

ICS 75.180.10

CCS E 11



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 33583-2025

Replacing GB/T 33583-2017

**Technical specification for data acquisition of petroleum
seismic exploration**

石油地震勘探资料采集技术规范

Issued on: October 5, 2025

Implemented on: May 1, 2026

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

1.Scope	1
2 Normative References	1
3.Terms and Definitions	1
4.2 Earthquake Deployment	4
4.3 Seismic Acquisition Engineering Design Requirements	4
5.1 Data Collection	6
5.2 Site reconnaissance	6
5.3 Verification of Acquisition Parameters	7
5.4 Near-surface survey and field static correction	10
6.Experimental Work	11
6.1 Basic Requirements	11
6.2 Experimental Objective	11
6.3 Test Content	11
6.4 Experimental Design	11
6.5 Test Procedure Requirements	12
6.6 Data Analysis and Summary	12
7.Seismic Data Acquisition Construction Requirements	12
7.1 Health, Safety, and Environmental Protection	12
7.2 Commencement and Acceptance	12
7.3 Measurement Procedure	13
7.4 Near-surface survey and field static correction procedures	15
7.5 Activation Process	16
7.6 Receiving Process	18
7.7 Seismic data and auxiliary data inspection	22
8.Quality Inspection Requirements and Data Evaluation	22
8.1 Basic Regulations for Quality Inspection	22
8.2 Inspection and Evaluation of Basic Measurement Data	23
8.3 Seismic Excitation Quality Inspection	23
8.4 Seismic Reception Quality Inspection	24
8.5 Quality Inspection of Near-Surface Survey	25
8.6 Indoor Quality Inspection	26
8.7 Evaluation of the quality of original records	27

8.8 Missed Shot Rate Assessment	29
8.9 Finishing Shot Record Rating	29
8.10 On-site processing quality inspection of raw data	30
9.Data delivery	30
9.1 Document Delivery Contents	30
9.3 Earthquake Team Reference Data	31
10 Seismic data acquisition project acceptance	31
10.1 Project Site Acceptance	32
47 Appendix H (Informative) Report on Micro-logging and Small Refraction Instruments	48

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting. This document supersedes GB/T 33583-2017 "Technical Specification for Data Acquisition in Onshore Petroleum Seismic Exploration" and is consistent with GB/T 33583-2017. Compared to previous versions, aside from structural adjustments and editorial changes, the main technical changes are as follows:

- a) Added terms and definitions such as near-surface quality factor, wired seismic acquisition, and nodal seismic acquisition (see 3.1~3.27);
- b) Terms and definitions such as plains, mountains, loess plateaus, deserts, water-land transition zones, urban areas, and obstacle zones have been removed (see section 3.1~ of the.2017 version). 3.7);
- c) Added "Demonstration and Technical Requirements for Seismic Acquisition Projects" and "Experimental Work" (see Chapters 4 and 6);
- d) Modified the design principles of 2D seismic survey lines and 3D seismic network (see 4.4.1, 4.4.2, and 4.2.1 in the.2017 version). 4.2.2.1, 4.2.3, 4.3.1~4.3.3);
- e) Added content related to the design principles of work area reconnaissance and data collection parameters (see 5.2, 5.3.1);
- f) The relevant content regarding high-fidelity in the sections on high-fidelity construction and its definition, receiving factors, and instrument factors has been deleted (see the.2017 edition). 4.5.4.3, 4.5.5.4, 4.5.6.4);

- g) Added content related to forward simulation and data-driven analysis (see 5.3.4);
- h) The content regarding air gun firing and instrument factors has been modified (see 5.3.6.4, 5.3.8, and 4.5.6 in the 2017 version);
- i) Added content related to electric spark excitation (see 5.3.6.5);
- j) Requirements for surveying desert areas, loess source areas, and near-surface quality factors have been added (see 5.4.3);

1 Scope

GB/T 33583-2025 is the Chinese national standard covering shooting a seismic survey - the geometry of sources and receivers and the fold it produces, the source parameters, the recording and the quality control in the field, the noise tests, and the observation report that goes with the tapes. At 26,500 words. Issued on 5 October 2025, it has been in force since 1 May 2026, replacing GB/T 33583-2017.

This document specifies the design, field construction, and quality inspection procedures for 2D and 3D petroleum seismic data acquisition in onshore, land-sea transition zones, and offshore areas. Technical requirements for processes such as evaluation, data delivery and acceptance. This document applies to the entire process of acquiring 2D and 3D seismic data for petroleum exploration in onshore, water-land transition zones, and offshore areas. Other engineering exploration projects can refer to this document. implement.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB 6722 Safety Regulations for Blasting SY/T 5171 Specification for Onshore Petroleum Geophysical Exploration SY/T 5391 General Technical Specification for Petroleum Seismic Data Acquisition Systems SY/T 5769 Geophysical Exploration Location Data P1/

11 Exchange Format SY/T 6156 Technical Specification for the Use of Air Gun Vibration Source SY/T 6276 Health, Safety and Environmental Management System for the Oil and Gas Industry SY/T 6290 Seismic Exploration Auxiliary Data in SPS Format SY/T 6349 Safety Management Standard for Petroleum Geophysical Seismic Teams SY/T 6734 Inspection Items and Technical Specifications for Pulse Source Excitation Synchronization Systems in Onshore Seismic Exploration SY/T 6839 Technical Specification for Positioning and Navigation in Marine Towed Cable Seismic Exploration SY/T 7071 Inspection Items

and Technical Specifications for Onshore Node Seismic Data Acquisition Systems SY/T 7323 Technical Specification for Operation of Onshore Seismic Data Acquisition System SY/T 7373 General Technical Specification for Digital Geophones in Onshore Seismic Exploration SY/T 7449 General Technical Specification for Simulated Seismic Detectors SY/T 7614 Technical Specification for Seismic Data Acquisition of Submarine Nodes SY/T 7660 Technical Specification for Acquisition of P-wave Seismic Data on Land SY/T 10015 Technical Specification for Offshore Towed Cable Seismic Data Acquisition Operations SY/T 10017 Technical Specification for Seismic Data Acquisition of Submarine Cables SY/T 10019 Technical Specification for Marine Satellite Positioning Measurement SY/T 10026 Guidelines for the Calibration of Marine Seismic Data Acquisition, Location, and Auxiliary Equipment

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Seismic survey Generating seismic waves on the ground (or in seawater) and simultaneously receiving seismic waves reflected from underground, utilizing the acquired seismic data and underground media...