

# ISO 10846-3:2002-06 (E)

## Acoustics and vibration - Laboratory measurement of vibro-acoustic transfer properties of resilient elements - Part 3: Indirect method for determination of the dynamic stiffness of resilient supports for translatory motion

---

| <b>Contents</b>   |   | <b>Page</b> |
|---|---|-------------|
| Foreword .....  |   | iv          |
| Introduction .....  |   | v           |
| 1   | Scope .....   | 1           |
| 2   | Normative references .....  | 2           |
| 3   | Terms and definitions .....   | 3           |
| 4   | Principles .....  | 5           |
| 5   | Requirements for apparatus .....  | 6           |
| 5.1   | Normal translations .....   | 6           |
| 5.2   | Transverse translations .....   | 10          |
| 5.3   | Suppression of unwanted vibrations .....  | 11          |
| 6   | Criteria for adequacy of the test arrangement .....                                     | 15          |
| 6.1   | Frequency range .....   | 15          |
| 6.2   | Determination of upper frequency limit $f_3$ .....                                      | 16          |
| 6.3   | Flanking transmission .....   | 19          |
| 6.4   | Unwanted input vibrations .....   | 20          |
| 6.5   | Accelerometers .....  | 21          |
| 6.6   | Force transducers .....   | 21          |
| 6.7   | Summation of signals .....  | 21          |
| 6.8   | Analysers .....   | 21          |
| 7   | Test procedures .....   | 21          |
| 7.1   | Installation of the test elements .....   | 21          |
| 7.2   | Mounting and connection of accelerometers .....   | 22          |
| 7.3   | Mounting and connections of the vibration exciter .....                                 | 22          |
| 7.4   | Source signal .....   | 22          |
| 7.5   | Measurements .....  | 22          |
| 7.6   | Test for linearity .....  | 23          |
| 8   | Evaluation of test results .....  | 24          |
| 8.1   | Evaluation of dynamic transfer stiffness .....  | 24          |
| 8.2   | One-third-octave-band values of the frequency averaged dynamic transfer stiffness ..... | 24          |
| 8.3   | Presentation of one-third-octave-band results .....                                     | 25          |
| 8.4   | Presentation of narrow-band data .....  | 25          |
| 9   | Information to be recorded .....  | 26          |
| 10  | Test report .....   | 26          |
| Annex A (informative) Transfer stiffness related to rotatory vibration components ..... |   | 28          |
| Annex B (informative) Effect of symmetry on the transfer stiffness matrix .....         |   | 36          |
| Annex C (informative) Static load-deflection curve .....                                |   | 37          |
| Bibliography .....  |   | 38          |