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

GB/T 39096-2020

**Petroleum and natural gas industries - Aluminium alloy pipe for
use as tubing for wells**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the redrafting method to modify and adopt ISO 13085.2014 "Aluminum Alloy Pipe for Oil and Gas Well Tubing in the Petroleum and Natural Gas Industry".

The technical differences between this standard and ISO 13085.2014 and the reasons are as follows.

---The applicability content has been added to the scope of Chapter 1 to meet the requirements of my country's standard formulation;

--- Modify the alloy name in Table 1 to correspond to my country's alloy material system;

--- Convert the corrosion rate unit in Table 1 into millimeters per year (mm/a), and modify the corrosion rate or test in 8.5 and B.1.

The expression of sample size requirements to adapt to the usage habits of my country's petroleum industry;

---The outer diameter of the aluminum alloy pipe in Table 3 is modified to correspond to the API tubing specifications; the inner diameter value is deleted to adapt to the tubing dimensional tolerance

control;

---Modified the hydrostatic pressure test factor in 8.4 Chinese formula (1) to make the hydrostatic pressure test conditions and the actual mechanical properties of the material more

Match;

--- In B.1, the requirement of "sample thickness not less than 2mm" has been added to ensure maximum metal corrosion reduction.

The Chinese documents that have a consistent correspondence with the international documents cited in this standard are as follows.

---GB/T 228.1-2010 Tensile test of metallic materials Part 1.Room temperature test method (ISO 6892-1.2009,

MOD);

---GB/T 228.2-2015 Tensile test of metallic materials Part 2.High temperature test method (ISO 6892-2.2011,

MOD);

---GB/T 29166-2012 Steel drill pipe for oil and gas industry (ISO 11961.2008, IDT).

This standard also made the following editorial changes.

--- The "Notes" from 3.1.3 to 3.1.5 are deleted.

Please note that certain contents of this document may involve patents. The issuing agency of this document is not responsible for identifying these patents.

This standard was proposed and managed by the National Petroleum and Natural Gas Standardization Technical Committee (SAC/TC355).

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1 Scope

This standard specifies the delivery technical conditions, production process, material requirements, structure and dimensions of aluminum alloy pipes for oil and gas industry.

Technical requirements and performance indicators for dimensions, inspection, test procedures, storage and transportation.

This standard applies to aluminum alloy pipes for oil and gas well tubing (referred to as aluminum alloy pipes).

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article

Pieces. For undated references, the latest version (including all amendments) applies to this document.

ISO 6892 (all parts) Tensile testing of metallic materials (Metallic materials-Tensile testing)

ISO 11961 Petroleum and natural gas industries-Steel drill pipe

ASTM G1 Standard practice for preparing, cleaning and evaluating corrosion specimens (Standard practice for preparing, cleaning, and evaluating corrosion test specimens)

ASTM G44 Standard practice for alternate immersion test of metals and alloys in 3.5% sodium chloride neutral solution (Standard practice

for exposure of metals and alloys by alternate immersion in neutral 3.5% sodium chloride solution)

NACE TM0177 Laboratory test method for resistance to sulfide stress cracking and stress corrosion cracking of metals in H₂S service environment

[Laboratory testing of metals for resistance to sulfide stress cracking and stress corrosion cracking in hydrogen sulfide (H₂S) environments]

3.1 Terms and definitions

The following terms and definitions apply to this document.

3.1.1

Defect

Defects that exceed the acceptable defect size and/or distribution density specified in this standard.

3.1.2

Furnace batch heat

Metal products produced in a single cycle of smelting.

3.1.3

Imperfection

Discontinuities or irregularities in the product.

3.1.4

Batch lot

In the continuous (or batch) heat treatment production process, it is produced through a single heat treatment or different heat treatments and meets the standard requirements