

DIN EN 13477-2:2010-12 (E)

Non-destructive testing - Acoustic emission - Equipment characterisation - Part 2: Verification of operating characteristic

Contents		Page
Foreword		4
1	Scope	5
2	Normative references	5
3	Terms and definitions	5
4	Required test equipment	5
4.1	List of required equipment	5
4.2	Test signal waveforms	6
4.2.1	Continuous sine wave	6
4.2.2	Triangular modulated sine wave	6
4.2.3	Sine ² -modulated sine wave	7
4.2.4	Rectangular modulated sine wave	8
4.2.5	Pulse	9
4.2.6	Repetitive signals	9
4.3	Test Body	10
4.4	Shielding test plate	10
5	Sensor verification	10
5.1	General	10
5.2	Uses	10
5.3	Procedure	10
5.3.1	Preliminary examination	10
5.3.2	Sensitivity verification	10
5.3.3	Verification of electrical shielding	11
5.3.4	Electrical noise verification of a sensor-preamplifier combination	11
6	Preamplifier verification	12
6.1	General	12
6.2	Verification of DC-current consumption	12
6.3	Measurement of preamplifier characteristics	13
6.3.1	General	13
6.3.2	Gain	13
6.3.3	Bandwidth	13
6.3.4	Electronic noise	15
6.3.5	Dynamic range	16
6.3.6	Pulsing test	16
7	AE signal processor verification	16
7.1	Overview	16
7.2	Bandwidth and filter roll-off verification	17
7.3	Detection threshold verification	17
7.4	AE signal processor noise verification	17
7.5	Burst signal parameter verification	18
7.5.1	General	18
7.5.2	Peak amplitude	18
7.5.3	Duration	20
7.5.4	Rise time	20
7.5.5	Ring down count	20

7.5.6	Energy	20
7.6	Parameters for continuous signal	21
8	External parameter verification	21
9	System acquisition rate verification	21
10	t measurement verification	22
11	Documentation	22
Annex A (informative) Sensor performance check form		25
Annex B (informative) Preamplifier performance check form		27
Annex C (informative) AE signal processor - bandwidth & noise verification form (one per channel)		29