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| SHAKAMBHARI GROUP #SteelWithin | SHAKAMBHARI ISPAT & POWER LTD. (Formerly known as Ess Dee Aluminium Ltd.) | | |
|---|---|---|---|
| STANDARD OPERATING PROCEDURE | | | |
| **Title:** Operation for Slitting Machine | | | **Page No.** 1 of 4 |
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| SIPL/PDI/007 | 00 | 06.07.2026 | 05.07.2028 |

## 1.0 PURPOSE

1.1 To slit and rewind wide rolls of material into narrower rolls of specified widths according to production requirements, while ensuring product quality, operator safety and efficient machine operation.

## 2.0 SCOPE

2.1 This SOP is applicable to the Production Department.

## 3.0 REFERENCE(S) & ATTACHMENTS

**3.1 References**

3.1.1 ISO 15378:2017

**3.2 Attachments**

3.2.1 Attachments Slitting log book : SIPL/PDI/007/F01/00

## 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 the controlled copy of the SOP.

4.2.4 To maintain the issuance record of the 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4.2.5 To retrieve the controlled copy of the SOP when it is superseded/obsolete and maintain its record.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

## 6.0 DEFINITION(S) & ABBREVIATION(S)

**6.1 Definitions**

6.1.1 **Slitting:** Inspect the incoming roll and change the slitting size.

6.1.2 **Inspection:** Checking for any kind of defects, such as wrinkles, spot, dent, roll loose winding, etc.

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### 6.2 Abbreviations

6.2.1 M/C: Machine
6.2.2 MPM: Meters Per Minute
6.2.3 HMI: Human Machine Interface
6.2.4 PSI: Pound per square inch (1 lb/in²; one pound-force applied to an area of one square inch).

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## 7.0 PROCEDURE

### 7.1 Pre-operation Requirements

7.1.1 Before attempting to operate the slitter, all operating and support personnel shall complete the training program and shall be thoroughly familiar with the operating, emergency and safety procedures.

7.1.2 Before starting the machine, ensure visually that all electrical and mechanical accessories are in working condition.

### 7.2 Responsibility

7.2.1 **Production Operator:** Machine operation and in-process inspection.

7.2.2 **Production Supervisor:** Verification of machine setup and production records.

7.2.3 **Quality Assurance (QA):** Line clearance, process monitoring and batch record review.

### 7.3 Process

7.3.1 The slitting unit, consisting of the male and female circular knives (or grooved bottom roll and razor blade), must slit the desired width. Each knife must be set on the shaft so that when the male and female knives are engaged, each properly meshes with its counterpart and each slit web is of the proper width.

7.3.2 The male knives are individual circular / razor blades that are locked on the male knife shaft in the proper position.

7.3.3 The female knives are positioned on the female knife shaft by means of fixed spacers with bottom cutters / grooved shaft.

7.3.4 The knives are geared together, and the female shaft is driven by a system of belts and pulleys.

7.3.5 In the case of a grooved shaft, only the shaft rotates and the razor blade stands still.

7.3.6 The two sets of knives are engaged and disengaged. The top male knives are also controllable as to the depth of engagement with the female knives.

7.3.7 The male knife is flat on one side and beveled on the other. It must be positioned on the male knife shaft so that the flat side is against the female knife. The bevel reduces the tendency to push the edge of the slit web down onto the groove, thus distorting the edge.

7.3.8 The depth of setting (engagement) of the male and female knives must be the minimum required to produce a clean cut. Setting them deeper than necessary produces distortion in the edge by pushing it down the groove. The decision on depth is taken as per the cutting quality of the material.

7.3.9 The male and female knives are of different diameters, so that they rotate at different speeds. This speed differential of the two knives (over-speed) aids in slitting by producing a shearing action.

7.3.10 The rewind cores are placed on the rewind shafts. These cores, whether aluminium, PVC, MS or cardboard, must be precision cut so that their

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width is exactly the same as the space between the knives. It is also important that the cores have the same thickness.

7.3.11 Ensure visually that the cores are of the same OD. The male knives are engaged and the individual slit webs are attached alternately to the front and back mandrel. The machine is brought to speed and tension and the wind-up and nip pressure are adjusted.

7.3.12 After completing the slitting, the OK, hold and rejected reels are kept in the designated place.

7.3.13 Weight is calculated on a weighing scale basis.

**7.3.14 Scrap Management System**

7.3.14.1 Bare foil / coated / laminated scrap.

7.3.14.2 Trimming scrap is collected in scrap bins and sent to the scrap area.

**7.4 Area Line Clearance**

7.4.1 Once the job is finished, stop the machine from run mode and switch to idling mode at the speed of 50 mpm.

7.4.2 Take the air pipe and clean the cutter roller, rubber roller, all rollers, etc.

7.4.3 Check the weight of all reels and enter it in the log book.

7.4.4 Remove all output reels to the store department.

7.4.5 Remove all scrap from the scrap area.

7.4.6 Remove all unused product from the machine.

7.4.7 Put the sign for line clearance.

7.4.8 Make ready for the next planning.

## 8.0 REVISION HISTORY

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

| **Prepared By:** | **Checked By:** | **Approved By:** |
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