





INFRASTRUCTURE MAINTENANCE

SPECIFICATION

Specification for Concrete Mixer

Author:	Engineer	Rotondwa Ludzulu	
Approved:	Senior Engineering Technologist	Molefi Moeketsane	
Authorised:	Principal Engineering	Siboniso Vilakazi

Date: 22 November 2018

Circulation Restricted To:

Transnet Freight Rail - Infrastructure

© This document as a whole is protected by copyright. The information herein is the sole property of Transnet Ltd. It may not be used, disclosed or reproduced in part or in whole in any manner whatsoever, except with the written permission of and in a manner permitted by the proprietors.

Contents

1. Scope.....	3
2. Operating Conditions.....	3
3. Qualifications.....	3
4. Performance.....	3
5. General Requirements	3
6. Detailed Requirements.....	3
6.1. Mass.....	3
6.2. Operator Comfort	4
6.3. Noise Emission.....	Error! Bookmark not defined.
6.4. Size	4
6.5. Body	4
6.6. Ergonomics.....	4
7. Quality Control	4
8. Legal and Operational.....	4

1. Scope

- 1.1 This specification outlines the requirements of a heavy duty Concrete Mixer for railway infrastructure maintenance.

2. Operating Conditions

- 2.1. The Concrete Mixer will be operated in all weather conditions at altitudes varying from sea level to 1850 m above sea level, relative humidity 10% to 90% and atmospheric conditions which vary from heavily saline to dry and dusty.
- 2.2. Ambient air temperatures ranging from -5° C to 45° C.

3. Qualifications

- 3.1. The design of the concrete mixer is to be that of the manufacturer, but must be of robust construction in order to meet sustained heavy-duty demands of railway infrastructure maintenance.
- 3.2. Only products proven in service will be considered. A list of users, both South African and International, is to be submitted.

4. Performance

- 4.1. A service life of not less than 7 years is expected from each concrete mixer. The actual design life of the machine is to be stated.
- 4.2. It must be driven by an engine that is capable of producing atleast 4kW of power
- 4.3. The engine equipped in the concrete mixer shall be sourced from a manufacturer with a proven track record and a local footprint.
- 4.4. The engine is to be easily and economically maintained, requiring standard workshop tools, with replacement parts readily available locally.

5. General Requirements

- 5.1. It shall be easy to carry and transport manually
- 5.2. It shall have at least 2 inflatable wheels

6. Detailed Requirements

6.1. Mass

- 6.1.1 The weight of the concrete mixer shall be at most 220 kg
- 6.1.2 The capacity of the mixer shall be at least 350 litres

6.2. Operator Comfort

- 6.2.1 The concrete mixer shall be equipped with handles to assist with manual transportation
- 6.2.2 It shall provide excellent grip even in oily conditions.
- 6.2.3 It shall be equipped with safety mechanism, including, but not limited to, emergency stop and a drum locking system.

6.3. Speed

- 6.3.1. The engine shall be able to rotate the drum at 30 rpm (revolution per minute)

6.4. Body

- 6.4.1. The drum mouth shall have a diameter of at least 445 mm
- 6.4.2. The dimension of the machine shall not exceed 200×100×150 cm
- 6.4.3. The body must be manufactured from robust, rust resistant materials.
- 6.4.4. External surfaces must have anti-corrosive coatings such as galvanised or powder-coated steel.
- 6.4.5. The grip on the handles must have a non-slip surface.
- 6.4.6. Machines will be acceptable in standard factory production finish and colour. Details to be furnished. Due cognisance must be given to the life requirement of the machine.

6.5. Ergonomics

- 6.5.1 The concrete mixer shall be designed for ease of use and operator safety, reducing fatigue and maximizing productivity.

7. Quality Control

- 7.1 All machines must be manufactured in an environment that complies to the latest ISO 9000 to ISO 9004 or similar quality control standards. Details must be furnished.
- 7.2 Machines will be subject to a technical evaluation and the final decision will, amongst others, be based on these findings.

8. Legal and Operational

- 8.1. The machine must be completely assembled and filled with lubricants and ready for service in all respects.
- 8.2. An operator's handbook, service manual and spare parts list must be supplied with each machine in order to ensure that the machine is operated in accordance to the manufacturer's instructions.
- 8.3. All machines and equipment must be supplied complete with essential tools such as Allen keys, spanners etc. in order to make essential adjustments as well as to fit or remove consumable items.

- 8.4. Consumable items must be available locally and must be of standardised format in order to be used on equipment of more than one supplier.
- 8.5. All machines and equipment is to be guaranteed for a minimum period of 12 months against faulty material and workmanship - fair wear and tear excluded. Full details of guarantee is to be submitted.
- 8.6. The information as requested by the various clauses in this specification are to be supplied in the form of technical data, pamphlets and/or drawings. If this is not complied to, offers may be overlooked.
- 8.7. Each machine purchased will be issued with a project number consisting of 20 characters which must be stamped or engraved directly onto the machine **or** on the manufacturer's data plate **or** a separate riveted plate on the particular machine.
- 8.8. Sufficient training must be given to all operators of these machines.