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O MODULE
Safety in electric arc welding under a flux

Safety in submerged arc welding by 12

Work safety during welding method 12 submerged arc

- Submerged arc welding is Situated fusion welding.
- It the arc welding.
- So valid in terms of work safety regulations and safety standards CSN 05 0630th
- Truth that it is the submerged-arc welding has its own specifics and peculiarities.
- At welding by this method can become droughts accidents, personal injury caused by electric shock and injury caused by burns.

Work safety during welding method 12 submerged arc

- In submerged arc welding is ook used in more than complicated machinery in the conventional manual welds.
- Service this equipment must be instructed and trained properly in the course of welding.
- At submerged arc welding arc burns beneath a layer of flux, which is covered.
- Serving exposed workers are not to any radiation. Referring to: It is necessary to usefull face plexiglas cover.

Work safety during welding method 12 submerged arc

- Serving when workers are exposed to the submerged arc welding fluxes arising from dusts and aerosols.
- Dangerously they are in particular oxides of silicon and manganese.
- Another also hazards are fluorides.
- Therefore it requires reliable respiratory protection.
- It this protection is used respirators.

Worker protection against electric shock

- Must eliminate worker contact with live parts of the device, and which have higher than the voltage safe voltage. (Welder operates mostly in hazardous environments, where there may be an AC voltage into a 25 V DC to 60 V - CSN 33 2000-4-41-NK).
- In case of danger of electrocution of workers must be on the welding workplace demonstrably familiar with first aid for electric shock.
- Staff who will be familiar, the supervisor of the operation.
- These workers must be able to discern the effects of electric shock.

BUREŠ, J. *Bezpečnost při svařování*. 5. vydání. Česká Třebová: DOM-ZO 13. s. r. o., 2012. s. 7.

Worker protection against electric shock

- Must know how to give artificial respiration to restore cardiac activity.
- In an enclosed space using a portable tool, respectively. portable lamps only if they are supplied with safe voltage (SELV).
- Security protective transformer must be outside the enclosed space.
- Do not use welding equipment with impaired sealing the cooling circuit.

BUREŠ, J. *Bezpečnost při svařování*. 5. vydání. Česká Třebová: DOM-ZO 13. s. r. o., 2012. s. 7.

Protection against burning

- Cording to CSN 05 0601 welder must Use the following personal protective equipment - work clothing, work boots, gloves, etc.
- Welders duty is to prevent the possibility of fire or explosion in the workplace.
- When handling the welded parts to use protective equipment such as Microsoft forging tongs, gloves, clothing and footwear.
- In comparison with manual arc welding formed in the submerged arc welding more molten metal and molten flux.
- There thus further risk of injury.
- Can cause leakage of the molten phase two especially at the circular welds.
- Operator they must therefore be equipped with high-quality protective footwear and fireproof working clothes.

Protection against spatter and slag fragments

- Cording to CSN 05 0601 welder must use the following personal protective equipment - work clothing, work boots, gloves, etc.
- Duty use welder's glasses with side protection when checking the weld immediately after welding and at the time of cooling.
- Also must use eye protection when cleaning the welds.
- Cording to Standard EN 1418 is required trained personnel serving in welding equipment submerged arc welding.
- personnel they are called operators.

Questions to ponder

1. What safety regulations apply for submerged arc welding?
2. What is the protection of workers against electric shock?
3. What rules apply to protect against burns?
4. How is it Possible to protect yourself from leaking molten metal and flux?
5. What are the peculiarities of protection of workers in the submerged arc welding?

Recommended literature and information sources

- AMBROŽ, O. A KOL. *Technologie svařování a zařízení: učební texty pro kurzy svářečských inženýrů a technologů*. Ostrava: ZEROSS, 2001, 395 s. Svařování. ISBN 80-85771-81-0.
- BERNASOVÁ, E. A KOL. *Svařování*. 1. vyd. Praha: SNTL, 1987. ISBN 04-221-88.
- BUREŠ, J. *Bezpečnost při svařování*. 5. vydání. Česká Třebová: DOM-ZO 13. s. r. o., 2012.
- KUBÍČEK, J. DANĚK, L. KANDUS, B. *Technologie svařování a zařízení. Učební texty pro kurzy svařovacích inženýrů a technologů*. Plzeň: ŠKODA WELDING, s. r. o., 2011, 242 s.