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Non-destructive testing — Ultrasonic testing with arrays — Vocabulary

Essais non destructifs — Contrôle à l'aide de réseaux ultrasonores — Vocabulaire

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Foreword

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This document was prepared by Technical Committee ISO/TC 135, *Non-destructive testing,* Subcommittee SC 3, *Ultrasonic testing,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 138, *Non-destructive testing,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document follows a structure similar to that in ISO 5577 but only takes into account terms related to ultrasonic arrays.

The general terms already defined in ISO 5577 are also valid for ultrasonic arrays.

Non-destructive testing — Ultrasonic testing with arrays — Vocabulary

1 Scope

This document defines terms used in ultrasonic testing with arrays. This includes phased array technology and signal processing technology using arrays, e. g. the full-matrix capture (FMC) (3.3.1.28) and the total focusing technique (TFM) (3.3.1.35).

2 Normative references

There are no normative references in this document.

3 Terms and definitions

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1 Terms related to sound

3.1.1
main lobe
main beam
sound beam in the intended direction, typically with the highest pressure within the sound field

Note 1 to entry: This applies to conventional and *array probes* (3.2.1.3).

3.1.2
side lobe
part of the sound field which corresponds to a local maximum in the far field, deviating from the direction of the *main lobe* (3.1.1) and typically lower in amplitude

Note 1 to entry: This applies to conventional and *array probes* (3.2.1.3).

3.1.3
grating lobe
parasitic replication of the *main lobe* (3.1.1) caused by spatial undersampling (low ratio between wavelength and *pitch* (3.2.1.16)), deviating from the direction of the main lobe and possibly of similar amplitude

Note 1 to entry: This applies to *array probes* (3.2.1.3) only.

3.2 Terms related to the test equipment

3.2.1 Probes

3.2.1.1
array
piezoelectric plate divided into several *elements* (3.2.1.2), which are acoustically and electrically separated