Indian Standard

MECHANICAL VIBRATION — EVALUATION OF MACHINE VIBRATION BY MEASUREMENTS ON ROTATING SHAFTS

PART 3 COUPLED INDUSTRIAL MACHINES

1 Scope

This part of ISO 7919 gives guidelines for applying evaluation criteria of shaft vibration under normal operating conditions, measured at or close to the bearings of coupled industrial machines. These guidelines are presented in terms of both steady running vibration and any amplitude changes which can occur in these steady values. The numerical values specified are not intended to serve as the only basis for vibration evaluation since, in general, the vibratory condition of a machine is assessed by consideration of both the shaft vibration and the associated structural vibration.

This part of ISO 7919 applies to coupled industrial machines with fluid-film bearings, having maximum continuous rated speeds in the range 1 000 r/min to 30 000 r/min and not limited by size and power, comprising

- steam turbines,
- turbocompressors,
- turbogenerators,
- turbofans,
- electric drives and associated gears, where relevant, and
- rotodynamic pumps (turbo pumps).

  The information relating to pumps provided in this part of ISO 7919 complements that given in ISO 10816-7. In particular, the conditions for *in-situ* operation, performing acceptance tests and the influence of bearing clearance given in ISO 10816-7 shall be taken into account when evaluating the shaft vibration of pumps

This part of ISO 7919 is neither applicable to land-based steam turbine-generator sets for power stations with outputs greater than 50 MW (see ISO 7919-2), nor machine sets in hydraulic power generating and pumping plants with outputs of 1 MW or greater (see ISO 7919-5).

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 7919-1, *Mechanical vibration of non-reciprocating machines — Measurements on rotating shafts and evaluation criteria — Part 1: General guidelines*