ISO 14695:2003-04 (E)

Industrial fans - Method of measurement of fan vibration

Contents

Page

Foreword iv

Introduction iv

1 Scope 1

2 Normative references 1

3 Terms and definitions 2

4 Symbols and units 2

5 Mounting of test rig 4
5.1 General 4
5.2 Resilient base mounting of fan 5
5.3 Mounting of fans with resilient elastic rope 5
5.4 Stiff mounting of fans 9
5.5 Flexible connections 9

6 Measuring equipment 9
6.1 General 9
6.2 Calibration 9
6.3 Instrument system 10
6.4 Transducers 10
6.5 Piezoelectric accelerometers 11
6.6 Preamplifiers 11
6.7 Analysers 11
6.8 Indicators 12
6.9 Outputs 12

7 Transducer attachment 12
7.1 General 12
7.2 Attachments 13

8 Selection of measuring positions 13
8.1 General 13
8.2 Mounting on combination base frame 16
8.3 Mounting of transducers for other fans 16

9 Test environment and operating data 16

10 Procedure 16
10.1 General 16
10.2 Measurement parameters 17
10.3 Frequency analysis 18

11 Presentation of results 18

Annex A (informative) Guide to calculating resilient mount positions and rigid body natural frequencies 19

Annex B (informative) Secondary measurement methods for in situ testing or quality grading 25

Annex C (informative) Recommended measuring positions for machinery health measurements 27

Annex D (informative) Relationship between absolute and decibel levels 29

Annex E (informative) Relationship between vibration magnitude of single frequency signal 31

Bibliography 33