

(Process FMEA)

Key date

## Production

A.Tajuddin

1

Form SOP8.15-1

Item	Date (Rev. 1.3): 07/12/2020	PROCESS
Eso Solder Bar Process	First Issue Date: 01/06/2018	Eco Solder Bar
Core team:	FGM, Mr. Nazli, Mr.Ramli, Ms. Aini Syareena, Ms. Farizan, Mr. Tajuddin, Mr. Yusup and Mr. Anbil	

Process Function  Requirements	Potential Failure Mode	Potential Effect(s) of Failure	S e v	C l a s s	Potential Cause(s)/Mechanlsm(S) of Failure	O c c u r	Current Process		D e t e c	R P N	Recommended Action(s)	Responsibility & Target Completion Date	Action Results				
							Controls Prevention	Controls Detection					Actions Taken	S e v	O c c	D e t	R P N
Raw Material Receiving	Wrong material received	Delay in production, delay in delivery, Insufficient storage space, cost of returning wrong item	7		Wrong material ordered	1	Countercheck by PIC before sign PR	Checking against DO	7	49	N/A						
				Wrong material requested when issuing PR													
RM Storage	Mix of raw mat	Traceability issue, FIFO issue	6		Material not properly stored, no indication	1	Designated area for each rawmat	Raw material labelling	6	36	N/A						
Material calculation & weighing	Wrong Tin used	SAP adjustment needed, Rawmat cost	2		Wrong material pickup used	1	Refer to MCR when preparing tin	Counter check with MCR	6	12	N/A						
	Product out of spec	Need to do adjustment May cause process issues at customer	4		Wrong material calculated	4	Countercheck by PIC before sign MCR	In process inspection	4	64	N/A						
					Weighing scale error (not calibrated)		Daily machine check										
		Traceability issue	Non compliance with CSR	4		Wrong recording of raw mat details	4	Training	Countercheck by PIC	4	64	N/A					
Combination (Melting & Mixing)	Product out of spec	Adjustment needed, waste of time, added cost. May cause process issues at customer side	4		Wrong furnace temperature setting	4	Process control checksheet	In process inspection	4	64	N/A						
					Skippping AB process												
					Wrong rawmat combined												
					Furnace not clean when starting work												
Label Printing	Wrong info on label	Customer complaint	6		Wrong key in of information	2	Double check before printing	Visual	1	12	None						
	Print Shortage	Not enough label for process, re-print			Wrong key in quantity of label to print												
	Extra print	Product recount, time waste			Wrong key in quantity of label to print												
	Illegible print	Customer complaint, reprinting of label			Printer printing head dirty, new/old printer cartridge												
	Torn / Damage label	Re-printing of labels			Wrongly insert label in printer, label stuck in printer.												
Inspection 1	Incorrect inspection results	Product with high Pb content sent to customer Out of spec product sent to customer Wrong information to production for adjustment process Application issues at customer	8		Wrong inspection method used	1	Training	Counter check by PIC	4	32	N/A						
					Arc spark m/c not calibrated		On time calibration. Calibration Schedule	Daily machine check									
					Arc spark m/c not accurate		On time calibration. Calibration Schedule	Daily machine check									
					Not qualified inspectors doing test		Training	Counter check by PIC									

Process Function  Requirements	Potential Failure Mode	Potential Effect(s) of Failure	S e v	C l a s s	Potential Cause(s)/Mechanlsm(S) of Failure	O c c u r	Current Process		D e t e c	R P N	Recommended Action(s)	Responsibility & Target Completion Date	Action Results				
							Controls Prevention	Controls Detection					Actions Taken	S e v	O c c	D e t	R P N
Casting	Bar appearance - NG	Low productivity, high rejects	2		Casting table not level	5	Adjustments when start of process	Weighing and appearance check	3	30	N/A						
	Bar weight out of spec				Incorrect solder bath nozzle opening			Weighing and appearance check									
					Incorrect solder bath temp			Process control checksheet									
	High Fe content	Lot rejection, rework	5	Product too long in furnace Faulty thermocouple	2	Daily machine check	In process inspection	4	40								
	Solder stuck in pump	Solder transfer to solder bath failure	2	Incorrect pipe temp	2	Process control checksheet	Pump clogged with solder	3	12								
Cutting	Bar appearance - NG	Low productivity, high rejects	2		Casting table not level Halmark not clear, wrong halmark used	5	Adjustments when start of process	Weighing and appearance check	3	30	N/A						
	Bar weight out of spec				Incorrect solder bath nozzle opening												
Packing	Packing spec not followed	Customer complaint Rework cost	4		Packing weight spec not followed	2	Process control checksheet	Counter check by PIC	7	56	N/A						
					Wrong carton box used												
					Wrong info on label												
					Wrong colored tape used												
Inspection 2	Incorrect inspection results	Product with high Pb content sent to customer, Out of spec product sent to customer, Wrong information to production for adjustment process, Application issues at customer	8		Wrong inspection method used	1	Training	Counter check by PIC	4	32	N/A						
					Arc spark m/c not calibrated		On time calibration. Calibration Schedule	Daily machine check									
					Arc spark m/c not accurate		On time calibration. Calibration Schedule	Daily machine check									
					Not qualified inspectors doing test		Training	Counter check by PIC									
Final Inspection	Wrong info on label	Customer complaint, Rework cost	8		Wrong data key in	1	Double check when key in	Final inspection checksheet	7	56	N/A						
Storage	Damaged packing	Rework cost	4		Hit by forklift	2	Forklift training	Visual check before delivery	7	56							
	FIFO not followed	Customer complaint	4		Product arrangement not follow	2	Inventory bin card	Visual display	7	56	N/A						
Delivery	Delayed delivery	Customer complaint	4		Transportation issues	2	Delivery Plan	Counter check by PIC	7	56	N/A						
	Wrong item delivered				Misread pick pack loading list		Pick pack loading list										
	Item delivered to wrong customer																
		Related shipping documents not sent to customer	Late clearance at Customs/ Port, Customer dissatisfaction. Additional operations cost	8		Document were not included with cargo	2	Cargo will be held at Senju until relevant documents are completed	Store staff and lorry driver to fill up form on items that need to be in the cargo	4	64	None					

#### Revision History

Date	Revision	Description
01/06/2018	1.0	First Revision
03/07/2019	1.1	Review for 2019
		Update Core Team list Added past quality issue - High Fe content, Damaged Packing
03/09/2020	1.2	Material calculation & weighing row - Include IA finding
07/12/2020	1.3	Added Label Printing Process