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**NATIONAL STANDARD OF THE
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**Petroleum and natural gas industries - Subsurface completion
barrier valves and related tools**

石油天然气工业 完井用地层隔离阀及其相关工具

(English Translation)

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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 is modified to adopt ISO 28781:2010 "Drilling and production equipment for the oil and gas industry - Formation isolation valves and related equipment".

This document has undergone significant structural adjustments compared to ISO 28781:2010. A table comparing the structural numbering changes between the two documents is provided.

See Appendix A.

This document differs significantly from ISO 28781:2010 in several technical aspects. The relevant clauses are indicated in vertical margins.

Single lines (l) are indicated. A summary of these technical differences and their causes can be found in Appendix B.

The following editorial changes have been made to this document.

a) To clarify the application scope of formation isolation valves and their supporting tools, the standard name has been changed to "Formation Isolation Valves for Well Completion in the Oil and Gas Industry".

"Isolation Valves and Related Tools"

b) The description of formation isolation valves has been changed from a paragraph to a note (see Chapter 1);

c) Using informative references to SY/T 6915 (all parts), GB/T 21410, GB/T 20970, GB/T 28259, GB/T 22513 replaces ISO 17078, ISO 16070, ISO 14310, ISO 10432, and ISO 10423 respectively (see section 1).

chapter);

d) Footnotes have been removed (see Table 1);

e) Modify quality grades Q1 and Q2 to QL1 and QL2 (see 5.1.4, 6.3.2.1, 7.3, 7.4, 7.6, 7.7, 7.8.2.2, 7.8.2.3).

7.10.1, F.1);

f) The specific description of the V2 confirmation level has been revised (see Table 2);

g) The phrase "(land, platform, underwater)" has been removed [see 5.3a)];

h) ISO/IEC 17025 has been replaced with GB/T 27025 (informative reference), and ANSI/NCSL (informative reference) has been removed.

Z540-3 (see 7.8.1);

i) Non-SI units have been removed and unified to SI units (see 7.8.2.5, D.4.4.2, D.4.4.3.2, D.4.8.1, Table D.1, E.3.4).

H.2, I.1.2, J.1);

j) An Appendix A (informative) "Comparison of this document with the structural numbering of ISO 28781:2010" has been added;

k) An Appendix B (informative) has been added, "Technical Differences Between This Document and ISO 28781:2010 and Their Reasons";

l) Figure G.1 has been modified, and X2, Y2 and their descriptions have been deleted.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed and is under the jurisdiction of the National Technical Committee on Standardization of Petroleum Drilling Equipment and Tools (SAC/TC96).

1 Scope

This document specifies the design, verification, manufacturing, functional evaluation, and maintenance of formation isolation valves and related tools used in well completion in the oil and gas industry.