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FILE NAME: 6907-051-16-46-3004-A-1

NOZZLES AND CONNECTIONS

MARK	QTY	NOM DIA.	SCH/ THK.	FLANGES			PROJECTION (NOTE-4)	PAD W X T	SERVICE
				CLASS	TYPE	FACING			
F1	1	200	160	600	WN	RF	940	200X42	FEED
F2	1	80	XXS	600	WN	RF	890	45X42	FEED
B	1	100	160	600	WN	RF	SEE DRG.	60X42	BOTTOM OUTLET
T	1	200	160	600	WN	RF	SEE DRG.	110X42	TOP OUTLET
V	1	50	XXS	600	WN	RF	SEE DRG.	-	VENT+BF
UC	1	50	XXS	600	WN	RF	840	-	UTILITY CONNECTION+BF
LT 3-8	6	80	XXS	600	WN	RF	890	45X42	LEVEL TRANSMITTER
SP 1-2	2	50	XXS	600	WN	RF	840	-	STAND PIPE
MH 1-3	3	500	22	600	WN	RF	990	250X42	MANHOLE+DAVIT+BF
PDT 1-2	2	80	XXS	600	WN	RF	890	45X42	DIASEAL DIFF. PRESSURE TRANSMITTER
AO	1	450	14	AS PER EIL STD.			225X22 ACCESS OPENING		
SKV 1-3	3	100	40	AS PER EIL STD.			- SKIRT VENT		

COLUMN IN AMINE SERVICE

COLUMN TO BE DELIVERED TO BCPL, LAKWA

FOUNDATION LOADING DATA
(OPERATING CONDITION)

TYPE	MAX. MOMENT AT BASE (M) (Kgm)		MAX. SHEAR FORCE AT BASE (H) (Kg)	
	DBE	484390	DBE	34400
SEISMIC	MCE	723400	MCE	52500
WIND	97700		6900	

GENERAL NOTES

- UNLESS STATED OTHERWISE.
- ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.
 - ALL ANCHOR BOLT HOLES TO STRADDLE N/S CENTER LINE.
 - NORTH DIRECTION WHEREVER SHOWN IS WITH RESPECT TO PLAN VIEW.
 - a) FOR NOZZLES ON SHELL PROJECTIONS ARE REFERRED TO FROM VESSEL CENTER LINE TO FLANGE CONTACT FACE.
b) FOR NOZZLES ON HEAD PROJECTIONS ARE REFERRED TO FROM HEAD T.L. TO FLANGE CONTACT FACE.
 - THE INDICATED THICKNESS IS THE MINIMUM ACCEPTABLE AFTER CONSTRUCTION.
 - FLANGE GASKET FACE SHALL HAVE 125 AARH FINISH.
 - DIMENSIONS OF FLANGES SHALL BE AS PER ANSI B16.5 UNLESS OTHERWISE STATED.
 - ID OF WELD NECK FLANGES SHALL MATCH WITH CORRESPONDING ID OF NOZZLE PIPE
 - NOZZLES 50NB AND BELOW SHALL BE STIFFENED WITH 2NOS.40X6THK. FLATS 90° APART.
 - ALL REMOVABLE INTERNALS SHALL BE SIZED SO AS TO PASS THROUGH MANHOLE EASILY.
 - VESSEL IS SUBJECTED TO STEAM OUT CONDITION OF 0.5 KG/CM2 (G) @90°C.
 - VENDOR SHALL PROVIDE PERMANENT SLOPING STEEL MONKEY LADDER (2 NOS.) INSIDE THE SKIT FOR COLUMN TO APPROOH BOTTOM DISH END FOR INSPECTION.
 - COMPLETE COLUMN INCLUDING SKIRT SHALL BE PWMT & HARDNESS AFTER PWMT SHALL NOT EXCEED 200BHN FOR PARENT METAL, HAZ & WELD METAL.
 - SURFACE CLANNING / PRIMER SHALL BE AS PER JOB SPEC. 6907-0642-PT-LO7
 - VENDOR SHALL CARRYOUT LOCAL LOAD ANALYSIS DUE TO NOZZLE LOADING FOR ALL PROGRESS NOZZLES AS PER NOZZLE LOAD SPEC. 6907-112-16-46-ST-0038 AND SUBMIT THE SAME FOR EIL REVIEW. VENDOR SHALL INCREASE NOZZLE PAD THK./DIMENSIONS OR PROVIDE INSERT PLATES IF REQUIRED AS PER CALCULATIONS.
 - a) LIFTING LUG/TRUNION & TAILING LUG SHALL BE PROVIDED ON THE COLUMN SECTIONS FOR ASSEMBLY INCLUDING LIFTING ARRANGEMENT FOR COMPLETED EQUIPMENT.
b) LIFTING LUG/TRUNION & TAILING LUG TO BE DESIGNED BY FABRICATOR CONSIDERING IMPACT FACTOR OF 2. BASE BLOCK TO BE STIFFENED PROPERLY. CALCULATIONS TO BE SUBMITTED TO EIL FOR REVIEW.
 - TAILING LUGS SHALL BE PROVIDED AT 90° TO LIFTING LUGS.
 - ALL BUT WELDS IN THE PRESSURE PARTS SHALL BE FULLY RADIOGRAPHED.
 - PIPE TO PIPE AND PIPE TO FLANGE, PIPE TO FITTING AND FITTING TO FLANGE JOINT SHALL BE WELDED WITH THE SAME TECHNIQUE USED FOR MAIN EQUIPMENT WELDING.
 - ALL BUT WELDS INCLUDING FLANGE TO NECK, PIPE TO PIPE AND PIPE TO FITTINGS SHALL BE 100% RADIOGRAPHED.

SPECIFICATIONS

DENOTES APPLICABILITY	
GENERAL SPEC. FOR PRESSURE VESSELS	6-12-0001
SUPP. SPEC. FOR CS VESSELS	6-12-0002
STD. SPEC. FOR BOCS PLATES	6-12-0011
STD. SPEC. FOR STRUCTURAL QUALITY PLATES	6-12-0014
JOB SPEC. FOR SHOP & FIELD PAINTING	6907-0642-PT-LO7

STANDARDS

VESEL TOLERANCES	7-12--0001
SUPPORT FOR HORIZONTAL VESSEL	7-12--0002
WOODEN PILLOWS FOR SADDLE SUPPORT	7-12-0003
SKIRT BASE DETAILS	7-12-0004
SKIRT OPENING DETAILS	7-12-0005
ANGLE LEG SUPPORT	7-12--0006
PIPE LEG SUPPORT	7-12-0007
BRACKET SUPPORT FOR VERTICAL VESSEL	7-12-0008
MANHOLE WITH HINGED COVER	7-12--0009
MANHOLE WITH DAVIT	7-12-0010
LADDER RUNGS FOR MANHOLE/DEMISTER	7-12-0011
RETAINING PLATE	7-12-0012
NOZZLE REINFORCEMENT AND PROJECTION	7-12--0013
PAD NOZZLES FOR VESSELS	7-12-0014
STANDARD BOLT HOLE ORIENTATION	7-12-0015
ALLOY LINER DETAILS	7-12--0016
SIGHT GLASSES FOR PRESSURE VESSELS	7-12-0017
INTERNAL FLANGES	7-12-0018
VORTEX BREAKERS	7-12-0019
INLET DEFLECTOR BAFFLE	7-12-0020
SUPPORT RING & BOLTING BAR	7-12-0021
SUPPORT RING SIZES FOR PACKED TOWERS	7-12-0022
PIPE DAVIT	7-12-0023
LIFTING LUG TOP HEAD TYPE	7-12--0024
FIRE PROOFING AND INSULATION SUPPORTS	7-12-0025
EARTHING LUG	7-12--0026
NAME PLATE	7-12-0027
MANUFACTURER NAME PLATE	7-12-0028
BRACKET FOR NAME PLATE	7-12-0029
NAME PLATE FOR SMALL EQUIPMENT	7-12-0030
DETAILS OF FORGED NOZZLES	7-12-0031
SUPPORTS FOR INTERNAL FEED PIPE	7-12--0032
HOT INSULATION SUPPORTS FOR HORIZONTAL VESSEL	7-12-0033
PIPE DAVIT SUPPORT FOR COLD INS. VESSELS	7-12--0034
TP.DETAILS OF WIRE MESH DEMISTER SUPPORTS (FOR GUIDANCE)	7-12--0036
S.R. NOZZLE NECK	7-12--0037
ALLOWABLE NOZZLE LOAD	6907-112-16-46-ST-0038

DESIGN DATA

CODE	ASME SEC. VIII DIV 1(LATEST) + ADDENDA
WORKING PRESSURE (Kg/Cm ² g)	INT 53.4(TOP)/53.9(BOTTOM)
DESIGN PRESSURE (Kg/Cm ² g)	INT 65(TOP)/65.5(BOTTOM) EXT.-F.V.
WORKING TEMPERATURE (°C)	59.4(TOP)/58(BOTTOM)
DESIGN TEMPERATURE (°C)	75
MDMT	4
CORROSION ALLOWANCE (mm)	3.0
TYPE OF HEADS	2:1 ELLIPSOIDAL
JOINT EFFICIENCY	SHELL 1.0 HEAD 1.0
RADIOGRAPHY	SHELL FULL HEAD SINGLE PIECE
POST WELD HEAT TREATMENT	YES (COMPLETE VESSEL) (NOTE-13)
HEAT TREATMENT	HEAD AS PER SPEC.
WIND SPECIFICATION	IS : 875
EARTH-QUAKE SPECIFICATION	SITE SPECTRA
OPERATING MEDIUM AMINE & FEED GAS (HC+CO2) SP. GRAVITY-1.021	
CAPACITY (M ³)	22.5
PAINTING / CLEANING	AS PER JOB SPEC. (NOTE-14)
INSULATION THICKNESS (mm)	25 SAFETY ☐ HOT ☐ COLD
FIRE PROOFING	☒ YES ☐ NO
HYDROSTATIC TEST (Kg/Cm ² g)	HORIZONTAL VERTICAL
PRESSURE (NEW & COLD)	85.15 (AT TOP)
INSPECTION BY	☒ EIL ☐ CIB ☐ LLOYDS

MATERIAL OF CONSTRUCTION
(AS PER ASME /IS OR EQUIVALENT)

SHELL	SA 516 GR60
REINFORCEMENT PAD	SA 516 GR.60
HEADS	SA 516 GR.60
SHELL FLANGES	-
NOZZLE FLANGES/LWN	SA 105
S.R.NOZZLE NECK	SA 350 GR.LF2 CL1
PIPE FITTINGS	SA 234 GR.WPB
GASKETS EXTERNAL	SPIRAL WOUND GASKET WITH SS 316 METAL WINDING WITH GRAFOIL FILLER MATERIAL AS PER ASME B16.2.
GASKETS INTERNAL	COMPRESSED FIBRE ASBESTOR FREE
EXTERNAL STUDS/BOLTS/NUTS	SA 193 GR.B7/SA 194 GR.2H
INTERNAL STUDS/BOLTS/NUTS	SS 304
SKIRT SUPPORT	SA 516 GR.60/IS 2062 GR.B
SKIRT /SUPPORT BASE	IS 2062 GR.B
INTERNAL PARTS	SA 516 GR.70/SA 106 GR.B
CLIPS & ATTACHMENTS DIRECTLY WELDED (EXTERNAL)	SA 516 GR.60
CLIPS & ATTACHMENTS WELDED OVER PAD (EXTERNAL)	IS 2062 GR.B
PAD FOR EXTERNAL ATTACHMENTS	SA 516 GR.60
WRAPPER PLATE	-
DEMISTER / GRID/ BOLTING	-
PIPE DAVIT	SA 106 GR.B / SA 53
LIFTING LUGS	SA 516 GR.60
TAILING LUGS	IS 2062 GR.B

STATUTORY REGULATIONS

INDIAN BOILER REGULATIONS (IBR)	
DEPARTMENT OF EXPLOSIVES, NAGPUR (CCOE)	

APPROXIMATE WEIGHT (KGS)

ERECTION WEIGHT	36800	OPERATING WEIGHT	83700
HYDROTEST WEIGHT	59200	HYDROTEST WEIGHT (FIELD)	73600

NUMBER OF ITEMS : ONE



ENGINEERS INDIA LIMITED
KOLKATA

JOB NO.: 6907
CLIENT: BCPL
PLANT: GSU, LAKWA

REV.	DATE
0	29.01.2010
A	27.05.2009

ISSUED FOR PURCHASE
ISSUED FOR BIDS
REVISION

RR/PB	AKG
RR/PB	AKG
CHK	APPROVED

VESEL DESIGN DATA
ABSORBER
ITEM NO. 051-CC-101

वेसेल डिजाइन डाटा
एब्सॉर्बर
श्रीहर नगर 051-सीसी-101

DRAWING NO.	REV.
6907-051-16-46-3004	0
SHEET 1 OF 2	



ENGINEERS INDIA LIMITED
KOLKATA

JOB NO.:	6907
CLIENT:	BCPL
PLANT:	GSU, LAKWA

REV.	DATE	ISSUED FOR PURCHASE	ISSUED FOR BIDS	REVISION
0	29.01.2010			
A	27.05.2009			
BY		AROY	AROY	CHK
				APPROVED
				APPROVED

VESSEL DESIGN DATA
ABSORBER
ITEM NO. 051-CC-101

वेसेल डिजाइन डाटा
एब्सोर्बर
आइटम नम्बर 051-सीसी-101

DRAWING NO.	6907-051-16-46-3004	REV.	0
SHEET 2 OF 2			

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FILE NAME: 6907-051-16-46-3004-A-2

