


INTER PLANT STANDARD IN STEEL INDUSTRY		
 IPSS	<b>METHOD OF STORAGE OF SEMI-FINISHED PRODUCTS LIKE INGOTS, BLOOMS, BILLETS, SLABS</b>	<b>IPSS:3-02-001-18</b>
	Corresponding IS does not exist	Formerly : IPSS:3-02-001-01

## 0. FOREWORD

- 0.1 Interplant standardization in steel industry has been initiated under the aegis of the Indian Standards Institution (ISI) and the Steel Authority of India Limited (SAIL). This IPSS was prepared by the standard committee on Operation and Maintenance, IPSS 3:2 and firstly published in 1994. Lastly, this has been revised by the standard committee in July 2018 with the active participation of the representatives of Indian steel plants and leading consultants.
- 0.2 This revision is an updated version to take care of the latest procedural requirements.

## 1. SCOPE

- 1.1 This Inter Plant Standard enumerates the Method of storage of semi-finished products like ingots, blooms, billets and slabs covering their identification, marking, stacking and record keeping.

## 2. IDENTIFICATION AND MARKING

- 2.1 **General** – Following general practices shall be followed during marking and identification :
- Only English alphabet(s) and numbers shall be used.
  - The size of alphabet(s) and number for paint marking shall be between 100 mm to 150 mm. Where the cross section of the product is of size less than 100 mm, the size of alphabet(s) and number shall be 20 mm less than the product size.
  - Marking shall be done in white/aluminium paint. Hot chalk shall be used for marking in hot condition.
- 2.2 **Ingots**
- 2.2.1 Heat/cast number shall be painted on the ingots after sufficient cooling based on Ingot Transit Memo and position of banking. Any other details like ingot number and grade may also be given as per the requirement in the plant.
- 2.2.2 The above details shall be painted on two faces.

2.2.3 Identification marks shall also be written at convenient locations in case of mould & bottom stickers. Immediately after release of stickers, the heat/cast number shall be painted on ingots.

### 2.3 **Slabs/Blooms/Billets**

2.3.1 Hot stamping machines shall be used for marking heat number wherever facility exists. The size of the alphabet(s)/number shall be as per the design specification of the machine.

2.3.2 After sufficient cooling, heat/cast number shall be painted on the slabs/blooms/billets based on placement register.

Other details like Slab No./Billet No./Bloom No. may be painted as per requirement of Plant.

2.3.3 The identification details shall be painted at the middle on the first and last layer on either side in one cast for semis like blooms and billets stored in multi-layered stacks. In case of slabs/blooms/billets meant for IPT (Inter Plant Transfer), export and deemed export, the identification details shall be painted on the middle on one side and on the sheared edge.

## 3. **COLOUR CODE**

3.1 To have clear identification, colour codes shall be applied on slabs/blooms/billets.

3.2 All plants shall have colour coding as below :

Rejected material	Red
Off grade material	White
Graded material	As per plant's practice and grade declared by the Research and Control Laboratory of the Plant.

3.3 The size of colour code strips shall be 50 mm to 100 mm and shall be painted on one corner of the sheared edge.

## 4. **STORAGE**

### 4.1 **Ingots**

4.1.1 Ingots shall be received only with Ingot Transit Memo.

4.1.2 Ingots shall be stored in specified areas and the stacking position shall be recorded in the placement register.

4.1.3 Ingots of one heat shall be kept together.

4.1.4 The sequence of placement shall be such that during storage and removal of the ingots, minimum crane movement is required.

4.1.5 Atleast one metre gap shall be maintained between two stacks. Height of the stack should not be more than 2 metres. Dimension Symmetry for stability should be maintained.

4.2 **Slabs/Blooms/Billets**

- 4.2.1 Stacking shall be done size wise and castwise before painting.
- 4.2.2 Separate areas shall be allocated to special steels.
- 4.2.3 Products of one heat shall be kept together.
- 4.2.4 Separate area shall be earmarked for uncut pipe left and material without proper identity.

**5. DOCUMENTATION**

- 5.1 Ingots shall move with Ingot Transit Memo.
- 5.2 The details of ingots, its location, heat number and ingot number and grade shall be recorded in the placement register.
- 5.3 In case of slabs/blooms/billets, the details of yard number, stack number and pile number shall be recorded in placement register of the yard.
- 5.4 The registers shall be updated continuously.
- 5.5 Slabs/billets/blooms shall move with route cards, which shall indicate details of heat number, grade and size.
- 5.6 Wherever yards are computerized, details with respect to heat number, quality, size, source and location shall be stored in the computer. This shall be updated regularly.

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