

Defect Details

NC No.	7000940002
NC Date	25/08/2023
NC Submission Date	
Part No.	S2BG04102B
Part Name	BRACKET UNCOATED
Supplier Name & Code	100959-AAR CEE ENGINEERING WORKS UNIT
ETL Plant	1126-ETL Pantnagar
Defect Details	POROSITY-Failed in Load Testing

1. Problem Description

Defect Description	Bracket Failed in Breaking Load Test
Detection Stage	Receipt
Problem Severity	Safety
NG Quantity	1200
Is Defect Repeatative?	Yes
Defect Sketch / Photo	

Supplier Communication Details

Quality Head Email ID	qc@aarceeengg.com
Plant Head/CEO Email ID	planthead.diecasting@aarceeengg.com
MD Email ID	vaibhav.arora@aarceeengg.com

2. Stock Details & action taken for NG parts

Location	ETL End	Warehouse	Transit	Supplier FG	Supplier WIP	Total
Total Qty	2800	19000	0	0	0	21800
Check Qty	2800	10000	0	0	0	12800
NG Qty	2	0	0	0	0	2

Action taken on NG part

Scrap	2
Rework	0
Under Deviation	0

Containment Action

All material send back to Aar cee for 100 % inspection with identification

3. Process Flow

Process Flow Description

RM Store + Melting cum holding+ HPDC+ Fettling + Reaming + Drilling + Tapping + Final Inspection+ Packing & Dispatch

4. Process Details

Process / Operation	HPDC & Final Inspection
Outsource	No
Machine / Cell	Mc -07
Machine / Cell No.	mc-07

5. Problem Analysis

Type	Possible Cause	Fact Verification	Jud
Method	improper check load	checked and found pin using of 21 mm in the 22 inner dia during load testing in BKT 4102	X
Material	Improper material used	Material found ok	O
Man	unskilled inspector deputed at final inspection	Found ok ,Kaushal inspector was aware about all defects	O
Method	Improper degassing	manual degassing done ,but not enough chance of porosity in bracket	X
Method	Error in UTM	Found ok ,calibration done on 1.6.23 and due on 1.6.24	O

6. Inspection Method Analysis (Current)

Inspection Method	Other
Other Inspection Method	Load testing on UTM
Check Point at Final Inspection	Yes
Checking Freq.	100%
Sampling	No
Sample Size	5 nos /lot

7. Root Cause Analysis (Occurance)

Why 1	4102 Bracket failed in load testing
Why 2	20 mm pin used in the 22 inner dia of 4102 bracket during load testing
Why 3	model wise Pin not defined for load testing in bracket
Why 4	Possibility Pin dim. of UTM fixture not considered during development
Why 5	
Root Cause (Occurance)	Possibility Pin dim. of UTM fixture not considered during development

Root Cause Analysis (Outflow)

Why 1	4102 Bracket failed in load testing
Why 2	Single pin used for load testing in bracket
Why 3	Pin not defined for model wise (Inner dia)
Why 4	Check point not covered in work instruction of UTM
Why 5	
Root Cause (Outflow)	Check Point not covered in work instruction of UTM

8. Countermeasure (Occurrence , Outflow & System side Actions)

Type	Countermeasure Details	Responsibility	Target Date	Actual Date	Status
Occurance	Density index ,vacumization unit & auto plunger lubrication machines introduced	Bhim Singh	03/09/2023	03/09/2023	Completed
Occurance	Fixture pin to be made model wise for bracket load testing	Bhim Singh	04/09/2023	04/09/2023	Completed
Occurance	N2 degasser introduced and adhered to avoid porosity issue	Bhim Singh	03/09/2023	03/09/2023	Completed

9. Inspection Method After Customer Complaint

Change In Inspection System	Yes
Change Details	Pin changed and check point added in load testing work instruction Inspection started with identification
Inspection Method	Other
Other Inspection Method	UTM + Fixture
Check Point at Final Inspection	Yes
Checking Freq.	Sampling
Sampling	No
Sample Size	05 nos/lot

10. Evidance of Countermeasure

Occurance (Before)	N/A 534_Occurance_Before.png
Occurance (After)	N2 degasser, density index ,vacumization unit and auto plunger lubrication added and started 534_Occurance_After.png
Outflow (Before)	N/A 534_Outflow_Before.png
Outflow (After)	OPL made and adhered for load testing Pin made and adhered for model wise bracket for load testing 534_Outflow_After.pdf

11. Horizontal Deployment

Horizontal Deployment Required	Yes
Applicable Machine / Model / Plant	All bracket model

12. Document Review

Documents	WISOP
Specify Other Document	OPL

13. Effectiveness Of Action

Reviewed Quantity

0

Reason for submission

Please review the possible causes and provided proper action with actual quantity