**SOP FOR**

1. **PURPOSE: Safe fabrication of drill bit for optimum performance**
2. **SCOPE:** **Blast furnace Accessories** .
3. **RESPONSIBILITY: Shift Engineer & workmen on job .**
4. **PROCEDURE: DRILL BIT FABRICATION JOB .**
5. **REFERENCES: Operation & Maintenance manual .**

PPE –s to be used :

* Helmet, Safety shoes, Cotton cloth, complete sealed goggle, welding screen, face shield & hand gloves

Aspect - Impact

|  |  |
| --- | --- |
| Scrap generation | Resource Depletion |

Hazards identified

**Mechanical Hazard** - Impingement of pipe

Fall of pipe or tools

Breakage of cutting wheel

Fall of sparks in eyes, body, ear etc

Skidding of person due to poor housekeeping. oil spillage, uneven surfaces, etc

Hitting of drill bit pipe

Slippage of pipe while handling .

**Human Behaviour aspect of operators** :

Operator nature, alcoholism, casual approach & non usage of PPE’s , not following SOP, Violation of Covid 19 Pandemic protocol.

**Chemical Hazard** - Nil

**Physical Hazard** - Burn injury

**Electrical Hazard** - Electrical Shock.

**Work No 1: Fabrication of Drill Bits**

1. Use safety goggles/face shield while cutting, grinding and chipping.
2. Drill bit length**:** 3350 mm from shank to drill bit tip.
3. Cut the drill bit using ~~drill bit~~ cutting torch. Maximum allowable welding joints are ~~2 nos,~~ 1no.- All joints should be inspected for good welding and straightness and 7018 – 3.15 mm welding electrode to be used for welding.
4. Check the shank for any damage to threads. If found damaged, same should not be re used.
5. Check the shank for the center hole is free of any restriction from inside.
6. Ensure that min 6mm thick fillet welding is carried out for pipe. Follow welding procedure SP 44.
7. Weld the drill bit with 6 mm fillet welding without any eccentricity.
8. After welding the joint, check the straightness of the drill bit fabricated .
9. Stack the fabricated drill bits in the drill bit stand .
10. Damaged pipe should be put in the scrap zone and ensure that its length should not be more than 0.5mt and to be returned to store.
11. Keep the work area neat and clean.
12. Do not throw used pipes/bits on the floor.
13. Follow housekeeping procedure as per instruction given in [WI/MAINT/91](file:///\\Mgr_maint\qehs\departmental%20manual\11%20%20Work%20instruction\WIMAINT91%20HOUSE%20KEEPING.doc).

**DO’s**

1. Use welders hand gloves during welding operations.
2. Only trained workmen and certified welders should do the fabrication job.
3. Only certified welding machine should be used.
4. Care should be taken while moving the drill bits.

**DO NOT :-**

Cut the drill bit pipes without holding it properly on vice /stand.

**Amendement Record**

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Manual Section Ref. & Para** | **Brief details of Revision** | **New Rev.** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

|  |  |  |
| --- | --- | --- |
| **Prepared By:**  Digital head VAB | **Reviewed & Issued By:**  Management Representative | **Approved By:**  Mechanical and Asset Integrity Head VAB |
| **Signature:** | **Signature:** | **Signature:** |
| **Review Date: 10.04.2023** | **Review Date: 10.04.2023** | **Review Date: 10.04.2023** |