


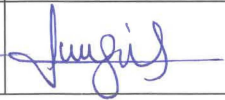


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T.Ş. 230.059

TECHNICAL SPECIFICATIONS FOR BEARINGS

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1- SCOPE

This technical specification covers the general conditions and requirements and inspections of various type of bearings used on the locomotive and wagons.

1.1- DEFINITION:

ADMINISTRATION: TÜRASAS

2- GENERAL CONDITIONS AND REQUIREMENTS

2.1. If the rolling bearings are to be used in axle boxes of freight wagons;

2.1.1. Bearings to be used in axle boxes of TSI Certified freight wagons,

The offered bearings shall comply with the requirements of EN 12080. In addition, the performance tests of these bearings shall be successfully completed according to EN 12082 clause 7.

Tenderers shall submit the technical drawings of the bearings they will offer together with their offers.

Tenderers shall submit the current EC Type Verification Certificate and the current Quality Management System Certificate of the bearings issued by the authorised certification bodies (NoBo=Notified Body) registered in the NANDO database according to the TSI WAG 321/2013 Regulation on the Interoperability of Railway Systems in the European Union and the current regulations published in addition to this Regulation (1236/2013, 2015/924, 2019/776, 2020/387, 2023/1694) in order to prove that the bearings they will offer comply with the requirements under the EN 12080 standard.

In addition, the bidders shall submit the TSI Declaration of Conformity of the bearings they offer and the declaration that the performance test of the bearings subject to the offer has been successfully completed in accordance with EN 12082 with a load of BA182 type or greater axle load. The bidders shall submit the performance test report or certificate made in an accredited laboratory or under the supervision of NoBo in accordance with EN 12082 with BA182 type or a load with a larger axle load together with the first product delivery.

2.1.2. For bearings to be used in axle boxes of freight wagons that are not TSI Certified;

The bearings subject to the offer shall comply with the requirements of EN 12080. In this context, tenderers shall submit the Declaration of Conformity that the bearings they offer comply with the requirements of EN 12080 with their offers.

Tenderers shall submit the technical drawings of the bearings they will offer together with their offers.

2.2. If the bearings are to be used in other rolling stock;

2.2.1. The bearings in the order list are stated as numbers and symbols (FAG, SKF, TIMKEN) used by original manufacturers of vehicles/equipments. The bearings to be offered shall be original or their equivalent the mark, origin and numbers of bearings shall be determined in offers (e.g. Germany FAG, Sweden SKF). If equivalent bearings are offered, comparative tables in terms of dimensions, tolerances and technical specifications showing that these bearings are exactly the same as the requested bearings shall be attached to the offer. In addition, the document to be received from the bearing manufacturer stating that it is exactly suitable in terms of dimension, tolerance, technical specifications, assembly instead and working function shall be submitted with the offer.

2.2.2. In the order list bearings are specified according to classification number, type number and

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using places. Should any specific bearing has been offered according to using place, the documents obtained from the manufacturers of the bearings stating the explanations and complementary information about prefix and suffix numbers of offered bearings and full competence of their dimension and tolerance, appropriateness of usage place and functional operating of the demanded bearings, shall be submitted together with the offer. This article does not apply to the demands of the Electrical Machinery Factory.

2.2.3. In case of demands from the Locomotive Factory and Electrical Machinery Factory, the operation test approval certificate made by the Bidder will be submitted together with the offer.

2.2.4. Operational test for bearings demanded by the Locomotive Factory and Electrical Machinery Factory :

The bearings to be offered for the first time as the original manufacturer's equivalent/substitute shall have been previously subjected to operational tests.

The tenderers shall have operational test approval from TCDDT / TCDD for the bearings to be submitted for the first time. The tenderer shall submit this approval letter to the commission at the tender stage. A sufficient amount of samples shall be delivered to TCDDT and a letter of undertaking will be signed in return for the guarantee to be determined by taking into account the negative effects that may be given to the environment in the vehicle / component where the operating test shall be carried out.

The delivered bearings shall be inspected in detail from the point of technical aspect by comparing to the original bearings by a commission. Should there be no defects or any negative state, the bearing shall be tested and monitored from the point of conformity and operation for a desired period of time (3-6 months) by TCDDT. After the trial, the bearings shall be disassembled and checked physically with respect to before assembly condition.

All operational test costs shall belong to the bidders.

In case the bearings fail in the operational tests, the bidder/s will not claim any rights.

3- INSPECTIONS

The production quality certificates of bearings prepared by manufacturer shall be submitted to ADMINISTRATION together with the delivery.

The inspection and acceptance commission shall carry out the inspections indicated below, after examining the production quality certificates of the bearing. In case the results obtained from these inspections comply with the technical specification, the whole party shall be accepted, case any of the result doesn't comply with the technical specification, the whole party shall be rejected.

3.1- Physical Inspections

The inspections indicated below shall be carried out on the samples to be selected according to the item 3.2 of the technical specification after the packing inspection of the whole bearings is performed by the inspection and acceptance commission.

3.1.1- Appearance Inspection

For appearance inspection of the bearings, it shall be inspected if the marking is conformable and made completely and if the bearing is free of the faults such as scratches, crack, break, damage, deformation, corrosion etc.

3.1.2- It will be checked whether the bearings comply with the brand and catalog numbers requested in the order.

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3.2- Sampling

Samples shall be selected randomly from the bearings delivered, in the quantity to be required (for one vehicle/equipment).

ADMINISTRATION Quality Control Commission can increase the number of the sample for the inspection, in case it is needed.

4. MARKING

The mark and type number (together with prefix and suffix) of the bearings shall be marked on appropriate place of bearings by means of an appropriate method as legibly and clearly. There shall be no erasure, scraping or modification on the bearings.

5. PACKING

The bearings protected against environmental hazards (water, dust, moisture, etc.) and mechanical damages shall be delivered within boxes.

The following data shall be written or labeled on the boxes in a way not to be affected by ambient effects:

- Contract number,
- Manufacturer's name,
- Bearing brand name and type number,

6. WARRANTY

The bearings shall be guaranteed for 2 years.

7. MISCELLANEOUS

The administrative specification will be valid for items not included in this specification.