

- 1) fixed frequency,
 - centred resonance frequency.

The applied frequency shall always be maintained at the actual critical frequency.

- 2) almost fixed frequency,
 - restricted frequency sweeping.

If the actual critical frequency is not clearly evident, for example if there is chatter, or where a number of individual specimens are being tested simultaneously, it may be convenient to sweep over a restricted frequency range between 0,8 and 1,2 times the critical frequency in order to be sure of exciting the effect fully. This may also apply where the resonance is non-linear (see Clause A.1).

- b) predetermined frequencies stated in the relevant specification.

The test shall be applied at the amplitude and for the duration stated in the relevant specification (see A.3.2).

NOTE In the case of a product mounted either on vibration isolators, or within packaging, the relevant specification states whether or not the resonant frequencies of the product on its isolators, or in the packaging material, should be chosen for this endurance test (see Clause A.5)

9 Intermediate measurements

When prescribed by the relevant specification, the specimen shall be functioning and its performance checked during the test for the specified proportion of the total time (see A.3.2 and Clause A.8).

10 Recovery

It is sometimes necessary, when prescribed by the relevant specification, to provide a period of time after testing and before final measurements to allow the specimen to attain the same conditions, for example of temperature, as existed for the initial measurements. The relevant specification shall prescribe the precise conditions for recovery.

11 Final measurements

The specimen shall be submitted to the visual, dimensional and functional checks prescribed by the relevant specification.

The relevant specification shall provide the criteria upon which the acceptance or rejection of the specimen is to be based (see Clause A.9).

12 Information to be given in the relevant specification

When this test is included in a relevant specification, the following details shall be given in so far as they are applicable, paying particular attention to the items marked with an asterisk (*) as this information is always required.

	Clause and/or subclause
a) Choice of check points	3.2.3
b) Choice of control points*	3.3.2
c) Cross axis motion	4.1.2.1
d) Rotational motion	4.1.2.2
e) Signal tolerance	4.1.3

f) Vibration amplitude tolerance	4.1.4
g) Confidence level	4.1.4
h) Single or multipoint control*	4.1.4.1
i) Mounting	4.3
j) Severities, real environment, if known	5
k) Frequency range*	5.1
l) Vibration amplitude*	5.2
m) Special cross-over frequency	5.2
n) Duration of endurance*	5.3 and 8.3
o) Preconditioning	6
p) Initial measurements*	7
q) Axes of vibration*	8
r) Force limitation	8
s) Test stages to be performed and sequence*	8, 8.2 and 8.3
t) Functioning and functional checks*	8.2 and 9
u) Action to be taken after the vibration response investigation*	8.2
v) Action to be taken if a change of response frequency is found when a final response investigation is performed*	8.2
w) Predetermined frequencies	8.3.2
x) Testing at the resonance frequencies of the specimen on its vibration isolators	8.3.2
y) Recovery	10
z) Final measurements*	11
aa) Acceptance or rejection criteria*	11

13 Information to be given in the test report

As a minimum the test report shall show the following information:

1 Customer	(name and address)
2 Test laboratory	(name and address)
3 Test report identification	(date of issue, unique number)
4 Test dates	
5 Type of test	Sine
6 Purpose of the test	(development test, qualification, etc.)
7 Test standard, edition	(relevant test procedure)
8 Test specimen description	(unique identification, drawing, photo, quantity, etc.)
9 Mounting of test specimen	(fixture identification, drawing, photo, etc.)
10 Description of test apparatus	(cross-motion, etc.)
11 Control and measuring system, sensor location	(description, drawing, photo, etc.)
12 Filters used for all signal(s)	(types and bandwidth)
13 Uncertainties of measuring system	(calibration data, last and next date)
14 Control strategy	(multi-point control, multi-reference or MIN or MAX strategy)
15 Initial, intermediate or final measurements	
16 Required severities	(from test specification)
17 Test severities with documentation	(measuring points, test spectra)