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SHAKAMBHARI ISPAT & POWER LTD. (Formerly known as Ess Dee Aluminium Ltd.)

STANDARD OPERATING PROCEDURE

Title: Final Inspection of Converted Foil

Page No. 1 of 4

SOP No.	Version No.	Effective Date	Next review date
SIPL/QCS/006	00	06.07.2026	05.07.2028

1.0 PURPOSE

- 1.1 To define the step-by-step evaluation, testing, and approval process for coated aluminium foil, to prevent defective material from being released for packaging or customer use.

2.0 SCOPE

- 2.1 This SOP is applicable to the Conversion Department.

3.0 REFERENCE(S) & ATTACHMENTS

3.1 References

- 3.1.1 ISO 15378:2017

3.2 Attachments

- 3.2.1 Attachment- I : In-Process Quality Formats (see List of Formats - QC Conversion, Annexure)

4.0 RESPONSIBILITY

4.1 Production Head:

- 4.1.1 To ensure the training of the SOP to all concerned department personnel involved in implementation of the SOP.
4.1.2 To ensure the implementation of the SOP after training.

4.2 Quality Assurance Person:

- 4.2.1 To check the SOP.
4.2.2 To maintain the original copy of the SOP.
4.2.3 To issue controlled copy of the SOP.
4.2.4 To maintain issuance record of SOP.
4.2.5 To retrieve the controlled copy of the SOP when it is superseded/obsolete and maintain its record.

4.3 QA Head:

- 4.3.1 To approve new or revised SOP.
4.3.2 To ensure the implementation of the defined system.

4.4 Plant Head:

- 4.4.1 To approve new or revised SOP.
4.4.2 To ensure the implementation of the defined system.

5.0 DISTRIBUTION

- 5.1 Quality Control
5.2 Production
5.3 Quality Assurance

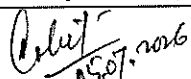
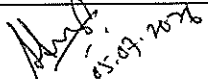
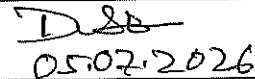
6.0 DEFINITION(S) & ABBREVIATION(S)

6.1 Definitions

- 6.1.1 Nil

6.2 Abbreviations

- 6.2.1 GSM: Grams per Square Metre

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7.0 PROCEDURE

7.1 Required Equipment & Materials:

- 7.1.1 Digital/dial thickness gauge
- 7.1.2 Calibrated steel scale or measuring tape
- 7.1.3 Acetone and clean cotton swabs
- 7.1.4 Analytical weighing balance
- 7.1.5 Standard approved specimen/shade card
- 7.1.6 Standard template (10 cm x 10 cm)

7.2 Inspection Checkpoints:

7.2.1 Visual & Physical Examination:

- 7.2.1.1 **Appearance:** Unroll 1 to 3 metres of foil and visually check under daylight for cracks, pinholes, wrinkles, creases, and foreign particles. Edges must be smooth without dents.
- 7.2.1.2 **Dimensions:** Use a calibrated scale to measure reel width and length against the specified Purchase Order (PO).
- 7.2.1.3 **Thickness & Grammage:** Cut a 10 x 10 cm² piece of foil, weigh it on an analytical balance, and calculate thickness/grammage using the approved formula. To determine the coating GSM separately, remove the heat seal lacquer by rubbing with a cotton swab soaked in ethyl acetate to obtain the base foil GSM, then calculate:
Combined GSM – Foil GSM = Coating GSM.
- 7.2.1.4 **Print Inspection:** Verify colours, layout, and text against the approved shade card. The printing must be legible and clear.

7.3 Coating & Lacquer Tests:

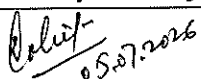
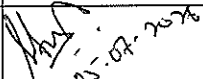
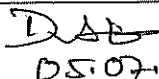
- 7.3.1 **Heat Seal Lacquer (HSL) Detection:** Heat a copper wire in a Bunsen burner flame until red hot. Touch it to the coated side of the foil; if it leaves a residue/stickiness, the lacquer is properly present.
- 7.3.2 **VMCH Coating Test:** Apply acetone to a finger and touch the reverse side of the foil (unprinted/unlaminated side). The foil will stick slightly to the finger if the VMCH coating is properly applied.

7.4 Laminated Material Check Points:

- 7.4.1 Visual inspection
- 7.4.2 Peel strength / bond strength test
- 7.4.3 GSM checking
- 7.4.4 Thickness measurement
- 7.4.5 Width measurement
- 7.4.6 Bursting strength
- 7.4.7 Heat seal test and its strength
- 7.4.8 Ink adhesion test — plain and printed laminate

7.5 Packaging & Labelling:

- 7.5.1 Verify the foil rolls are properly wrapped in a polythene bag inside a corrugated/wooden box.

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7.5.2 Check the external labels for batch number, manufacturing date, product description, and net weight.

7.6 Acceptance Quality Level (AQL):

7.6.1 Follow the standard sampling plan; each and every roll shall be checked to determine acceptable batch sizes and identify non-conforming items.

7.7 Documentation & Release:

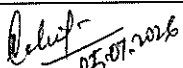
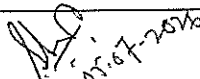
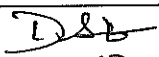
7.7.1 Record all observations, measurements, and test results in the approved Raw Data Sheet (RDS).

7.7.2 If all parameters pass, the Quality Assurance (QA) Inspector and Manager shall sign the Certificate of Analysis (CoA) and issue a Release Tag.

7.7.3 If the material fails, immediately place a REJECTED tag on the reels and move them to the rejected area.

8.0 REVISION HISTORY

Revision No.	00	Effective Date	06.07.2026	CC No.	NA
Details of revision: New SOP					

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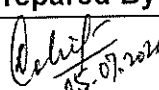
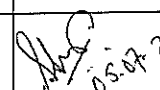
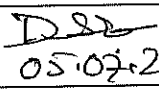
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Attachment- I : List of Formats - QC Conversion

Sr. No.	Format No.	Format Description	Type	Size (mm)
1	SIPL/QCS/006/F01/00	In-Process Quality Inspection - Rewinder Machine	Register	A4
2	SIPL/QCS/006/F02/00	In-Process Quality Inspection - Rolling Mill	Register	A4
3	SIPL/QCS/006/F03/00	In-Process Quality Inspection - Separator	Register	A4
4	SIPL/QCS/006/F04/00	In-Process Quality Inspection - Annealing Furnace	Register	A4
5	SIPL/QCS/006/F05/00	In-Process Quality Inspection - Coating	Register	A4
6	SIPL/QCS/006/F06/00	In-Process Quality Inspection - Lamination	Register	A4
7	SIPL/QCS/006/F07/00	In-Process Quality Inspection - Slitting	Register	A4
8	SIPL/QCS/006/F08/00	In-Process Quality Inspection - Rolling Oil	Soft Copy	A4
9	SIPL/QCS/006/F09/00	In-Process Quality Inspection - Foil Stock	Register	A4
10	SIPL/QCS/006/F10/00	In-Process Quality Inspection - Final Bare Foil	Register	A5

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 05.07.2026	 05.07.2026	 05.07.2026