**Note: Grade change over for any grade depends upon f/c operating conditions, raw material availability & grade required. So the below process can be modified/ changed during the time of execution after consultation with HOD/SS.**

1. **PURPOSE:**
2. **SCOPE:**
3. **RESPONSIBILITY:** BF Control room shift in charge
4. **PERFORMANCE INDICATORS:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sr. No.** | **Measure** | **Unit** | **Frequency** | **Acceptance Criteria** | **Responsibility** |
| **Quality** | | | | | |
| 1 |  |  |  |  |  |
| **Environment** | | | | | |
| 1 |  |  |  |  |  |
| **Safety** | | | | | |
| 1 |  |  |  |  |  |

1. **PROCEDURE:**

A) Basic grade to foundry grade changeover

* Responsibility: BF Control room shift in charge
* Grade to be changed only after receiving proper communication either from HOD-Production or Head Process or Head PID
* Sinter percentages in burden to be kept same. Percentage change in the sinter has to be done in consultation of HOD/SS.
* No change in coke base and N/C. However, coke base can be changed after consultation with HOD-Production.
* Coke rate in burden to be kept at 630 kg/Thm with consultation with SS.
* Target Si -2.3% or as per requirement.
* Slag Basicity-0.90-1.00 (Can be changed depending upon actual basicity coming in Slag)
* Mn in burden as per requirement & availability of iron ore & Sinter.
* At the time of grade changeover 0.5 extra coke to be given (amount of extra coke will depends on the furnace condition). Exact quantity should be discussed with SS before charging in the furnace.
* Skip L/S and 500 Kg’s of ore for 7 batches after consulting the SS.

B) Foundry grade to Basic grade changeover

* Responsibility: BF Control room shift in charge
* Grade to be changed only after receiving proper communication either from HOD-Production or Head Process or Head PID
* Sinter percentages in burden to be kept same. Percentage change in the sinter has to be done in consultation of HOD/SS.
* No change in coke base and N/C. However, coke base can be changed after consultation with HOD-Production.
* Coke rate in burden to be kept at 590 kg/thm.
* Target Si -1.00-1.20% ( Based on BG05 or BG06 grade)
* Slag Basicity-1.00-1.10 (Can be changed depending upon actual basicity coming in Slag)
* Mn in burden as per requirement & availability of iron ore & Sinter.

C) Foundry grade to SG grade changeover

* Responsibility: BF Control room shift in charge
* Grade to be changed only after receiving proper communication either from HOD-Production or Head Process or Head PID
* No change in coke base and N/C. However, coke base can be changed after consultation with HOD-Production.
* Target Si -1.5-2.0% ( Based on grade required)
* Coke rate in burden to be kept at 650 kg/thm (coke rate will be maintained based on furnace condition).
* Completely stop sinter and start with high grade low Mn ore.
* Slag Basicity-1.10-1.14 (Can be changed depending upon actual basicity coming in Slag).
* Start sinter considering Mn requirement in the burden after 4 hrs of starting SG burden.
* Also slightly decrease basicity after 4 hrs of starting burden as per requirement.

D) SG grade to Foundry grade changeover

* Responsibility: BF Control room shift in charge
* Grade to be changed only after receiving proper communication either from HOD-Production or Head Process or Head PID
* Sinter percentages in burden to be increased based upon the sinter availability. Percentage change in the sinter has to be done in consultation of HOD/SS.
* No change in coke base and N/C. However, coke base can be changed after consultation with HOD-Production.
* Coke rate in burden to be kept at 630 kg/Thm with consultation with SS.
* Target Si -2.3% or as per requirement.
* Slag Basicity-0.90-1.00 (Can be changed depending upon actual basicity coming in Slag)
* Mn in burden as per requirement & availability of iron ore & Sinter.
* At the time of grade changeover 0.5 extra coke to be given. Exact quantity should be discussed with SS before charging in the furnace.
* Skip L/S and 500 Kg’s of ore for 7 batches after consulting the SS.

E) SG grade to Basic grade changeover

* Responsibility: BF Control room shift in charge
* Grade to be changed only after receiving proper communication either from HOD-Production or Head Process or Head PID.
* Sinter percentages in burden to be increased based upon the sinter availability. Percentage change in the sinter has to be done in consultation of HOD/SS.
* No change in coke base and N/C. However, coke base can be changed after consultation with HOD-Production.
* Coke rate in burden to be kept at 590 kg/Thm with consultation with SS.
* Target Si -1.0-1.2% or as per requirement.
* Slag Basicity-1.05-1.10 (Can be changed depending upon actual basicity coming in Slag)
* Mn in burden as per requirement & availability of iron ore & Sinter.

F) Basic grade to SG grade changeover

* Responsibility: BF Control room shift in charge
* Grade to be changed only after receiving proper communication either from HOD-Production or Head Process or Head PID.
* No change in coke base and N/C. However, coke base can be changed after consultation with HOD-Production.
* Target Si -1.5-2.0% ( Based on grade required)
* Coke rate in burden to be kept at 650 kg/thm (coke rate will be decided based on furnace condition).
* Completely stop sinter and start with high grade low Mn ore.
* Slag Basicity-1.05-1.10 (Can be changed depending upon actual basicity coming in Slag).
* Start sinter considering Mn requirement in the burden after 4 hrs of starting SG burden.
* Also slightly decrease basicity after 4 hrs of starting burden as per requirement.

1. **REFERENCES:**
2. **RECORDS:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sr. No.** | **Record No.** | **Record Title** | **Maintained by** | **Soft/Hard form** | **Retention Time** |
| 1. |  |  |  |  |  |
| 2. |  |  |  |  |  |
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| **Prepared By:**  Head – Process Control PID | **Reviewed & Issued By:**  Management Representative | **Approved By:**  Head – Pig Iron Division |
| **Signature:** | **Signature:** | **Signature:** |
| **Date: 15.07.2022** | **Date: 15.07.2022** | **Date: 15.07.2022** |