



Bharat Heavy Electricals Limited
(A Govt. Of India Undertaking)

**Project Engineering
Management**

**TENDER ENQUIRY FOR TRAVELLING WATER SCREENS (TWS)
FOR 1 x 660 MW UPRVUNL PANKI TPS.**

Ref No. : PE/PG/PKI/E-6258/2019

Date: 27.08.2019

CORRIGENDUM/ ADDENDUM- 4

Tender Enquiry no.: PE/PG/PKI/E-6258/2019
Date: 05.07.2019,

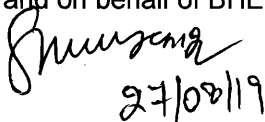
Extended DUE DATE
02-September- 2019
02:00 PM

1. The Due date for offer submission & Part-I opening for **TRAVELLING WATER SCREENS (TWS)** for aforesaid project is **02.09.2019, 02:00 P.M.** Techno-commercial offer (Part-I) shall be opened on **02.09.2019 at 03:00 P.M.** Kindly Ensure submission/uploading of offer on or before Extended due date & time i.e. by **02.09.2019, 02:00 P.M** on (<https://bhel.abcpurchase.com>).
2. Along with this Corrigendum no. 04 also find attached reply of pre-bid query & AMENDMENT 1 of Technical Specification of Panki – **TRAVELLING WATER SCREENS (TWS)**.
3. All other terms & conditions of NIT remains same.

All corrigenda, addenda, amendments, time extensions, clarifications etc. to the tender will be hosted on BHEL websites only (<https://bhel.abcpurchase.com>) under subject tender reference. Bidders are requested to visit our website from time to time to keep themselves updated.

Thanking you,

Yours faithfully,
For and on behalf of BHEL


27/08/19

SHRI PRAKASH
(DY. MANAGER /Project Group-3)

Please reply to:
SHRI PRAKASH –DY. MANAGER /PG-3
Power Project Engineering Institute Building
HRD & ESI Complex Plot No. 25, Sector -16 A,
BHEL-PEM, Noida-201301 (U.P.)
Tel No. 0120-4213621/4368838.

PRE BID CLARIFICATION SCHEDULE

Project: - 1X660 MW PANKI TPS EXTENSION (UPRVUNL)								
PACKAGE:- Travelling Water Screens (TWS)								
ENQUIRY NO.:- PE/PG/PKI/E-6258/2019 Dt. 05.07.2019								
S.No	Volume	Section	Clause	Page No	Specification requirement	Clarification	Reasons for clarification	BHEL Replies
1		NIT	Point no. 13 (iii)	2 of 6	Mandatory Spares	4 months from the date of manufacturing clearance.	Delivery of Mandatory spares shall be provided along with the last dispatch.	Mandatory Spares delivery as per NIT sl. No. 13 - iii) i.e 4 months from the date of manufacturing clearance.
2		Section IA	Clasuse no. 2.00.0 Point no. 2.5	2 of 13	Scope of supply & services	Switch gear panel should have suitable arrangement like bus coupler for providing redundancy of incoming supply feeder (1 Working +1Standby feeder)	Bus Coupler is not applicable for starter panel. We shall provide manual changeover for redundancy	Please follow specification.
3		Scetion IA	Clasuse no. 4.00.0 Point no. 4.01.00	3 of 13	Description of Equipments	The intake system comprises of 2 stream (1 working + 1 standby) as specified in Data sheet - A	Please note the configuration philosophy of TBS is not mentioned in Data sheet - A. Please clarify.	There shall be 2 stream of TWS (1W+1S).
4		Scetion IA	Clasuse no. 4.00.0 Point no. 4.02.00	3 of 13	Description of Equipments	The TBS shall be dual speed and central flow or dual flow designs.	Please note in Data sheet - A all three types of TBS i.e. Single flow/Dual flow/Central flow are mentioned. Please clarify.	Section-1A shall prevail.
5		Scetion IA	Clasuse no. 5.04.00 Point no. 5.04.02	5 of 13	Control Philosophy	One number differential level switch shall be provide across the traveling band screen	Please note this is not applicable for TBS. The same is not shown in P & ID, Sketch-A too. Kindly clarify.	Please note, sketch-A is only indicative. Bidder to consider the instruments as per technical specification and as per functional requiremnt of TWS.
6		Scetion IA	Clasuse no. 5.10.00 Point no. 5.10.01	7 of 13	Self -cleaning Strainer	01 no. DPG. Shall be provided across each SCS for local measurement.	Please note this is not shown in P & ID, Sketch-A. Please clarify.	Please note, sketch-A is only indicative. Bidder to consider the instruments as per technical specification and as per functional requiremnt of TWS.
7		Scetion IA	Clasuse no. 5.10.00 Point no. 5.10.02	7 of 13	Self -cleaning Strainer	02 nos. DPT. Shall be provided across each SCS.	Please note this is not shown in P & ID, Sketch-A. Please clarify.	Please note, sketch-A is only indicative. Bidder to consider the instruments as per technical specification and as per functional requiremnt of TWS.
8		Scetion IA & ID	Clasuse no. 6.00.00 Point no. 6.07.00 & Data Sheet -A point 3.11 & 7.1	7 of 13	General Requirements	Cathodic Protection of TWS.	Please note we shall provide the same in guides as mentioned in your Data sheet-A.	For cathodic protection please refer clause no 6.07.00 of Section-IA of technical specification. Follow specification.
9		Scetion IA	Clasuse no. 6.00.00 Point no. 6.08.00	7 of 13	General Requirements	TBS Design for Sea water	Please clarify whether the water type id Sea water (or) river water.	It is river water (canal water).
10		---	---	----	Sketch - A	1. Legend 2. Motorzied Butterfly valve Two nos. LT with differential controller shown in Sketch A.	1. Please provide Legend of instruments shown in Sketch - A. 2. Please note that One no. Motorzied butterfly valve is required at the inlet of TBS. 3. However, the same is not shown in Sketch-A. Please clarify. 3. We presume this is meant for VT-Pump and the same is not applicable for TBS. Please review and confirm.	Please note, sketch-A is only indicative. Bidder to consider the instruments as per technical specification and as per functional requiremnt of TWS.

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11		Technical Specification of TBS (Electrical portion)	Data sheet A General A point no. 3 & Cl. no. 1.5.1 AC Motors	----	Efficiency Class of Motor	IE 3 & IE2 both are mentioned.	Please note IE3 is applicable for Single speed LT Motor and IE2 is applicable for Dual speed LT Motor.	Please comply the specification, else submit Indian Standards/international standards related to your query
12		Technical Specification of TBS (Electrical portion)	Data sheet A General B point no. 5	---	System fault level at rated voltage	50KA for 1 sec	This fault level is not applicable for starter panel.	Please comply the specification.
13		Specific Technical requirements (C & I)	Section C Specific Technical Requirement (C&I) for TWS. Point no. 39	—	Bidder to note that all the transmitters/instruments supplied by Bidder shall be rack mounted. The racks shall be preassembled and provided by Bidder. Also no instruments / analyzers & JBS/Racks should be protruding on the walkway.	Please clarify whether Rack and walkway are to be provided for all the instruments.	Please check and reconfirm whether Rack and walkways are really required for our application.	Rack and walkways are not required.
14		1. TS, cl. no. 5.04.01 2. Control philosophy for TWS	Sr. no. 17, Section IC	—	The quantity of Ultrasonic level transmitters is mentioned as 4 nos. for each TWS	Please confirm the quantity of ULT for each TWS, please note that in clause no. 5.04.01 Two nos. DLT for each TWS is mentioned and Four (4) nos. ULT is given in Control philosophy whereas 1 no. DLT as per TWS is shown in your P & ID of TS.	1. Kindly confirm whether we should provide ULT (or) DLT for each TWS. 2. Please specify the quantity required for each TWS with redundancy as mentioned in Annexure-1.	Bidder to follow the control philosophy as specified in the specification. Level transmitters should be ultrasonic type.
15		Section ID	Data Sheet -A point no 4.1 & 12.11.2.1 ,2.2	1 of 4 & 3 of 4	Spray wash /Flushing system	Moc of Pipes upto 50 NB & above 50 NB is mentioned as carbon steel and SS 304	Please clarify which one to be considered. Also, please confirm the MoC of Pipe supports.	Please refer revised Datasheet-A.
16		Section ID	Data sheet A Point no. 5.1	2 of 4	Self -cleaning Strainer	Screen Perforation Size is mentioned as 1.1 mm (Max.) and less than Nozzle dia.	Please note 1.1 mm dia. (Max.) cannot be provided by us as per our design parameter. However, the screen perforation size shall be less than our provided Nozzle dia.	Bidder to follow specification
17		Section ID	Data sheet A Point no. 8.2	2 of 4	Control & Instrumentation	01 no. Differential pressure Switch for TBS	Please note this is not applicable for TBS. The same is not shown in P & ID, Sketch-A too. Kindly clarify.	Bidder's query not clear.
18		Section ID	Data sheet A Point no. 12.3 & 12.10.13	2 of 4 & 3 of 4	Material of Construction & Carrying chain & rollers	MOC of Basket Frame and wire clamping bars	Please note the MoC mentioned in both the clauses is not matching. Kindly clarify which one to be considered.	Please refer revised Datasheet-A.
19		Section ID	Data sheet A Point no. 12.4	2 of 4	Material of Construction	Fasteners - Carbon steel to IS 2062 Gr B	Please note instead of Carbon steel, GI/SS are recommended to overcome corrosion. Kindly review and confirm.	Please refer revised Datasheet-A.

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S.No	Volume	Section	Clause	Page No	Specification requirement	Clarification	Reasons for clarification	BHEL Replies
20		Section ID	Data sheet A Point no. 12.5 & 12.6	2 of 4 & 3 of 4	Material of Construction	Head & Foot Shaft - Carbon steel to IS 2062 Gr B	Please note instead of Carbon steel, EN-8/SS are recommended. Kindly review and confirm.	Please refer revised Datasheet-A.
21		Section ID	Data sheet A Point no. 12.7	3 of 4	Material of Construction	Head & Foot Sprockets - CS to IS 2062 Gr B	As per our standard design, we are providing the sprockets in Alloy Cast Iron.	Please refer revised Datasheet-A.
22		Section ID	Data sheet A Point no. 12.8 & 12.10.8	3 of 4	Material of Construction	Material of Carrying Chain / Screen chain Side Bar	Please note the MoC mentioned in both the clauses is not matching. Kindly clarify which one to be considered.	Please refer revised Datasheet-A.
23		Section ID	Data sheet A Point no. 12.10.2,3 & 4	3 of 4	Carrying chain & rollers	Drive chain type, Drive chain pin/ bushing.	Please note as per the standard practice, transmission chain is made of Cast steel/Low alloy steel only. SS chains are not available in the market for small quantity.	Please refer revised Datasheet-A.
24		Section ID	Data sheet A Point no. 12.10.5	3 of 4	Carrying chain & rollers	Material of Construction for Sprocket	Please note the Drive , Driven and Idler sprockets are made of Cast steel/EN materials. SS is not required as these are not coming in water contact.	Please refer revised Datasheet-A.
25		Section ID	Data sheet A Point no. 12.10.12	3 of 4	Splash housing & refuse chute	Moulded Fibre glass/ SS 304/ Equivalent or superior	Please note that we shall provide Moulded FRP with SS frame/SS 304/Toughened glass with SS 304 frame.	Bidder to follow specification. However, superior material is also acceptable.
26		Section ID	Data sheet A Point no. 12.12	3 of 4	Valves	Valves 400 NB and above (Butterfly valve only)	Please provide the material of construction for 50 NB to 350NB butterfly valves.	Please note valves upto 350 NB shall be gate valve/Globe Valve.
27	Volume V Instruments, JB, Valves Specification	Section D Measuring Instrument (Primary & secondary)	Clause no. 2.00.05	—	Instruments	Please note the MoC of instruments mentioned in your specifications are various i.e. SS 316/SS 316L/Monel / Hastelloy C	Please clarify which one to be considered as there is a huge difference in the given MoC's.	All the given options are acceptable.
28	Volume V	Local control Panel Specification & quality plan	Clause no. 6.10.00 Point no. V	5 of 12	Starter Panel	Exhaust fans with louvers & filters shall be provided on upper side to remove hot air in all consoles and panels.	Not applicable for starter panel of TWS . If it is required then specified IP protection cannot be maintained.	Bidder to follow specification.
29	Volume V	Local control Panel Specification & quality plan	Clause no. 6.14.00 & 6.15.00	8 of 12	Starter Panel	Panel cooling fan & Panel Thermostat	Not applicable for starter panel of TWS . If it is required then specified IP protection cannot be maintained.	Bidder to follow specification.

1X660 MW PANKI TPS EXTENSION (UPRVUNL)

AMENDMENT NO. 1

**TO TECHNICAL SPECIFICATION
FOR
TRAVELLING BAND SCREENING SYSTEM**

Specification No. : PE-TS-426-100-N001 (REV. 0)



**BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
PPEI BUILDING, SECTOR 16 A
NOIDA - 201301**



TECHNICAL SPECIFICATIONS

SPECN. NO.:

PE-TS-426-172-N001

TRAVELLING BAND SCREENING SYSTEM

REV. NO.

00

DATE:

26.08.19

AMENDMENT NO. 1

1.0 Please refer Technical Datasheet-A, Rev-01 for Travelling Band Screen System, attached with this amendment.

	TITLE: TECHNICAL SPECIFICATION FOR TRAVELLING BAND SCREEN SYSTEM		SPEC NO: PE-TS-426-172-N001
	TECHNICAL DATA SHEET- A		SECTION : ID
			REV.NO: 01, Dated 26.08.19
S.no.	Description	Units	Data/Parameters
1	General		
1.1	Nos. of Travelling Band screening systems sets required	Nos.	2 Nos. for station (1 Working + 1 standby)
1.2	Nos. of Spray wash pumps common for all TBS	Nos.	2 Nos. (1 Working + 1 Standby)
1.3	Liquid handled		River water (Analysis attached)
1.4	Type of Travelling Band Screen		Central Flow / Dual Flow
1.5	No. of speed levels for the TBS		Dual Speed
1.6	Hydraulic /Fluid coupling		Required
1.7	Manufacturer		By Bidder
1.8	Country of Origin		By Bidder
1.9	Drive Mechanism Safety Devices		Required, By Bidder
2	Site Data		
2.1	FGL of the Site	m	EL (-) 0.5M
2.2	Elevation of the TBS Operating Floor	m	EL (+) 0.0M
2.3	Invert level of the Intake canal at TBS Inlet	m	EL (-) 7.28M
2.4	Min. W.L. at upstream of TBS	m	EL (-) 4.28M
2.5	Max. W.L. at upstream of TBS	m	EL (-) 1.68M
2.6	Clearance between bars of coarse bar screens at upstream of TBS(Not in Bidder scope)	mm	50
2.7	Maximum Chamber length & width for the TBS		2000 mm X 1600 mm
2.8	Design Mechanical temperature	Deg. Cel.	60
2.9	Spray wash/Flushing water source		Raw Water Intake Pump Discharge at Downstream of TBS
2.10	Pressure available at Tap off from discharge of purchaser's pump	mwc	10 to 13 MWC (g)
2.11	Max. Limit on shut off head of purchasers pump"	mwc	22 MWC (g)
3	Design Data		
3.1	Flow rate per stream		
-	Design/Normal	cum/hr	2850
-	Maximum	cum/hr	3710
3.2	No. of Speed levels of TBS		By Bidder (Minimum 2)
3.3	Protection Mechanism for Differential level $\geq$ Design Differential		Required (Type Details: By Bidder)
3.4	Travelling Band Screen clear opening	mm ²	10 mm X 10 mm
3.5	Screen wire mesh size (Diameter)	mm	2 (Minimum)
3.6	Maximum water velocity through screen at min. WL	m/sec	0.15
3.7	Design differential head for Travelling Band screens	MWC	1.5
3.8	Maximum head loss permitted across TBS (i.e. between inlet and outlet) in clean condition at Min WL	MWC	0.1
3.9	Screen backwashing/flushing start "ON" Slow speed head loss across TBS	MWC	0.2
3.10	Screen backwashing/flushing start at fast speed	MWC	0.35
3.11	Corrosion Protection system		YES, with Sacrificial anode type Cathodic protection by Bidder. (Calculation for same to be furnished during contract stage for approval)
3.12	Service Factor for Gear Box		2 (minimum)
3.13	The velocities for Calculating the inside diameters shall be limited to		At Pump Suction: 1.8 m/sec At Pump Discharge and Headers: 2.4 m/sec
4	Spray Wash/Flushing system		
4.1	Spray wash/flushing water Piping		
	a) Material		a) Up to 150 Nb - Carbon steel ERW, IS:1239 (Heavy Grade). b) 200 Nb and above - CS to IS 2062 Gr. B, rolled & butt welded, conforming to IS 3589
	b) O.D.Xthickness of Stub at Terminal Point	mmXmm	219.1 X 6.35
4.2	Motor Rating of Spray Wash pump		Continuous motor rating (at 50 deg. C ambient) shall be 15% above the maximum power requirement at any condition of the entire characteristic curve of the pump.
5	Self Cleaning Strainer		
5.1	Screen perforation size	mm	1.1 mm (Max.) & less than spray Nozzle hole
5.2	Free flow area in the Screen basket		Minimum 110 % of Pipe Inlet Area
6	Debris Segregation and collection baskets		
6.1	Quantity	Nos.	2 (1 No. for each TBS)
6.2	Size(Preferable) - L x B x H	MxMxM	1 X 1 X 0.75
6.3	Discharge mechanism for emptying the basket		Lever operated bottom mechanism

	TITLE: TECHNICAL SPECIFICATION FOR TRAVELLING BAND SCREEN SYSTEM		SPEC NO: PE-TS-426-172-N001
	TECHNICAL DATA SHEET- A		SECTION : ID
			REV.NO: 01, Dated 26.08.19
S.no.	Description	Units	Data/Parameters
6.4	Type of arrangement for handling by Gantry crane provided		YES, By Purchaser (6 Ton capacity with crane hook level EL(+) 6.0 M)
6.5	Basket frame plate thickness	mm	Min. 6
6.6	Wire Mesh size dia	mm	Min. 5
6.7	Guide Ways		
6.7.1	Number	Nos.	4
6.7.2	Type		Embedded in wall
7	Guide ways section		
7.1	Cathodic Protection to be provided against corrosion		YES, with Sacrificial anode type Cathodic protection by Bidder. (Calculation for same to be furnished during contract stage for approval)
7.2	Fixing method of guide ways to be supplied by Bidder		YES, By bidder
8	Control and Instrumentation		
8.1	Control Panel		N.A (DDCMIS control). Only Starter cum Switchgear Panel to be provided by Bidder as per Section IC
8.2	Differential Level Switch		NA
8.3	Differential Level Transmitters		2 nos. per stream
8.4	Pressure Transmitters		
8.4.1	Spray wash Suction Header		1 no . Common for all the pumps
8.4.2	Spray wash Discharge Header		1 no . Common for all the pumps
8.5	Pressure Gauges		
8.5.1	Spray wash individual suction line		1 no for each pump
8.5.2	Spray wash individual discharge line		1 no for each pump
8.6	Differential Pressure Very High Switch		NA
8.7	Differential Pressure Transmitters		2 no . Per SCS
8.8	Differential Pressure Gauge		1 no . Per SCS
8.9	Limit Switches		1 No . Per suction valve (OPEN) of TBS Spray wash pumps
9	Operation		
9.1	Travelling Band Screening system shall be designed for the following operation modes:		
9.1.1	Automatic start up initiated by High differential level		YES
9.1.2	Automatic start-up initiated by timer.		YES
9.1.3	Manual mode of operation		YES
9.1.4	Provision for manual operation of the Travelling band shall be made in case of control system failure.		YES
10	Spray wash/Flushing system/Self Cleaning Strainer		
10.1	Spray wash pumps		Applicable
10.2	No. of Spray wash pumps	Nos.	2 Nos. (1 W + 1 S)
10.4	No. of Self Cleaning Strainer	Nos.	2 Nos. (1 W + 1 S)
10.4	Whether Inserts/embedments/packers for Spray wash pumps/distributors and nozzles being supplied.		YES, By Bidder
10.5	Hydrostatic Test		
10.5.1	Hydrostatic test pressure for Spray wash/ flushing system/Self Cleaning Strainer	Bar (g)	Refer Section IIA
10.5.2	Test duration	Min	Refer Section IIA
11.0	Painting		
11.1	Surface preparation		Refer Section IIA
11.2	Primer coating thickness		Refer Section IIA
11.3	Finish coating thickness		Refer Section IIA
12.0	Materials of Construction		
12.1	Travelling band Screen		
12.1.1	Screen Wire mesh		SS 304
12.1.2	Clamping Plates/Clamps		SS 304
12.1.3	Basket frame and wire clamping bars		CS to IS 2062 Gr. B
12.1.4	Fasteners		SS 304
12.1.6	Rubber Seals		As per Appendix-B of IS: 4622
12.2	Head Shaft / Sprocket		
12.2.1	Head Shaft		CS to IS 2062 Gr. B / EN-8 / SS
12.2.2	Foot Shaft (if applicable)		CS to IS 2062 Gr. B / EN-8 / SS
12.2.3	Head/Foot Sprockets		CS to IS 2062 Gr. B / EN-8 / SS
12.2.4	Sprocket		SS-304
12.2.5	Torque tube		SS-304
12.3	Carrying chain & rollers		

	TITLE: TECHNICAL SPECIFICATION FOR TRAVELLING BAND SCREEN SYSTEM		SPEC NO: PE-TS-426-172-N001
	TECHNICAL DATA SHEET- A		SECTION : ID
			REV.NO: 01, Dated 26.08.19
S.no.	Description	Units	Data/Parameters
12.3.1	Carrying chain		SS-304
12.3.2	Carrying Chain pins,&Bushing		SS-304
12.3.3	Shaft bearing Bushing spherical roller		SS-304
12.3.4	Screen chain side bars		SS-304
12.4	Drive Chain		
12.4.1	Drive Chain type		Cast Steel / Low Alloy Steel / SS
12.4.2	Drive chain pin/Bushing		SS-304 for Pin SS 420 Hardened to at least 450 BHN for Bush or vice versa
12.4.3	Drive Chain guard		Cast Steel / Low Alloy Steel / SS
12.5	Frame and Guideways		
12.5.1	Baffle plate in boot section		SS-304
12.5.2	Guide ways / Anchor		SS-304
12.5.3	Main supporting frame		SS-304
12.6	Splash housing and refuse		
12.6.1	Splash housing and refuse chute		MOULDED FIBRE GLASS/ SS-304/ Equivalent or superior
12.7	Pipe & Nozzles		
12.7.1	Spray nozzle		SS 304 / PVC
12.8	Valves		
12.8.1	Valve 400 NB and above (Butterfly Valves only)		
12.8.1.1	Body & Disc		ASTM A48, Gr. 40 With 2% Ni / IS 210,Gr. FG 260 With 2% Ni and epoxy coated
12.8.1.2	Shaft		BS 970 431 S: 291 / EN 57, or AISI-410 or AWWA-permitted shaft material equivalent to EN-57/AISI-410 or better
12.8.1.3	Seat ring		18-8 Stainless steel
12.8.1.4	Shaft Bearing		Sleeve Type Self Lubricated
12.8.1.5	Seal		Nitrile Rubber
12.8.1.6	Gland Packing		Poly Tetra Fluoro Ethylene (PTFE) or eq.
12.8.2	Valve 350 NB and Below (Gate/Globe/Check Valves only)		
12.8.2.1	Body, Bonnet		ASTM A 216, Gr WCB / ASTM A 105
12.8.2.2	Trim		ASTM A 182 Gr F6 or eq
12.8.2.3	Disc for NRVs		ASTM A 216, Gr WCB / ASTM A 105
12.9	Spray Wash pump		
12.9.1	Spray Wash pump Casing		2.0 % Ni Cl to IS 210 Gr. FG 260
12.9.2	Spray Wash pump impeller		ASTM-A-351 CF 8M
12.9.3	Spray Wash pump Shaft		SS-410
12.9.4	Spray Wash pump Shaft sleeve		SS-316
12.9.5	Screen wash pump Base frame		IS 2062 Gr. B. with Epoxy coating
12.9.6	All hardware under water		SS-304
12.9.7	Material of Gland Packing /Mechanical Seal (If applicable)		AS PER MANUFACTURER PRACTICE
12.10	Debris Segregation and collection baskets		
12.10.1	Frame		CS to IS 2062 epoxy painted inside.
12.10.2	Wire Mesh		SS 316
12.10.3	Flanges		CS to IS 2062 epoxy painted inside.
12.11	Self Cleaning Strainer		
12.11.1	Body		CS to IS 2062 epoxy painted inside.
12.11.2	Screen / Wetted Fasteners		SS 316
12.11.3	All Non-Wetted Fastners		SS 316
13.0	MANDATORY SPARES		AS PER ANNEXURE-A OF THIS DATASHEET
	NOTE: The material of construction of each component of the Travelling Band Screen shall be such as to resist erosion and give a long and satisfactory life for plant. MOC indicated above is minimum requirement and Bidder to provide suitable MOC for various components for the attached water analysis. For components not mentioned above, suitable compatible MOC shall be provided for the attached water analysis.		