JINDAL ALUMINIUM LIMITED ROLLING AND EXTRUSION DIVISION			
PROCEDURE FOR QUALITY ASSURANCE			
DOC. NO. JAL/R&E/QA/PR/10		**TITLE PAGE**	
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AMENDMENT RECORD

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PREPARED BY	SR.MANAGER - QA		
VERIFIED BY	QMS COORDINATOR		
APPROVED BY	GM(O)		

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1.0 PURPOSE: The purpose of this procedure is to document and lay down procedures and documented instructions for Rolling Division Quality Assurance Department.

1.1 OBJECTIVE

- To reduce the Internal Non Conforming Output Material.
- Minimize the customer Complaint.
- To reduce the sales return.

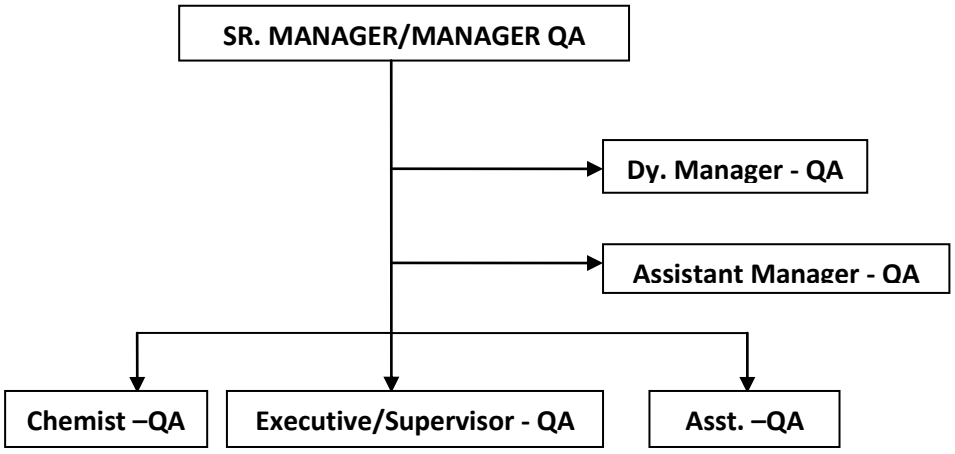
2.0 SCOPE

ISO 9001: 2015 Cl. No.	**Description**
7.1.5	Monitoring and measuring resources
8.1	Operational planning and control
8.4.2	Type and extent of control
8.5.2	Identification and traceability
8.5.3	Property belonging to customers or external providers
8.5.4	Preservation
9.1	Monitoring, measurement, analysis and evaluation
8.6	Release of products and services

3.0 INTERFACE

Marketing
Cast House
Rolling Mill
Purchase (Ind)
Stores
Shipping and Packing

4.0 DEPARTMENT FUNCTIONAL CHART: (Cl 5.3 of IS /ISO 9001-2015)



4.0. Roles, Responsibilities and Authorities

4.1.1 Sr. Manager/ Manager – QA

The Sr. Manager**/**Manger-QA will be reporting to GM(O) and be responsible for: -

- To monitor the quality of product in production as per Quality Plan.
- Plan departmental activities related to raw material inspection, in-process inspection and final inspection.
- To monitor inspection and test status at various stages of production.
- To monitor status of calibration of inspection, measuring and test equipments.
- To investigate process and product non-conformances and suggest remedial measures.
- To ensure all the relevant tests are carried out and approve finished products for dispatch.
- To release conforming products and to monitor disposition of non-conforming products.
- To analyze and resolve customer complaints. To propose corrective and actions and ensure its implementation.
- To identify risks and opportunities
- To check daily the quality of cast coils in the Cast House for its chemical composition , profile & grain size and release the cast coils to production department
- To co-ordinate with other functional departments regarding quality related matters.
- To co-ordinate with Marketing department and production department to develop various end products with the samples received from customers
- Conducting Internal Quality Audits and other quality system activities.

4.1.2 Dy. Manager/Asst. Manager – QA

They will report to Sr. Manager/Manager (QA) and be responsible for: -

- To monitor the quality of product as per Quality Plan.
- To monitor inspection and test status at rolling of production.
- To investigate process and product non-conformances.
- To analyze and resolve customer complaints. To propose corrective and actions and ensure its implementation.
- To release conforming products and to monitor disposition of non-conforming products.
- To identify risks and opportunities.
- To Update and review the Daily Non Confirmative Product details.
- Participation in pre-shipment inspection.
- Preparation of samples as required by Marketing department for customers
- Issue of necessary Test Certificate or Certificate of Analysis to the shipping department after receipt of packing list from packing department.

4.1.3 Executives/Supervisor/ Chemist –QA

They will report to Sr. Manager/Manager (QA) and be responsible for: -

- Conducting all necessary raw material, in-process and final inspection & tests related to products.
- Maintenance of Inspection & Test records

- Coordinating with other departments for raw material and in-process inspection
- Monitoring & controlling product quality during process
- Release of conforming products.
- Calibrating the measuring, inspection & test equipment.
- Participation in pre-shipment inspection.
- Analyzing Spectrometer samples for Chemical composition of cast coils melting & Holding furnace samples and report daily to Sr. Manager**/**Manager-QA
- Checking of cast coil samples for Profile and grain size
- Preparation of samples as required by Marketing department for customers
- Issue of necessary Test Certificate or Certificate of Analysis to the shipping department after receipt of packing list from packing department.

4.1.4 Assistants – QA

Reporting to Sr. Manager (QA)/ Manager (QA) and be responsible for: -

- To Update and review the Daily Non Confirmative Product details.
- Issue of Test Certificate or Certificate of Analysis to the shipping department/ Marketing Department after receipt of packing list from packing department.
- To Issue the Material Test Certificate for Export Customer after the receipt of packing list from Packing department
- To update and maintain the Material Compliant Report on Monthly Basis.
- To update and maintain the Sales Return details on Monthly Basis.

5.0 REFERENCES

- IS 737 : 2008
- ASTM B 209 - 96
- EN 573 - :2009

6.0 ABBREVIATIONS

- QA – Quality Assurance
- COA – Certificate of Analysis
- GSM - Grams per Square Meter
- VOL – Volume
- KFR - Karl Fisher Reagent
- BHN- Brinell Harness Number
- UTS-Ultimate Tensile Strength

7.0 INPUTS

- Materials for testing (Raw Material & In process Material)
- Chemical Composition Internal Standard – JAL/R&E/QA/STD/0001
- Lab work instructions
- Acceptance Order/EPA

8.0 OUTPUTS

- In-Process material Testing
- Cast coil report

- Certificate Of Analysis(COA)
- Inspection Report
- Clearance for finished material dispatch

9.0 PROCEDURE:

9.1 Incoming Raw Material Inspection:

The Raw Material are inspected and accepted based on the acceptance criteria and the details of acceptance criteria given at JAL/R&E/QA/ANX/01

9.2 Continuous Cast coils

Cast coils are continuously cast in Cast House. The coils are identified by the alloy cast, Batch/Coil number, and weight of coil and OD of the coil. This is written on the coil itself. The alloy is determined by the chemical composition at the time of continuous casting in caster. These coils are checked for the Chemical composition by taking cast coil sample after casting minimum 3 sample of each coil by way of spectrometer.

At the end of the coil, a plate sample is cut which is tested for Crown or profile along the Width of the sheet. The same plate is subjected to grain size test by etching with tucker's reagent.

The profile or crown is measured in % by the following formula

$$\text{Crown in \%} = \frac{\text{Thickness in mm in middle - Average thickness in mm of both ends} \times 100}{\text{Thickness in mm in middle}}$$

The crown in should be not more than 1.5 % and the grain size should be within acceptable limit. The chemical composition should be within the range of the internal standard as per JAL/R&E/QA /STD/0001.

The coils with deviation in the above tests can be accepted with the written permission of Sr. Manager**/**Manager –QA.

The accepted cast coils are planned for further rolling as per the Product end use and customer order by the PPC department.

Sampling:

Melting furnace: One disc sample for Chemical composition. If any addition is done, then samples are analyzed for composition again by way of Spectrometer.
Holding Furnace: One disc sample for Chemical composition. If any addition is done, then samples are analyzed for composition again by way of Spectrometer.
Caster: One disc sample for Chemical composition which will represent the coil composition.
All samples are identified by way of serial numbers in case of Melting & Holding with a prefix of A,B,C,D which will represent each melting or holding furnace 1,2,3,4.
One strip sample is cut at the end of the coil for performing Profile check and grain size check
The Spectro analysis is to be carried out as per details addressed in Annexure JAL/R&E/QA/ANX/05.

9.3 Cold rolling mill / foil

Cast coils are subjected to rolling in cold rolling mill. Thickness is reduced to required level as per the pass schedule. Surface and thickness are checked for coils at random to ensure that thickness is within +/- 8% tolerance and no major marks are observed on the surface.

At foil rolling mills, surface of the materials are checked for pin holes and any other surface abnormalities, like roll marks, metal sticking etc. Specification limits for pin holes are as per the end product thickness as per spec JAL/R&E/QA/SPEC which is maintained in QA department.

For material which is going for PP cap, after final pass, material is checked for the following before it is taken for final slitting.

1. Tensile Strength
2. % Elongation
3. Cupping & % Earring

If material is found within specification limits as per JAL/R&E/QA/SPEC, the coils are taken for final slitting process.

Sampling: One sample per coil

9.4 Slitting

Materials which are finished in Foil mill and cold mill are subjected to final slitting in Slitting Machines. These coils are finally inspected for the following:

1. Surface Visual inspection
2. Tensile Strength in case of thicker material (from 60 micron & above)
3. % elongation in case of thicker material (from 60 micron & above)
4. Thickness
5. GSM in case of material below 60 micron
6. Dyne level for all foils equal and below 50 microns thickness
7. Build up straightness – visual inspection
8. Slitting edge – visual inspection
9. Width in mm

If the coils are found as per specification and within limits as per JAL/R&E/QA/SPEC, the coils are released for packing with a green QA ok sticker affixed on it. No coils will be packed till QA ok stickers are put on coils. Intimation to packing is given for coils to be packed.

Sampling: Three samples per Mother Coil – start, middle and end

9.5 Annealing:

All coils which are finally annealed to get soft temper are checked for the following:

- Thickness in mm
- Surface tension / dyne level
- Tensile strength in case of material thickness above 30 microns
- % Elongation in case of material above 30 microns thickness

- Bursting strength for foils equal and below 50 microns

The annealed coils if found within specification limits as per JAL/R&E/QA/SPEC are cleared. The Green round/Square Ok Sticker to be affixed on the material and then released for the Packing.

Sampling: One sample per coil
Any deviation in the testing is reported to Sr. Manager/Manager- QA and coils are held with a yellow sticker which is for Awaiting decision material. Sr. Manager/Manager – QA is the final authority for the disposition of this material.

The quality plan for rolling is detailed in Annexure JAL/R&E/QA/ANX/02

9.6 Export order

The test will be carried out as mentioned under clause number 9 of this procedure.

9.7 Products

Generally following products are manufactured from the cast coils / or purchased Foil stock:

Sr. No	Product	Alloy	Temper	Thickness in mm	Tests Conducted
1	GEQ/Sheets / coils/ Chequered sheets/ Roofing sheets	AA1050/1100/ 3003/3105/ 8011/5052/120 0/3103/5005	Soft/ H12/H14/ H16/H18	0.28 to 5	Tensile strength , % Elongation, thickness, Bend Test, width , length Diagonal (In case of sheets).
2	PP Cap Coils	AA8011	H14	0.15 to 0.23	Tensile Strength, % Elongation, Erichsen Cup
3	Circle	AA8011/1100/ 1050/3003	Soft/ Hard/H14/ H16	0.4 to 4.	Dia in mm, Thickness, Hardness, UTS, Elongation, Surface, Grain Size
4	Slug	AA1050/1060	Soft	2.2 to 13.5	Thickness ,Dia in mm, Surface, Burr, Hardness
5	Pharma (Bare Foils)	AA 8011	Soft	0.03/0.04	Al-GSM, Al thickness, pin hole, Bursting strength, Dyne
6	Blister	AA8011	Hard	0.02/0.02	Al GSM, Al thickness , pin hole
7	Filter Products	AA 8011/AA1235	Hard	0.035/0.038	GSM, surface tension, Tensile Strength/ Elongation
8	House Foil	AA8011/1235	soft	0.018/0.020	Al GSM , Width , thickness, Wet ability, Free Fall
9	SRC Foil	AA8006	H24	0.035 to 0.080	Thickness, Tensile strength , % Elongation
10	ALU ALU Foil	AA8021	Soft	0.040 to 0.050	Thickness, Tensile strength , % Elongation, Bursting Strength

*** All specification limits are as per guide lines given in JAL/R&E/QA/SPEC/001 to JAL/R&E/QA/SPEC/029.**

In addition to the above tests, visual inspection for pin holes, surface, Winding quality, core etc are also inspected before clearing the material for packing. A green round sticker is put on the coil which is cleared by QA. If coil is QA HOLD, then a yellow sticker is put which indicate Awaiting decision. A red sticker is put when the material is totally rejected.

9.8 Release for packing & Dispatch:

The materials tested are recorded in registers for each process. The detail of records maintained is given in Annexure JAL/R&E/QA/ANX/03.

All test results are entered in the concerned registers and material which are as per specifications are released for packing by way of Intimation for packing as per format no: JAL/R&E/QA/F/06. Coils will be packed as per customer requirements by packing department after receiving the packing intimation. Each dispatch is accompanied by a Certificate of Analysis (COA).

10.0 CONTROL OF EXTERNAL DOCUMENTS

The external documents are controlled and verified by Sr.Manager/Manager (QA) for latest revision status. The documents are AAS (American Association Standards)/ASTMB-209/ IS-737-2008 / EN AW-573- for alloy Nos. 1235, 3003, 3103, 3105, 8011,8006, 8021, 5052, 5005, 1100, 1050, and 1060 aluminium alloys.

11.0 MONITORING AND MEASUREMENT RESOURCES

(Cl: 7.1.5 of IS/ISO-9001:2015 – Monitoring and measuring resources)

The Quality Assurance Department controls, calibrates & maintains inspection, measuring & test equipment as explained below: -

The following measurements are identified to demonstrate the conformance of product to the specified requirements.

a) Thickness in mm.
b) Linear measurements in mm.
c) Tensile strength in kg/mm^2 or kg/MPa
d) Elongation in %
e) Earing in %
f) Chemical Composition in Percentage

11.1 The following types of instruments are identified for inspection, measuring & test equipments with following criteria:

Sl. No	Measurements	Instruments Identified	Aceptable Criteria (Max allowable error)	Calibration Frequency
01	Thickness	Micrometer	± 0.004 m	One Year
02	Dimensions a) Linear	a) Micrometers b) Measuring Tape	± 0.004 mm ± 3 mm	One Year One year

Sl. No	Measurements	Instruments Identified	Aceptable Criteria (Max allowable error)	Calibration Frequency
03	Tensile Strength	Tensile Testing Machine	± 2% of FSD	One Year
04	Hardness	Brinell Hardness Number (BHN) Machine	5% with ref. To Standard	One Year
05	Chemical Composition	Spectrometer (Spectro)	AS per ASTM/IS standard.	One year
06	Temperature	Thermometer	+/-0.5 Deg. C	One year
07	Specific Gravity (Density)	hydrometers	+/-0.01	One Year
08	Weight measurements	Weighing balances	+/-0.001 grams	One Year
09	Annealing Cycle	Muffle Furnace	+/-10 Deg. C	One year

Sr.Manager /Manager (QA) approve the inclusion and removal of the instruments from the list. The details of calibration made as separate work instruction.

All the inspection, measuring & test equipments, used by QA are calibrated/sent for calibration by Quality Assurance Department. The Quality Assurance supervisor and Chemist are authorized & responsible for calibration.

11.2 Calibration Records:

All instruments are identified with a label or sticker showing the status of calibration. Instruments calibrated by external agencies will have the sticker of the external agency who did the calibration. If the sticker put by the external agency is damaged or lost before the next due date of calibration, then our own sticker / label may be put on the equipment, by referring to the relevant details from the calibration certificate given by the external agency. For equipments which are calibrated in-house, a label or sticker will be put containing all the details.

If any instrument is noticed out of order, the material inspected till then is kept separate and tests are carried out after calibrating the instrument and material is released accordingly.

11.3 Environmental Condition:

All the measuring, inspection & testing equipments except Hardness tester & tensile tester are calibrated at Room Temperature and used for inspection at room temperature.

The environmental condition for the Metal Analyzer is a room installed with Air Conditioner and protected from direct sunlight & dirt. The room temperature shall be maintained at 20 ± 3°C.

11.4 Handling, Preservation & Storage:

Instruments like Vernier, Micrometers shall be stored and preserved in suitable covers or boxes to avoid damages or inaccuracy. Other instruments like Spectrometer, Tensile Testing Machines Bursting Strength Machine etc shall be in the specified location and shall be operated by the authorized personnel.

12.0 FINAL INSPECTION & TEST RECORDS

The inspection & test records are maintained for the final inspection and/or test conducted on the product. The details of records have been given in Annexure No.JAL/R&E/QA/ANX/03

Final Inspection of the products are done as per specified limits as mentioned in JAL/R&E/QA/SPEC/01 to JAL/R&E/QA/SPEC/29.

13.0 SAFETY AND ENVIRONMENTAL REQUIREMENTS

The following safety and environmental requirements are to be followed in Rolling QA:

a. Use safety shoes while moving on the shop floor.
b. Use proper tools while working on the mills.
c. Avoid oil spillage on the floor.
d. To clean oil spillage immediately to avoid slipping and accidents.
e. While lifting load by the crane, ensure that the load is within the safe working capacity of the crane.
f. To clean the machine and take utmost care while cutting Magnesium and to collect the boring and store separately in a safe area.
g. In the event of any accident / shock, to give First Aid immediately.
h. To have full knowledge of operating the fire extinguisher in the event of fire hazards like for oil - Foam type, paper & gunny; Electrical - Carbon Dioxide and dry powder.
i. Use sufficient light below the work spot to avoid accidents.
j. In addition to above, any safety orders/instructions issued by Management from time to time, are also to be followed.

14.0 CONTROL OF NON CONFORMING OUTPUTS

The detail of disposal of Non Conforming outputs is recorded in the format No. JAL/R&E/QA/F/11 and sent to GM (O) for appropriate decision.

Procedure reference: JAL/R&E/NCO/PR/04.

15.0 NONCONFORMITY AND CORRECTIVE ACTION:

Any customer complaints & internal rejection will take proper corrective action & maintain record in the format JAL/R&E/NCA/F/01 & JAL/R&E/CPA/F/01.

16.0 RISKS AND OPPORTUNITIES:

Risk & opportunity is defined as separate procedure. **JAL** has established, implemented & maintained this procedure for managing risk & opportunities.

17.0 ANALYSIS AND EVALUATION

Every month the number of customer complaints & NC material are analyzed. The actions taken are reviewed in monthly meetings by the respective departments.

18.0 CONTINUAL IMPROVEMENT

The quality objectives are monitored for improvement during the department meeting and the current level of the objectives is noted down and target level is fixed for the next period and action plan is developed to attain the target level and monitored for improvement. The details are recorded in the format JAL/R&E/QMSC/01.

The effectiveness of corrective taken for the non-conformities is also monitored for improvement

19.0 EXTERNALLY PROVIDED SERVICES:

The servicing, maintenance and calibration of critical equipments like Spectro, tensile testing machine, etc, is entrusted to outside agencies in the form of Annual Maintenance contract (AMC). The AMCs are finalized through Purchase dept. The details regarding the required number of service visits, breakdown visits, etc., are specified in the AMC. Purchase dept. co-ordinates with the AMC provider to ensure that the work is carried out as specified in the contract. The record of the visits done, visit due date, etc, is also maintained by Purchase dept. Quality dept. will check and certify after each service visit whether the work has been satisfactorily carried out.

20.0 ORGANIZATIONAL KNOWLEDGE, COMPETENCE, AWARENESS AND COMMUNICATION

Training is defined as separate procedure. The purpose of this procedure is to define the requirements for positions in the company affecting quality for hiring. Training procedure is applied for new employees & existing employees and evaluating the effectiveness of training provided.

List of training records is shown in the Annexure No JAL/R&E/QA/ANX/03 & responsible by HOD.

Competency chart is identified for all position in Rolling-QA department as per Annexure No JAL/R&E/QA/ANX/05.

RAW MATERIAL ACCEPTANCE OF CRITERIA

Sr. No.	Description of Material	Acceptance Criteria
01	Vergin Ingots	Conformance to the composition as per specification of supplier's contract
02	FO	As per Standard Specification JAL/R&E/QA/RM/SPEC/01
03	Rolling Oil	As per Standard Specification JAL/R&E/QA/RM/SPEC/02
04	Foil Stock	As per Standard Specification JAL/R&E/QA/RM/SPEC/03
05	Diesel	As per Standard Specification JAL/R&E/QA/RM/SPEC/04
06	Wood	As per Standard Specification JAL/R&E/QA/RM/SPEC/05
07	LDPE	As per Standard Specification JAL/R&E/QA/RM/SPEC/06

Note: All Raw Material Standard Specification are attached

Quality test plan for Rolling Mill

Sl. No.	Stage	Test	Sample size / frequency	Acceptance criteria	Remarks
1.	CC Cast Coils	Chemical composition	1 sample per Cast	All samples must confirm to the alloy specification as per internal standards JAL/R&E/QA/STD/0001	Format no. JAL/R&E/QA/STD/0001
2.	Rolling Mill	Tensile Strength & Elongation	One sample per coil in Special Alloy	Should conform TO PRODUCT SPECIFICATION	Product specification JAL/R&E/QA/SPEC/01-29
3.	Slitting Machine	GSM, width, thickness, Dyne level, Tensile Strength & Elongation	Three sample per mother coil (Start, middle, end)	As per Product specification	JAL/R&E/QA/SPEC/01-29
4.	Annealing	GSM, Dyne level, Bursting Strength	One sample per part	As per product specification	JAL/R&E/QA/SPEC/01-29
5.	Circle	Thickness, Diameter, Tensile & Elongation, BHN, Grain Size	Two Sample of each Specification	As per product specification	JAL/R&E/QA/SPEC/01-29
6.	Slug	Thickness, Diameter, BHN, Grain Size	Five sample of each specification	As per product specification	JAL/R&E/QA/SPEC/01-29

LIST OF INSPECTION & TEST RECORDS

Sl. No	RECORD NAME	RECORD NUMBER	RESPONSIBLE PERSON	RETENTION PERIOD
01	CAST COIL REGISTER	JAL/R&E/QA/F/01	HOD	1 year
02	STAMCO REGISTER	JAL/R&E/QA/F/02		1 year
03	CTL REGISTER	JAL/R&E/QA/F/03		1 year
04	BHOOMI REGISTER	JAL/R&E/QA/F/04		1 year
05	ANNEALING REGISTER	JAL/R&E/QA/F/05		1 year
06	INTIMATION REPORT (QA PACKING)	JAL/R&E/QA/F/06		1 year
07	INCOMING MATERIAL CHECKING REPORT	JAL/R&E/QA/F/07		1 year
08	FINAL INSPECTION – SLITTER	JAL/R&E/QA/F/08		1 year
09	ROLLING OIL - HEAVY ENDS REGISTER	JAL/R&E/QA/F/09		1 year
10	MULTI SLITTING LOG BOOK	JAL/R&E/QA/F/10		1 year
11	INTERNAL NC REGISTER	JAL/R&E/QA/F/11		1 year
12	CUSTOMER COMPLAINT REGISTER	JAL/R&E/QA/F/12		1 year
13	OIL TESTING REGISTER	JAL/R&E/QA/F/13		1 year
14	CIRCLE REGISTER	JAL/R&E/QA/F/14		1 year
15	SLUG REGISTER	JAL/R&E/QA/F/15		1 year
16	SALES RETURN REGISTER	JAL/R&E/QA/F/16		1 year
17	CONTROL OF NONCONFORMING OUTPUTS	JAL/R&E/NCO/F/01		1 year
18	NON CONFORMITY & CORRECTIVE ACTION	JAL/R&E/NCA/F/01		Till Implementation of NC
19	CORRECTIVE& PREVENTIVE ACTION (Only Customer complaint)	JAL/R&E/CPA/F/01		1 year

CALIBRATION RECORDS

Sl. No	RECORD NAME	RECORD NUMBER	RESPONSIBLE PERSON	RETENTION PERIOD
01	List of instruments for Calibration	JAL/R&E/CAL/F/01	HOD	1 Year
02	Calibration Records	JAL/R&E/CAL/F/02		Until calibration of Instrument
03	Calibration Results	JAL/R&E/CAL/F/03		Until calibration of Instrument

TRAINING RECORDS

Sl. No	RECORD NAME	RECORD NUMBER	RESPONSIBLE PERSON	RETENTION PERIOD
01	Employee details	JAL/R&E/TRG/F/01	HOD	Till end of service
02	Training needs identified	JAL/R&E/TRG/F/02		1 Year
03	Record of Training Imparted	JAL/R&E/TRG/F/03		1 year
04	Review of Training effectiveness	JAL/R&E/TRG/F/04		1 year

Note:
The computer generated documents (soft copy) will not be having the signature of the generating department. However, if a hard copy is taken out, it has to have signature of the concerned person.

PRODUCT SPECIFICATION

Sl No	Product	Specification No
1	Specification for 0.0065 mm Soft Foil	JAL/R&E/QA/SPEC/01
2	Specification for 0.007 mm Soft Foil	JAL/R&E/QA/SPEC/02
3	Specification for 0.008 mm Soft Foil	JAL/R&E/QA/SPEC/03
4	Specification for 0.009 mm Soft Foil	JAL/R&E/QA/SPEC/04
5	Specification for 0.010 mm Soft Foil	JAL/R&E/QA/SPEC/05
6	Specification for 0.011 mm Soft Foil	JAL/R&E/QA/SPEC/06
7	Specification for 0.012 mm Soft Foil	JAL/R&E/QA/SPEC/07
8	Specification for 0.015 mm Soft Foil	JAL/R&E/QA/SPEC/08
9	Specification for 0.018 mm Soft Foil	JAL/R&E/QA/SPEC/09
10	Specification for 0.012 mm Soft Foil (HOUSE FOIL)	JAL/R&E/QA/SPEC/10
11	Specification for 0.018 mm Soft Foil (HOUSE FOIL)	JAL/R&E/QA/SPEC/11
12	Specification for 0.020mm Soft Foil	JAL/R&E/QA/SPEC/12
13	Specification for 0.025 mm Soft Foil	JAL/R&E/QA/SPEC/13
14	Specification for 0.030 mm Soft Foil	JAL/R&E/QA/SPEC/14
15	Specification for 0.040 mm Soft Foil	JAL/R&E/QA/SPEC/15
16	Specification for 0.020 mm Plain Foil	JAL/R&E/QA/SPEC/16
17	Specification for 0.025 mm Hard foil	JAL/R&E/QA/SPEC/17
18	Specification for 0.030 mm Hard foil	JAL/R&E/QA/SPEC/18
19	Specification for 0.038 mm Hard foil	JAL/R&E/QA/SPEC/19
20	Specification for 0.040 mm Hard foil	JAL/R&E/QA/SPEC/20
21	Specification for PP Cap Sheet / Coil in thickness of 0.15 / 0.16/0.17/0.175/0.18/0.185/0.20/0.21/0.23 mm	JAL/R&E/QA/SPEC/21
22	Specification for ROPP Cap Coil in thickness of 0.12 mm to 0.23 mm	JAL/R&E/QA/SPEC/22
23	Specification for Insulation Coil in thickness of 0.71 mm	JAL/R&E/QA/SPEC/23
24	Specification for Sheet & Coil	JAL/R&E/QA/SPEC/24
25	Specification for Chequered Sheet	JAL/R&E/QA/SPEC/25
26	Specification for Circle	JAL/R&E/QA/SPEC/26
27	Specification for Slug	JAL/R&E/QA/SPEC/27
28	Specification for SRC Foils	JAL/R&E/QA/SPEC/28
29	Specification for Alu-Alu-Foil	JAL/R&E/QA/SPEC/29

NOTE: All 29 Specifications are attached

COMPETENCY CHART

Name of department: QA			
IS/ISO 9001:2015 clause number 7.2			
Sl. No.	**Position**	**Required qualification***	**Experience required**
1	Senior Manager QA	M.Sc. Chemistry/BE/B Tech Metallurgy/Mechanical	10 Years
2	Manager QA	M.Sc. Chemistry/BE/BTech Metallurgy/Mechanical	8 Years
3	Dy. Manager QA	Diploma in Mechanical / Metallurgy/ B.Sc Chemistry.	6 Years
4	Assistant Manager QA	Diploma in Mechanical / Metallurgy /B.Sc Chemistry	4 Years
5	Engineer/Supervisor QA	Diploma in Mechanical / Metallurgy / B.Sc chemistry	2 Years
6	Management trainee QA	Diploma in Mechanical / Metallurgy / B.Sc chemistry	0 Year
*Note: Relaxation in qualification can be given in case the candidate is having sufficient experience in relevant field.			
Prepared by: HOD		Approved by: GM(O)	

Customer complaint handling

Sr. No.	Activity	Responsibility	Ref. Doc.
1	Receipt of Customer complaint Intimation letter / MCR by either Customer / Mktg. Dept.	HOD-QA	JAL/R&E/MAR/F/01
2	The nature of the complaint and Problem is discussed with Unit Head and concerned department HOD/In charges.	HOD-QA	---
3	A technical representative will be deputed to attend the complaint, if required.	HOD-QA/ Concerned HOD	---
4	In case if technical visit not required, regarding material disposal / salvage is conveyed to Marketing / Customer directly.	Concerned HODs	---
5	Details of the visit is discussed with the Unit Head/ HOD's of the concerned dept.'s and based on the discussions decision is taken for disposal of the material.	Representative	---
6	A detailed Visit report is prepared by the Representative and given to all concerned including Marketing department.	Representative	---
7	Intimation regarding the disposal of the material is conveyed to Customer through letter / Mail /Verbally.	Representative	---
8	Based on the Visit report / MOM / Sales return, top 5 defects are analyzed by using structural problem solving techniques such as fish bone diagram, why-why analysis etc. and corrective & preventive action shall be taken.	All Concerned HOD/In charge	---
9	In case there is no feedback from the customer within 30 days, complaint will be treated as closed,	QA-In charge	MCR Register-(PC) Soft copy/Hard Copy
10	Summary of each visit report with MOM is prepared and attached with QA-Monthly report.	QA-In charge	

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LOG BOOK IN CASTER

CASTER NO -	Dt:			Coil No	
Profile in Coil				Alloy	
Distance in MM	Thickness measured by micrometer			Width	
10			After Profile Check		
20			Average of Profile		
30			Middle point in profile		
40			Percentage of Crown		
50			Grain Size		
60			Remarks		
70					
80					
90					
100					
110					
120			Verified by Q.A:		
130					
140			Date:		
150			QA Shift in-charge Signature:		

Chemical Composition

Si	Fe	Cu	Mn	Mg
Cr	Zn	Ti	Al	

Received in PPC Shift in-charge

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STAMCO REGISTER

FORMAT NO. JAL/R&E/QA/F/02

DATE	Input Coil No.	Product	Alloy	Temper	Specification	Thickness (mm)	Width (mm)	UTS (Kg/mm2)	Elongation (%)	Surface properties	Customer's Name	Remarks

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CHINA CTL REGISTER

FORMAT NO. JAL/R&E/QA/F/03

Date	Input Coil No.	Product	Alloy	Temper	Specification	Thickness (mm)	Width (mm)	Length (mm)	UTS (Kg/mm2)	Elongation (%)	Diagonal	Surface properties	Customer's Name	Remarks

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BHOOMI REGISTER

FORMAT NO. JAL/R&E/QA/F/04

Date	Coil No.	Alloy/Temper	Specification	Thickness (mm)	Width (mm)	Length (mm)	Diagonal	UTS (Kg/mm2)	Elongation (%)	Box No.	Remarks

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ANNEALING REGISTER
FORMAT NO. JAL/R&E/QA/F/05

Date	Customer Name	Product	Alloy/ Temper	Specification	Width (mm)	Thickness (mm)	UTS (Kg/mm2)	Elongation (%)	Dyne	Bursting Strength	Free fall	Coil No	Remarks

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INTIMATION REPORT (QA → PACKING)

Format No. JAL/R&E/QA/F/06

INTIMATION LETTER FOR QUALITY APPROVED MATERIALS					
PRODUCT NAME:					
PRODUCT CODE NO:					
CUSTOMER NAME:					
SPECIFICATION:					
SL.NO	**DATE**	**SHIFT/SIGN**	**SET NO**	**NO OF REEL RELEASED**	**REMARKS**
PREPARED BY: **QC EXECUTIVE**				**APPROVED BY:** **QA HEAD**	

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INCOMING RAW MATERIAL CHECKING REPORT

Format No. JAL/R&E/QA/F/07

SPECIFICATION:

Date	Inv no/ date	Supplier's name	Identification no	Vech. No	Bill qty.	Density	Odour	Moisture content	Supplier TC	Material status accept/reject	Checked by	Approved by	Remarks

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FINAL INSPECTION - SLITTER

FORMAT NO. JAL/R&E/QA/F/08

DATE/SIGN	CUSTOMER NAME	SPECIFICATION	FOIL TEMPER	BSO/DSO/BSB	GSM	THICKNESS(mm)	WIDTH (mm)	SURFACE TENSION DYNES/CM

…….CONTINUED

PHYSICAL PROPERTIES	NO. OF JOINTS	INPUT COIL. NO	OUTPUT REEL NO.	QTY (KGS)	REMARKS

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HEAVY ENDS REGISTER
FORMAT NO. JAL/R&E/QA/F/09

SL. NO.	DATE	MACHINE NAME	CUP WEIGHT IN GRAM (W1)	ACTUAL SAMPLE WEIGHT (W2)	FINAL SAMPLE WEIGHT (Wf)	HEAVY ENDS IN %

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MULTI SLITTING LOG BOOK

FORMAT NO. JAL/R&E/QA/F/10

Date	Coil No.	Alloy/Temper	Specification	Reel No.	Thickness (mm)	Width (mm)	UTS (Kg/mm2)	Elongation (%)	Customer Name	Remarks

JINDAL ALUMINIUM LIMITED (ROLLING AND EXTRUSION DIVISION)	
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INTERNAL NC REGISTER
FORMAT NO. JAL/R&E/QA/F/11

Date	M/c name	Product	Alloy/ Temper	Coil no	Specification	Customer name	Hold qty.	Defect	Deviation Approval	Current status	Disposition

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CUSTOMER COMPLAINT REGISTER
FORMAT NO. JAL/R&E/QA/F/12

Sl no.	Mkt ref. No. & date of complaint	Product/ Customer type	Customer's name	Section no./specification	Invoice no. & date	Supplied qty. In kgs	Complaint qty. In kgs

……..CONTINUED

Rejected qty. In kgs	Reason of complaint	Action plan	Visited by	Status	Person responsible for the loss	Marketing person

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OIL TESTING REGISTER

FORMAT NO. JAL/R&E/QA/F/13

Date	Source	Colour	Density	Viscosity @ 40 deg c	Distillation		
					IBP	FBP	RECOVERY

……..CONTINUED

% of Contamination	Brown stain test	flash point	% of Ginol	Checked by	Remarks

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CIRCLE INSPECTION REGISTER

FORMAT NO. JAL/R&E/QA/F/14

SL. No	DATE	COIL NO	ALLOY	TEMPER	SPECIFICATION(mm)	CUSTOMER NAME	GUAGE(mm)

……..CONTINUED

UTS (Kg/mm2)	% ELONGATION	BHN	DIA	GRAIN	REMARKS

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SLUG INSPECTION REGISTER

FORMAT NO. JAL/R&E/QA/F/15

Sr No.	Date	Coil No.	Alloy	Temper	Specification(mm)	Customer	Gauge(mm)	BHN		Act. Diameter(mm)	Annealing Cycle	Remarks
								Before Tumbling	After Tumbling			

JINDAL ALUMINIUM LIMITED (ROLLING AND EXTRUSION DIVISION)	
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SALES RETURN REGISTER

FORMAT NO. JAL/R&E/QA/F/16

SL NO.	RECEIVED DATE	CUSTOMER'S NAME	SPECIFICATION	INVOICE NO. & DATE	INVOICE QTY. IN KGS	RECEIVED QTY. IN KGS

……..CONTINUED

COMPLAINT NO. & DATE	APPROVED BY	REASON FOR REJECTION	ACTION FOR DISPOSAL	QA REMARKS	STATUS

JINDAL ALUMINIUM LIMITED (ROLLING AND EXTRUSION DIVISION)	
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QUALITY OBJECTIVES MONITORING RECORD

Format No.JAL/R&E/QMSC/F/01

1.0 Department
2.0 Quality Objectives:
3.0 Reference Document:
4.0 Responsibility:

Sl. No	Month	Target	Actual	Target period	Action Plan	Remark

Retention Period 3 years

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TRAINING DETAILS

Format No.JAL/R&E/TRG/F/01

Div Code : Dept. Code : Staff Code :
Name : Designation:
Sex : D.O.B : D.O.J. :

Educational Qualifications	Year	Current knowledge (Professional Training)	Year

Previous Experience	
Nature of Job	Duration

Promotions Year :

Training & Additional knowledge			
Programme	Duration	Conducted By	Remarks

DEPT. HEAD

JINDAL ALUMINIUM LIMITED (ROLLING AND EXTRUSION DIVISION)	
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Training Needs Identified

Format No: JAL/R&E/TRG/F/02

DEPARTMENT: **PERIOD:**

Sl. No.	Name	Designation	Topic	Type of training	Source		Tentative Schedule
					Internal	external	

Prepared By Approved By

Retention Period: One Year

JINDAL ALUMINIUM LIMITED (ROLLING AND EXTRUSION DIVISION)	
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RECORD OF TRAINING IMPARTED

Format No: JAL/R&E/TRG/F/03

DEPARTMENT: **PERIOD:**

Sl No	Name	Designation	Topic	Date of Training	Type of training	Signature of Trainee	Training given by	
							Name	Sign

Retention Period: One Year

JINDAL ALUMINIUM LIMITED ROLLING & EXTRUSION DIVISION	
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REVIEW OF EFFECTIVENESS OF TRAINING

Format No: JAL/TRG/F/04

Department:

Sl No	Name	Topic	Effectiveness Criteria	Excellent	Good	Average	Poor	Date of Review	Sign of HOD
1			Job performance						
			Knowledge & Communication skill						
			Attitude						
2			Job performance						
			Knowledge & Communication skill						
			Attitude						
3			Job performance						
			Knowledge & Communication skill						
			Attitude						
4			Job performance						
			Knowledge & Communication skill						
			Attitude						
5			Job performance						
			Knowledge & Communication skill						
			Attitude						
6			Job performance						
			Knowledge & Communication skill						
			Attitude						
7			Job performance						
			Knowledge & Communication skill						
			Attitude						

Prepared By

Approved By

Note: Effectiveness of Training will be reviewed by concerned HOD after 2 months of training.

Retention Period: One Year

JINDAL ALUMINIUM LIMITED (ROLLING AND EXTRUSION DIVISION)	
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LIST OF INSTRUMENTS & CALIBRATION RECORDS

(Format No:.JAL/R&E/CAL/F/01)

SL. NO.	DESCRIPTION OF THE INSTRUMENT	MAKE	SL.NO.OF INSTRUMENT	LOCATION	CALIBRATED ON

ERROR	CALIBRATION DUE ON	CALIBRATED BY	APPROVED BY	REMARKS

RETENTION PERIOD 3 YEARS

JINDAL ALUMINIUM LIMITED (ROLLING AND EXTRUSION DIVISION)	
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CALIBRATION RESULTS

(Format No: JAL/R&E/CAL/F/02)

INSTRUMNT NO		ROOM TEMPERATURE	
DESCRIPTION		DATE OF CALIBRATION	
LOCATION		DUE FOR CALIBRATION	
MASTER STANDARD USED			
CALIBRATION PROCEDURE REFERENCE			

SL.NO.	STANDARD VALUE	OBSERVED VALUE	ERROR ±	REMARKS

CALIBRATED BY: VERIFIED BY:

DEPARTMENT HEAD

Rétention Period : 3 Years

JINDAL ALUMINIUM LIMITED ROLLING & EXTRUSION DIVISION	
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NONCONFORMITY AND CORRECTIVE ACTIONS

As per clause number 10.2 of IS/ISO 9001 : 2015)

(JAL/R&E/NCA/F/01)

NC & CA No.	DATE:	DEPARMENT:
NON-CONFORMITY RELATED TO: i. PRODUCT □ iv MAINTENANCE □ ii. PROCESS □ v OTHERS □ iii RECORDS □		
DESCRIBE THE NON- CONFORMITY:		
ROOT CAUSE OF NON-CONFORMITY:		
CORRECTIONS:		
CORRECTIVE ACTION	RESPONSIBILITY	DATE OF COMPLETION
EFFECTIVENESS OF CORRECTIVE ACTION		
Checked by:	Verified and Approved by: (Department Head)	

Retention period: Until Nonconformity is closed and corrective action is implemented.

CC: QMS COORDINATOR

JINDAL ALUMINIUM LIMITED ROLLING & EXTRUSION DIVISION	
Rev. No.: 00	Rev Date: 01.07.2017

CORRECTIVE AND PREVENTIVE ACTION

Department :		Date:
01	NAME OF THE CUSTOMER	
02	NATURE OF COMPLAINT	
03	DESPATCH DETAILS:	
04	QUANTITY REJECTED	
05	REASON FOR THE COMPLAINT	
06	ROOT CAUSE	.
07	CORRECTION	
08	CORRECTIVE ACTION	
09	PREVENTIVE ACTION	
10	REVIEWED AT MANAGEMENT REVIEW MEETING ON	
Prepared by:		Verified & Approved by: Department Head
Note: This format applicable only for customer complaint		