ISO 14694:2003-03 (E)

Industrial fans - Specifications for balance quality and vibration levels

Contents

Page

Foreword iv

Introduction v

1 Scope 1

2 Normative references 2

3 Terms and definitions 2

4 Symbols and units 7

5 Purpose of the test 8

6 Balance and vibration application categories (BV categories) 9

7 Balancing 10
7.1 General 10
7.2 Balance quality grade 10
7.3 Calculation of permissible residual unbalance 10

8 Fan vibration 11
8.1 Measurement requirements 11
8.2 Fan support system 15
8.3 Fan vibration limits for tests in manufacturer's work-shop 15
8.4 Fan vibration limits for operation in situ 15

9 Other rotating components 16

10 Instruments and calibration 17
10.1 Instruments 17
10.2 Calibration 17

11 Documentation 17
11.1 Balance 17
11.2 Fan vibration 17
11.3 Certificates 18

Annex A (informative) Relationship of vibration displacement, velocity and acceleration for sinusoidal motion 20

Annex B (informative) Assembly practices for balancing in a balancing machine 22

Annex C (informative) Sources of vibrations 24

Annex D (informative) Equation of vibration 30

Annex E (informative) Vibration and supports 32

Annex F (informative) Out of balance and bearing reactions 33

Annex G (informative) Condition monitoring and diagnostic guidelines 36

Annex H (informative) Suggested relaxation of specified grades and levels 37

Bibliography 38