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

GB/T 31439.1-2025

Replacing GB/T 31439.1-2015

**Corrugated sheet steel beams for road guardrail - Part 1:
W-beam guardrail**

波形梁钢护栏 第1部分：两波形梁钢护栏

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Foreword

This document conforms to GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents". Drafting is scheduled.

This document is Part 1 of GB/T 31439 "Wave-beam steel guardrails". GB/T 31439 has already published the following parts.

--Part 1: Two-wave beam steel guardrail;

--Part 2: Three-wave beam steel guardrail.

This document supersedes GB/T 31439.1-2015 "Wave-beam steel guardrails - Part 1: Two-wave-beam steel guardrails", and is consistent with GB/T 31439.1- Compared to 2015, aside from structural adjustments and editorial changes, the main technical changes are as follows.

- a) Product categories have been removed (see 3.1.1 in the 2015 version).
- b) The product composition has been changed (see 4.2, 3.2.1 of the 2015 version).
- c) The purpose, model, and specifications of the two-wave beams and steel pipe columns have been changed (see 4.3.1, 4.3.2, and 3.2.2 of the 2015 edition). 3.2.3.1);
- d) The requirements for steel pipe column reinforcing plates and related technical requirements have been deleted (see 3.2.3.2, 4.2.2.5~4.2.2.7 in the 2015 version).
- e) The purpose, specifications, nominal dimensions, and permissible deviations of splicing

bolt assemblies and connecting bolt assemblies have been changed (see 4.3.4).

4.3.5, 5.2.4.1, 5.2.4.3, 5.2.5.1 and 5.2.5.3 (and 3.2.5, 3.2.6, 4.2.4.1 and 4.2.5.1 in the 2015 edition).

f) The anti-blocking block and related technical requirements have been deleted (see 3.2.7 and 4.2.6 in the 2015 version).

g) The purpose, specifications, nominal dimensions, and permissible deviations of the bracket have been changed (see 4.3.6, 5.2.6.1, and 3.2.8 of the 2015 edition). 4.2.7.1);

h) The purpose, specifications, nominal dimensions, and permissible deviations of the transverse diaphragms have been changed (see 4.3.7, 5.2.7.1, and 3.2.9 of the 2015 edition). 4.2.8.1);

i) A requirement has been added that two-wave beam plates should not be welded to extend their length (see 5.1.4);

j) Increased the minimum and average thickness requirements for 2.0 mm and 2.5 mm thick corrugated beams, and the number of bolt holes for central connections.

The spacing of the steel pipe columns should be set according to the requirements (see 5.2.1.1, 5.2.1.2).

k) The outline drawing, nominal dimensions of the cross-section, unfolded dimensions, and permissible deviations of the two-wave beam plate have been modified (see 5.2.1.1~5.2.1.3, 2015 version). (4.2.1.1, 4.2.1.2).

l) The outline drawing and processing requirements for the variable cross-section two-wave beam plate have been deleted (see Figures 3, 4 and 4.4.2 in the 2015 edition).

m) The bolt hole specifications for the two-wave beam plate have been changed (see 5.2.1.4, 4.2.1.3 in the 2015 version).

n) The requirements for the nominal dimensions and permissible deviations of the steel pipe columns have been changed (see 5.2.2.1, 4.2.2.1 in the 2015 edition).

o) The requirement that multiple lifting holes be reserved for steel pipe columns has been added (see 5.2.2.2);

p) The nominal dimensions and permissible deviations of the ends have been changed (see 5.2.3.1, 4.2.3.1 in the 2015 edition).

q) The requirements for splicing bolt connections and connecting bolt connections under anti-theft fastening technology have been deleted (see 4.2.4.3 and 2015 version). 4.2.5.3);

r) The material requirements for components such as two-wave beams, steel pipe columns, end caps, brackets, and transverse beams have been changed (see 5.3.1, 2015 version). 4.3.1);

- s) The corrosion protection requirements have been changed (see 5.5, 4.5 in the 2015 edition);
- t) Added test methods for the dimensions of bolts, nuts, washers, and beam gaskets (see 6.2.1.8 and 6.2.1.9);
- u) The test method for the thickness of the base metal of the two-wave beam plate after anti-corrosion treatment has been changed (see 6.2.2, 5.2.2 in the 2015 version).
- v) The testing methods for material properties have been changed (see 6.3, 5.3 in the 2015 edition).
- w) Added test methods for processing technology (see 6.4);
- x) The inspection rules have been changed (see Chapter 7, Chapter 6 in the 2015 edition);
- y) Added the requirement that the corresponding driving direction during installation should be marked on the back of the two corrugated beams (see 8.1.1);
- z) The marking methods for steel pipe columns, two-wave beams, bolts and nuts have been changed (see 8.1.2, 8.1.3, 7.2 and 7.3 in the 2015 edition).

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 Transportation Engineering Facilities (Highway) (SAC/TC 223).

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Introduction

Corrugated beam steel guardrails are installed on the outer side of the driving lane or in the central divider. In the event of a vehicle collision, they absorb the impact through their own deformation or the vehicle's upward movement.

A strip-shaped energy-absorbing structure that absorbs energy to reduce the degree of injury to occupants.

GB/T 31439 "Corrugated Beam Steel Guardrail" is a fundamental and general standard guiding the production and inspection of corrugated beam steel guardrails. It consists of two parts. constitute.

--Part 1: Two-Wave Beam Steel Guardrail. The purpose is to establish the naming, composition, model and specifications, and technical requirements of two-wave beam steel guardrails.

Requirements, test methods, inspection rules, and marking, packaging, transportation and storage requirements.

--Part 2: Three-Wave Beam Steel Guardrail. The purpose is to establish the naming, composition, model and specifications, and technical requirements of three-wave beam steel guardrails.

Requirements, test methods, inspection rules, and marking, packaging, transportation and storage requirements.

Corrugated beam steel guardrail Part 1: Two-wave beam steel guardrail

1 Scope

This document specifies the naming, composition, model, specifications, technical requirements, test methods, inspection rules, and marking of two-wave beam steel guardrails.

Packaging, transportation and storage requirements.

This document applies to the production and inspection of all components of a two-wave beam steel guardrail.

2 Normative references

GB/T 90.2