 EM DIVISION	QUALITY PLAN	DOC NO	323-QP-CF-108
	QUALITY PLAN FOR LINK FORGINGS - SUPPLIERS	ISSUE NO	2
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1 Purpose

To establish procedures of inspection and testing of link forgings at supplier end.

2 Scope

Covers inspection and testing of link forgings.

3 Responsibility

(1)The section head of Castings/Forgings Materials group to ensure that the quality plan is sent to all suppliers along with the purchase order.

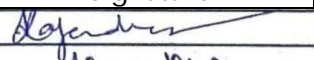
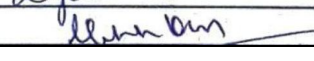
(2)The suppliers shall ensure that quality plan is followed for testing and inspection of the forgings.

4 Procedure

The quality plan is applicable for link forgings of equipment mentioned in table 1 . Supplier should carry out inspection and testing of forgings as per Table -2

TABLE -1

SLNo	EQUIPMENT	LINK - LH FORGING PART No.	LINK - RH FORGING PART No.
1	BD50	110CT51214	110CT51222
2	BD65	160CT51177	160CT51185
3	BD80 / BP41	116CT51211	116CT51228
4	BD155	125CT51543	125CT51551
5	BD355	130CT51266	130CT51274
6	BE220	155CT51235	155CT51251
7	BE300	160CT51177	160CT51185
8	BE700	130CT51266	130CT51274
9	BE1000 / BE1250	175CT51132	175CT51157
10	BE1600/ BD475	135CT51079	135CT51054

	Name	Signature	Date
Prepared by	RAJENDRA BABU K		17.10.2020
Approved by	MAHESH KULKARNI		17.10.2020


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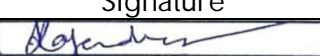
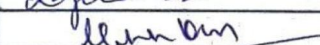
Table -2

SLNO	TEST	PERIODICITY OF TESTS
1	Visual inspection	The forgings shall be free from abnormalities such as: pittings, Rust, undercuts, folds and uneven surface / projections shall be checked on 100% of forgings Weld repairs / machining / grinding operations are not allowed.
2	Dimensions	During sample development 100% dimensions as per drawing shall be checked on 5 nos. by layout method. For regular supplies, 2% links to be checked for dimension to ensure datum plane A & B parallelism, offset dimn. b/w datum plane A & B. Piercing D-pocket hole and bore diameters to be ensured by using suitable gauge. On re-sinking of die, 5nos. of forging to be ensured for 100% dimensions as per drawing. Dimensional deviation due to die mismatch is not acceptable.
3	Composition	Raw material used for forging to be checked for composition and report to be sent with each consignment.
4	Raw Material	Minimum reduction ratio 6:1 to be ensured in the raw material used for forgings. Reduction Ratio should be indicated in Mill TC. Mill TC should be enclosed with Quality documents for every batch of
5	Macro etching / flow lines	Macro etching / Flow lines shall be checked for 1 no. sample during development stage and on change of Raw material source and report should be sent along with supplies.
6	Inclusion rating	1 no. sample shall be checked for inclusion rating and report to be sent along with each consignment.
7	Grain Size / Hardenability	Grain Size and Hardenability values shall be reported for each supply
8	Hardness	5% of forgings (subject to a min. of 50nos.) to be checked for hardness for every batch. Hardness to be checked at location mentioned in drawing, by grinding to a depth of 1.5/2mm (to remove the decarburisation layer)
9	Heat treatment details	HT report to be sent along with each consignment.
10	MPI	MPI check for 100% Link forgings shall be carried by Wet-Flourescent method for development & regular supplies.
11	Idenification / Traceability	The forging shall be marked with vendor code, part no. & sl.no., heat no. & BEML logo
12	Supply Condition	forgings of sample batch and regular supplies to be in un-painted condition with rust preventive applied on all areas.
13	General Note	Quality requirement and supply condition shall be as per BEML forging drawing and BEML standard

Sampling Plan:

Sl No.	Batch Qty.	Insp. Qty.
1	0-500	5
2	500-1000	10
3	>1000	20

On report of deviations, Inspection will be as per IS-2500

	Name	Signature	Date
Prepared by	RAJENDRA BABU K		17.10.2020
Approved by	MAHESH KULKARNI		17.10.2020