



0001

## ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 0-80-300-05523

CUST. NO : 7104 TO 7108  
 PGMA : 80-300  
 SYSTEM : MAIN STEAM LINE FROM SH OUTLET  
 HEADER TO BOILER STOP VALVE

DOC. NO. : 4-80-300-72829  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN. 1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC / GAS / TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTN)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SAA335P91	323.9	31	20	31.0 $\overline{\cup}$	TIG	RT2½Cr1Mo	Ø2.50	3000 gms	1034	220	760+/-10	1 hr / 25 mm minimum 120 mins	100% UT 100% MT 100% HARDNESS
	SAA335P91	323.9	35			ARC	E9015-B9	Ø2.50	550 nos					
	SAA335P91	323.9	35			ARC	E9015-B9	Ø3.20	900 nos					
2	MS HEADER SAA335F91(A)	445	58	2	58 $\overline{\cup}$	TIG	RT2½Cr1Mo	Ø2.50	290 gms	1034	220	760+/-10	1 hr / 25 mm minimum 120 mins	100% UT 100% MT 100% HARDNESS
	SA335P91					ARC	E9015-B3	Ø2.50	75 nos					
	MATCHING PIECE					ARC	E9015-B3	Ø3.20	124 nos					
3	SA335P91	60.3	12.5	20	12.5 $\overline{\cup}$	TIG	RT2½Cr1Mo	Ø2.50	228 gms	1034	220	760+/-10	1 hr / 25 mm minimum 120 mins	100% UT 100% MT 100% HARDNESS
	SA182F22(A)					ARC	E9015-B3	Ø2.50	286 nos					
						ARC	E9018-B3	Ø3.20	154 nos					

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - 0A	DATE 18-11-11	DRAWING NO. 4-80-300-72829	REV. 00
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## ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 0-80-301-05389

CUST. NO : 7104 TO 7108  
 PGMA : 80-301  
 SYSTEM : MAIN STEAM LINE FROM BOILER STOP VALVE TO ESV

DOC. NO. : 4-80-301-72440  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN. 1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC / GAS / TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	P.WHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA335P91	323.9	31	45	31.0 $\psi$	TIG	RT $\frac{1}{2}$ Cr1Mo	Ø2.50	5700 gms	1034	220	760+/-10	1 hr / 25 mm minimum 120 mins	100% UT 100% MT 100%
	ARC					E9015-B9	Ø2.50	1200 nos						
	ARC					E9015-B9	Ø3.20	1950 nos						
2	SA335P91 GS-1/CMoV511 (STRAINER)	ID262	59	2	59 $\psi$	TIG	RT $\frac{1}{2}$ Cr1Mo	Ø2.40	290 gms					HARDNESS
	ARC					E9015-B3	Ø2.50	75 nos						
	ARC					E9015-B3	Ø3.20	124 nos						
3	SA335P91	60.3	12.5	20	12.5 $\psi$	TIG	RT $\frac{1}{2}$ Cr1Mo	Ø2.40	228 gms					HARDNESS
	ARC					E9018-B3	Ø2.50	286 nos						
	ARC					E9018-B3	Ø3.20	154 nos						
4	SA335P91	457.2	42	20	42.0 $\psi$	TIG	RT $\frac{1}{2}$ Cr1Mo	Ø2.50	3550 gms	1034	220	760+/-10	1 hr / 25 mm minimum 120 mins	100% UT 100% MT 100%
	ARC					E9015-B9	Ø2.50	750 nos						
	ARC					E9015-B9	Ø3.20	1250 nos						
5	SA335P91	63.5	13	4	13.0 $\psi$	TIG	ErNiCr3	Ø2.50	40 gms					HARDNESS
	ARC					ErNiCrFe2	Ø2.50	60 nos						
	ARC					ErNiCrFe2	Ø3.15	30 nos						

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - 0A	DATE 18-11-11	DRAWING NO. 4-80-301-72440	REV. 00
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## ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 0-80-303-05825

CUST. NO : 7104 TO 7108  
 PGMA : 80-303  
 SYSTEM : MS HEADER TO AUX PRDS

DOC. NO. : 4-80-303-72756  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN. 1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/GAS/TIG.	RECOMMENDED ELECTRODE / WIRE			WPS NO.	MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTEST)	SIZE (mm)	QUANTITY			TEMP °C	TIME		
1	SA335P22(A)	355.6	62	2	62 ∩	ARC	TIG	RT2½Cr1Mo	Ø2.50	230 gms	1014	150	725+/-25	1 hr / 25 mm minimum 60 mins	100% RT 3% HARDNESS
	ARC						E9018-B3	Ø2.50	59 nos						
	ARC						E9018-B3	Ø3.15	96 nos						
2	SA234WP22CL1(A)	323.9	9.53	7	9.53V	ARC	TIG	RT2½Cr1Mo	Ø2.50	910 gms	1014	-	725+/-25	1 hr / 25 mm minimum 60 mins	100% RT 3% HARDNESS
	ARC						E9018-B3	Ø2.50	184 nos						
	ARC						E9018-B3	Ø3.15	284 nos						
3	SA335P22(A)	219.1	36	31	36 ∩	ARC	TIG	RT2½Cr1Mo	Ø2.50	2287 gms	1014	150	725+/-25	1 hr / 25 mm minimum 60 mins	100% RT 3% HARDNESS
	ARC						E9018-B3	Ø2.50	613 nos						
	ARC						E9018-B3	Ø3.15	852 nos						
	SA234WP22CL1(A)														
	SA335P22(A)														
	SA234WP22CL1(A)														

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - 0A	DATE 18-11-11	DRAWING NO. 4-80-303-73756	REV. 00
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## ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 1-80-304-16912

CUST. NO : 7104 TO 7108  
 PGMA : 80-304  
 SYSTEM : HPBP PIPING FROM MAIN STEAM TO  
 HPBP VALVE INLET

DOC. NO. : 4-80-304-72876  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN. 1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS	
		OD (in mm)	THK (in mm)				SPECN. (ATTEST)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C			TIME
1	SAC335P91	219.1	25.0	18	25.0 $\overline{U}$	TIG	RT2 $\frac{1}{4}$ Cr-1Mo	Ø2.50	1580 gms	1034	220	760+/-10	1 hr / 25 mm minimum 120 mins	100% UT 100% MT 100% HARDNESS	
	ARC						E9015-B9	Ø2.50	360 nos						
	ARC						E9015-B9	Ø3.15	525 nos						
	SA182F91					ARC	E9015-B9	Ø4.00	770 nos						

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-304-72876	REV. 00
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ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 2-80-307-10323

CUST. NO : 7104 TO 7108  
 PGMA : 80-307  
 SYSTEM : HP AND LP BYPASS WARMUP  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-307-72113  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO 1 OF 1

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			WPS NO.	MIN. PRE HEAT °C	PWH <sup>†</sup> SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTENT)	SIZE (mm)	QUANTITY			TEMP °C	TIME		
1	SA335P22(A)	60.3	12.5	22	12.5V	TIG	RT2½Cr1Mo	Ø2.50	201gms	1014	---	725+/-25	1 hr / 25 mm minimum 60 mins	100% RT	
	SA234WP22CL1(A)						Ø2.50	314 nos							
	SA335P22(A)						Ø3.15	100 nos							
2	SA335P22(A)	60.3	5.54	32	5.54V	ARC	RT2½Cr1Mo	Ø2.50	404 gms	1013	150			100% RT	
	SA234WP22CL1(A)						Ø2.50	320 nos							
	SA335P22(A)						Ø2.50								
	SA234WP22CL1(A)														

01. REFER 4-80-999-93172 & 4-80-999-93173 FOR WPS, HT AND NDT REQUIREMENTS

PREPARED A. SURESH	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 19-12-11	DRAWING NO. 4-80-307-72113	REV. 00
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## ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 0-80-310-05388

CUST. NO : 7104 TO 7108  
 PGMA : 80-310  
 SYSTEM : HRH FROM REHEATER TO INTERCEPTOR VALVE

DOC. NO. : 4-80-310-72437  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTENT)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA335P22	558.8	28.58	29	28.58	TIG	RT2½Cr1Mo	Ø2.50	6815 gms	150	725+/-25	1 hr / 25 mm minimum 60 mts	100% RT 3% HARDNESS	
						ARC	E9018B3	Ø2.50	1340 nos					
						ARC	E9018B3	Ø3.15	2202 nos					
1	SA234WP22CL1	558.8	28.50	18	40.0	TIG	RT2½Cr1Mo	Ø2.50	4600 gms	150	725+/-25	1 hr / 25 mm minimum 60 mts	100% RT 3% HARDNESS	
						ARC	E9018B3	Ø2.50	1045 nos					
						ARC	E9018B3	Ø3.15	1700 nos					
1	SA335P22	762.0	40.0	35	28.58	TIG	RT2½Cr1Mo	Ø2.50	8225 gms	150	725+/-25	1 hr / 25 mm minimum 60 mts	100% RT 3% HARDNESS	
						ARC	E9018B3	Ø2.50	1617 nos					
						ARC	E9018B3	Ø3.15	2657 nos					
3	SA335P22	558.8	28.58	35	35.0	TIG	RT2½Cr1Mo	Ø2.50	532.5 gms	150	725+/-25	1 hr / 25 mm minimum 60 mts	100% RT 3% HARDNESS	
						ARC	E9018B3	Ø2.50	103 nos					
						ARC	E9018B3	Ø3.15	172 nos					
4	SA335P22(A)	629.0	35	2	13	TIG	RT2½Cr1Mo	Ø2.50	46 gms	150	725+/-25	1 hr / 25 mm minimum 60 mts	100% RT 3% HARDNESS	
						ARC	E9018-B3	Ø2.50	257 nos					
						ARC	E9018-B3	Ø4.00	257 nos					
5	SA182F22CL3(A)	63.5	13	4	13	TIG	RT2½Cr1Mo	Ø2.50	41 nos	150	725+/-25	1 hr / 25 mm minimum 60 mts	100% RT 3% HARDNESS	
						ARC	ENiCrFe2	Ø3.15	56 nos					
						ARC	ENiCrFe2	Ø4.00	38 nos					

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - 0A	DATE 18-11-11	DRAWING NO. 4-80-310-72437	REV. 00
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## ERECTION WELDING SCHEDULE

PROJECT : NASIK SX270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 1-80-312-16913

CUST. NO : 7104 TO 7108  
 PGMA : 80-312  
 SYSTEM : LOW PRESSURE BYPASS  
 VALVE UPSTREAM AND DOWNSTREAM PIPING

DOC. NO. : 4-80-312-72877  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			WPS NO.	MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTEST)	SIZE (mm)	QUANTITY			TEMP °C	TIME		
1	SA335P22(A)	508	28	47	28.0ψ	TIG	RT2¼Cr1Mo	Ø2.50	10120 gms	1014	150	725+/-25	1 hr / 25 mm minimum 60 mins	100% RT	
	ARC						E9018-B3	Ø2.50	1970 nos						
	ARC						E9018-B3	Ø3.15	3260 nos						
2	SA234WP22CL1(A)	609.6	20	4	20.0ψ	TIG	RT2¼Cr1Mo	Ø2.50	1176 gms	1014	150	725+/-25	1 hr / 25 mm minimum 60 mins	100% RT	
	ARC						E9018-B3	Ø3.15	414 nos						
	ARC						E9018-B3	Ø4.00	306 nos						

NOTES :  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-312-72877	REV. 00
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ERECTION WELDING SCHEDULE

PROJECT : NASTIK 5x270 MW THERMAL POWER PROJECT  
CONTRACTOR : M/S BHEL

CUST. NO: 7104 TO 7108  
P&M : 80-320

DOC. NO. : 4-80-320-72834  
REV. NO. : 00

DRAWING NO : 0-80-320-05330

SYSTEM : COLD REHEAT PIPING FROM TURBINE  
TO HRPP TEE

WELDING CODE : 1BR / ASME  
PAGE NO : 1 OF 2

Sl. No.	MATERIAL SPECN. 1 MATERIAL SPECN. 2	PIPE SIZE OD (in mm) / THK (in mm)	TOTAL No. OF JOINTS	WELD SPECN.	ARC / GAS / TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PHMT SOAKING		MIN. RECOMMENDED NDE	REMARKS
						SPECN. (AMERICAN)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	S4338P22 SA233W22CL1 SA102Z2CL3	168.3 10.97 2	2	10.97 √	TIG	RT23CTMo	02.50	128 gms	1014	725/-25	1 hr / 25 mm mILuminum	100% RT	
2	S4338P22 SA233W22CL1 SA338P22	711.2 25	12	25 √	ARC	E9018B3 E9018B3 E9018B3	02.50 03.15 04.00	650 nos 1060 nos 1300 nos	1014	725/-25	25 mm mILuminum 60 mths	100% RT	
3	SA233W22CL1 SA233W22CL1 SA338P22	457.2 22.2 2	2	22.2 √	ARC	RT23CTMo	02.50	400 gms		725/-25	1 hr / 25 mm mILuminum	100% RT	
4	TIENONWELL A151321 SA182P22CL3(A)	63.5 13	3	13 √	TIG	E9018B3 E9018B3 E9018B3	02.50 03.15 04.00	75 nos 130 nos 125 nos	1014	725/-25	25 mm mILuminum 60 mths	3% HARDNESS	
5	SA106GR C SA338P22	711.2 20	1	20 √	ARC	RT23CTMo	02.50	2500 gms	1041	925/-15	1 hr / 25 mm mILuminum	100% RT	

NOTES: 01. 100 % LPT / PPT ON ALL BUTT WELDS AFTER PHMT.  
02. \* REFER NDE MANUAL NO. PS DM-1002 REV 01 / 12-98.

03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED: E. YIVARAJ DESIGN/CHKD: P. SURESH DESIGN/APPD: C. V. NATHAN CRO-APPD: - 0A DATE: 18-11-11 DRAWING NO.: 4-80-320-72834 REV.: 00



ERECTION WELDING SCHEDULE

PROJECT : NASTIK 5x270 MW THERMAL POWER PROJECT  
CONTRACTOR : M/S BHEL

CUST. NO: 7104 TO 7108  
P&M : 80-320

DOC. NO. : 4-80-320-72834  
REV. NO. : 00

DRAWING NO : 0-80-320-05332

SYSTEM : COLD REHEAT PIPING FROM HRPP  
TEE TO REHEATER INLET HEADER.

WELDING CODE : 1BR / ASME  
PAGE NO : 2 OF 2

Sl. No.	MATERIAL SPECN. 1 MATERIAL SPECN. 2	PIPE SIZE OD (in mm) / THK (in mm)	TOTAL No. OF JOINTS	WELD SPECN.	ARC / GAS / TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PHMT SOAKING		MIN. RECOMMENDED NDE	REMARKS
						SPECN. (AMERICAN)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
6	SA106GR C SA2024MPC	711.2 20.0 18	20.0 √	ARC	TIG	RT3Mo	02.50	4500 gms		325/-15	1 hr / 25 mm mILuminum	100% RT	
7	SA106GR C SA106GR C SA233W22CL1 SA233W22CL1	457.2 12.7 36	12.7 √	ARC	TIG	E7018A1 E7018A1 E7018A1	02.50 03.15 04.00	980 nos 1600 nos 1200 nos	1005	-	30 mths	10% RT	
8	SA106GR C SA105 SA233W22CL1	168.3 7.11 2	7.11 √	ARC	TIG	RT3Mo	02.50	133 gms	1003	-	-	10% RT	
9	TIENONWELL A151321 SA105	63.5 13	1	13 √	ARC	ENICrFe2 ENICrFe2 ENICrFe2	02.50 03.15 03.15	12 gms 11 nos 9 nos		-	-	10% RT	
10	SA106GR C SA105	33.4 6.35 8	6.35 √	ARC	TIG	RT3Mo	02.50	133 gms	1003	-	-	10% RT	

NOTES: 01. 100 % LPT / PPT ON ALL BUTT WELDS AFTER PHMT.  
02. \* REFER NDE MANUAL NO. PS DM-1002 REV 01 / 12-98.

03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED: E. YIVARAJ DESIGN/CHKD: A. SURESH DESIGN/APPD: C. V. NATHAN CRO-APPD: - 0A DATE: 18-11-11 DRAWING NO.: 4-80-320-72834 REV.: 00



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ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT	CUST. NO : 7104 TO 7108	DOC. NO. : 4-80-321-72878
CONTRACTOR : M/S BHEL	PGMA : 80-321	REV. NO. : 00
DRAWING NO : 1-80-321-16914	SYSTEM : HIGH PRESSURE BYPASS VALVE DOWN STREAM PIPING	WELDING CODE : IBR / ASME
	PAGE NO. : 1 OF 1	PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			WPS NO.	MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY			TEMP °C	TIME		
1	SA335P22(A)	273	36	4	36.0 $\bar{u}$	TIG	RT $\frac{1}{2}$ Cr-1Mo	02.50	395 gms	1014	150	725+/-25	1 hr / 25 mm minimum 60 mts	3% HARDNESS	
	ARC					E9018-B3	02.50	88 nos							
	ARC					E9018-B3	03.15	145 nos							
2	SA335P22(A)	457.2	25	10	25.0 $\bar{u}$	TIG	RT $\frac{1}{2}$ Cr-1Mo	02.50	1940 gms	1014	150	725+/-25	25 mm minimum 60 mts	100%RT	
	ARC					E9018-B3	03.15	620 nos							
	ARC					E9018-B3	04.00	740 nos							
3	SA335P22(A)	63.5	13	2	13.0 $\bar{u}$	TIG	ErNiCr-3	02.50	20 gms						
	ARC					ENiCrFe2	02.50	28 nos							
	ARC					ENiCrFe2	03.15	14 nos							
	SA182F22CL3(A)														
	SA234WP22CL1(A)														
	SA182F22CL3(A)														
	SA234WP22CL1(A)														

NOTES :  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-321-72878	REV. 00
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ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 1-80-322-16583

CUST. NO : 7104 TO 7108  
 PGMA : 80-322  
 SYSTEM : COLD REHEAT PIPING TO DEAERATOR  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-322-72260  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN. 1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTENT)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA106GR.B	508.0	12.7	17	12.7 V	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	3506 gms	1003			10% RT	
	SA234WPB						E7018-1	Ø2.50	711 nos					
	SA106GR.B						E7018-1	Ø3.15	1178 nos					
2	SA106GR.C	273.0	9.27	35	9.27 V	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	3807 gms	1003			10% RT	
	SA234WPC						E7018-A1	Ø2.50	770 nos					
	SA106GR.C						E7018-A1	Ø3.15	1155 nos					

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - 0A	DATE 18-11-11	DRAWING NO. 4-80-322-72260	REV. 00
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ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 1-80-324-17193

CUST. NO : 7104 TO 7108  
 PGMA : 80-324  
 SYSTEM : CRH HEADER TO AUX. PRDS  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-324-73340  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN. 1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTENT)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA106GR.B	168.3	7.11	21	7.11 V	ARC	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	1392gms	1003			10% RT
	ARC						E7018-1	Ø2.50	347nos					
	ARC						E7018-1	Ø3.15	207nos					
2	SA106GR.B	114.1	6.02	30	6.02 V	ARC	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	998gms	1003			10% RT
	ARC						E7018-1	Ø2.50	693nos					
	ARC						E7018-1	Ø2.50	1003					

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-324-73340	REV. 00
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ERECTION WELDING SCHEDULE

<p>PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT          CONTRACTOR : M/S BHEL          DRAWING NO : 1-80-330-16584</p>	<p>CUST. NO : 7104 TO 7108          PGMA : 80-330          SYSTEM : EXTRACTION STEAM PIPING TO          LOW PRESSURE HEATER I          PAGE NO. 1 OF 1</p>
<p>DOC. NO. : 4-80-330-72259          REV. NO. : 00          WELDING CODE : IBR / ASME          PAGE NO : 1 OF 1</p>	

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			WPS NO.	MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKDS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY			TEMP °C	TIME		
1	SA672GR.B70CL22	813.0	10.0	7	10 √	ARC	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	2310gms	1003				10% RT
	ARC						E7018-1	Ø3.15	723 nos						
2	SA672GR.B70CL22	610.0	10.0	37	10 √	ARC	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	9620gms	1003				10% RT
	ARC						E7018-1	Ø3.15	1953 nos 3011 nos						
3	SA106GRB	273	6.35	4	6.35 √	ARC	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	445 gms	1003				10% RT
	ARC						E7018-1	Ø3.15	88 nos 39 nos						
4	SA234WPB	558.8	9.53	2	9.53 √	ARC	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	460 gms	1003				10% RT
	ARC						E7018-1	Ø3.15	102 nos 159 nos						
5	SA234WPB	508.0	9.53	2	9.53 √	ARC	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	418 gms	1003				10% RT
	ARC						E7018-1	Ø3.15	92 nos 145 nos						

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA
	DATE 18-11-11	DRAWING NO. 4-80-330-72259	REV. 00



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### ERECTION WELDING SCHEDULE

<b>PROJECT :</b> NASIK 5X270 MW THERMAL POWER PROJECT <b>CONTRACTOR :</b> M/S BHEL <b>DRAWING NO :</b> 1-80-331-16532	<b>CUST. NO :</b> 7104 TO 7108 <b>PGMA :</b> 80-331 <b>SYSTEM :</b> EXTRACTION STEAM PIPING TO LOW PRESSURE HEATER II <b>PAGE NO .</b> 1 OF 1
<b>DOC. NO. :</b> 4-80-331-72198 <b>REV. NO. :</b> 00 <b>WELDING CODE :</b> IBR / ASME <b>PAGE NO :</b> 1 OF 1	

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA672GR.B70CL22	610.0	10.0	18	10 √	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	4680gms	1003			10% RT	
	SA234WPB					ARC	E7018-1	Ø3.15	1465 nos					
2	SA234WPB	508.0	9.53	1	9.53 √	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	209 gms	1003			10% RT	
	LPH-2 NOZZLE					ARC	E7018-1	Ø3.15	66 nos					
3	SA106GR.B	273	6.35	2	6.35 √	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	223 gms	1003			10% RT	
	SA106GR.B					ARC	E7018-1	Ø3.15	45 nos					
4	SA106GRB	273	6.35	4	6.35 √	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	460 gms	1003			10% RT	
	SA234WPB					ARC	E7018-1	Ø3.15	88 nos					

**NOTES :**  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

<b>PREPARED</b> E. YUVARAJ	<b>DESIGN/CHD.</b> A. SURESH	<b>DESIGN/APPD.</b> C. V. NATHAN	<b>CHD./APPD. - QA</b>
	<b>DATE</b> 18-11-11	<b>DRAWING NO.</b> 4-80-331-72198	<b>REV .</b> 00



0001

ERECTION WELDING SCHEDULE

<p>PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT          CONTRACTOR : M/S BHEL          DRAWING NO : 1-80-332-16554</p>	<p>CUST. NO : 7104 TO 7108          PGMA : 80-332          SYSTEM : EXTRACTION STEAM PIPING TO          LOW PRESSURE HEATER III          PAGE NO. 1 OF 1</p>
<p>DOC. NO. : 4-80-332-72211          REV. NO. : 00          WELDING CODE : IBR / ASME          PAGE NO : 1 OF 1</p>	

SL No.	MATERIAL SPECN. 1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/GAS/TIG.	RECOMMENDED ELECTRODE / WIRE			WPS NO.	MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY			TEMP °C	TIME		
1	SA106GR.B	508.0	12.7	14	12.7 √	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	2888gms	1003				10% RT	
	SA234WPB					ARC	E7018-1	Ø2.50	585 nos						
	SA106GR.B					ARC	E7018-1	Ø3.15	970 nos						
2	SA234WPB	406.4	9.53	2	9.53 √	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	330 gms	1003				10% RT	
	SA106GR.B					ARC	E7018-1	Ø2.50	66 nos						
	LPH-3 NOZZLE EXT-3 NOZZLE					ARC	E7018-1	Ø3.15	104 nos						
3	SA106GR.B	219.1	6.35	2	6.35 √	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	178 gms	1003				10% RT	
	SA106GR.B					ARC	E7018-1	Ø2.50	82 nos						
	SA515GR70														

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA
	DATE 18-11-11	DRAWING NO. 4-80-332-72211	REV. 00



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ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 0-80-335-05299

CUST. NO : 7104 TO 7108  
 PGMA : 80-335  
 SYSTEM : EXTRACTION STEAM TO  
 DEAERATING HEATER  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-335-72223  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			WPS NO.	MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY			TEMP °C	TIME		
1	SA106GR.B	508.0	12.7	19	12.7 V	ARC ARC ARC	RT $\frac{1}{2}$ Mo	Ø2.50	39220gms	1003				10% RT	
	SA234WPB						Ø2.50	795 nos							
	SA106GR.B						Ø3.15	1317 nos							
2	SA106GR.B	406.4	9.53	26	9.53 V	ARC ARC	RT $\frac{1}{2}$ Mo	Ø2.50	4290 gms	1003				10% RT	
	SA234WPB						Ø3.15	858 nos							
	SA106GR.B						Ø3.15	1345 nos							

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-335-72223	REV. 00
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ERECTION WELDING SCHEDULE

PROJECT : *NASIK 5X270 MW THERMAL POWER PROJECT CONTRACTOR : M/S BHEL DRAWING NO : 1-80-336-16562	CUST. NO : 7104 TO 7108 PGMA : 80-336 SYSTEM : EXTRACTION STEAM PIPING TO HIGH PRESSURE HEATER 1 PAGE NO. 1 OF 1
DOC. NO. : 4-80-336-72224 REV. NO. : 00 WELDING CODE : IBR / ASME PAGE NO : 1 OF 1	

SL No.	MATERIAL SPECN. 1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS	
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C			TIME
1	SA335P22(A)	323.9	9.53	31	9.53V	ARC	TIG	RT2½Cr1Mo	Ø2.50	4030 gms	1014	---	725+/-25	1 hr / 25 mm minimum 60 mins	100% RT 3% HARDNESS
	ARC						E9018-B3	Ø2.50	819 nos						
	ARC						E9018-B3	Ø3.15	1262 nos						
2	SA234WP22CL1(A)	273.0	9.27	1	9.27 V	ARC	TIG	RT2½Cr1Mo	Ø2.50	109 gms	1014	---	725+/-25	1 hr / 25 mm minimum 60 mins	100% RT 3% HARDNESS
	ARC						E9018-B3	Ø3.15	33 nos						
3	SA335P22(A)	114.3	6.02	2	6.02 V	ARC	TIG	RT2½Cr1Mo	Ø2.50	67 gms	1013	150	---	---	100% RT 3% HARDNESS
	ARC						E9018-B3	Ø2.50	47 nos						
	ARC						E9018-B3	Ø2.50	47 nos						

NOTES :  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA
	DATE 18-11-11	DRAWING NO. 4-80-336-72224	REV. 00



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ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 1-80-337-16561

CUST. NO : 7104 TO 7108  
 PGMA : 80-337  
 SYSTEM : EXTRACTION STEAM TO  
 HIGH PRESSURE HEATER II  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-337-72225  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA106GR.C	273.0	9.27	18	9.27 √	ARC	RT $\frac{1}{2}$ Mo	Ø2.50	1958gms	1003			10% RT	
	SA234WPC						Ø2.50	396 nos						
	SA106GR.C						Ø3.15	594 nos						
2	SA106GR.B	114.3	6.02	2	6.02 √	ARC	RT $\frac{1}{2}$ Mo	Ø2.50	67 gms	1003			10% RT	
	SA106GR.B						Ø2.50	47 nos						
	SA515GR70													

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-337-72225	REV. 00
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ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 0-80-340-05694

CUST. NO : 7104 TO 7108  
 PGMA : 80-340  
 SYSTEM : HT & LT AUX STEAM HEADER  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-340-73342  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA106GR.B	323.9	9.53	31	9.53 √	ARC	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	4030gms	1003			10% RT
	ARC						E7018-1	Ø2.50	819nos					
	ARC						E7018-1	Ø3.15	1262nos					
2	SA106GR.B	273	6.35	30	6.35 √	ARC	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	3338gms	1003			10% RT
	ARC						E7018-1	Ø2.50	660nos					
	ARC						E7018-1	Ø3.15	297nos					
3	SA106GR.B	219.1	6.35	6	6.35 √	ARC	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	533gms	1003			10% RT
	ARC						E7018-1	Ø2.50	245nos					
	ARC						E7018-1	Ø2.50	533gms					
4	SA106GR.B	114.1	6.02	16	6.02 √	ARC	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	1223gms	1003			10% RT
	ARC						E7018-1	Ø2.50	370nos					
	ARC						E7018-1	Ø2.50	1223gms					
5	SA106GR.B	88.9	5.49	5	5.49 √	ARC	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	83nos	1003			10% RT
	ARC						E7018-1	Ø2.50	83nos					
	ARC						E7018-1	Ø2.50	83nos					

NOTES :  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-340-73342	REV. 00
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### ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 1-80-343-17357

CUST. NO : 7104 TO 7108  
 PGMA : 80-343  
 SYSTEM : AUXILIARY STEAM PIPING  
 AIR HEATER SOOT BLOWING  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-343-73701  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN. 1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC / GAS / TIG.	RECOMMENDED ELECTRODE / WIRE			WPS NO.	MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY			TEMP °C	TIME		
1	SA106GR.B	88.9	5.49	26	5.49 V	ARC	TIG	RT 1/2Mo	Ø2.50	637 gms	1003				10% RT
	SA234WPB														
	SA106GR.B														
	SA234WPB														

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA
	DATE 18-11-11	DRAWING NO. 4-80-343-73701	REV. 00



0001

ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT CONTRACTOR : M/S BHEL DRAWING NO : 1-80-344-17569	CUST. NO : 7104 PGMA : 80-344 SYSTEM : AUXILIARY STEAM TO FOPH AND STEAM TRACING PAGE NO. 1 OF 1
DOC. NO. : 4-80-344-74028 REV. NO. : 00 WELDING CODE : IBR / ASME PAGE NO : 1 OF 1	MIN. PRE HEAT °C : PWHT SOAKING TEMP °C : TIME : MIN. RECOMMENDED NDE : REMARKS :

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTEST)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA106GR.B	323.9	6.35	800	6.35 √	ARC	RT $\frac{1}{2}$ Mo	Ø2.50	103687gms	1003			10% RT	FOR 7104 ONLY
	ARC						E7018-1	Ø2.50	22440 nos					
	ARC						E7018-1	Ø3.15	14025 nos					
2	SA106GR.B	60.3	5.54	80	5.54 √	ARC	RT $\frac{1}{2}$ Mo	Ø2.50	1260 gms	1003			10% RT	FOR 7104 ONLY
	ARC						E7018-1	Ø2.50	1109 nos					
	ARC						E7018-1	Ø3.15	880 nos					
3	SA106GR.B	33.4	4.55	180	4.55 √	ARC	RT $\frac{1}{2}$ Mo	Ø2.50	1440 gms	1003			10% RT	FOR 7104 ONLY
	ARC						E7018-1	Ø2.50	1080 nos					
	ARC						E7018-1	Ø2.50	1260 gms					
4	SA106GR.B	21.3	3.73	180	3.73 √	ARC	RT $\frac{1}{2}$ Mo	Ø2.50	90 nos	1003			10% RT	FOR 7104 ONLY
	ARC						E7018-1	Ø2.50	90 nos					
	ARC						E7018-1	Ø2.50	1260 gms					

NOTES :  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA
	DATE 18-11-11	DRAWING NO. 4-80-344-74028	REV. 00



0001

ERECTION WELDING SCHEDULE

PROJECT : \*NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 0-80-345-05684

CUST. NO : 7104 TO 7108  
 PGMA : 80-345  
 SYSTEM : AUXILIARY STEAM TO DEAERATOR  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-345-73327  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA106GR.C	457.2	12.7	15	12.7 V	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	2775 gms	1003			10% RT	
	ARC					E7018-A1	Ø2.50	561 nos						
	ARC					E7018-A1	Ø3.15	924 nos						
2	SA106GR.C	457.2	12.7	15	12.7 V	ARC	E7018-A1	Ø3.15	924 nos	1003			10% RT	
	ARC					E7018-A1	Ø4.00	265 nos						
	TIG					RT $\frac{1}{2}$ Mo	Ø2.50	3783 gms						
3	SA106GR.B	273.0	6.35	34	6.35 V	ARC	E7018-1	Ø2.50	748 nos	1003			10% RT	
	ARC					E7018-1	Ø3.15	337 nos						
	TIG					RT $\frac{1}{2}$ Mo	Ø2.50	532 gms						
	SA234WPB	114.3	6.02	16	6.02 V	ARC	E7018-1	Ø2.50	370 nos	1003			10% RT	
	SA106GR.B													
	SA234WPB													

NOTES :  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - 0A	DATE 18-11-11	DRAWING NO. 4-80-345-73327	REV. 00
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### ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 1-80-348-16752

CUST. NO : 7104 TO 7108  
 PGMA : 80-348  
 SYSTEM : AUXILIARY STEAM PIPING TO TURBINE  
 GLAND SEALING  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-348-72499  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN. 1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC / GAS / TIG.	RECOMMENDED ELECTRODE / WIRE			WPS NO.	MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY			TEMP °C	TIME		
1	SA106GR.B	114.3	6.02	24	6.02 V	ARC	RT 1/2Mo	Ø2.50	798 gms	1003				10% RT	
	SA234WPB														
	SA106GR.B														
	SA234WPB														

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA
	DATE 18-11-11	DRAWING NO. 4-80-348-72499	REV. 00



0001

ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 1-80-364-16467

CUST. NO : 7104 TO 7108  
 PGMA : 80-364  
 SYSTEM : CBD TANK VENT PIPING TO DEAERATOR  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-364-72128  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN. 1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC / GAS / TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA106GR.B	219.1	6.35	17	6.35 V	ARC	RT 1/2Mo	Ø2.50	1509 gms	1003			10% RT	
	SA234WPB													
	SA106GR.B													
	SA234WPB													

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-364-72128	REV. 00
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ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 1-80-365-16464

CUST. NO : 7104 TO 7108  
 PGMA : 80-365  
 SYSTEM : CBD SAFETY VALVE EXHAUST  
 PIPING TO ATMOSPHERE  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-365-72127  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTENT)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA106GR.B	219.1	6.35	8	6.35 √	ARC	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	710 gms	1003			10% RT
	SA234WPB													
	SA106GR.B													
2	SA106GR.B	168.3	7.11	5	7.11 √	ARC	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	332 gms	1003			10% RT
	SA234WPB													
	SA106GR.B													
	SA234WPB													

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-365-72127	REV. 00
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### ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 0-80-366-05277

CUST. NO : 7104 TO 7108  
 PGMA : 80-366  
 SYSTEM : IBD VENT TO ATMOSPHERE  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-366-72126  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN. 1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC / GAS / TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	IS3589 410MPA	610	8	16	8 V	TIG	RT 1/2 Mo	Ø2.50	4030gms	1213				10% RT
	ARC					E7018-1	Ø2.50	800 nos						
	IS3589 410MPA					ARC	E7018-1	Ø3.15	6784 nos					

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA
	DATE 18-11-11	DRAWING NO. 4-80-366-72126	REV. 00



0001

ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 0-80-373-05690

CUST. NO : 7104 TO 7108  
 PGMA : 80-373  
 SYSTEM : SRV EXHAUST PIPING  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-373-73333  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE		WPS NO.	MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)			QUANTITY	TEMP °C		
1	SA106GR.B	355.6	9.53	38	9.53 √	ARC	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	5463 gms	1003			10% RT
	ARC						E7018-1	Ø2.50	1129 nos					
	ARC						E7018-1	Ø3.15	1714 nos					
2	SA106GR.B	323.9	9.53	10	9.53 √	ARC	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	1300 gms	1003			10% RT
	ARC						E7018-1	Ø2.50	265 nos					
	ARC						E7018-1	Ø3.15	407 nos					
3	SA106GR.B	273.0	6.35	24	6.35 √	ARC	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	2670 gms	1003			10% RT
	ARC						E7018-1	Ø2.50	528 nos					
	ARC						E7018-1	Ø3.15	238 nos					
4	SA106GR.B	219.1	6.35	12	6.35 √	ARC	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	1065 gms	1003			10% RT
	ARC						E7018-1	Ø2.50	490 nos					
	ARC						E7018-1	Ø2.50	490 nos					

NOTES :  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-373-73333	REV. 00
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ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 1-80-375-17188

CUST. NO : 7104 TO 7108  
 PGMA : 80-375  
 SYSTEM : HP AND LP HEATERS SV EXHAUSE PPG  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-375-73337  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/GAS/TIG.	RECOMMENDED ELECTRODE / WIRE			WPS NO.	MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY			TEMP °C	TIME		
1	SA106GR.B	168.3	7.11	11	7.11 V	ARC	TIG	RT 1/2 Mo	Ø2.50	729 gms	1003			10% RT	
	ARC						E7018-1	Ø2.50	182 nos						
	ARC						E7018-1	Ø3.15	109 nos						
2	SA106GR.B	114.3	6.02	17	6.02 V	ARC	TIG	RT 1/2 Mo	Ø2.50	566 gms	1003			10% RT	
	ARC						E7018-1	Ø2.50	393 nos						
	ARC						E7018-1	Ø2.50	393 nos						

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-375-73337	REV. 00
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ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL

CUST. NO : 7104 TO 7108  
 PGMA : 80-381

DOC. NO. : 4-80-381-73811

SYSTEM : HP HEATERS START UP VENTS

REV. NO. : 00  
 WELDING CODE : IBR / ASME

DRAWING NO :

PAGE NO. 1 OF 1

PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			WPS NO.	MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTENT)	SIZE (mm)	QUANTITY			TEMP °C	TIME		
1	SA106GR.B	60.3	5.54	60	5.54 √	ARC ARC	RT $\frac{1}{2}$ Mo	Ø2.50	945 gms	1003				10% RT	
	E7018-1						Ø3.15	660 nos							
2	SA106GR.B	33.4	4.55	2	4.55 √	ARC TIG	RT $\frac{1}{2}$ Mo	Ø2.50	16 gms	1003				10% RT	
	E7018-1						Ø2.50	12 nos							

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-381-73811	REV. 00
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### ERECTION WELDING SCHEDULE

PROJECT : AMRAVATI 5X270 MW THERMAL POWER PROJECT CONTRACTOR : M/S BHEL DRAWING NO : 1-80-382-16751	CUST. NO : 7109 TO 7113 PGMA : 80-382 SYSTEM : LPH-I VENT TO CONDENSER PAGE NO. 1 OF 1
DOC. NO. : 4-80-382-72498 REV. NO. : 00 WELDING CODE : IBR / ASME PAGE NO : 1 OF 1	DOC. NO. : 4-80-382-72498 REV. NO. : 00 WELDING CODE : IBR / ASME PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN. 1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC / GAS / TIG.	RECOMMENDED ELECTRODE / WIRE			WPS NO.	MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY			TEMP °C	TIME		
1	SA106GR.B	88.9	5.49	17	5.49 V	ARC	RT $\frac{1}{2}$ Mo	Ø2.50	417 gms	1003				10% RT	
	SA234WPB														
	SA106GR.B														
	SA234WPB														

NOTES:

01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.

02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.

03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA
	DATE 18-11-11	DRAWING NO. 4-80-382-72498	REV. 00



0001

ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 1-80-385-16619

CUST. NO : 7104 TO 7108  
 PGMA : 80-385  
 SYSTEM : UNIT FLASH TANK DRAIN AND VENT PIPING  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-385-72304  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN. 1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			WPS NO.	MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTEST)	SIZE (mm)	QUANTITY			TEMP °C	TIME		
1	SA106GR. B/GR. C SA234WPB	406.4	9.53	15	9.53 V	ARC	RT $\frac{1}{2}$ Mo	Ø2.50	2475 gms	1003	---	---	---	10% RT	
							E7018-1	Ø2.50	495 nos						
							E7018-1	Ø3.15	776 nos						
2	SA106GR. B SA234WPB SA106GR. B SA234WPB	114.3	6.02	22	6.02 V	ARC	RT $\frac{1}{2}$ Mo	Ø2.50	732 gms	1003	---	---	---	10% RT	
							E7018-1	Ø2.50	509 nos						

NOTES :  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-385-72304	REV. 00
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ERECTION WELDING SCHEDULE

PROJECT : \*NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 1-80-388-16618

CUST. NO : 7104 TO 7108  
 PGMA : 80-388  
 SYSTEM : CONDENSER AIR EVACUATION LINE  
 AND VACUUM BREAKER LINE  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-388-72303  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTEST)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA106GR.B	323.9	9.53	32	9.53 √	ARC	TIG	RT <sub>1</sub> Mo	Ø2.50	4160 gms	1003			10% RT
	SA234WPB						E7018-1	Ø2.50	845 nos					
	SA106GR.B						E7018-1	Ø3.15	1303 nos					
2	SA106GR.B	168.3	7.11	25	7.11 √	ARC	TIG	RT <sub>1</sub> Mo	Ø2.50	1657 gms	1003			10% RT
	SA234WPB						E7018-1	Ø2.50	413 nos					
	SA106GR.B						E7018-1	Ø3.15	248 nos					

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-388-72303	REV. 00
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0001

### ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 1-80-395-17484

CUST. NO : 7104 TO 7108  
 PGMA : 80-395  
 SYSTEM : AUXILIARY STEAM TO FO ATOMISATION  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-395-73894  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN. 1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC / GAS / TIG.	RECOMMENDED ELECTRODE / WIRE			WPS NO.	MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY			TEMP °C	TIME		
1	SA106GR.B	114.3	6.02	15	6.02 V	ARC	TIG	RT 1/2Mo	Ø2.50	500 gms	1003				10% RT
	SA234WPB														
	SA106GR.B														
	SA234WPB														

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-395-73894	REV. 00
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ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 0-80-400-05569

CUST. NO : 7104 TO 7108  
 PGMA : 80-400  
 SYSTEM : CONDENSATE SUCTION PIPING  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-400-72521  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			WPS NO.	MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTENT)	SIZE (mm)	QUANTITY			TEMP °C	TIME		
1	SA106GR.B SA234WPB	508	12.7	15	12.7 V	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	3094gms	1003				10% RT	
	ARC					E7018-1	Ø2.50	627 nos							
	ARC					E7018-1	Ø3.15	1040 nos							
2	SA106GR.B SA234WPB	355.6	9.53	4	9.53 V	ARC	E7018-1	Ø2.50	119 nos	1003				10% RT	
	ARC					E7018-1	Ø3.15	185 nos							
	TIG					RT $\frac{1}{2}$ Mo	Ø2.50	575 gms							

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-400-72521	REV. 00
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ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 0-80-401-05373

CUST. NO : 7104 TO 7108  
 PGMA : 80-401  
 SYSTEM : COND. MINI RECIRCULATION &  
 LP BYPASS SPRAY PIPING  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-401-72404  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			WPS NO.	MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTENT)	SIZE (mm)	QUANTITY			TEMP °C	TIME		
1	SA106GR.B SA234WPB	219.1	6.35	43	6.35 ✓	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	3817gms	1003				10% RT	
	ARC					E7018-1	Ø2.50	1751 nos							
2	SA106GR.B SA234WPB	168.3	7.11	8	7.11 ✓	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	530 gms	1003				10% RT	
	ARC					E7018-1 E7018-1	Ø2.50 Ø3.15	132 nos 90 nos							

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-401-72404	REV. 00
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### ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT CONTRACTOR : M/S BHEL DRAWING NO :	CUST. NO : 7104 TO 7108 PGMA : 80-407 SYSTEM : CONDENSATE FOR SEALING OF VACUUM PAGE NO. 1 OF 1
DOC. NO. : 4-80-407-74316 REV. NO. : 00 WELDING CODE : IBR / ASME PAGE NO : 1 OF 1	DOC. NO. : 4-80-407-74316 REV. NO. : 00 WELDING CODE : IBR / ASME PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN. 1 MATERIAL SPECN. 2	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTENT)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA106GR.B	48.3	5.08	30	5.08 √	ARC ARC	TIG	RT <sub>1/2</sub> Mo	Ø2.50	372 gms	1003			10% RT
	ARC						E7018-A1	Ø3.15	264 nos					
2	SA106GR.B	33.4	4.55	40	4.55 √	ARC	TIG	RT <sub>1/2</sub> Mo	Ø2.50	312 gms	1003			10% RT
	ARC						E7018-A1	Ø2.50	240 nos					
3	SA106GR.B	21.3	3.73	40	3.73 √	ARC	TIG	RT <sub>1/2</sub> Mo	Ø2.50	312 gms	1003			10% RT
	ARC						E7018-A1	Ø2.50	240 nos					

NOTES:

01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.

02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.

03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED A. SURESH	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA
	DATE 19-11-11	DRAWING NO. 4-80-407-74316	REV. 00



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ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 0-80-408-05818

CUST. NO : 7104 TO 7108  
 PGMA : 80-408  
 SYSTEM : DM MAKE UP PIPING

DOC. NO. : 4-80-408-73729  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

PAGE NO. 1 OF 1

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/GAS/TIG.	RECOMMENDED ELECTRODE / WIRE			WPS NO.	MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTEST)	SIZE (mm)	QUANTITY			TEMP °C	TIME		
1	SA312TP304H	114.3	3.05	55	3.05 V	ARC	TIG	RT 347	Ø2.40	1815 gms	1032	---	---	10% RT 100% LPT	
	SA403WP304H						ARC	E 347	Ø2.50	990 nos					
	SA312TP304H						TIG	RT 347	Ø2.40	1040 gms					
2	SA312TP304H	88.9	3.05	40	3.05 V	ARC	TIG	RT 347	Ø2.50	560 nos	1032	---	---	10% RT 100% LPT	
	SA403WP304H						ARC	E 347	Ø2.50	560 nos					
	SA312TP304H						TIG	RT 347	Ø2.40	1040 gms					

NOTES:  
 01. 100 % LPT / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-408-73729	REV. 00
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### ERECTION WELDING SCHEDULE

<b>PROJECT :</b> NASIK 5X270 MW THERMAL POWER PROJECT <b>CONTRACTOR :</b> M/S BHEL  <b>DRAWING NO :</b> 4-80-413-17422, 1-80-413-17423	<b>CUST. NO :</b> 7104 TO 7108 <b>PGMA :</b> 80-413  <b>SYSTEM :</b> 1) DEARATOR & BOILER INITIAL FILLING LINE 2) COND.EXCESS RETURN PPG. <b>PAGE NO. :</b> 1 OF 1
<b>DOC.NO. :</b> 4-80-413-73792 <b>REV. NO. :</b> 00 <b>WELDING CODE :</b> IBR / ASME <b>PAGE NO :</b> 1 OF 1	

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			WPS NO.	MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY			TEMP °C	TIME		
1	SA312TP304H	168.3	3.4	32	3.4 √	ARC	TIG	RT 347	Ø2.40	2176 gms	1032	---	---	10% RT 100% LPT	
	SA403WP304H						ARC	E 347	Ø2.50	960nos					
	SA312TP304H						TIG	RT 347	Ø2.40	578 gms					
2	SA312TP304H	114.3	3.05	17	3.05 √	ARC	ARC	E 347	Ø2.50	306 nos	1032	---	---	10% RT 100% LPT	
	SA403WP304H						TIG	RT 347	Ø2.50	3313 gms					
	SA312TP304H						ARC	E7018-1	Ø2.50	825 nos					
3	SA106GR.B	168.3	7.11	50	7.11 √	ARC	RT 3Mo	Ø2.50	825 nos	1003	---	---	10% RT		
	SA234WPB						ARC	E7018-1	Ø3.15						495 nos
	SA106GR.B						ARC	E7018-1	Ø3.15						495 nos

**NOTES :**  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED <b>E. YUVARAJ</b>	DESIGN/CHD. <b>A. SURESH</b>	DESIGN/APPD. <b>C. V. NATHAN</b>	CHD./APPD. - 0A DATE <b>18-11-11</b>	DRAWING NO. <b>4-80-413-73792</b>	REV. <b>00</b>
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ERECTION WELDING SCHEDULE

PROJECT : \*NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 0-80-420-05671

CUST. NO : 7104 TO 7108  
 PGMA : 80-420  
 SYSTEM : BOILER FEED SUCTION PIPING  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-420-73300  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA106GR.C	355.6	7.92	25	7.92 √	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	3625gms	1003			10% RT	
	SA234WPB						E7018-A1	Ø2.50	743 nos					
	SA106GR.C						E7018-A1	Ø3.15	743 nos					
2	SA106GR.B	273	6.35	95	6.35 √	ARC	RT $\frac{1}{2}$ Mo	Ø2.50	10568gms	1003			10% RT	
	SA234WPB						E7018-1	Ø2.50	2090nos					
	SA106GR.B						E7018-1	Ø3.15	940nos					
3	SA106GR.B	168.3	7.11	8	7.11 √	ARC	RT $\frac{1}{2}$ Mo	Ø2.50	530gms	1003			10% RT	
	SA234WPB						E7018-1	Ø2.50	132 nos					
	SA106GR.B						E7018-1	Ø3.15	80 nos					

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - 0A	DATE 18-11-11	DRAWING NO. 4-80-420-73300	REV. 00
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### ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 0-80-421-05520

CUST. NO : 7104 TO 7108  
 PGMA : 80-421  
 SYSTEM : BOILER FEED RECIRCULATION PIPING  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-421-72824  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTENT)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA106GR.C	168.3	21.95	75	21.95VW	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	4900 gms	1005		1 hr / 25 mm minimum 30 mts	100% RT	
	SA234WPC						E7018-A1	Ø2.50	1232 nos					
	SA106GR.C SA234WPC						E7018-A1 E7018-A1	Ø3.15 Ø4.00	2112 nos 1144 nos					

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-421-72824.	REV. 00
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ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 0-80-423-05495

CUST. NO : 7104 TO 7108  
 PGMA : 80-423  
 SYSTEM : BOILER FEED DISCHARGE PIPING  
 PAGE NO. 1 OF 1

DOC.NO. : 4-80-423-72769  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA106GR.C(A)	368	48	30	48.0 ∩	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	4000gms	1005	100	635+/-15	1 hr/ 25 mm micrum 30 mts	100% RT
	ARC					E7018-A1	Ø2.50	930 nos						
	ARC					E7018-A1	Ø3.15	1500 nos						
2	SA106GR.C(A)	273.0	32.0	75	32.0 ∩	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	6765 gms	1005	100	635+/-15	1 hr/ 25 mm micrum 30 mts	100% RT
	ARC					E7018-A1	Ø2.50	1650 nos						
	ARC					E7018-A1	Ø3.15	2730 nos						
3	SA234WPC(A)	406.4	61	1	61.0 ∩	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	139 gms	1005	100	635+/-15	1 hr/ 25 mm micrum 30 mts	100% RT
	ARC					E7018-A1	Ø2.50	33 nos						
	ARC					E7018-A1	Ø3.15	55 nos						
4	SA234WPC(A)	63.5	13	5	13.0 ∩	TIG	ERNiCr3	Ø2.50	50 gms	1005	100	635+/-15	1 hr/ 25 mm micrum 30 mts	100% RT
	ARC					ENiCrFe3	Ø2.50	70 nos						
	ARC					ENiCrFe3	Ø3.15	35 nos						
5	SA106GR.C(A)	33.4	9.09	14	9.09 ∩	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	250 nos	1005	100	635+/-15	1 hr/ 25 mm micrum 30 mts	100% RT
	ARC					E7018-1	Ø2.50	250 nos						
	ARC					E7018-1	Ø3.15	55 nos						

NOTES :  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-423-72769	REV. 00
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ERECTION WELDING SCHEDULE



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PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 0-80-424-05496

CUST. NO : 7104 TO 7108  
 PGMA : 80-424  
 SYSTEM : BOILER FEED DISCHARGE PIPING FROM  
 HPH-5 TO HPH-6 AND BY PASS  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-424-72770  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA106GR.C(A)	368	48	56	48.0 $\sqrt{}$	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	6500 gms	1005	100	635+/-15	1 hr / 25 mm minimum 30 mts	100% RT
	ARC					E7018-A1	Ø2.50	1730 nos						
	ARC					E7018-A1	Ø3.15	2780 nos						
2	SA234WPC(A)	406.4	61	2	61.0 $\sqrt{}$	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	280 gms	1005	100	635+/-15	25 mm minimum 30 mts	100% RT
	ARC					E7018-A1	Ø3.15	68 nos						
	ARC					E7018-A1	Ø3.15	110 nos						
3	SA105(A)	63.5	13	4	13.0 $\sqrt{}$	TIG	ENiCr3	Ø2.50	40 gms	1005	100	635+/-15	25 mm minimum 30 mts	100% RT
	ARC					ENiCrFe3	Ø2.50	65 nos						
	ARC					ENiCrFe3	Ø3.15	30 nos						
4	SA106GR.C(A)	33.4	9.09	6	9.09 $\sqrt{}$	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	250 nos	1005	100	635+/-15	25 mm minimum 30 mts	100% RT
	ARC					E7018-A1	Ø2.50	55 nos						
	ARC					E7018-A1	Ø3.15	55 nos						

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - 0A	DATE 19-11-11	DRAWING NO. 4-80-424-72770	REV. 00
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ERECTION WELDING SCHEDULE

<p>PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT          CONTRACTOR : M/S BHEL          DRAWING NO : 0-80-425-05497</p>	<p>CUST. NO : 7104 TO 7108          PGMA : 80-425          SYSTEM : BOILER FEED DISCHARGE PIPING          FROM HPH-6 TO ECONOMISER          PAGE NO. 1 OF 1</p>
<p>DOC. NO. : 4-80-425-72771          REV. NO. : 00          WELDING CODE : IBR / ASME          PAGE NO : 1 OF 1</p>	

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTERT)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA106GR.C(A)	368	48	75	48.0 V	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	8660 gms	1005	100	635+/-15	1 hr / 25 mm minimum 30 mts	100% RT
	ARC					E7018-A1	Ø2.50	2310 nos						
	ARC					E7018-A1	Ø3.15	3720 nos						
2	SA106GR.C(A)	219.1	30	12	30.0V	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	2050 gms	1005	100	635+/-15	1 hr / 25 mm minimum 30 mts	100% RT
	ARC					E7018-A1	Ø3.15	240 nos						
	ARC					E7018-A1	Ø4.00	330 nos						
3	SA234WPC(A)	63.5	13	4	13.0 V	TIG	ENiCr3	Ø2.50	40 gms	1005	100	635+/-15	1 hr / 25 mm minimum 30 mts	100% RT
	ARC					ENiCrFe3	Ø2.50	60 nos						
	ARC					ENiCrFe3	Ø3.15	30 nos						
4	SA106GR.C(A)	33.4	9.09	6	9.09 V	ARC	E7018-1	Ø2.50	250 nos	1005	100	635+/-15	1 hr / 25 mm minimum 30 mts	100% RT
	ARC					E7018-1	Ø3.15	55 nos						
5	SA234WPC(A)	406.4	61	1	61.0V	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	139 gms	1005	100	635+/-15	1 hr / 25 mm minimum 30 mts	100% RT
	ARC					E7018-A1	Ø2.50	33 nos						
	ARC					E7018-A1	Ø3.15	55 nos						
	HEATER NOZZLE					ARC	E7018-A1	Ø3.15	273 nos					

NOTES: 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA
	DATE 19-11-11	DRAWING NO. 4-80-425-72771	REV. 00



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## ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 1-80-430-17034

CUST. NO : 7104 TO 7108  
 PGMA : 80-430  
 SYSTEM : SPRAY WATER PIPING TO HRBP VALVE

DOC. NO. : 4-80-430-72997  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN. 1 MATERIAL SPECN. 2	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			WPS NO.	MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTENT)	SIZE (mm)	QUANTITY			TEMP °C	TIME		
1	SA335P22(A)	114.3	20	10	20.00	ARC	RT2½Cr1Mo	Ø2.50	388 gms	1014	150	725+/-25	1 hr / 25 mm minimum 60 mins	100% RT 3% HARDNESS	
	E9018-B3						Ø2.50	132 nos							
	E9018-B3						Ø3.15	154 nos							
2	SA3106GR.C(A)	114.3	13.49	28	13.49V	ARC	RT½Mo	Ø2.50	1190 gms	1003	---	---		100% RT	
	E7018-A1						Ø2.50	339 nos							
	E7018-A1						Ø3.15	462 nos							
	SA234WPC														
	SA3106GR.C(A)														
	SA234WPC														

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-430-72997	REV. 00
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### ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 2-80-431-10324

CUST. NO : 7104 TO 7108  
 PGMA : 80-431  
 SYSTEM : SPRAY WATER TO AUX. PRDS  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-431-72125  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN. 1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC / GAS / TIG.	RECOMMENDED ELECTRODE / WIRE			WPS NO.	MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY			TEMP °C	TIME		
1	SA106GR.B	48.3	5.08	40	5.08 V	ARC / ARC	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	495 gms	1003				10% RT
	ARC						E7018-1	Ø3.15	436 nos 352 nos						
2	SA106GR.B	33.4	4.55	50	4.55V	ARC	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	390 gms	1003				10% RT
	ARC						E7018-1	Ø2.50	300 nos						
3	SA335P22(A)	33.4	4.55	3	4.55 V	ARC	TIG	RT $\frac{1}{2}$ Cr1Mo	Ø2.50	24 gms	1013	150			10% RT
	ARC						E9018-B3	Ø2.50	18 nos						

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-431-72125	REV. 00
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ERECTION WELDING SCHEDULE

PROJECT : *NASIK 5X270 MW THERMAL POWER PROJECT CONTRACTOR : M/S BHEL DRAWING NO : 1-80-432-17160	CUST. NO : 7104 TO 7108 PGMA : 80-432 SYSTEM : SPRAY WATER TO RH AND SH ATTEMPERATION PAGE NO. 1 OF 1
DOC. NO. : 4-80-432-73291 REV. NO. : 00 WELDING CODE : IBR / ASME PAGE NO : 1 OF 1	

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA106GR.C(A)	219.1	25	5	25	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	413 gms	1005	---	635+/-15	1 hr / 25 mm minimum 30 mts	100% RT
	ARC					E7018-A1	Ø2.50	94 nos						
	ARC					E7018-A1	Ø3.15	138 nos						
2	SA106GR.C(A)	168.3	21.95	5	21.95	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	307 gms	1005	---	635+/-15	1 hr / 25 mm minimum 30 mts	100% RT
	ARC					E7018-A1	Ø3.15	77 nos						
	ARC					E7018-A1	Ø4.00	132 nos						
3	SA234WPC(A)	88.9	11.13	6	11.13	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	137 gms	1003	---	---		100% RT
	ARC					E7018-A1	Ø2.50	53 nos						
	ARC					E7018-A1	Ø3.15	60 nos						

NOTES :  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA
	DATE 18-11-11	DRAWING NO. 4-80-432-73291	REV. 00



0001

### ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT CONTRACTOR : M/S BHEL DRAWING NO : 1-80-440-17465 1-80-440-17466	CUST. NO : 7104 TO 7108 PGMA : 80-440 SYSTEM : HOTWELL AND WATERBOX DRAIN, HOTWELL VENT & DRAIN PIT PAGE NO. 1 OF 1
DOC. NO. : 4-80-440-73862 REV. NO. : 00 WELDING CODE : IBR / ASME PAGE NO : 1 OF 1	DOC. NO. : 4-80-440-73862 REV. NO. : 00 WELDING CODE : IBR / ASME PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN. 1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			WPS NO.	MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS		
		OD (in mm)	THK (in mm)				SPECN. (ATTEST)	SIZE (mm)	QUANTITY			TEMP °C	TIME				
1	SA106GR.B	114.3	6.02	77	6.02 V	ARC	TIG	RT 1/2Mo	Ø2.50	2561gms	1003				10% RT		
	SA234WPB																
	SA106GR.B																
	SA234WPB																

NOTES:

01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.

02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.

03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED <b>E. YUVARAJ</b>	DESIGN/CHD. <b>A. SURESH</b>	DESIGN/APPD. <b>C. V. NATHAN</b>	CHD./APPD. - QA  
	DATE 18-11-11	DRAWING NO. 4-80-440-73862	REV. 00



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ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 1-80-442-17140

CUST. NO : 7104 TO 7108  
 PGMA : 80-442  
 SYSTEM : GSC DRAIN TO LP DRAIN FLASH TANK  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-442-73265  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTENT)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA106GR.B SA234WPB	88.9	5.49	33	5.49 √	ARC	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	809gms	1003			10% RT
	ARC						E7018-1	Ø2.50	545 nos					
2	SA106GR.B SA234WPB	60.3	5.54	6	5.54 √	ARC	RT $\frac{1}{2}$ Mo	Ø2.50	95 gms	1003			10% RT	
	ARC					E7018-1	Ø2.50	84 nos						
	ARC					E7018-1	Ø3.15	66 nos						
3	SA106GR.B SA234WPB	33.4	4.55	6	4.55 √	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	8 gms	1003			10% RT	
	ARC					E7018-1	Ø2.50	7 nos						
	ARC					E7018-1	Ø2.50	7 nos						

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-442-73265	REV. 00
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### ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 1-80-443-16775

CUST. NO : 7104 TO 7108  
 PGMA : 80-443  
 SYSTEM : LPH-1 DRAIN TO LPFT THROUGH DRAIN COOLER  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-443-72522  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA106GR.B	273	6.35	15	6.35 V	TIG	RT½Mo	Ø2.50	1669gms	1003			10% RT	
	SA234WPB					E7018-1	Ø2.50	330 nos						
	SA106GR.B					E7018-1	Ø3.15	149 nos						
2	SA106GR.B	219.1	6.35	17	6.35 V	TIG	RT½Mo	Ø2.50	1509gms	1003			10% RT	
	SA234WPB					E7018-1	Ø2.50	692 nos						
	SA106GR.B					E7018-1	Ø2.50	692 nos						

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-443-72522	REV. 00
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### ERECTION WELDING SCHEDULE

<p>PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT          CONTRACTOR : M/S BHEL          DRAWING NO : 1-80-444-17036, 1-80-444-17037</p>	<p>CUST. NO : 7104 TO 7108          PGMA : 80-444          SYSTEM : LPH-2 DRAIN PPG TO LPH-1          &amp; LPD F/T          LPH-3 DRAIN PPG TO LPH-2          &amp; LPD F/T</p>
<p>DOC. NO. : 4-80-444-73036          REV. NO. : 00          WELDING CODE : IBR / ASME          PAGE NO : 1 OF 1</p>	<p>MIN. PRE HEAT °C :          PWHT SOAKING TIME :          MIN. RECOMMENDED NDE :          REMARKS :</p>

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/GAS/TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA106GR.C	219.1	8.18	4	8.18 V	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	350gms	1003			10% RT	
	ARC					E7018-A1	Ø2.50	75 nos						
2	SA106GR.C	219.1	6.35	10	6.35 V	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	888gms	1003			10% RT	
	ARC					E7018-1	Ø2.50	407nos						
3	SA106GR.B	168.3	7.11	35	7.11 V	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	2518gms	1003			10% RT	
	ARC					E7018-1	Ø2.50	628 nos						
4	SA106GR.B	114.3	6.02	52	6.02 V	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	1729gms	1003			10% RT	
	ARC					E7018-1	Ø2.50	1202nos						

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA
	DATE 18-11-11	DRAWING NO. 4-80-444-73036	REV. 00



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### ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 1-80-446-16785

CUST. NO : 7104 TO 7108  
 PGMA : 80-446  
 SYSTEM : DEAERATOR OVER FLOW TO  
 UNIT FLASH TANK  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-446-72537  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			WPS NO.	MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTENT)	SIZE (mm)	QUANTITY			TEMP °C	TIME		
1	SA106GR.C	219.1	8.18	6	8.18 V	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	525gms	1003				10% RT	
	ARC					E7018-A1	Ø2.50	113 nos							
	ARC					E7018-A1	Ø3.15	106 nos							
2	SA106GR.B	114.3	6.02	40	6.02 V	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	1330gms	1003				10% RT	
	ARC					E7018-1	Ø2.50	924nos							
	SA234WPC														
	SA106GR.C														
	SA234WPC														
	SA106GR.B														
	SA515GR70														

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-446-72537	REV. 00
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ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 1-80-449-17454

CUST. NO : 7104 TO 7108  
 PGMA : 80-449  
 SYSTEM : FLASH PIPE DRAIN & VENT PPG  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-449-73855  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			WPS NO.	MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY			TEMP °C	TIME		
1	SA106GR.B	168.3	7.11	5	7.11 V	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	332gms	1003				10% RT	
	SA234WPB					E7018-1	Ø2.50	83 nos							
	SA106GR.B					E7018-1	Ø3.15	50 nos							
2	SA106GR.B	88.9	5.49	27	5.49 V	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	662gms	1003				10% RT	
	SA234WPB					E7018-1	Ø2.50	446nos							
	SA106GR.B														
	SA515GR70														

NOTES :  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-449-73855	REV. 00
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## ERECTION WELDING SCHEDULE

<p><b>PROJECT :</b> NASIK 5X270 MW THERMAL POWER PROJECT</p> <p><b>CONTRACTOR :</b> M/S BHEL</p> <p><b>DRAWING NO :</b> 1-80-450-17492, 1-80-450-17493</p>	<p><b>CUST. NO :</b> 7104 TO 7108</p> <p><b>PGMA :</b> 80-450</p> <p><b>SYSTEM :</b> EMERGENCY DRUM DRAIN TO IBDT CBD TO CBDT AND BYPASS TO IBDT</p> <p><b>PAGE NO. :</b> 1 OF 1</p>
<p><b>DOC. NO. :</b> 4-80-450-73902</p> <p><b>REV. NO. :</b> 00</p> <p><b>WELDING CODE :</b> IBR / ASME</p> <p><b>PAGE NO :</b> 1 OF 1</p>	

SL No.	MATERIAL SPECN. 1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTEST)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA106GR.C	88.9	15.24	35	15.24U	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	1050 gms	1003			100% RT	
	SA234WPC					ARC	E7018-A1	Ø2.50	308 nos					
	SA106GR.C					ARC	E7018-A1	Ø3.15	385 nos					
2	SA234WPC	168.3	21.95	22	21.95U	ARC	RT $\frac{1}{2}$ Mo	Ø2.50	1348 gms	1005			100% RT	
	SA106GR.C					ARC	E7018-A1	Ø3.15	580 nos					
	SA234WPC					ARC	E7018-A1	Ø4.00	315 nos					

**NOTES:**

01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.

02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.

03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

<p>PREPARED <b>E. YUVARAJ</b></p>	<p>DESIGN/CHD. <b>A. SURESH</b></p>	<p>DESIGN/APPD. <b>C. V. NATHAN</b></p>	<p>CHD./APPD. - QA</p>
	<p>DATE <b>18-11-11</b></p>	<p>DRAWING NO. <b>4-80-450-73902</b></p>	<p>REV. <b>00</b></p>



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ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL  
 DRAWING NO : 1-80-451-17587, 1-80-451-17588, 1-80-451-17589

CUST. NO : 7104 TO 7108  
 PGMA : 80-451  
 SYSTEM : SUPER HEATER DRAIN HEADER DRAIN TO IBDT  
 DOWN COMER BLOW OFF TO IBDT  
 BOILER DRAIN HEADER DRAIN TO IBDT

DOC. NO. : 4-80-451-74057  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA106GR.C	219.1	28	12	28 ∩	TIG	RT½Mo	Ø2.50	960 gms	1005	100	635+/-15	1 hr / 25 mm minimum 30 mts	100% RT
	ARC					E7018-A1	Ø2.50	225 nos						
	ARC					E7018-A1	Ø3.15	330 nos						
2	SA106GR.C	168.3	21.95	15	21.95 ∩	TIG	RT½Mo	Ø2.50	919gms	1005	635+/-15	25 mm minimum 30 mts	100% RT	
	ARC					E7018-A1	Ø2.50	231nos						
	ARC					E7018-A1	Ø3.15	396nos						
3	SA106GR.C	88.9	11.13	10	11.13 ∩	TIG	RT½Mo	Ø2.50	228gms	1003	100	100% RT		
	ARC					E7018-A1	Ø2.50	88nos						
	ARC					E7018-A1	Ø3.15	99nos						

NOTES :  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-451-74057	REV. 00
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### ERECTION WELDING SCHEDULE

<p>PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT</p> <p>CONTRACTOR : M/S BHEL</p> <p>DRAWING NO : 0-80-455-05892, 1-80-455-17552 2-80-455-10946, 2-80-455-10947</p>	<p>CUST. NO : 7104 TO 7108</p> <p>PGMA : 80-455</p> <p>SYSTEM : CBD TANK DRAIN TO IBD TANK IBD TANK DRAIN TO TRENCH HP AND LP MANIFOLDS</p>
<p>DOC. NO. : 4-80-455-73990</p> <p>REV. NO. : 00</p> <p>WELDING CODE : IBR / ASME</p> <p>PAGE NO : 1 OF 1</p>	

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA106GR.C	323.9	36	2	36.0 √	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	245 gms	1005	100	635+/-15 minimum 30 mts	100% RT	
						ARC	E7018-A1	Ø2.50	53 nos					
						ARC	E7018-A1	Ø3.15	86 nos					
2	SA106GR.C	219.1	8.18	2	8.18√	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	175 gms	1003	---	---	10% RT	
						ARC	E7018-A1	Ø3.15	36 nos					
						ARC	E7018-A1	Ø2.50	36 nos					
3	SA106GR.B SA234WPB	219.1	6.35	13	6.35 √	ARC	E7018-1	Ø2.50	530 nos	1003	---	---	10% RT	
						TIG	RT $\frac{1}{2}$ Mo	Ø2.50	1225 gms					
						TIG	RT $\frac{1}{2}$ Mo	Ø2.50	1225 gms					
4	SA106GR.B SA234WPB	88.9	5.49	50	5.49 √	ARC	E7018-1	Ø2.50	825 nos	1003	---	---	10% RT	
						TIG	RT $\frac{1}{2}$ Mo	Ø2.50	1225 gms					
						TIG	RT $\frac{1}{2}$ Mo	Ø2.50	1225 gms					

NOTES:

01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.

02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.

03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA
	DATE 18-11-11	DRAWING NO. 4-80-455-73990	REV. 00



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ERECTION WELDING SCHEDULE

PROJECT : *NASIK 5X270 MW THERMAL POWER PROJECT CONTRACTOR : M/S BHEL DRAWING NO : 1-80-457-17268	CUST. NO : 7104 TO 7108 PGMA : 80-457 SYSTEM : HP & LP DRAIN FLASH TANK MANIFOLD PAGE NO. 1 OF 1
DOC. NO. : 4-80-457-73557 REV. NO. : 00 WELDING CODE : IBR / ASME PAGE NO : 1 OF 1	

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA335P22	355.6	9.53	2	9.53 V	TIG	RT2¼Cr1Mo	Ø2.50	288 gms	1014	725+/-25	1 hr / 25 mm minimum 60 mts	10% RT 3% HARDNESS	
	ARC					E9018B3	Ø2.50	60 nos						
	ARC					E9018B3	Ø3.15	91 nos						
2	SA335P22	323.9	9.53	2	9.53 V	TIG	RT2¼Cr1Mo	Ø2.50	260 gms	1014	725+/-25	1 hr / 25 mm minimum 60 mts	10% RT 3% HARDNESS	
	ARC					E9018B3	Ø2.50	53 nos						
	ARC					E9018B3	Ø3.15	82 nos						
3	SA106GR.B	323.9	9.53	2	9.53 V	TIG	RT½Mo	Ø2.50	260gms	1003			10% RT	
	SA234WPB					ARC	E7018-1	Ø2.50	53 nos					
	SA106GR.B					ARC	E7018-1	Ø3.15	82 nos					

NOTES :  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.  
 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA
	DATE 18-11-11	DRAWING NO. 4-80-457-73557	REV. 00



ERECTION WELDING SCHEDULE

PROJECT : NASTIK SX270 MW THERMAL POWER PROJECT  
CONTRACTOR : M/S BHEL

CUST. NO : 7104 TO 7108  
PBRN : 80-460  
SYSTEM : COOLING WATER PIPING IN SG AREA

DOC.NO. : 4-80-460-72130  
REV. NO. : 00  
WELDING CODE : 1BR / ASME

DRAWING NO :

PAGE NO - 1 OF 2

PAGE NO : 1 OF 2

SL No.	MATERIAL SPECN.1	PIPE SIZE	TOTAL No. OF JOINTS	WELD SPECN.	ARC/TIG	RECOMMENDED ELECTRODE / WIRE			HTN. PRE HEAT °C	PWHT SOAKING		HTN. RECOMMENDED	REMARKS
						SIZE (mm)	QUANTITY	WPS NO.		TEMP °C	TIME		
1	APPLI.GRB-ENW APTI.SGRB-ENW SA.254 WTB	00219	85	6.4 ∇	ARC	E7018-1	02.50	3460 nos	1003			10X RT	
2	IS 1239 BL	NB150	130	5.4 ∇	ARC	E6013	02.50	3861 nos	1001			10X RT	
3	IS 1239 BL	NB100	240	5.4 ∇	ARC	E6013	02.50	4752 nos	1001			10X RT	
4	IS 1239 BL	NB80	385	4.85 ∇	ARC	E6013	02.50	5505 nos	1001			10X RT	
5	IS 1239 BL	NB40	457	4.05 ∇	ARC	E6013	02.50	5128 nos	1001			10X RT	

NOTES: 01. 100 % IPT / IPT ON ALL BUTT WELDS AFTER PWHT.  
02. \* REFER NDE MANUAL NO. PS CW-1002 REV 01 / 12-98.

03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGNED BY A. SURESH	DESIGN APPRO. C. V. NATHAN	CHKD. / APPD. - DA	DATE 18-11-11	DRAWING NO. 4-80-460-72130	REV. 00
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ERECTION WELDING SCHEDULE

PROJECT : NASTIK SX270 MW THERMAL POWER PROJECT  
CONTRACTOR : M/S BHEL

CUST. NO : 7104 TO 7108  
PBRN : 80-460  
SYSTEM : COOLING WATER PIPING IN SG AREA

DOC.NO. : 4-80-460-72130  
REV. NO. : 00  
WELDING CODE : 1BR / ASME

DRAWING NO :

PAGE NO - 2 OF 2

PAGE NO : 2 OF 2

SL No.	MATERIAL SPECN.1	PIPE SIZE	TOTAL No. OF JOINTS	WELD SPECN.	ARC/TIG	RECOMMENDED ELECTRODE / WIRE			HTN. PRE HEAT °C	PWHT SOAKING		HTN. RECOMMENDED	REMARKS
						SIZE (mm)	QUANTITY	WPS NO.		TEMP °C	TIME		
6	IS 1239 BL	NB25	641	4.05 ∇	ARC	E6013	02.50	3525 nos	1001			10X RT	
7	IS 1239 BL	NB15	362	3.25 ∇	ARC	E6013	02.50	1448 nos	1001			10X RT	
8	IS 1239 BL	NB50	77	4.50 ∇	ARC	E6013	02.50	762 nos	1001			10X RT	
9	IS 1239 BL	NB65	40	4.50 ∇	ARC	E6013	02.50	560 nos	1001			10X RT	

NOTES: 01. 100 % IPT / IPT ON ALL BUTT WELDS AFTER PWHT.  
02. \* REFER NDE MANUAL NO. PS CW-1002 REV 01 / 12-98.

03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGNED BY A. SURESH	DESIGN APPRO. C. V. NATHAN	CHKD. / APPD. - DA	DATE 18-11-11	DRAWING NO. 4-80-460-72130	REV. 00
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## ERECTION WELDING SCHEDULE

<p>PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT</p> <p>CONTRACTOR : M/S BHEL</p> <p>DRAWING NO :</p>	<p>CUST. NO : 7104 TO 7108</p> <p>PGMA : 80-471</p> <p>SYSTEM : BOILER WATER WASH PIPING</p> <p>PAGE NO. 1 OF 1</p>
<p>DOC. NO. : 4-80-471-72110</p> <p>REV. NO. : 00</p> <p>WELDING CODE : IBR / ASME</p> <p>PAGE NO : 1 OF 1</p>	

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	IS 3589	219.1	6.4	90	6.4 √	ARC	E7018	Ø2.50	4076 nos	1213			10% RT	
	IS 3589													
2	IS 1239 BL	NB150	5.4	70	5.4 √	ARC	E6013	Ø2.50	2286 nos	1001			10% RT	
	IS 1239 BL													
3	IS 1239 BL	NB100	5.4	12	5.4 √	ARC	E6013	Ø2.50	264 nos	1001			10% RT	
	IS 1239 BL													
4	IS 1239 BL	NB50	4.5	47	4.5 √	ARC	E6013	Ø2.50	512 nos	1001			10% RT	
	IS 1239 BL													
5	IS 1239 BL	NB25	4.05	105	4.05 √	ARC	E6013	Ø2.50	636 nos	1001			10% RT	
	IS 1239 BL													

NOTES:

01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.

02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.

03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - 0A
	DATE 18-11-11	DRAWING NO. 4-80-471-72110	REV. 00



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## ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL

CUST. NO : 7104 TO 7108  
 PGMA : 80-480

DOC. NO. : 4-80-480-72111

SYSTEM : FIRE FIGHTING PIPING

REV. NO. : 00  
 WELDING CODE : IBR / ASWE

DRAWING NO :

PAGE NO. 1 OF 1

WELDING CODE : IBR / ASWE  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTEST)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	IS 3589	219.1	6.4	80	6.4 √	ARC	E7018	Ø2.50	3576 nos	1213			10% RT	
	IS 3589													
2	IS 1239 BL	NB150	5.4	65	5.4 √	ARC	E6013	Ø2.50	1950 nos	1001			10% RT	
	IS 1239 BL													
3	IS 1239 BL	NB50	4.5	105	4.5 √	ARC	E6013	Ø2.50	1155 nos	1001			10% RT	
	IS 1239 BL													
4	IS 1239 BL	NB25	4.05	215	4.05 √	ARC	E6013	Ø2.50	1183 nos	1001			10% RT	
	IS 1239 BL													
5	IS 1239 BL	NB100	5.4	20	5.4 √	ARC	E6013	Ø2.50	506 nos	1001			10% RT	
	IS 1239 BL													

NOTES:  
 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.  
 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.

03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-480-72111	REV. 00
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### ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT CONTRACTOR : M/S BHEL DRAWING NO :	CUST. NO : 7104 TO 7108 PGMA : 80-600 SYSTEM : HP DOSING PIPING PAGE NO. 1 OF 1
DOC. NO. : 4-80-600-73566 REV. NO. : 00 WELDING CODE : IBR / ASME PAGE NO : 1 OF 1	

SL No.	MATERIAL SPECN. 1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTEST)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA312TP304H	33.4	3.38	154	3.38 V	TIG	RT 347	Ø2.40	5544 gms	1032	---	---	---	10% RT 100% LPT
	SA403WP304H													
	SA312TP304H													
	SA403WP304H													

NOTES:

01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.      03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.      04. CHD. / APPD. - 0A

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD. / APPD. - 0A
	DATE 18-11-11	DRAWING NO. 4-80-600-73566	REV. 00



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ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL

CUST. NO : 7104 TO 7108  
 PGMA : 80-601  
 SYSTEM : LP DOSING PIPING

DOC. NO. : 4-80-601-73567

REV. NO. : 00

WELDING CODE : IBR / ASME

DRAWING NO :

PAGE NO. 1 OF 1

PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTST)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA106GR.B	33.4	4.55	10	4.55 √	ARC	E7018-1	Ø2.50	77.5 gms	55 nos	1003	---	---	10% RT
2	SA312TP304H	33.4	3.38	154	3.38 √	TIG	RT 347	Ø2.40	5544 gms	1032	---	---	---	10% RT 100% LPT
	SA403WP304H													
	SA312TP304H													
	SA403WP304H													

NOTES:

- 01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.
- 02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.
- 03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-601-73567	REV. 00
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### ERECTION WELDING SCHEDULE

<p>PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT</p> <p>CONTRACTOR : M/S BHEL</p> <p>DRAWING NO :</p>	<p>CUST. NO : 7104 TO 7108</p> <p>PGMA : 80-673</p> <p>SYSTEM : LUBE OIL PIPING SYSTEM</p> <p>PAGE NO. 1 OF 1</p>
<p>DOC. NO. : 4-80-673-73889</p> <p>REV. NO. : 00</p> <p>WELDING CODE : IBR / ASME</p> <p>PAGE NO : 1 OF 1</p>	

SL No.	MATERIAL SPECN.1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC/ GAS/ TIG.	RECOMMENDED ELECTRODE / WIRE			WPS NO.	MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (in mm)	THK (in mm)				SPECN. (ATTENT)	SIZE (mm)	QUANTITY			TEMP °C	TIME		
1	SA106GR. B	88.9	5.49	435	5.49 √	ARC	RT <sub>1</sub> Mo	Ø2.50	10658 gms	1003	---	---	---	10% RT	FOR 7104 ONLY
	SA234WPB														
2	SA106GR. B	88.9	5.49	36	5.49 √	ARC	RT <sub>1</sub> Mo	Ø2.50	882 gms	1003	---	---	---	10% RT	36 NOS EACH FOR 7105, 7107 AND 7108
	SA234WPB														
	SA106GR. B														
3	SA106GR. B	88.9	5.49	540	5.49 √	ARC	RT <sub>1</sub> Mo	Ø2.50	13230 gms	1003	---	---	---	10% RT	FOR 7110 ONLY
	SA234WPB														
	SA106GR. B														

NOTES:

01. 100 % LPI / MPI ON ALL BUTT WELDS AFTER PWHT.

02. \* REFER NDE MANUAL NO. PS CNX:002 REV 01 / 12-98.

03. 3% HARDNESS CHECKING ON BUTT WELDS OF ALLOYSTEEL.

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA
	DATE 18-11-11	DRAWING NO. 4-80-673-73889	REV. 00



ERECTION WELDING SCHEDULE

PROJECT : NASTIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL

DRAWING NO : 1-80-451-17587, 1-80-451-17588, 1-80-451-17589

CUST. NO : 7104 TO 7108  
 PART : 80-451  
 SYSTEM : SUPER HEATER DRAIN HEADER DRAIN TO 18DT  
 DOWN COMER BLOW OFF TO 18DT  
 BOILER DRAIN HEADER DRAIN TO 18DT

DOC. NO. : 4-80-451-74057  
 REV. NO. : 00  
 WELDING CODE : 18R / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN. 1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC / GAS / TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS	
		OD (in mm)	THK (in mm)				SPECN. (ATTEST)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C			TIME
1	SA106GR.C	219.1	28	12	28 ∩	ARC	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	960 gms	1005	100	635+/-15	1 hr / 25 mm minimum 30 mts	100% RT
	ARC						E7018-A1	Ø2.50	225 nos						
	ARC						E7018-A1	Ø3.15	330 nos						
2	SA106GR.C	168.3	21.95	15	21.95 ∩	ARC	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	919gms	1005	635+/-15	1 hr / 25 mm minimum 30 mts	100% RT	
	ARC						E7018-A1	Ø2.50	231nos						
	ARC						E7018-A1	Ø3.15	396nos						
3	SA106GR.C	88.9	11.13	10	11.13 ∩	ARC	TIG	RT $\frac{1}{2}$ Mo	Ø2.50	228gms	1003	100	100% RT		
	ARC						E7018-A1	Ø2.50	88nos						
	ARC						E7018-A1	Ø3.15	99nos						

01. REFER 4-80-999-93172 & 4-80-999-93173 FOR WPS, HT AND NDT REQUIREMENTS

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - GA	DATE 18-11-11	DRAWING NO. 4-80-451-74057	REV. 00
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ERECTION WELDING SCHEDULE

PROJECT : MASIK 5X270 MW THERMAL POWER PROJECT  
 CONTRACTOR : M/S BHEL

DRAWING NO : 1-80-450-17492, 1-80-450-17493

CUST. NO : 7104 TO 7108  
 PGMA : 80-450  
 SYSTEM : EMERGENCY DRUM DRAIN TO IBDT  
 CBD TO CBDT AND BYPASS TO IBDT  
 PAGE NO. 1 OF 1

DOC. NO. : 4-80-450-73902  
 REV. NO. : 00  
 WELDING CODE : IBR / ASME  
 PAGE NO : 1 OF 1

SL No.	MATERIAL SPECN. 1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC / GAS / TIG.	RECOMMENDED ELECTRODE / WIRE			MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED NDE	REMARKS
		OD (In mm)	THK (In mm)				SPECN. (ATTEST)	SIZE (mm)	QUANTITY		WPS NO.	TEMP °C		
1	SA106GR.C SA234WPC	88.9	15.24	35	15.24	TIG	RT <sub>1</sub> Mo	Ø2.50	1050 gms					
	ARC					E7018-A1	Ø2.50	308 nos						
	ARC					E7018-A1	Ø3.15	385 nos	1003					
2	SA106GR.C SA234WPC	168.3	21.95	22	21.95	TIG	RT <sub>1</sub> Mo	Ø2.50	1348 gms					
	ARC					E7018-A1	Ø2.50	339 nos						
	ARC					E7018-A1	Ø3.15	580 nos	1005		635+/-15	25 mm minimum 30 mts	100% RT	
	SA234WPC													

01. REFER 4-80-999-93172 & 4-80-999-93173 FOR WPS, HT AND NDT REQUIREMENTS

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - OA	DATE 18-11-11	DRAWING NO. 4-80-450-73902	REV. 00
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ERECTION WELDING SCHEDULE

PROJECT : NASIK 5X270 MW THERMAL POWER PROJECT CONTRACTOR : M/S BHEL DRAWING NO : 1-80-343-17357	CUST. NO : 7104 TO 7108 PGMA : 80-343 SYSTEM : AUXILIARY STEAM PIPING AIR HEATER SOOT BLOWING PAGE NO. : 1 OF 1
DOC. NO. : 4-80-343-73701 REV. NO. : 00 WELDING CODE : IBR / ASME PAGE NO : 1 OF 1	MIN. PRE HEAT °C PWHT SOAKING TEMP °C TIME MIN. RECOMMENDED HOLD REMARKS

SL No.	MATERIAL SPECN. 1	PIPE SIZE		TOTAL No. OF JOINTS	WELD SPECN.	ARC / GAS / TIG.	RECOMMENDED ELECTRODE / WIRE			WPS NO.	MIN. PRE HEAT °C	PWHT SOAKING		MIN. RECOMMENDED HOLD	REMARKS
		OD (1st mm)	THK (1st mm)				SPECN. (ATTEST)	SIZE (mm)	QUANTITY			TEMP °C	TIME		
1	SA106GR.B	88.9	5.49	26	5.49 V	ARC	TIG	RT	Ø2.50	637 gms	1003				10% RT
	SA234WPB						E7018-1	Ø2.50	429 nos						
	SA106GR.B														
	SA234WPB														

01. REFER 4-80-999-93172 & 4-80-999-93173 FOR WPS, HT AND NDT REQUIREMENTS

PREPARED E. YUVARAJ	DESIGN/CHD. A. SURESH	DESIGN/APPD. C. V. NATHAN	CHD./APPD. - QA	DATE 18-11-11	DRAWING NO. 4-80-343-73701	REV. 00
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