating and lining thickness/ application	-	SANS 121 Heavy duty		
2.3	Additional coating	-	Not required		
2.4	Coating thickness (DFT)	microns	N/A		
2.5	Coatings (Pipes below ground)				
2.5.1	First Layer of Coating	-	Polyisobutene Visco-elastic (Stopaq or similar approved)		
2.5.2	Coating thickness (DFT)	microns	850 min		
2.5.3	Second Layer of Coating	-	Polyurea spray elastomer		
2.5.4	Coating thickness (DFT)	microns	2000		
2.5.5	Additional protection for flange joints	-	Profiling putty and Petrolatum Wrapping (System 10)		
3	PIPE TESTING				
3.1	Hydraulic pipe testing	Yes/No	Yes		
3.2	Test pressure	kPa	2 X WP		
3.3	Radiographic testing	Yes/No	Yes		
4	GENERAL DETAILS				
4.1	Total length of pipe required	m	Refer to BOQ		
4.2	Pipe lengths	m	(Specify)		
4.3	Allowable tolerance on pipe length	mm	Refer to Specs		
4.4	Total weight of pipe per meter (pipe and coating)	kg/m	(Specify)		



113503

**PERTH EMPIRE CORRIDOR OF FREEDOM
WATER MAINS UPGRADE**

TITLE

INTERIM STEEL PIPE (\leq DN150) DATA SHEET

CLIENT N°.

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ZUTARI N°.

113503-3110-DST-MM-0009

REV.

T0**5****FINANCIAL DETAILS**

5.1	Cost per meter (uncoated)	ZAR			Price in BOQ
5.2	Cost per meter (coating and lining)	ZAR			Price in BOQ
5.3	Expected delivery time	Weeks	(Specify)		

Explanatory Notes

01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification.

02 - Supplier shall confirm and/or provide all equipment data while filing the proposed column.

REFERENCE DOCUMENTS

Drawing: 113503-3310-DRG-MM-0007

ZUT 7001: Design and Manufacturing of Medium-pressure Steel Specials.

ZUT 7002: Manufacture of Medium-pressure Steel Pipelines.

ZUT 7003: Laying and Jointing of Medium-pressure Steel Pipelines and Specials.

ZUT 0003: General Corrosion Protection for Pipelines, Water and Waste Water Works.

ZUT 7024: Pipework Supports.

ZUT 0001: General Mechanical Requirements.