



DRAFT TANZANIA STANDARD

MMDC 3(6486) P3 Coal - Handling, storage and transportation – Code of practice

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TANZANIA BUREAU OF STANDARD

0. Foreword

0.1 This draft Tanzania Standard is being prepared by the Solid Minerals and Related Products Technical Committee (MMDC 3), under the supervision of Mining and Minerals Standards Divisional Committee (MMDC)

0.2 This draft standard aims at addressing the safety and requirements related to fire hazards as a result of poor handling of coal. Currently, there is no harmonized national code of practice to address the coal handling, storage and transportation, and it is this gap that prompted the need to develop this draft standard

1. Scope

This draft Tanzania standard mainly covers handling of coal at the site and during transportation

2. Normative references

The following document is referred to in the text in such a way that some or all of their content constitutes requirements of this document. For undated references, the latest edition of the referenced document (including any amendments) applies

TZS 1934 - 2 Solid mineral fuels - Vocabulary - Part 2: Terms relating to sampling, testing and analysis

3. Terms and definitions

For the purposes of this document, the terms and definitions given in TZS 1934 - 2- and the following apply

3.1 Coal self-ignition/coal self-heating

phenomenon of temperature rises of coal stockpile without applying any external heat

3.2 Coal spontaneous explosion

occurs when the heat generated within a stockpile is greater than the heat dissipated to the external environment, process in which oxidation reaction takes place without the interference of an external heat source

3.3 Coal stockpile

pile or storage location for bulk Coal materials, forming part of the bulk coal material handling process

3.4 Coal handling facility

a facility where coal is handled such as coal transshipment terminals, electric generating plants, boiler plants, or steam plants

4. Coal handling

4.1 Location

4.1.1 Coal handling facility at the mining site (producer) shall be a minimum of 1000 metres away from residential area, petrol station, school, college, religious places, national parks, railway line, water

bodies e.g. river, lake, canal or a pond game reserves, surrounding agriculture land as well as ecological sensitive areas

4.1.2 Coal handling facility for users, the facility should be well shaded and properly covered

4.1.3 Coal handling facility should be secured/fenced to avoid easy access by unauthorized parties and animals

4.2 Transportation trucks/ships

4.2.1 The vehicles/vessel shipping coal should be completely and effectively covered with fire resistant and water proof materials'

4.2.2 The vehicles/vessels shipping coal should not exceed 75% of the rated capacity

4.2.3 Vessels shipping coal should at all times carry on board instruments for measuring temperature, methane, oxygen and carbon monoxide gas concentrations, so that the atmosphere within the cargo space can be monitored

4.2.4 The instrument should be regularly serviced and calibrated so that it provides the reliable data about the atmosphere within the cargo space

4.2.5 Extra monitoring should be implemented when coal is loaded in holds adjacent to hot areas, such as heated fuel double bottom tanks and engine room bulkheads

4.2.6 A no smoking policy should be fully implemented on the ship and hot work should not be allowed, particularly in the vicinity of cargo compartments

4.2.7 The transportation trucks should be properly labelled as transporting hazardous materials

4.2.8 If the shipper has declared that the cargo is liable to self-heat, then the following additional precautions should be taken; -

4.2.8.1 Surface ventilation should be kept to minimum

4.2.8.2 Carbon monoxide concentration should be regularly measured and recorded

4.2.8.3 If the hold temperature exceeds 55°C or the carbon monoxide concentration rises steadily, emergency assistance should be sought

4.3 Storage and Handling

4.3.1 Coal piles should not be higher than 5 metres and the smallest distance between two adjacent heaps should be 5 metres, so that in case of fire approach is available

4.3.2 Coal stockpiles should be properly compacted to reduce the movement of air for easy oxidation

4.3.3 Wet and dry coals should not be stacked together

4.3.4 Weathered and fresh coals should not be stacked together, similarly, the washed coal should not be stacked together with run-of-mine coal

4.3.5 Proper water drainage should be maintained by contouring the base of coal stockpiles

4.3.6 Artificial wind barriers should be constructed to minimize the movement of air in the stockpile

- 4.3.7 Segregation of coal particles within a stockpile should be avoided. The segregation facilitates the movement of air into and within the stockpile
- 4.3.8 Coals of different ranks, particle sizes and propensities to spontaneous combustion should not be stacked together
- 4.3.9 Coals which are more prone to self heat should not be stockpiled in large quantities for an extended period of time
- 4.3.10 The spontaneous combustion of coal is not necessarily caused by mining activities and storage conditions, attention should also be paid to other external sources of heat such as. Potential ignition sources such as forest fires, lightning, and hydrocarbons should be eliminated from coal stockpiles
- 4.3.11 Steam lines and sewage lines should not run under the coal stockpiles
- 4.3.12 Coal handling facility should have considered for all corrective steps for resolving the issue of air pollution

4.4 General safety requirements

The first line of defense in fighting coal fires is installing fire protection detectors and fire suppression systems

- 4.4.1 Coal handling facility should have effective fire detectors and adequate firefighting measures to combat any fire resulting from coal sources
- 4.4.2 An onsite emergency plan shall be prepared and implemented by the emergency response team
- 4.4.3 Coal handling unit shall provide adequate firefighting measure to avoid any fire or related hazard