



PIPING MATERIAL SPECIFICATION  
A1A



DOC. NO. : 1019-PI-PMS-101

CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT

SHEET : 1 OF 5

PROJECT NO. : 1019

PROJECT : BHASKAR FIELD

REV : 1

PIPING MATERIAL SPECIFICATION  
FOR CLASS A1A

REV	DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY
1	03.02.2020	ISSUED FOR ENGINEERING	RZ	RZ	BP
0	06.06.2019	ISSUED FOR REVIEW	IJ	RZ	BP



**PIPING MATERIAL SPECIFICATION  
A1A**



<b>DOC. NO.</b> : 1019-PI-PMS-101		<b>CLIENT</b> : SUN PETROCHEMICALS PVT LTD, KHAMBHAT										<b>SHEET</b> : 2 OF 5		
<b>PROJECT NO.</b> : 1019		<b>PROJECT</b> : BHASKAR FIELD										<b>REV</b> : 1		
<b>ASME CLASS</b>	<b>CORROSION ALLOWANCE</b>	<b>TEMPERATURE</b>	<b>°C</b>	-29	38	50	100							<b>PIPE CLASS:</b>
150#	1.5 mm	<b>PRESSURE</b>	<b>kg/cm<sup>2</sup> g</b>	19.98	19.98	19.57	18.04							A1A

<b>SERVICE:</b>	DRAIN
<b>BASIC MATERIAL :</b>	CARBON STEEL

**NOTES:**

- 1) BUTT WELDED JOINT- 100% VISUAL, 10% RADIOGRAPHY.
- 2) BRANCH CONNECTION- 100% VISUAL; DYE PENETRANT TEST-100% (FOR ROOT RUN/FINAL RUN)
- 3) VENT & DRAIN SHALL HAVE FLANGED ENDS.
- 4) TYPE OF STRAINERS ARE TENTATIVE, SELECTION OF STRAINER WILL BE AS PER P&ID.

ITEM	SIZE	DESCRIPTION
MAINTENANCE JOINTS	ALL	FLANGED, TO BE KEPT MINIMUM
PIPE JOINTS	40 NB & BELOW	SW
	50 NB & ABOVE	BUTTWELDED
DRAIN (HYDRO)	ALL	25 NB
VENT (HYDRO)	ALL	15 NB
TEMP. CONN.	40 NB OR AS PER P&ID	FLANGED
PRESS. CONN.	25 NB OR AS PER P&ID	SPEC AS PER P&ID



**PIPING MATERIAL SPECIFICATION  
A1A**



DOC. NO. : 1019-PI-PMS-101

CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT

SHEET : 3 OF 5

PROJECT NO. : 1019

PROJECT : BHASKAR FIELD

REV : 1

ASME CLASS	CORROSION ALLOWANCE
150#	1.5 mm
T	TEES BW (EQ. OR RED.)
TS	TEES SW (EQ. OR RED.)
H	HALF COUPLING (SW)
W	WELDOLET

**BRANCH TABLE**

**PIPE CLASS:**

**A1A**

								T	200	<b>BRANCH PIPE</b>
								T	150	
								T	100	
								W	80	
								W	50	
				TS	T	H	H	H	40	
			TS	TS	H	H	H	H	25	
		TS	TS	TS	H	H	H	H	20	
	TS	TS	TS	TS	H	H	H	H	15	
15	20	25	40	50	80	100	150	200		
<b>RUN PIPE</b>										





**PIPING MATERIAL SPECIFICATION  
A1A**



DOC. NO. : 1019-PI-PMS-101		CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT					SHEET : 5 OF 5		
PROJECT NO. : 1019		PROJECT : BHASKAR FIELD					REV : 1		
ASME CLASS		CORROSION ALLOWANCE					PIPE CLASS:		
150#		1.5 mm					A1A		
GASKET/BOLT ITEM	TYPE	END CONN.	DIAMETER RANGE		SCH./THK	FACE/ FINISH /RADIUS	DESIGN STD.	MATERIAL	REMARKS
			LOW	HIGH				DESCRIPTION	
GASKET/BOLT ITEM	STUD BOLT	-	15	150	-	-	ASME B18.2.1 ASME B18.2.2	BOLT : ASTM A 193 GR. B7 NUT : ASTM A 194 GR. 2H	
	GASKET	-	15	150	4.5 mm/ 150#	-	ASME B16.20 ASME B16.5	SPIRAL WOUND PTFE FILLER, SS304 INNER RING / CS OUTER RING	
STRAINERS	Y-TYPE STRAINER	RF/ B16.5	15	80	150#	125-250 μAARH	MNF. STD	BODY: ASTM A 216 GR. WCB, TRIM: 13% CR. STEEL	
	BASKET TYPE STRAINER	RF/ B16.5	100	150	150#	125-250 μAARH	MNF. STD	BODY: ASTM A 216 GR. WCB, TRIM: 13% CR. STEEL	



PIPING MATERIAL SPECIFICATION  
A1L



DOC. NO. :1019-PI-PMS-102

CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT

SHEET : 1 OF 5

PROJECT NO. : 1019

PROJECT : BHASKAR FIELD

REV : 1

PIPING MATERIAL SPECIFICATION  
FOR CLASS A1L

REV	DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY
1	03.02.2020	ISSUED FOR ENGINEERING	RZ	RZ	BP
0	06.06.2019	ISSUED FOR REVIEW	IJ	RZ	BP



**PIPING MATERIAL SPECIFICATION  
A1L**



<b>DOC. NO.</b> :1019-PI-PMS-102		<b>CLIENT</b> : SUN PETROCHEMICALS PVT LTD, KHAMBHAT										<b>SHEET</b> : 2 OF 5		
<b>PROJECT NO.</b> : 1019		<b>PROJECT</b> : BHASKAR FIELD										<b>REV</b> : 1		
<b>ASME CLASS</b>	<b>CORROSION ALLOWANCE</b>	<b>TEMPERATURE</b>	<b>°C</b>	-29	38	50	100							<b>PIPE CLASS:</b>
150#	NIL	<b>PRESSURE</b>	<b>kg/cm<sup>2</sup> g</b>	19.4	19.4	18.76	16.51							<b>A1L</b>

<b>SERVICE:</b>	DOSING CHEMICALS 1
<b>BASIC MATERIAL :</b>	SS316

**NOTES:**

- 1) BUTT WEIDED JOINT -100% VISUAL CHECKING, 10% RADIOGRAPHY FOR DOSING CHEMICALS 1
- 2) BRANCH CONNECTION -100% VISUAL, DYE PENETRANT TEST-10%
- 3) TYPE OF STRAINER ARE TENTATIVE, SELECTION OF STRAINER WILL BE AS PER P&ID.
- 4) ADDITIONAL TAPPINGS WITH BLIND FLANGES SHALL BE PROVIDED AT SUITABLE LOCATIONS ON ALL HEADERS AT ALL FLOOR ELEVATIONS FOR FUTURE USE.

ITEM	SIZE	DESCRIPTION
MAINTENANCE JOINTS	ALL	FLANGED, TO BE KEPT JUST SUFFICIENT FOR MAINTENANCE
PIPE JOINTS	ALL	BUTTWELDED
DRAIN (HYDRO)	ALL	25 NB
VENT (HYDRO)	ALL	15 NB
TEMP. CONN.	40 NB OR AS PER P&ID	FLANGED
PRESS. CONN.	25 NB OR AS PER P&ID	SPEC AS PER P&ID



**PIPING MATERIAL SPECIFICATION  
A1L**



DOC. NO. :1019-PI-PMS-102

CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT

SHEET : 3 OF 5

PROJECT NO. : 1019

PROJECT : BHASKAR FIELD

REV : 1

ASME CLASS	CORROSION ALLOWANCE
150#	NIL
T	TEES BW (EQ. OR RED.)
S	SOCKOLET
H	HALF COUPLING

**BRANCH TABLE**

**PIPE CLASS:**

**A1L**

												T	300	<b>BRANCH PIPE</b>
												T	250	
												T	200	
												T	150	
												T	100	
												S	80	
												S	50	
												S	40	
												H	25	
												H	20	
												H	15	
15	20	25	40	50	80	100	150	200	250	300	<b>RUN PIPE</b>			



**PIPING MATERIAL SPECIFICATION  
A1L**



DOC. NO. :1019-PI-PMS-102	CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT	SHEET : 4 OF 5
PROJECT NO. : 1019	PROJECT : BHASKAR FIELD	REV : 1

ASME CLASS	CORROSION ALLOWANCE	PIPE CLASS:	
150#	NIL	A1L	

ITEM	TYPE	END CONN.	DIAMETER RANGE		SCH./THK	FACE/ FINISH /RADIUS	DESIGN STD.	MATERIAL	REMARKS
			LOW	HIGH				DESCRIPTION	
PIPE	PIPE	BE	15	40	SCH. 40S	-	ASME B36.19	ASTM A 312 TP316, SEAMLESS	
	PIPE	BE	50	50	SCH. 40S	-	ASME B36.19	ASTM A 312 TP316, SEAMLESS	
	PIPE	BE	80	300	SCH. 10S	-	ASME B36.19	ASTM A 312 TP316, SEAMLESS	
	NIPPLE	PE/ PE-NPT	15	40	SCH. 80S	-	ASME B36.19	ASTM A 312 TP316, SEAMLESS	
FLANGES	LAP JOINT	RF	15	300	150#	125-250 μAARH	ASME B16.5	IS 2062 GR. B (WITH PROTECTIVE COATING)	
	BLIND	RF	15	300	150#	125-250 μAARH	ASME B16.5	IS 2062 GR. B, 3 mm THK. SS304 CLADDED	
	SPECTACLE BLIND	FF	15	300	150#	125-250 μAARH	ASME B16.48	IS 2062 GR. B, 3 mm THK. SS304 CLADDED	
STUB ENDS	SHORT PATTERN	BW	15	50	SCH. 40S	-	ASME B16.9	ASTM A 403 GR. WP316-S	
	SHORT PATTERN	BW	80	300	SCH. 10S	-	ASME B16.9	ASTM A 403 GR. WP316-S	
FITTINGS	ELBOW 90°/45°	BW	15	50	SCH. 40S	R = 1.5D	ASME B16.9	ASTM A 403 GR. WP316-S	
	ELBOW 90°/45°	BW	80	300	SCH. 10S	R = 1.5D	ASME B16.9	ASTM A 403 GR. WP316-S	
	EQUAL/RED. TEE	BW	15	50	SCH. 40S	-	ASME B16.9	ASTM A 403 GR. WP316-S	
	EQUAL/RED. TEE	BW	80	300	SCH. 10S	-	ASME B16.9	ASTM A 403 GR. WP316-S	
	CONC./ECC RED.	BW	15	50	SCH. 40S	-	ASME B16.9	ASTM A 403 GR. WP316-S	
	CONC./ECC RED.	BW	80	300	SCH. 10S	-	ASME B16.9	ASTM A 403 GR. WP316-S	
	SOCKOLET	SW	50	100	TSAP*	-	MSS SP 97	ASTM A 182 GR. F316	
	HALF COUPLING	SW	15	40	3000#	-	ASME B16.11	ASTM A 182 GR. F316	
	FULL COUPLING	SW	15	40	3000#	-	ASME B16.11	ASTM A 182 GR. F316	
	FULL COUPLING	NPT	15	40	3000#	-	ASME B16.11	ASTM A 182 GR. F316	
	CAP	BW	15	50	SCH. 40S	-	ASME B16.9	ASTM A 403 GR. WP316-S	
CAP	BW	80	300	SCH. 10S	-	ASME B16.9	ASTM A 403 GR. WP316-S		
VALVES	BALL VALVE (REDUCE BORE)	RF/ B16.5	15	300	150#	125-250 μAARH	BS EN ISO 17292	BODY: ASTM A 351 GR. CF8M, TRIM: SS316, STEAM -SS316	△ 1
	BUTTERFLY VALVE	SAND CONN. B16.5	150	300	150#	125-250 μAARH	API 609	BODY: ASTM A 351 GR. CF8M, TRIM & SPINDLE: SS316, SEAT: PTFE	



\*THICKNESS SAME AS PIPE



**PIPING MATERIAL SPECIFICATION  
A1L**



DOC. NO. :1019-PI-PMS-102		CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT				SHEET : 5 OF 5	
PROJECT NO. : 1019		PROJECT : BHASKAR FIELD				REV : 1	
ASME CLASS	CORROSION ALLOWANCE					PIPE CLASS:	
150#	NIL					A1L	

ITEM	TYPE	END CONN.	DIAMETER RANGE		SCH./THK	FACE/ FINISH /RADIUS	DESIGN STD.	MATERIAL	REMARKS
			LOW	HIGH				DESCRIPTION	
VALVES	CHECK VALVE (LIFT TYPE)	SAND CONN. B16.5	15	40	150#	125-250 μAARH	MNF. STD.	BODY: ASTM A 182 GR. F316, TRIM: SS316	
	CHECK VALVE (SWING TYPE)	SAND CONN. B16.5	50	300	150#	125-250 μAARH	API 594	BODY: ASTM A 351 GR. CF8M, TRIM: SS316	
GASKET/BOLT	STUD BOLT	-	15	300	-	-	ASME B18.2.1 ASME B18.2.2	BOLT : A193 GR. B7, NUT : A194 GR. 2H	
	GASKET	-	15	300	3 mm/ 150#	-	ASME B16.21 ASME B16.5	SPIRAL WOUND PTFE FILL,SS316 INNER RING /C.S OUTER RINGS	
STRAINERS	Y-TYPE STRAINER	RF/ B16.5	15	80	150#	125-250 μAARH	MNF. STD.	BODY: ASTM A 351 GR. CF8M, INT.: SS316	
	BASKET TYPE STRAINER	RF/ B16.5	100	450	150#	125-250 μAARH	MNF. STD.	BODY: ASTM A 351 GR. CF8M, INT.: SS316	



PIPING MATERIAL SPECIFICATION  
A2F



DOC. NO. : 1019-PI-PMS-103

CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT

SHEET : 1 OF 5

PROJECT NO. : 1019

PROJECT : BHASKAR FIELD

REV : 0

PIPING MATERIAL SPECIFICATION  
FOR CLASS A2F

REV	DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY
0	06.06.2019	ISSUED FOR REVIEW	IJ	RZ	BP



**PIPING MATERIAL SPECIFICATION  
A2F**



DOC. NO. : 1019-PI-PMS-103		CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT										SHEET : 2 OF 5		
PROJECT NO. : 1019		PROJECT : BHASKAR FIELD										REV : 0		
ASME CLASS	CORROSION ALLOWANCE	TEMPERATURE	°C	-29	38	50	100							PIPE CLASS:
150#	NIL	PRESSURE	kg/cm <sup>2</sup> g	19.98	19.98	19.57	18.04							A2F

SERVICE:	INSTRUMENT AIR
BASIC MATERIAL :	CARBON STEEL, GALVANIZED

**NOTES:**

- 1) SURFACES WHERE GALVANISING HAS BEEN BURNT OFF SHALL BE WIRE BRUSHED AND COLD GALVANISED WITH ZINC COATING COMPOUND.
- 2) WELDED JOINTS SHALL BE TESTED TO 100% VISUAL AND 10% DPT.
- 3) ADDITIONAL TAPPINGS WITH BLIND FLANGES SHALL BE PROVIDED AT SUITABLE LOCATIONS ON ALL HEADERS AT ALL FLOOR ELEVATIONS FOR FUTURE USE.

ITEM	SIZE	DESCRIPTION
MAINTENANCE JOINTS	ALL	FLANGED, TO BE KEPT JUST SUFFICIENT FOR MAINTENANCE
PIPE JOINTS	40 NB & BELOW	SW
	50 NB & ABOVE	BUTTWELDED
DRAIN (HYDRO)	ALL	25 NB
VENT (HYDRO)	ALL	15 NB
TEMP. CONN.	40 NB OR AS PER P&ID	FLANGED
PRESS. CONN.	25 NB OR AS PER P&ID	AS PER P & ID



**PIPING MATERIAL SPECIFICATION  
A2F**



<b>DOC. NO.</b> : 1019-PI-PMS-103	<b>CLIENT</b> : SUN PETROCHEMICALS PVT LTD, KHAMBHAT	<b>SHEET</b> : 3 OF 5
<b>PROJECT NO.</b> : 1019	<b>PROJECT</b> : BHASKAR FIELD	<b>REV</b> : 0

<b>ASME CLASS</b>	<b>CORROSION ALLOWANCE</b>	<b>BRANCH TABLE</b>	<b>PIPE CLASS:</b>
150#	NIL		A2F

T	TEES BW (EQ. OR RED.)
TS	TEES SW (EQ. OR RED.)
H	HALF COUPLING
P	PIPE TO PIPE

							T	150	<b>BRANCH PIPE</b>
						T	T	100	
					T	T	T	80	
				T	T	P	H	50	
		TS	TS	H	H	H	H	40	
	TS	TS	TS	H	H	H	H	25	
TS	TS	TS	TS	H	H	H	H	20	
TS	TS	TS	TS	H	H	H	H	15	
<b>15</b>	<b>20</b>	<b>25</b>	<b>40</b>	<b>50</b>	<b>80</b>	<b>100</b>	<b>150</b>		
<b>RUN PIPE</b>									



**PIPING MATERIAL SPECIFICATION  
A2F**



DOC. NO. : 1019-PI-PMS-103		CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT						SHEET : 4 OF 5	
PROJECT NO. : 1019		PROJECT : BHASKAR FIELD						REV : 0	
ASME CLASS		CORROSION ALLOWANCE						PIPE CLASS:	
150#		NIL						A2F	
ITEM	TYPE	END CONN.	DIAMETER RANGE		SCH./THK	FACE/ FINISH /RADIUS	DESIGN STD.	MATERIAL	REMARKS
			LOW	HIGH				DESCRIPTION	
PIPE	PIPE	PE	15	40	HVY.	-	IS 1239-1	IS 1239-1, ERW (HOT DIPPED GALVANIZED)	
	PIPE	BE	50	150	HVY.	-	IS 1239-1	IS 1239-1, ERW (HOT DIPPED GALVANIZED)	
FLANGES	SOCKET WELD	RF	15	40	150#	125-250 μAARH	ASME B16.5	ASTM A 105, GALV.	
	SLIP ON	RF	50	150	150#	125-250 μAARH	ASME B16.5	IS 2062 GR. B, GALV.	
	BLIND FLANGE	RF	15	150	150#	125-250 μAARH	ASME B16.5	IS 2062 GR. B, GALV.	
	SPECTACLE BLIND	FF	15	150	150#	125-250 μAARH	ASME B16.48	IS 2062 GR. B, GALV.	
FITTINGS	ELBOW 90°/45°	SW	15	40	3000#	-	ASME B16.11	ASTM A 105, GALV.	
	ELBOW 90°/45°	BW	50	150	SCH. 40	R = 1.5D	ASME B16.9	ASTM A 234 GR. WPB-S, GALV.	
	EQUAL/RED. TEE	SW	15	40	3000#	-	ASME B16.11	ASTM A 105, GALV.	
	EQUAL/RED. TEE	BW	50	150	SCH. 40	-	ASME B16.9	ASTM A 234 GR. WPB-S, GALV.	
	CONC./ECC RED.	BW	50	150	SCH. 40	-	ASME B16.9	ASTM A 234 GR. WPB-S, GALV.	
	CONC./ECC SWG.	PBE	15	80	3000#	-	BS 3799	ASTM A 105, GALV.	
	CAP	SW	15	40	3000#	-	ASME B16.11	ASTM A 105, GALV.	
	CAP	BW	50	150	SCH. 40	-	ASME B16.9	ASTM A 234 GR. WPB-S, GALV.	
	FULL COUPLING	SW	15	40	3000#	-	ASME B16.11	ASTM A 105, GALV.	
HALF COUPLING	SW	15	40	3000#	-	ASME B16.11	ASTM A 105, GALV.		
VALVES	BALL VALVE (FULL BORE)	RF/ B16.5	15	150	150#	125-250 μAARH	ISO 17292	BODY: ASTM A 216 GR. WCB, TRIM: SS304, SEAT: PTFE	
	CHECK VALVE (NON SLAM)	SAND CONN. B16.5	15	40	150#	125-250 μAARH	MNF. STD.	BODY: ASTM A 105, TRIM: 13% CR. STEEL	
	CHECK VALVE (DUAL PLATE)	SAND CONN. B16.5	50	150	150#	125-250 μAARH	API 594	BODY: ASTM A 216 GR. WCB, TRIM: 13% CR. STEEL	
	BUTTERFLY VALVE	SAND CONN. B16.5	50	150	150#	125-250 μAARH	API-609	BODY: ASTM A 216 GR. WCB, TRIM: 13% CR. STEEL, SEAT: PTFE	



**PIPING MATERIAL SPECIFICATION  
A2F**



DOC. NO. : 1019-PI-PMS-103		CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT					SHEET : 5 OF 5		
PROJECT NO. : 1019		PROJECT : BHASKAR FIELD					REV : 0		
ASME CLASS		CORROSION ALLOWANCE					PIPE CLASS:		
150#		NIL					A2F		
ITEM	TYPE	END CONN.	DIAMETER RANGE		SCH./THK	FACE/ FINISH /RADIUS	DESIGN STD.	MATERIAL	REMARKS
			LOW	HIGH				DESCRIPTION	
GASKET/ BOLT	STUD BOLT	-	15	150	-	-	IS 1363	BOLT : IS 1367 CLASS 4.6 (G.I.) NUT : IS 1367 CLASS 4 (G.I)	
	GASKET	-	15	150	2 mm/ 150#	-	ASME B16.21 ASME B16.5	CHAMPION STYLE AF 120	
STRAINER	Y-TYPE STRAINER	RF/ B16.5	15	50	150#	125-250 μAARH	MNF. STD	BODY: ASTM A 216 GR. WCB, TRIM: 13% CR. STEEL	
	BASKET TYPE STRAINER	RF/ B16.5	80	150	150#	125-250 μAARH	MNF. STD	BODY: ASTM A 216 GR. WCB, TRIM: 13% CR. STEEL	



PIPING MATERIAL SPECIFICATION  
A3A



DOC. NO. : 1019-PI-PMS-104

CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT

SHEET : 1 OF 5

PROJECT NO. : 1019

PROJECT : BHASKAR FIELD

REV : 0

PIPING MATERIAL SPECIFICATION  
FOR CLASS A3A


REV	DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY
1	03.02.2020	ISSUED FOR ENGINEERING	RZ	RZ	BP
0	06.06.2019	ISSUED FOR REVIEW	IJ	RZ	BP



**PIPING MATERIAL SPECIFICATION  
A3A**



<b>DOC. NO.</b> : 1019-PI-PMS-104		<b>CLIENT</b> : SUN PETROCHEMICALS PVT LTD, KHAMBHAT								<b>SHEET</b> : 2 OF 5	
<b>PROJECT NO.</b> : 1019		<b>PROJECT</b> : BHASKAR FIELD								<b>REV</b> : 0	
<b>ASME CLASS</b>	<b>CORROSION ALLOWANCE</b>	<b>TEMPERATURE</b>	<b>°C</b>	-29	38	50	100	150			<b>PIPE CLASS:</b>
150#	1.6 mm	<b>PRESSURE</b>	<b>kg/cm<sup>2</sup> g</b>	19.98	19.98	19.57	18.04	16.11			<b>A3A</b>

<b>SERVICE:</b>	DIESEL,FULE GAS/BLANKETING GAS, HOT OIL SUPPLY, HOT OIL RETURN, SERVO GAS 
<b>BASIC MATERIAL :</b>	CARBON STEEL

**NOTES:**

- 1) BUTT WELDED JOINT- 100% VISUAL, 10% RADIOGRAPHY
- 2) BRANCH CONNECTION- 100% VISUAL; DYE PENETRANT TEST-10% (FOR ROOT RUN/FINAL RUN)
- 3) VENT & DRAIN SHALL HAVE FLANGED ENDS.
- 4) TYPE OF STRAINERS ARE TENTATIVE, SELECTION OF STRAINER WILL BE AS PER P&ID

ITEM	SIZE	DESCRIPTION
MAINTENANCE JOINTS	ALL	FLANGED, TO BE KEPT JUST SUFFICIENT FOR MAINTENANCE.
PIPE JOINTS	40 NB & BELOW	SW
	50 NB & ABOVE	BUTTWELDED
DRAIN (HYDRO)	ALL	25 NB
VENT (HYDRO)	ALL	15 NB
TEMP. CONN.	40 NB OR AS PER P&ID	FLANGED
PRESS. CONN.	25 NB OR AS PER P&ID	AS PER P&ID



**PIPING MATERIAL SPECIFICATION  
A3A**



DOC. NO. : 1019-PI-PMS-104  
PROJECT NO. : 1019

CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT  
PROJECT : BHASKAR FIELD

SHEET : 3 OF 5  
REV : 0

ASME CLASS	CORROSION ALLOWANCE
150#	1.6 mm
T	TEES BW (EQ. OR RED.)
TS	TEES SW (EQ. OR RED.)
H	HALF COUPLING (SW)
P	PIPE TO PIPE
R	PIPE TO PIPE, REINFORCED

**BRANCH TABLE**

PIPE CLASS:  
A3A

										T	300	BRANCH PIPE
									T	T	250	
								T	T	T	200	
							T	T	T	P	150	
						T	T	T	P	P	100	
					T	T	T	P	P	P	80	
				T	T	T	P	P	P	P	50	
			TS	T	H	H	H	H	H	H	40	
		TS	TS	H	H	H	H	H	H	H	25	
	TS	TS	TS	H	H	H	H	H	H	H	20	
TS	TS	TS	TS	H	H	H	H	H	H	H	15	
15	20	25	40	50	80	100	150	200	250	300		
RUN PIPE												



**PIPING MATERIAL SPECIFICATION  
A3A**



DOC. NO. : 1019-PI-PMS-104		CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT				SHEET : 4 OF 5	
PROJECT NO. : 1019		PROJECT : BHASKAR FIELD				REV : 0	
ASME CLASS	CORROSION ALLOWANCE					PIPE CLASS:	
150#	1.6 mm					A3A	

ITEM	TYPE	END CONN.	DIAMETER RANGE		SCH./THK	FACE/ FINISH /RADIUS	DESIGN STD.	MATERIAL	REMARKS
			LOW	HIGH				DESCRIPTION	
PIPE	PIPE	PE	15	40	SCH. 80	-	ASME B36.10	ASTM A 106 GR. B (SEAMLESS)	
	PIPE	BE	50	150	SCH. 40	-	ASME B36.10	ASTM A 106 GR. B (SEAMLESS)	
	PIPE	BE	200	300	SCH. 20	-	ASME B36.10	ASTM A 106 GR. B (SEAMLESS)	
	NIPPLE	PBE/PE-NPT	15	40	SCH. 80		ASME B36.10	ASTM A 106 GR. B (SEAMLESS)	

FLANGES	SOCKET WELD	RF	15	40	150#/ SCH. 80	125-250 μAARH	ASME B16.5	ASTM A 105	
	SLIP ON	RF	50	300	150#	125-250 μAARH	ASME B16.5	ASTM A 105	
	BLIND	RF	15	300	150#	125-250 μAARH	ASME B16.5	ASTM A 105	
	SPECTACLE BLIND	FF	15	300	150#	125-250 μAARH	ASME B16.48	ASTM A 105	

FITTINGS	ELBOW 90°/45°	SW	15	40	3000#	-	ASME B16.11	ASTM A 105	
	ELBOW 90°/45°	BW	50	150	SCH. 40	R = 1.5D	ASME B16.9	ASTM A 234 GR. WPB-S	
	ELBOW 90°/45°	BW	200	300	SCH. 20	R = 1.5D	ASME B16.9	ASTM A 234 GR. WPB-S	
	EQUAL/RED. TEE	SW	15	40	3000#	-	ASME B16.11	ASTM A 105	
	EQUAL/RED. TEE	BW	50	150	SCH. 40	-	ASME B16.9	ASTM A 234 GR. WPB-S	
	EQUAL/RED. TEE	BW	200	300	SCH. 20	-	ASME B16.9	ASTM A 234 GR. WPB-S	
	CONC./ECC RED.	BW	50	150	SCH. 40	-	ASME B16.9	ASTM A 234 GR. WPB-S	
	CONC./ECC RED.	BW	200	300	SCH. 20	-	ASME B16.9	ASTM A 234 GR. WPB-S	
	CONC./ECC SWG.	PBE	15	80	3000#	-	BS 3799	ASTM A 105	
	CAP	SW	15	40	3000#	-	ASME B16.11	ASTM A 105	
	CAP	BW	50	150	SCH. 40	-	ASME B16.9	ASTM A 234 GR. WPB-S	
	CAP	BW	200	300	SCH. 20	-	ASME B16.9	ASTM A 234 GR. WPB-S	
	FULL COUPLING	SW	15	40	3000#	-	ASME B16.11	ASTM A 105	
	FULL COUPLING	NPT	15	40	3000#	-	ASME B16.11	ASTM A 105	
HALF COUPLING	SW	15	40	3000#	-	ASME B16.11	ASTM A 105		

VALVE	S	BALL VALVE (REDUCE BORE)	RF/ B16.5	15	300	150#	125-250 μAARH	BS EN ISO 17292	BODY: ASTM A 216 GR. WCB, TRIM: SS304, SEAT: PTFE	
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**PIPING MATERIAL SPECIFICATION  
A3A**



DOC. NO. : 1019-PI-PMS-104		CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT					SHEET : 5 OF 5		
PROJECT NO. : 1019		PROJECT : BHASKAR FIELD					REV : 0		
ASME CLASS		CORROSION ALLOWANCE					PIPE CLASS:		
150#		1.6 mm					A3A		
ITEM	TYPE	END CONN.	DIAMETER RANGE		SCH./THK	FACE/ FINISH /RADIUS	DESIGN STD.	MATERIAL	REMARKS
			LOW	HIGH				DESCRIPTION	
VALVES	GLOBE VALVE	RF/ B16.5	50	100	150#	125-250 μAARH	BS 1873	BODY: ASTM A 216 GR. WCB, TRIM: 13% CR. STEEL	
	CHECK VALVE (LIFT TYPE)	SAND CONN. B16.5	15	40	150#	125-250 μAARH	MNF. STD.	BODY: ASTM A 105, TRIM: 13% CR. STEEL	△ 1
	CHECK VALVE (SWING DISC)	RF/ B16.5	50	300	150#	125-250 μAARH	API 594	BODY: ASTM A 216 GR. WCB, TRIM: 13% CR. STEEL	△ 1
	BUTTERFLY VALVE	SAND CONN. B16.5	80	300	150#	125-250 μAARH	API 609	BODY: ASTM A 216 GR WCB; TRIM & SPINDLE: 13% CR STEEL; SEAT: PTFE; DISC: PTFE LINED	
	GATE VALVE	SW,3000#/B16.11	15	40	800#	125-250 μAARH	API 602	BODY: ASTM A 105, TRIM: 13% CR. STEEL	△ 1
	GATE VALVE	RF/ B16.5	50	300	150#	125-250 μAARH	API 600	BODY: ASTM A 216 GR WCB; TRIM: 13% CR STEEL	△ 1
GASKET/BOLT	STUD BOLT	-	15	300	-	-	ASME B18.2.1 ASME B18.2.2	BOLT : A193 GR. B7, NUT : A194 GR. 2H	
	GASKET	-	15	300	4.5 mm/ 150#	-	ASME B16.21 ASME B16.5	SPIRAL WOUND PTFE FILL, SS304 INNER RING / CS OUTER RINGS	
STRAINERS	Y-TYPE STRAINER	RF/ B16.5	15	80	150#	125-250 μAARH	MNF. STD	BODY: ASTM A 216 GR. WCB, TRIM: 13% CR. STEEL	
	BASKET TYPE STRAINER	RF/ B16.5	100	300	150#	125-250 μAARH	MNF. STD	BODY: ASTM A 216 GR. WCB, TRIM: 13% CR. STEEL	



PIPING MATERIAL SPECIFICATION  
A6J



DOC. NO.	: 1019-PI-PMS-105	CLIENT	: SUN PETROCHEMICALS PVT LTD, KHAMBHAT	SHEET	: 1 OF 4
PROJECT NO.	1019	PROJECT	: BHASKAR FIELD	REV	0

PIPING MATERIAL SPECIFICATION  
FOR CLASS A6J

0	19.11.20	ISSUED FOR ENGINEERING	SD	RZ	BP
REV	DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY



PIPING MATERIAL SPECIFICATION  
A6J



DOC. NO. : 1019-PI-PMS-105		CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT										SHEET : 2 OF 4			
PROJECT NO. 1019		PROJECT : BHASKAR FIELD										REV 0			
ASME CLASS	CORROSION ALLOWANCE	TEMPERATURE	°C	80											PIPE CLASS:
150#	NIL	PRESSURE	kg/cm <sup>2</sup> g	8											A6J
SERVICE:	RAW WATER														
BASIC MATERIAL :	UNPLASTICIZED POLYVINYL CHLORIDE (UPVC)														

NOTES:

- 1) STUB-INS, ROD & FUSION WELDING ARE NOT PERMITTED.
- 2) CEMENT SOCKET JOINTS WITH UPVC SOLVENT CEMENT.



**PIPING MATERIAL SPECIFICATION  
A6J**



<b>DOC. NO.</b> : 1019-PI-PMS-105		<b>CLIENT</b> : SUN PETROCHEMICALS PVT LTD, KHAMBHAT		<b>SHEET</b> : 3 OF 4	
<b>PROJECT NO.</b> 1019		<b>PROJECT</b> : BHASKAR FIELD		<b>REV</b> 0	
<b>ASME CLASS</b>	<b>CORROSION ALLOWANCE</b>	<b>BRANCH TABLE</b>			<b>PIPE CLASS:</b>
150#	NIL				<b>A6J</b>
T	TEE EQ. OR REDUCING, SOCKET CONNECTION				

								T	T	150	<b>BRANCH PIPE</b>
								T	T	100	
								T	T	80	
								T	T	50	
								T	T	40	
								T	T	25	
T	T	T	T	T	T	T	T	T	T	20	
20	25	40	50	80	100	150	200	<b>RUN PIPE</b>			



**PIPING MATERIAL SPECIFICATION  
A6J**



DOC. NO. : 1019-PI-PMS-105		CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT					SHEET : 4 OF 4		
PROJECT NO. 1019		PROJECT : BHASKAR FIELD					REV 0		
ASME CLASS		CORROSION ALLOWANCE					PIPE CLASS:		
150#		NIL					A6J		
ITEM	TYPE	END CONN.	DIAMETER RANGE		SCH./THK.	FACE/ FINISH /RADIUS	DESIGN STD.	MATERIAL	REMARKS
			LOW	HIGH				DESCRIPTION	
PIPE	PIPE	PE	15	150	SCH. 80	-	ASTM D1785	ASTM D 1785 UPVC 1120 CL. 12454-B, SEAMLESS	
FLANGES	SOCKET	SOCKET	15	150	SCH. 80/ 150#	-	ASME B16.5	ASTM D 1784 CL. 12454-B, VANSTONE SOCKET TYPE WITH SOLID BACKING FLANGE	
	BLIND FLANGE	FF	15	150	150#	-	ASME B16.5		
FITTINGS	ELBOW 90°/45°	Socket	15	150	SCH. 80	-	ASTM D2467	ASTM D 2467; CL. 12454-B, SEAMLESS MOULDED SOCKET TYPE PRESSURE FITTINGS	
	EQUAL/RED. TEE	Socket	15	150	SCH. 80	-	ASTM D2467		
	CONC./ECC RED.	Socket	15	150	SCH. 80	-	ASTM D2467		
	CAP	Socket	15	150	SCH. 80	-	ASTM D2467		
	COUPLING	Socket	15	150	SCH. 80	-	ASTM D2467		
VALVES	BALL VALVE (FULL BORE)	FF/ B16.5	15	150	150#	-	MNF. STD.	BODY: UPVC, BALL: UPVC, SEAT: UPVC	
	CHECK VALVE (WAFER TYPE)	FF/B 16.5	50	150	150#	-	MNF. STD.	BODY: UPVC, BALL: UPVC, SEAT: UPVC	
GASKET/BOLT	STUD BOLT	-	15	150	-	-	ASME B18.2.1 ASME B18.2.2	BOLT : A 193 GR. B7 NUT : A 194 GR. 2H	WITH IS 2062 PLAIN WASHERS
	GASKET	-	15	150	3mm/ 150#	-	B16.21 ANSI B16.5	FULL FACE, BUTYL RUBBER	
STRAINER	STRNR PERM.	FF/ B16.5	15	80	150#	-	MNF. STD.	BODY : UPVC; INT : 13% CR STEEL	Y-TYPE



PIPING MATERIAL SPECIFICATION  
A7A



DOC. NO. : 1019-PI-PMS-106

CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT

SHEET : 1 OF 5

PROJECT NO. 1019

PROJECT : BHASKAR FIELD

REV 3

PIPING MATERIAL SPECIFICATION  
FOR CLASS A7A

REV	DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY
3	07.08.2020	ISSUED FOR ENGINEERING	SD	RZ	BP
2	03.02.2020	ISSUED FOR ENGINEERING	RZ	RZ	BP
1	18.11.2019	REVISED AS MARKED	IJ	RZ	BP
0	06.06.2019	ISSUED FOR REVIEW	IJ	RZ	BP



PIPING MATERIAL SPECIFICATION  
A7A



DOC. NO. : 1019-PI-PMS-106 CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT SHEET : 2 OF 5

PROJECT NO. 1019 PROJECT : BHASKAR FIELD REV 3

ASME CLASS	CORROSION ALLOWANCE	TEMPERATURE	°C	-29	38	50	100	150							PIPE CLASS:
150#	3 mm	PRESSURE	kg/cm <sup>2</sup> g	19.98	19.98	19.57	18.04	16.11							A7A

SERVICE: EFFLUENT WATER, FLARE VENT, RAW WATER, VENT , EXPORT OIL , FIRE WATER ,



BASIC MATERIAL : CARBON STEEL (SEAMLESS)

NOTES:

- 1) BUTT WELDED JOINT- 100% VISUAL, 10% RADIOGRAPHY
- 2) BRANCH CONNECTION- 100% VISUAL; DYE PENETRANT TEST-10% (FOR ROOT RUN/FINAL RUN)
- 3) VENT & DRAIN SHALL HAVE FLANGED ENDS.
- 4) TYPE OF STRAINERS ARE TENTATIVE, SELECTION OF STRAINER WILL BE AS PER P&ID

ITEM	SIZE	DESCRIPTION
MAINTENANCE JOINTS	ALL	FLANGED, TO BE KEPT MINIMUM
PIPE JOINTS	40 NB & BELOW	SW
	50 NB & ABOVE	BUTTWELDED
DRAIN (HYDRO)	ALL	25 NB
VENT (HYDRO)	ALL	15 NB
TEMP. CONN.	40 NB OR AS PER P&ID	FLANGED
PRESS. CONN.	25 NB OR AS PER P&ID	AS PER P&ID



			<b>PIPING MATERIAL SPECIFICATION A7A</b>								
DOC. NO. : 1019-PI-PMS-106			CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT						SHEET : 4 OF 5		
PROJECT NO. 1019			PROJECT : BHASKAR FIELD						REV 3		
ASME CLASS		CORROSION ALLOWANCE								PIPE CLASS:	
150#		3 mm								A7A	
ITEM	TYPE	END CONN.	DIAMETER RANGE		SCH./THK.	FACE/ FINISH /RADIUS	DESIGN STD.	MATERIAL DESCRIPTION	REMARKS		
			LOW	HIGH							
PIPE	PIPE	PE	15	20	SCH. 160	-	ASME B36.10	ASTM A 106 GR. B (SEAMLESS)			
	PIPE	PE	25	40	SCH. 80	-	ASME B36.10	ASTM A 106 GR. B (SEAMLESS)			
	PIPE	BE	50	50	SCH. 80	-	ASME B36.10	ASTM A 106 GR. B (SEAMLESS)			
	PIPE	BE	80	150	SCH. 40	-	ASME B36.10	ASTM A 106 GR. B (SEAMLESS)	REV-3		
	PIPE	BE	200	300	SCH. 40	-	ASME B36.10	ASTM A 53 GR. B (ERW)	REV-3 (FOR FW ONLY)		
	PIPE	BE	350	350	SCH. 40	-	ASME B36.10	ASTM A 53 GR. B (ERW)	REV-3 (FOR FW ONLY)		
	NIPPLE	PBE/ PE-NPT	15	40	SCH. 160	-	ASME B36.10	ASTM A 106 GR. B (SEAMLESS)			
FLANGES	SLIP ON	RF	50	350	150#	125-250 μAARH	ASME B16.5	ASTM A 105	REV-3 (FOR FW ONLY)		
	SOCKET WELD	RF	15	20	150#/ SCH.160	125-250 μAARH	ASME B16.5	ASTM A 105			
	SOCKET WELD	RF	25	40	150#/ SCH.80	125-250 μAARH	ASME B16.5	ASTM A 105			
	WELD NECK	RF	50	50	150# / SCH.80	125-250 μAARH	ASME B16.5	ASTM A 105			
	WELD NECK	RF	80	150	150# / SCH.40	125-250 μAARH	ASME B16.5	ASTM A 105	REV-3		
	BLIND FLANGE	RF	15	350	150#	125-250 μAARH	ASME B16.5	ASTM A 105	REV-3		
	SPECTACLE BLIND	FF	15	350	150#	125-250 μAARH	ASME B16.48	ASTM A 105	REV-3		
FITTINGS	ELBOW 90°/45°	SW	15	20	6000#	-	ASME B16.11	ASTM A 105			
	ELBOW 90°/45°	SW	25	40	3000#	-	ASME B16.11	ASTM A 105			
	ELBOW 90°/45°	BW	50	50	SCH. 80	R = 1.5D	ASME B16.9	ASTM A 234 GR. WPB-S			
	ELBOW 90°/45°	BW	80	150	SCH. 40	R = 1.5D	ASME B16.9	ASTM A 234 GR. WPB-S			
	ELBOW 90°/45°	BW	200	300	SCH. 40	R = 1.5D	ASME B16.9	ASTM A 234 GR. WPB-S	REV-3 (FOR FW ONLY)		
	ELBOW 90°/45°	BW	350	350	SCH. 40	R = 1.5D	ASME B16.9	ASTM A 234 GR. WPB-S	REV-3 (FOR FW ONLY)		
	EQUAL/RED. TEE	SW	15	20	6000#	-	ASME B16.11	ASTM A 105			
	EQUAL/RED. TEE	SW	25	40	3000#	-	ASME B16.11	ASTM A 105			
	EQUAL/RED. TEE	BW	50	50	SCH. 80	-	ASME B16.9	ASTM A 234 GR. WPB -S			
	EQUAL/RED. TEE	BW	80	150	SCH. 40	-	ASME B16.9	ASTM A 234 GR. WPB -S			
	EQUAL/RED. TEE	BW	200	300	SCH. 40	-	ASME B16.9	ASTM A 234 GR. WPB-S	REV-3 (FOR FW ONLY)		
	EQUAL/RED. TEE	BW	350	350	SCH. 40	-	ASME B16.9	ASTM A 234 GR. WPB-S	REV-3 (FOR FW ONLY)		
	CONC./ECC RED.	BW	50	50	SCH. 80	-	ASME B16.9	ASTM A 234 GR. WPB-S			
	CONC./ECC RED.	BW	80	150	SCH. 40	-	ASME B16.9	ASTM A 234 GR. WPB-S			
	CONC./ECC RED.	BW	200	300	SCH. 40	-	ASME B16.9	ASTM A 234 GR. WPB-S	REV-3 (FOR FW ONLY)		
	CONC./ECC RED.	BW	350	350	SCH. 40	-	ASME B16.9	ASTM A 234 GR. WPB-S	REV-3 (FOR FW ONLY)		
	CONC./ECC SWG.	PBE	15	80	3000#	-	BS 3799	ASTM A 105			
	LETROLET	SW	25	40	3000#	-	MSS SP 97	ASTM A 105	REV-3		
	LETROLET	BW	50	150	3000#	-	MSS SP 97	ASTM A 105	REV-3		
	CAP	SW	15	20	6000#	-	ASME B16.11	ASTM A 105			
CAP	SW	25	40	3000#	-	ASME B16.11	ASTM A 105				
CAP	BW	50	50	SCH.80	-	ASME B16.9	ASTM A 234 GR. WPB-S				
CAP	BW	80	150	SCH.40	-	ASME B16.9	ASTM A 234 GR. WPB-S				



**PIPING MATERIAL SPECIFICATION  
A7A**



DOC. NO. : 1019-PI-PMS-106		CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT						SHEET : 5 OF 5	
PROJECT NO. 1019		PROJECT : BHASKAR FIELD						REV 3	
ASME CLASS		CORROSION ALLOWANCE						PIPE CLASS:	
150#		3 mm						A7A	
ITEM	TYPE	END CONN.	DIAMETER RANGE		SCH./THK.	FACE/ FINISH /RADIUS	DESIGN STD.	MATERIAL	REMARKS
			LOW	HIGH				DESCRIPTION	
FITTINGS	FULL COUPLING	SW / NPT	15	20	6000#	-	ASME B16.11	ASTM A 105	
	FULL COUPLING	SW / NPT	25	40	3000#	-	ASME B16.11	ASTM A 105	
	HALF COUPLING	SW	15	20	6000#	-	ASME B16.11	ASTM A 105	
	HALF COUPLING	SW	25	40	3000#	-	ASME B16.11	ASTM A 105	
	WELDOLET	BW	50	50	SCH.80	-	MSS SP 97	ASTM A 105	
	WELDOLET	BW	80	150	SCH.40	-	MSS SP 97	ASTM A 105	
VALVE	BALL VALVE (REDUCE BORE)	RF/ B16.5	15	150	150#	125-250 μAARH	EN ISO 17292	BODY: ASTM A 216 GR. WCB, TRIM: SS304, SEAT: PTFE	
	GATE VALVE	SW	15	40	800#	-	API-602	BODY : ASTM A 105, TRIM- STELLITED.	
	GATE VALVE	RF/ B16.5	50	150	150#	125-250 μAARH	API-600	BODY-ASTM A 216 GR.WCB, TRIM-STELLITED, STEM-13% CR. STEEL.	
	GATE VALVE	RF/ B16.5	200	350	150#	125-250 μAARH	API-600	BODY-ASTM A 216 GR.WCB, TRIM: 13% CR. STEEL, STEM-13% CR. STEEL.	REV-3 (FOR FW ONLY)
	GLOBE VALVE	SW	15	40	800#	-	EN ISO 15761	BODY : ASTM A 105, TRIM- STELLITED, STEM - 13% CR. STEEL	
	GLOBE VALVE	RF/ B16.5	50	150	150#	125-250 μAARH	BS-1873	BODY-ASTM A 216 GR.WCB, TRIM-STELLITED, STEM-13% CR. STEEL.	
	CHECK VALVE (LIFT TYPE)	SW	15	40	800#	-	EN ISO 15761	BODY - ASTM A 105, TRIM - STELLITED.	
	CHECK VALVE (SWING DISC)	RF/ B16.5	50	200	150#	125-250 μAARH	API- 594	BODY: ASTM A 216 GR. WCB, TRIM-13% CR.STEEL	REV-3
GASKET/BOLT	STUD BOLT	-	15	150	-	-	ASME B18.2.1 ASME B18.2.2	BOLT : A 193 GR. B7 NUT : A 194 GR. 2H	
	GASKET	-	15	150	4.5MM THK./150#	-	ASME B16.20 ASME B16.5	SPIRAL WOUND GRAPHOIL FILLED, SS316 INNER AND CS OUTER RINGS.	



PIPING MATERIAL SPECIFICATION  
B7A



DOC. NO. : 1019-PI-PMS-107	CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT	SHEET : 1 OF 5
PROJECT NO. 1019	PROJECT : BHASKAR FIELD	REV 2

PIPING MATERIAL SPECIFICATION  
FOR CLASS B7A

REV	DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY
2	05.06.20	ISSUED FOR ENGINEERING	SD	RZ	BP
1	03.02.2020	ISSUED FOR ENGINEERING	RZ	RZ	BP
0	18.09.2019	ISSUED FOR REVIEW	IJ	RZ	BP



**PIPING MATERIAL SPECIFICATION  
B7A**



DOC. NO. : 1019-PI-PMS-107      CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT      SHEET : 2 OF 5

PROJECT NO. 1019      PROJECT : BHASKAR FIELD      REV 2

ASME CLASS	CORROSION ALLOWANCE	TEMPERATURE	°C	-29	38	50	100	150						PIPE CLASS:
300#	3 mm	PRESSURE	kg/cm <sup>2</sup> g	52.11	52.11	51.08	47.52	45.98						B7A

SERVICE: PROCESS LIQUID, PROCESS VAPOR, ~~BOTTOM RECYCLE~~, WELL FLUID, EXPORT OIL , HEAVY OIL, SERVO GAS △  
2

BASIC MATERIAL : CARBON STEEL (SEAMLESS)

**NOTES:**

- 1) NDT OF WELDS SHALL BE AS FOLLOWS :  
     RADIOGRAPHY : ALL BUTT WELDS - 100%  
     MPI : SOCKET WELD - 100%
- 2) ALL VENT AND DRAIN SHALL BE PROVIDED WITH GATE VALVE WITH BLIND FLANGE ASSEMBLY UNLESS OTHERWISE INDICATED IN P & ID.
- 3) PIPING DESIGN AS PER ASME B31.3
- 4) ALL BRANCH CONNECTIONS INCLUDING VENT, DRAIN, PRESSURE AND TEMPERATURE CONNECTION SHALL BE AS PER BRANCH CONNECTION TABLE.
- 5) FOR VALVE REFER RESPECTIVE VALVE DATA SHEET.

ITEM	SIZE	DESCRIPTION
MAINTENANCE JOINTS	ALL	FLANGED, TO BE KEPT MINIMUM
PIPE JOINTS	40 NB & BELOW	FULL COUPLING
	50 NB & ABOVE	BUTTWELDED
DRAIN (HYDRO)	ALL	25 NB
VENT (HYDRO)	ALL	15 NB
TEMP. CONN.	40 NB OR AS PER P&ID	FLANGED
PRESS. CONN.	25 NB OR AS PER P&ID	HALF COUPLING+PIPE+FLANGE+VALVE (SPEC. AS PER P&ID)



**PIPING MATERIAL SPECIFICATION  
B7A**



DOC. NO. : 1019-PI-PMS-107

CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT

SHEET : 3 OF 5

PROJECT NO. 1019

PROJECT : BHASKAR FIELD

REV 2

ASME CLASS	CORROSION ALLOWANCE
300#	3 mm
T	TEES/ RED. TEE
W	WELDOLETS
S	SOCKOLETS

**BRANCH TABLE**

**PIPE CLASS:  
B7A**

									T	300	<b>BRANCH PIPE</b>
								T	T	250	
							T	T	T	200	
						T	T	T	T	150	
					T	T	T	W	W	100	
			T	T	T	W	W	W	W	80	
		T	S	S	S	S	S	S	S	50	
	T	T	S	S	S	S	S	S	S	40	
T	T	T	S	S	S	S	S	S	S	25	
T	T	T	S	S	S	S	S	S	S	20	
										15	
20	25	40	50	80	100	150	200	250	300		
<b>RUN PIPE</b>											



**PIPING MATERIAL SPECIFICATION  
B7A**



DOC. NO. : 1019-PI-PMS-107		CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT						SHEET : 4 OF 5			
PROJECT NO. 1019		PROJECT : BHASKAR FIELD						REV 2			
ASME CLASS		CORROSION ALLOWANCE								PIPE CLASS:	
300#		3 mm								B7A	
ITEM	TYPE	END CONN.	DIAMETER RANGE		SCH./THK.	FACE/ FINISH /RADIUS	DESIGN STD.	MATERIAL		REMARKS	
			LOW	HIGH				DESCRIPTION			
PIPE	PIPE	PE	15	20	SCH. 160	-	ASME B36.10	ASTM A 106 GR. B (SEAMLESS)			
	PIPE	PE	25	40	SCH. 80	-	ASME B36.10	ASTM A 106 GR. B (SEAMLESS)			
	PIPE	BE	50	50	SCH. 80	-	ASME B36.10	ASTM A 106 GR. B (SEAMLESS)			
	PIPE	BE	80	300	SCH. 40	-	ASME B36.10	ASTM A 106 GR. B (SEAMLESS)			
	NIPPLE	PBE/ PE-NPT	15	40	SCH. 160	-	ASME B36.10	ASTM A 106 GR. B (SEAMLESS)			
FLANGES	SOCKET WELD	RF	15	40	300#/ SCH.160	125-250 μAARH	ASME B16.5	ASTM A 105			
	WELD NECK	RF	50	50	300# / SCH.80	125-250 μAARH	ASME B16.5	ASTM A 105			
	WELD NECK	RF	80	300	300# / SCH.40	125-250 μAARH	ASME B16.5	ASTM A 105			
	BLIND FLANGE	RF	15	300	300#	125-250 μAARH	ASME B16.5	ASTM A 105			
	SPECTACLE BLIND	FF	15	40	300#	125-250 μAARH	ASME B16.48	ASTM A 105			
	SPECTACLE BLIND	FF	50	150	300#	125-250 μAARH	ASME B16.48	ASTM A 105			
FITTINGS	ELBOW 90°/45°	SW	15	20	6000#	-	ASME B16.11	ASTM A 105			
	ELBOW 90°/45°	SW	25	40	3000#	-	ASME B16.11	ASTM A 105			
	ELBOW 90°/45°	BW	50	50	SCH.80	R = 1.5D	ASME B16.9	ASTM A 234 GR. WPB-S			
	ELBOW 90°/45°	BW	80	300	SCH.40	R = 1.5D	ASME B16.9	ASTM A 234 GR. WPB-S			
	EQUAL/RED. TEE	SW	15	20	6000#	-	ASME B16.11	ASTM A 105			
	EQUAL/RED. TEE	SW	25	40	3000#	-	ASME B16.11	ASTM A 105			
	EQUAL/RED. TEE	BW	50	50	SCH.80	-	ASME B16.9	ASTM A 234 GR. WPB-S			
	EQUAL/RED. TEE	BW	80	300	SCH.40	-	ASME B16.9	ASTM A 234 GR. WPB-S			
	CONC./ECC RED.	BW	80	300	SCH.40	-	ASME B16.9	ASTM A 234 GR. WPB -S			
	CONC./ECC SWG.	PBE	15	80	3000#	-	BS 3799	ASTM A 105			
	CAP	SW	15	20	6000#	-	ASME B16.11	ASTM A 105			
	CAP	SW	25	40	3000#	-	ASME B16.11	ASTM A 105			
	CAP	BW	50	50	SCH.80	-	ASME B16.9	ASTM A 234 GR. WPB -S			
CAP	BW	80	300	SCH.40	-	ASME B16.9	ASTM A 234 GR. WPB -S				

2



**PIPING MATERIAL SPECIFICATION  
B7A**



DOC. NO. : 1019-PI-PMS-107		CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT						SHEET : 5 OF 5			
PROJECT NO. 1019		PROJECT : BHASKAR FIELD						REV 2			
ASME CLASS		CORROSION ALLOWANCE								PIPE CLASS:	
300#		3 mm								B7A	
ITEM	TYPE	END CONN.	DIAMETER RANGE		SCH./THK.	FACE/ FINISH /RADIUS	DESIGN STD.	MATERIAL		REMARKS	
			LOW	HIGH				DESCRIPTION			
FITTINGS	FULL COUPLING	SW / NPT	15	20	6000#	-	ASME B16.11	ASTM A 105			
	FULL COUPLING	SW / NPT	25	40	3000#	-	ASME B16.11	ASTM A 105			
	HALF COUPLING	SW	15	20	6000#	-	ASME B16.11	ASTM A 105			
	HALF COUPLING	SW	25	40	3000#	-	ASME B16.11	ASTM A 105			
	SOCKOLET	SW	15	20	6000#	-	MSS SP 97	ASTM A 105			
	SOCKOLET	SW	25	40	3000#	-	MSS SP 97	ASTM A 105			
	WELDOLET	BW	50	50	SCH.80	-	MSS SP 97	ASTM A 105			
WELDOLET	BW	80	150	SCH.40	-	MSS SP 97	ASTM A 105				
VALVES	BALL VALVE (REDUCE BORE)	RF/ B16.5	15	40	300#	125-250 μAARH	EN ISO 17292	BODY: ASTM A 105,SEAT: RPTFE			
	BALL VALVE (REDUCE BORE)	RF/ B16.5	50	300	300#	125-250 μAARH	EN ISO 17292	BODY: ASTM A 216 GR. WCB, TRIM SEAT AISI 4140			
	GATE VALVE	SW	15	40	800#	-	API-602	BODY : ASTM A 105, TRIM- STELLITED.			
	GATE VALVE	RF/ B16.5	50	300	300#	125-250 μAARH	API-600	BODY-ASTM A 216 GR.WCB, TRIM-STELLITED, STEM-13% CR. STEEL.			
	GLOBE VALVE	SW	15	40	800#	-	EN ISO 15761	BODY : ASTM A 105, TRIM- STELLITED, STEM - 13% CR. STEEL			
	GLOBE VALVE	RF/ B16.5	50	300	300#	125-250 μAARH	BS-1873	BODY-ASTM A 216 GR.WCB, TRIM-STELLITED, STEM-13% CR. STEEL.			
	CHECK VALVE (LIFT)	SW	15	40	800#	-	EN ISO 15761	BODY - ASTM A 105, TRIM - STELLITED.			
	CHECK VALVE SWING CHECK)	RF/ B16.5	50	300	300#	125-250 μAARH	API-594	BODY-ASTM A 216 GR.WCB, TRIM-STELLITED, STEM-13% CR. STEEL.			
GASKET/BOLT	STUD BOLT	-	15	300	-	-	ASME B18.2.1 ASME B18.2.2	BOLT : A 193 GR. B7 NUT : A 194 GR. 2H			
	GASKET	-	15	300	4.5MM THK./300#	-	ASME B16.20 ASME B16.5	SPIRAL WOUND GRAPHOIL FILLED, SS316 INNER AND CS OUTER RINGS.			



PIPING MATERIAL SPECIFICATION  
B8A



DOC. NO.	: 1019-PI-PMS-108	CLIENT	: SUN PETROCHEMICALS PVT LTD, KHAMBHAT	SHEET	: 1 OF 5
PROJECT NO.	1019	PROJECT	: BHASKAR FIELD	REV	2

PIPING MATERIAL SPECIFICATION  
FOR CLASS B8A

REV	DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY
2	11.02.2020	REVISED AS MARKED	RZ	RZ	BP
1	03.02.2020	ISSUED FOR ENGGINEERING	RZ	RZ	BP
0	20.09.2019	ISSUED FOR REVIEW	IJ	RZ	BP



**PIPING MATERIAL SPECIFICATION  
B8A**



<b>DOC. NO.</b> : 1019-PI-PMS-108		<b>CLIENT</b> : SUN PETROCHEMICALS PVT LTD, KHAMBHAT							<b>SHEET</b> : 2 OF 5			
<b>PROJECT NO.</b> 1019		<b>PROJECT</b> : BHASKAR FIELD							<b>REV</b> 2			
<b>ASME CLASS</b>	<b>CORROSION ALLOWANCE</b>	<b>TEMPERATURE</b>	<b>°C</b>	-29	38	50	100					<b>PIPE CLASS:</b>
300#	3 mm	<b>PRESSURE</b>	<b>kg/cm<sup>2</sup> g</b>	52.11	52.11	51.08	47.52					<b>B8A</b>

**SERVICE:** WELL FLUID (PIPELINE)

**BASIC MATERIAL :** CARBON STEEL (SEAMLESS)

**NOTES:**

- 1) NDT OF WELDS SHALL BE AS FOLLOWS :  
 RADIOGRAPHY : ALL BUTT WELDS - 100%  
 MPI : SOCKET WELD - 100%
- 2) ALL VENT AND DRAIN SHALL BE PROVIDED WITH GATE VALVE WITH BLIND FLANGE ASSEMBLY UNLESS OTHERWISE INDICATED IN P & ID.
- 3) PIPING DESIGN AS PER ASME B31.4 & OISD 141
- 4) ALL BRANCH CONNECTIONS INCLUDING VENT, DRAIN, PRESSURE AND TEMPERATURE CONNECTION SHALL BE AS PER BRANCH CONNECTION TABLE.
- 5) FOR VALVE REFER RESPECTIVE VALVE DATA SHEET.
- 6) BARRED TEE SHALL BE WELDED TYPE FOR USE IN MAINLINE ONLY. MATERIAL SHALL BE AS PER ATTACHED TABLE-1 FOR PIPELINE SPECIALITY ITEMS.
- 7) LR BEND, IJ, L/R, PIG SIG. SHALL BE FOR USE IN MAINLINE ONLY. (SPACIAL ITEMS)

ITEM	SIZE	DESCRIPTION
MAINTENANCE JOINTS	ALL	FLANGED, TO BE KEPT MINIMUM
PIPE JOINTS	40 NB & BELOW	FULL COUPLING 3000#
	50 NB & ABOVE	BUTTWELDED
DRAIN (HYDRO)	ALL	25 NB
VENT (HYDRO)	ALL	15 NB
TEMP. CONN.	40 NB OR AS PER P&ID	FLANGED
PRESS. CONN.	25 NB OR AS PER P&ID	HALF COUPLING+PIPE+FLANGE+VALVE (SPEC. AS PER P&ID)



**PIPING MATERIAL SPECIFICATION  
B8A**



DOC. NO. : 1019-PI-PMS-108

CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT

SHEET : 3 OF 5

PROJECT NO. 1019

PROJECT : BHASKAR FIELD

REV 2

ASME CLASS	CORROSION ALLOWANCE
300#	3 mm
T	TEES/ RED. TEE
W	WELDOLETS
S	SOCKOLETS

**BRANCH TABLE**

**PIPE CLASS:  
B8A**

							T	200	<b>BRANCH PIPE</b>
							T	150	
						T	T	100	
						T	T	80	
						T	W	50	
						T	W	40	
						T	S	25	
						T	S	20	
						T	S	15	
20	25	40	50	80	100	150	200		
<b>RUN PIPE</b>									



**PIPING MATERIAL SPECIFICATION  
B8A**



DOC. NO. : 1019-PI-PMS-108		CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT						SHEET : 4 OF 5			
PROJECT NO. 1019		PROJECT : BHASKAR FIELD						REV 2			
ASME CLASS		CORROSION ALLOWANCE								PIPE CLASS:	
300#		3 mm								B8A	
ITEM	TYPE	END CONN.	DIAMETER RANGE		SCH./THK.	FACE/ FINISH /RADIUS	DESIGN STD.	MATERIAL		REMARKS	
			LOW	HIGH				DESCRIPTION			
PIPE	PIPE	PE	15	40	SCH. 80	-	ASME B36.10	API 5L GR.B PSL2 (SEAMLESS)			
	PIPE	BE	50	150	SCH. 40	-	ASME B36.10	API 5L GR.B PSL2 (SEAMLESS)			
	NIPPLE	PBE/ PE-NPT	15	40	SCH. 80	-	ASME B36.10	ASTM A 106 GR. B (SEAMLESS)			
FLANGES	SOCKET WELD	RF	15	40	300#/ SCH.80	125-250 μAARH	ASME B16.5	ASTM A 105			
	WELD NECK	RF	50	150	300# / SCH.40	125-250 μAARH	ASME B16.5	ASTM A 105			
	BLIND FLANGE	RF	15	150	300#	125-250 μAARH	ASME B16.5	ASTM A 105			
	SPECTACLE BLIND	RF	15	150	300#	125-250 μAARH	ASME B16.48	ASTM A 105			
FITTINGS	ELBOW 90°/45°	SW	15	40	3000#	-	ASME B16.11	ASTM A 105			
	ELBOW 90°/45°	BW	50	150	SCH.40	R = 1.5D	ASME B16.9	ASTM A 234 GR. WPB-S			
	EQUAL/RED. TEE	SW	15	40	3000#	-	ASME B16.11	ASTM A 105			
	EQUAL/RED. TEE	BW	50	150	SCH.40	-	ASME B16.9	ASTM A 234 GR. WPB-S			
	CONC./ECC RED.	BW	50	150	SCH.40	-	ASME B16.9	ASTM A 234 GR. WPB-S			
	CONC./ECC SWG.	PBE	15	80	3000#	-	BS 3799	ASTM A 105			
	CAP	SW	15	40	3000#	-	ASME B16.11	ASTM A 105			
	CAP	BW	50	150	SCH.40	-	ASME B16.9	ASTM A 234 GR. WPB-S			



**PIPING MATERIAL SPECIFICATION  
B8A**



DOC. NO. : 1019-PI-PMS-108		CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT						SHEET : 5 OF 5			
PROJECT NO. 1019		PROJECT : BHASKAR FIELD						REV 2			
ASME CLASS		CORROSION ALLOWANCE								PIPE CLASS:	
300#		3 mm								B8A	
ITEM	TYPE	END CONN.	DIAMETER RANGE		SCH./THK.	FACE/ FINISH /RADIUS	DESIGN STD.	MATERIAL		REMARKS	
			LOW	HIGH				DESCRIPTION			
FITTINGS	FULL COUPLING	SW / NPT	15	40	3000#	-	ASME B16.11	ASTM A 105			
	HALF COUPLING	SW	15	40	3000#	-	ASME B16.11	ASTM A 105			
	SOCKOLET	SW	15	40	3000#	-	ASME B16.11	ASTM A 105			
	WELDOLET	BW	50	150	SCH.40	-	MSS SP 97	ASTM A 105			
VALVES	BALL VALVE (FULL BORE)	RF/ B16.5	15	40	300#	125-250 μAARH	EN ISO 17292	BODY: ASTM A 105,SEAT: RPTFE			
	BALL VALVE (FULL BORE)	RF/ B16.5	50	150	300#	125-250 μAARH	EN ISO 17293	BODY: ASTM A 216 GR. WCB, TRIM SEAT AISI 4140			
	BALL VALVE (REDUCE BORE)	RF/ B16.5	15	40	300#	125-250 μAARH	EN ISO 17292	BODY: ASTM A 105,SEAT: RPTFE		2	
	BALL VALVE (REDUCE BORE)	RF/ B16.5	50	150	300#	125-250 μAARH	EN ISO 17293	BODY: ASTM A 216 GR. WCB, TRIM SEAT AISI 4140		2	
	GATE VALVE	SW	15	40	800#	-	API-602	BODY : ASTM A 105, TRIM- STELLITED.			
	GATE VALVE	RF/ B16.5	50	150	300#	125-250 μAARH	API-6D	BODY-ASTM A 216 GR.WCB, TRIM-STELLITED, STEM-13% CR. STEEL.			
	GLOBE VALVE	SW	15	40	800#	-	BS-1873	BODY : ASTM A 105, TRIM- STELLITED, STEM - 13% CR. STEEL			
	GLOBE VALVE	RF/ B16.5	50	150	300#	125-250 μAARH	BS-1873	BODY-ASTM A 216 GR.WCB, TRIM-STELLITED, STEM-13% CR. STEEL.			
	CHECK VALVE (LIFT)	SW	15	40	800#	-	EN ISO 15761	BODY - ASTM A 105, TRIM - STELLITED.			
	CHECK VALVE (SWING CHECK)	RF/ B16.5	50	150	300#	125-250 μAARH	API-594	BODY-ASTM A 216 GR.WCB, TRIM-STELLITED, STEM-13% CR. STEEL.			
GASKET/BO	STUD BOLT	-	15	150	-	-	ASME B18.2.1 ASME B18.2.2	BOLT : A 193 GR. B7 NUT : A 194 GR. 2H			
	GASKET	-	15	150	4.5MM THK./300#	-	ASME B16.20 ASME B16.5	SPIRAL WOUND GRAPHOIL FILLED, SS316 INNER AND CS OUTER RINGS.			



PIPING MATERIAL SPECIFICATION  
D3A\_EXPORT LINE



DOC. NO.	: 1019-PI-PMS-109	CLIENT	: SUN PETROCHEMICALS PVT LTD, KHAMBHAT	SHEET	: 1 OF 5
PROJECT NO.	1019	PROJECT	: BHASKAR FIELD	REV	2

PIPING MATERIAL SPECIFICATION  
FOR CLASS D3A\_EXPORT LINE

REV	DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY
2	11.02.2020	REVISED AS MARKED	RZ	RZ	BP
1	03.02.2020	ISSUED FOR ENGINEERING	RZ	RZ	BP
0	18-09-2019	ISSUED FOR REVIEW	IJ	RZ	BP



**PIPING MATERIAL SPECIFICATION  
D3A\_EXPORT LINE**



DOC. NO. : 1019-PI-PMS-109      CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT      SHEET : 2 OF 5

PROJECT NO. 1019      PROJECT : BHASKAR FIELD      REV 2

ASME CLASS	CORROSION ALLOWANCE	TEMPERATURE	°C	-29	38	50	100	150							PIPE CLASS:
600#	1.6 mm	PRESSURE	kg/cm <sup>2</sup> g	104.11	104.11	102.17	95.03	91.97							D3A

SERVICE: EXPORT OIL (PIPELINE)

BASIC MATERIAL : CARBON STEEL (SEAMLESS)

**NOTES:**

- 1) NDT OF WELDS SHALL BE AS FOLLOWS :  
RADIOGRAPHY : ALL BUTT WELDS - 100%  
MPI : SOCKET WELD - 100%
- 2) ALL VENT AND DRAIN SHALL BE PROVIDED WITH GATE VALVE WITH BLIND FLANGE ASSEMBLY UNLESS OTHERWISE INDICATED IN P & ID.
- 3) PIPING DESIGN AS PER ASME B31.4 & OISD 141
- 4) CHARPY V-NOTCH TEST & HARDNESS TEST SHALL BE CONDUCTED FOR PIPE, FITTING AND FLANGES.
- 5) ALL BRANCH CONNECTIONS INCLUDING VENT, DRAIN, PRESSURE AND TEMPERATURE CONNECTION SHALL BE AS PER BRANCH CONNECTION TABLE.
- 6) FOR VALVE REFER RESPECTIVE VALVE DATA SHEET.
- 7) BARRED TEE SHALL BE WELDED TYPE FOR USE IN MAINLINE ONLY. MATERIAL SHALL BE AS PER ATTACHED TABLE-1 FOR PIPELINE SPECIALITY ITEMS.
- 8) LR BEND, IJ, L/R, PIG SIG. SHALL BE FOR USE IN MAINLINE ONLY.

ITEM	SIZE	DESCRIPTION
MAINTENANCE JOINTS	ALL	FLANGED, TO BE KEPT MINIMUM
PIPE JOINTS	40 NB & BELOW	FULL COUPLING 3000#
	50 NB & ABOVE	BUTTWELDED
DRAIN (HYDRO)	ALL	25 NB
VENT (HYDRO)	ALL	15 NB
TEMP. CONN.	40 NB OR AS PER P&ID	FLANGED
PRESS. CONN.	25 NB OR AS PER P&ID	HALF COUPLING+PIPE+FLANGE+VALVE (SPEC. AS PER P&ID)



**PIPING MATERIAL SPECIFICATION  
D3A\_EXPORT LINE**



DOC. NO. : 1019-PI-PMS-109

CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT

SHEET : 3 OF 5

PROJECT NO. 1019

PROJECT : BHASKAR FIELD

REV 2

ASME CLASS	CORROSION ALLOWANCE
600#	1.6 mm
T	TEES
W	WELDOLETS
S	SOCKOLETS

**BRANCH TABLE**

PIPE CLASS:

D3A

							T	200	BRANCH PIPE
							T	150	
						T	T	100	
						T	T	80	
						T	W	50	
						T	W	40	
						T	S	25	
						T	S	20	
						T	S	15	
20	25	40	50	80	100	150	200		
RUN PIPE									



**PIPING MATERIAL SPECIFICATION  
D3A\_EXPORT LINE**



<b>DOC. NO.</b> : 1019-PI-PMS-109		<b>CLIENT</b> : SUN PETROCHEMICALS PVT LTD, KHAMBHAT						<b>SHEET</b> : 4 OF 5	
<b>PROJECT NO.</b> 1019		<b>PROJECT</b> : BHASKAR FIELD						<b>REV</b> 2	
<b>ASME CLASS</b>		<b>CORROSION ALLOWANCE</b>						<b>PIPE CLASS:</b>	
600#		1.6 mm						D3A	
ITEM	TYPE	END CONN.	DIAMETER RANGE		SCH./THK.	FACE/ FINISH /RADIUS	DESIGN STD.	MATERIAL	REMARKS
			LOW	HIGH				DESCRIPTION	
PIPE	PIPE	PE	15	40	SCH. 80	-	ASME B36.10	API 5L X42 PSL2 (SEAMLESS)	
	PIPE	BE	50	400	SCH. 40	-	ASME B36.10	API 5L X42 PSL2 (SEAMLESS)	
	NIPPLE	PBE / PE-NPT	15	40	SCH. 80	-	ASME B36.10	API 5L X42 PSL2 (SEAMLESS)	
FLANGES	SOCKET WELD	RF	15	40	600#/ SCH.80	125-250 μAARH	ASME B16.5	ASTM A 105	
	WELD NECK	RF	50	400	600#/ SCH.40	125-250 μAARH	ASME B16.5	ASTM A 105	
	BLIND FLANGE	RF	15	400	600#	125-250 μAARH	ASME B16.5	ASTM A 105	
	SPECTACLE BLIND	FF	15	40	600#	125-250 μAARH	ASME B16.48	ASTM A 105	
	SPECTACLE BLIND	FF	50	150	600#	125-250 μAARH	ASME B16.48	ASTM A 105	
FITTINGS	ELBOW 90°/45°	SW	15	20	3000#	-	ASME B16.11	ASTM A 105	
	ELBOW 90°/45°	SW	25	40	3000#	-	ASME B16.11	ASTM A 105	
	ELBOW 90°/45°	BW	50	400	SCH. 40	R = 1.5D	ASME B16.9	ASTM A 234 GR. WPB-S	
	EQUAL/RED. TEE	SW	15	20	3000#	-	ASME B16.11	ASTM A 105	
	EQUAL/RED. TEE	SW	25	40	3000#	-	ASME B16.11	ASTM A 105	
	EQUAL/RED. TEE	BW	50	400	SCH. 40	-	ASME B16.9	ASTM A 234 GR. WPB-S	
	CONC./ECC RED.	BW	50	400	SCH. 40	-	ASME B16.9	ASTM A 234 GR. WPB-S	
	CONC./ECC SWG.	PBE	15	80	3000#	-	BS 3799	ASTM A 105	
	CAP	SW	15	20	3000#	-	ASME B16.11	ASTM A 105	
	CAP	SW	25	40	3000#	-	ASME B16.11	ASTM A 105	
CAP	BW	50	150	SCH. 40	-	ASME B16.9	ASTM A 234 GR. WPB-S		



**PIPING MATERIAL SPECIFICATION  
D3A\_EXPORT LINE**



DOC. NO. : 1019-PI-PMS-109		CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT					SHEET : 5 OF 5		
PROJECT NO. 1019		PROJECT : BHASKAR FIELD					REV 2		
ASME CLASS		CORROSION ALLOWANCE					PIPE CLASS:		
600#		1.6 mm					D3A		
ITEM	TYPE	END CONN.	DIAMETER RANGE		SCH./THK.	FACE/ FINISH /RADIUS	DESIGN STD.	MATERIAL	REMARKS
			LOW	HIGH				DESCRIPTION	
FITTINGS	FULL COUPLING	SW	15	20	3000#	-	ASME B16.11	ASTM A 105	
	FULL COUPLING	SW	25	40	3000#	-	ASME B16.11	ASTM A 105	
	HALF COUPLING	SW	15	20	3000#	-	ASME B16.11	ASTM A 105	
	HALF COUPLING	SW	25	40	3000#	-	ASME B16.11	ASTM A 105	
	SOCKOLET	SW	15	20	3000#	-	ASME B16.11	ASTM A 105	
	SOCKOLET	SW	25	40	3000#	-	ASME B16.11	ASTM A 105	
	WELDOLET	SW	50	150	SCH.40	-	MSS SP 97	ASTM A 105	
VALVES	BALL VALVE (FULL BORE)	RF/ B16.5	15	40	600#	125-250 μAARH	BS EN ISO 17292	BODY: ASTM A 105,SEAT: RPTFE	
	BALL VALVE (FULL BORE)	RF/ B16.5	50	150	600#	125-250 μAARH	BS EN ISO 17292	BODY: ASTM A 216 GR. WCB, TRIM SEAT AISI 4140	
	BALL VALVE (REDUCE BORE)	RF/ B16.5	15	40	600#	125-250 μAARH	BS EN ISO 17292	BODY: ASTM A 105,SEAT: RPTFE	2
	BALL VALVE (REDUCE BORE)	RF/ B16.5	50	150	600#	125-250 μAARH	BS EN ISO 17292	BODY: ASTM A 216 GR. WCB, TRIM SEAT AISI 4140	2
	GATE VALVE	SW	15	40	800#	-	API-602	BODY : ASTM A 105, TRIM- STELLITED.	
	GATE VALVE	RF/ B16.5	50	150	600#	125-250 μAARH	API-600	BODY-ASTM A 216 GR.WCB, TRIM-STELLITED, STEM-13% CR. STEEL.	
	GLOBE VALVE	SW	15	40	800#	-	BS-1873	BODY : ASTM A 105, TRIM- STELLITED, STEM - 13% CR. STEEL	
	GLOBE VALVE	RF/ B16.5	50	150	600#	125-250 μAARH	BS-1873	BODY-ASTM A 216 GR.WCB, TRIM-STELLITED, STEM-13% CR. STEEL.	
	CHECK VALVE (LIFT CHECK)	SW	15	40	800	-	BS-5352	BODY - ASTM A 105, TRIM - STELLITED.	
	CHECK VALVE (SWING CHECK)	RF/ B16.5	50	150	600#	125-250 μAARH	API-594	BODY-ASTM A 216 GR.WCB, TRIM-STELLITED, STEM-13% CR. STEEL.	
GASKET/BOLT	STUD BOLT	-	15	150	-	-	ASME B18.2.1 ASME B18.2.2	BOLT : A 193 GR. B7 NUT : A 194 GR. 2H	
	GASKET	-	15	150	4.5MM THK. / 600#	-	ASME B16.20 ASME B16.5	SPIRAL WOUND GRAPHOIL FILLED, SS316 INNER AND CS OUTER RINGS.	



PIPING MATERIAL SPECIFICATION  
D7A



DOC. NO. : 1019-PI-PMS-110

CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT

SHEET : 1 OF 5



PROJECT NO. 1019

PROJECT : BHASKAR FIELD

REV 2

PIPING MATERIAL SPECIFICATION  
FOR CLASS D7A

REV	DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY
2	25.05.2020	ISSUED FOR ENGINEERING	SD	RZ	BP
1	03.02.2020	ISSUED FOR ENGINEERING	RZ	RZ	BP
0	09.07.2019	ISSUED FOR REVIEW	IJ	RZ	BP

		<b>PIPING MATERIAL SPECIFICATION</b> <b>D7A</b>												
<b>DOC. NO.</b> : 1019-PI-PMS-110		<b>CLIENT</b> : SUN PETROCHEMICALS PVT LTD, KHAMBHAT										<b>SHEET</b> : 2 OF 5		
<b>PROJECT NO.</b> 1019		<b>PROJECT</b> : BHASKAR FIELD										<b>REV</b> 2		
<b>ASME CLASS</b>	<b>CORROSION ALLOWANCE</b>	<b>TEMPERATURE</b>	<b>°C</b>	-29	38	50	100							<b>PIPE CLASS:</b>
600#	3 mm	<b>PRESSURE</b>	<b>kg/cm<sup>2</sup> g</b>	104.11	104.11	102.17	95.03							<b>D7A</b>
<b>SERVICE:</b>		PRODUCED WATER (EFFLUENT DISPOSAL PIPELINE)												
<b>BASIC MATERIAL :</b>		CARBON STEEL (SEAMLESS)												
<b>NOTES:</b>														
1) NDT OF WELDS SHALL BE AS FOLLOWS : RADIOGRAPHY : ALL BUTT WELDS - 100% MPI : SOCKET WELD - 100% 2) ALL VENT AND DRAIN SHALL BE PROVIDED WITH GATE VALVE WITH BLIND FLANGE ASSEMBLY UNLESS OTHERWISE INDICATED IN P & ID. 3) PIPING DESIGN AS PER ASME B31.4 & OISD 141 4) CHARPHY V-NOTCH TEST & HARDNESS TEST SHALL BE CONDUCTED FOR PIPE , FITTINGS AND FLANGES. 5) ALL BRANCH CONNECTIONS INCLUDING VENT, DRAIN, PRESSURE AND TEMPERATURE CONNECTION SHALL BE AS PER BRANCH CONNECTION TABLE. 6) FOR VALVE REFER RESPECTIVE VALVE DATA SHEET. 7) BARRED TEE SHALL BE WELDED TYPE FOR USE IN MAINLINE ONLY. MATERIAL SHALL BE AS PER ATTACHED TABLE-1 FOR PIPELINE SPECIALITY ITEMS. 8) LR BEND, IJ, L/R, PIG SIG. SHALL BE FOR USE IN MAINLINE ONLY.														
<b>ITEM</b>	<b>SIZE</b>	<b>DESCRIPTION</b>												
<b>MAINTENANCE JOINTS</b>	ALL	FLANGED, TO BE KEPT MINIMUM												
<b>PIPE JOINTS</b>	40 NB & BELOW	FULL COUPLING												
	50 NB & ABOVE	BUTTWELDED												
<b>DRAIN (HYDRO)</b>	ALL	25 NB												
<b>VENT (HYDRO)</b>	ALL	15 NB												
<b>TEMP. CONN.</b>	40 NB OR AS PER P&ID	FLANGED												
<b>PRESS. CONN.</b>	25 NB OR AS PER P&ID	HALF COUPLING+PIPE+FLANGE+VALVE (SPEC. AS PER P&ID)												



**PIPING MATERIAL SPECIFICATION  
D7A**







DOC. NO. : 1019-PI-PMS-110      CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT      SHEET : 3 OF 5

PROJECT NO. 1019      PROJECT : BHASKAR FIELD      REV 2

<b>ASME CLASS</b>	<b>CORROSION ALLOWANCE</b>	<b>BRANCH TABLE</b>	<b>PIPE CLASS:</b>	
600#	3 mm		<b>D7A</b>	
T	TEES/ RED. TEE			
W	WELDOLETS			
S	SOCKOLETS			

							T	200	<b>BRANCH PIPE</b>
							T	150	
					T	T	T	100	
				T	T	T	W	80	
		T	S	S	S	W	W	50	
	T	T	S	S	S	S	S	40	
T	T	T	S	S	S	S	S	25	
T	T	T	S	S	S	S	S	20	
								15	
<b>20</b>	<b>25</b>	<b>40</b>	<b>50</b>	<b>80</b>	<b>100</b>	<b>150</b>	<b>200</b>		
<b>RUN PIPE</b>									

		<b>PIPING MATERIAL SPECIFICATION</b> <b>D7A</b>										
DOC. NO. : 1019-PI-PMS-110		CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT							SHEET : 4 OF 5			
PROJECT NO. 1019		PROJECT : BHASKAR FIELD							REV 2			
ASME CLASS		CORROSION ALLOWANCE									PIPE CLASS:	
600#		3 mm									D7A	
ITEM	TYPE	END CONN.	DIAMETER RANGE		SCH./THK.	FACE/ FINISH /RADIUS	DESIGN STD.	MATERIAL		REMARKS		
			LOW	HIGH				DESCRIPTION				
PIPE	PIPE	PE	15	40	SCH. 160	-	ASME B36.10	ASTM A 106 GR. B (SEAMLESS)		Rev.2		
	PIPE	BE	50	50	SCH. 160	-	ASME B36.10	ASTM A 106 GR. B (SEAMLESS)		Rev.2		
	PIPE	BE	80	150	SCH. 80	-	ASME B36.10	ASTM A 106 GR. B (SEAMLESS)		Rev.2		
	NIPPLE	PBE/ PE-NPT	15	40	SCH. 160	-	ASME B36.10	ASTM A 106 GR. B (SEAMLESS)		Rev.2		
FLANGES	SOCKET WELD	RF	15	40	600#/ SCH.160	125-250 μAARH	ASME B16.5	ASTM A 105		Rev.2		
	WELD NECK	RF	50	50	600#/ SCH.160	125-250 μAARH	ASME B16.5	ASTM A 105		Rev.2		
	WELD NECK	RF	80	150	600#/ SCH.80	125-250 μAARH	ASME B16.5	ASTM A 105		Rev.2		
	BLIND FLANGE	RF	15	150	600#	125-250 μAARH	ASME B16.5	ASTM A 105				
	SPECTACLE BLIND	RF	15	40	600#	125-250 μAARH	ASME B16.48	ASTM A 105				
	SPECTACLE BLIND	RF	50	150	600#	125-250 μAARH	ASME B16.48	ASTM A 105				
FITTINGS	ELBOW 90°/45°	SW	15	40	3000#	-	ASME B16.11	ASTM A 105				
	ELBOW 90°/45°	BW	50	50	SCH.160	R = 1.5D	ASME B16.9	ASTM A 234 GR. WPB-S		Rev.2		
	ELBOW 90°/45°	BW	80	150	SCH.80	R = 1.5D	ASME B16.9	ASTM A 234 GR. WPB-S		Rev.2		
	EQUAL/RED. TEE	SW	15	40	3000#	-	ASME B16.11	ASTM A 105				
	EQUAL/RED. TEE	BW	50	50	SCH.160	-	ASME B16.9	ASTM A 234 GR. WPB-S		Rev.2		
	EQUAL/RED. TEE	BW	80	150	SCH.80	-	ASME B16.9	ASTM A 234 GR. WPB-S		Rev.2		
	CONC./ECC RED.	BW	50	50	SCH.160	-	ASME B16.9	ASTM A 234 GR. WPB-S		Rev.2		
	CONC./ECC RED.	BW	80	150	SCH.80	-	ASME B16.9	ASTM A 234 GR. WPB-S		Rev.2		
	CONC./ECC SWG.	PBE	15	80	3000#	-	BS 3799	ASTM A 105				
	CAP	SW	15	40	6000#	-	ASME B16.11	ASTM A 105				
	CAP	BW	50	50	SCH.160	-	ASME B16.9	ASTM A 234 GR. WPB-S		Rev.2		
CAP	BW	80	150	SCH.80	-	ASME B16.9	ASTM A 234 GR. WPB-S		Rev.2			

		<b>PIPING MATERIAL SPECIFICATION</b> <b>D7A</b>							
DOC. NO. : 1019-PI-PMS-110		CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT						SHEET : 5 OF 5	
PROJECT NO. 1019		PROJECT : BHASKAR FIELD						REV 2	
ASME CLASS		CORROSION ALLOWANCE						PIPE CLASS:	
600#		3 mm						D7A	
ITEM	TYPE	END CONN.	DIAMETER RANGE		SCH./THK.	FACE/ FINISH /RADIUS	DESIGN STD.	MATERIAL DESCRIPTION	REMARKS
			LOW	HIGH					
FITTINGS	FULL COUPLING	SW / NPT	15	40	6000#	-	ASME B16.11	ASTM A 105	
	HALF COUPLING	SW	15	40	6000#	-	ASME B16.11	ASTM A 105	
	SOCKOLET	SW	15	40	6000#	-	MSS SP 97	ASTM A 105	
	WELDOLET	BW	50	50	SCH.160	-	MSS SP 97	ASTM A 105	Rev.2
	WELDOLET	BW	80	150	SCH.80	-	MSS SP 97	ASTM A 105	Rev.2
VALVES	BALL VALVE (FULL BORE)	RF/ B16.5	15	40	600#	125-250 μAARH	EN ISO 17292	BODY: ASTM A 105,SEAT: RPTFE	
	BALL VALVE (FULL BORE)	RF/ B16.5	50	150	600#	125-250 μAARH	EN ISO 17293	BODY: ASTM A 216 GR. WCB, TRIM SEAT AISI 4140	
	GATE VALVE	SW	15	40	800#	-	API-602	BODY : ASTM A 105, TRIM- STELLITED.	
	GATE VALVE	RF/ B16.5	50	150	600#	125-250 μAARH	API-600	BODY-ASTM A 216 GR.WCB, TRIM-STELLITED, STEM-13% CR. STEEL.	
	GLOBE VALVE	SW	15	40	800#	-	BS-1873	BODY : ASTM A 105, TRIM- STELLITED, STEM - 13% CR. STEEL	
	GLOBE VALVE	RF/ B16.5	50	150	600#	125-250 μAARH	BS-1873	BODY-ASTM A 216 GR.WCB, TRIM-STELLITED, STEM-13% CR. STEEL.	
	CHECK VALVE	SW	15	40	800#	-	EN ISO 15761	BODY - ASTM A 105, TRIM - STELLITED.	
	CHECK VALVE	RF/ B16.5	50	150	600#	125-250 μAARH	API 594	BODY-ASTM A 216 GR.WCB, TRIM-STELLITED, STEM-13% CR. STEEL.	
GASKET/BO	STUD BOLT	-	15	150	-	-	ASME B18.2.1 ASME B18.2.2	BOLT : A 193 GR. B7 NUT : A 194 GR. 2H	
	GASKET	-	15	150	4.5MM THK./600#	-	ASME B16.20 ASME B16.5	SPIRAL WOUND GRAPHOIL FILLED, SS316 INNER AND CS OUTER RINGS.	



PIPING MATERIAL SPECIFICATION  
A5J



DOC. NO. : 1019-PI-PMS-111	CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT	SHEET : 1 OF 4
PROJECT NO. 1019	PROJECT : BHASKAR FIELD	REV 0

PIPING MATERIAL SPECIFICATION  
FOR CLASS A5J

0	19.11.2020	ISSUED FOR ENGINEERING	SD	RZ	BP
REV	DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY



PIPING MATERIAL SPECIFICATION  
A5J



DOC. NO. : 1019-PI-PMS-111		CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT										SHEET : 2 OF 4			
PROJECT NO. 1019		PROJECT : BHASKAR FIELD										REV 0			
ASME CLASS	CORROSION ALLOWANCE	TEMPERATURE	°C	80											PIPE CLASS:
150#	NIL	PRESSURE	kg/cm <sup>2</sup> g	12											A5J
SERVICE:		DOSING CHEMICALS													
BASIC MATERIAL :		CHLORINATED POLYVINYL CHLORIDE (CPVC)													

NOTES:

- 1) STUB-INS, ROD & FUSION WELDING ARE NOT PERMITTED.
- 2) CEMENT SOCKET JOINTS WITH CPVC SOLVENT CEMENT ASTM F493 IN ACCORDANCE WITH ASTM D2855 TO BE USED.



**PIPING MATERIAL SPECIFICATION  
A5J**



<b>DOC. NO.</b> : 1019-PI-PMS-111		<b>CLIENT</b> : SUN PETROCHEMICALS PVT LTD, KHAMBHAT		<b>SHEET</b> : 3 OF 4	
<b>PROJECT NO.</b> 1019		<b>PROJECT</b> : BHASKAR FIELD		<b>REV</b> 0	
<b>ASME CLASS</b>	<b>CORROSION ALLOWANCE</b>	<b>BRANCH TABLE</b>			<b>PIPE CLASS:</b>
150#	NIL				A5J
T	TEE EQ. OR REDUCING, SOCKET CONNECTION				

								T	T	150	<b>BRANCH PIPE</b>
								T	T	100	
								T	T	80	
								T	T	50	
								T	T	40	
								T	T	25	
T	T	T	T	T	T	T	T	T	T	20	
20	25	40	50	80	100	150	200	<b>RUN PIPE</b>			



**PIPING MATERIAL SPECIFICATION  
A5J**



DOC. NO. : 1019-PI-PMS-111		CLIENT : SUN PETROCHEMICALS PVT LTD, KHAMBHAT					SHEET : 4 OF 4		
PROJECT NO. 1019		PROJECT : BHASKAR FIELD					REV 0		
ASME CLASS		CORROSION ALLOWANCE					PIPE CLASS:		
150#		NIL					A5J		
ITEM	TYPE	END CONN.	DIAMETER RANGE		SCH./THK.	FACE/ FINISH /RADIUS	DESIGN STD.	MATERIAL	REMARKS
			LOW	HIGH				DESCRIPTION	
PIPE	PIPE	PE	15	150	SCH. 80	-	ASTM D 1785	ASTM F-441, CL 23447, CPVC, SEAMLESS	
FLANGES	SOCKET	SOCKET	15	150	SCH. 80/ 150#	-	ASME B16.5	F-439, CL 23447, VANSTONE SOCKET TYPE WITH SOLID BACKING FLANGE	
	BLIND FLANGE	FF	15	150	150#	-	ASME B16.5		
FITTINGS	ELBOW 90°/45°	SW	15	150	SCH. 80		ASTM D2467	ASTM F 439/; CL. 23447, SEAMLESS MOULDED SOCKET TYPE PRESSURE FITTINGS	
	EQUAL/RED. TEE	SW	15	150	SCH. 80		ASTM D2467		
	CONC./ECC RED.	SW	15	150	SCH. 80		ASTM D2467		
	CAP	SW	15	150	SCH. 80		ASTM D2467		
	COUPLING	SW	15	150	SCH. 80	-	ASTM D2467		
VALVES	BALL VALVE (FULL BORE)	FF/ B16.5	15	150	150#	-	MNF. STD.	BODY: CPVC, BALL: CPVC, SEAT: CPVC	
	CHECK VALVE (BALL LIFT TYPE)	FF/B 16.5	15	150	150#	-	MNF. STD.	BODY: CPVC, BALL: CPVC, SEAT: CPVC	
GASKET/BOLT	STUD BOLT	-	15	150	-	-	ASME B18.2.1 ASME B18.2.2	BOLT : A 193 GR. B7 NUT : A 194 GR. 2H	WITH IS 2062 PLAIN WASHERS
	GASKET	-	15	150	3mm/ 150#	-	B16.21 ANSI B16.5	FULL FACE, BUTYL RUBBER	
STRAINER	STRNR PERM.	FF/ B16.5	15	80	150#	-	MNF. STD.	BODY : CPVC; INT : 13% CR STEEL	Y-TYPE