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

GB/T 24721.5-2023

**Glass fiber reinforced plastic product for highway - Part 5: Sign
base panel**

公路用玻璃纤维增强塑料产品 第5部分：标志底板

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Foreword

This document was issued on 17 March 2023 by the State Administration for Market Regulation; Standardization Administration of the PRC and takes effect on 1 July 2023.

It is a GB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies when assessing a submission.

1 Scope

GB/T 24721.5-2023 covers the glass fiber reinforced plastic base panel behind a highway sign - the sheet the retroreflective face is applied to and the fixings are bolted through. Structures, dimensions and deviations come first: a panel whose diameter or longest side is not greater than 1 000 mm is formed in one piece, and minimum thicknesses are set by size, because a panel that flexes lets the sign face craze and the sign then goes dark at the hour it is needed. Technical requirements and the matching test methods follow, and Appendix A specifies the setup of the traction device used for the overall load test, so that a load applied in one laboratory means the same as a load applied in another. Inspection rules refer back to Chapter 7 of GB/T 24721.1-2023, keeping type inspection and exit-factory inspection consistent across the series, with the items particular to sign base panels listed here. Marking, packaging, transportation and storage close the document. The load work earns its place through exposure: a sign is a sail on a cantilevered post beside live traffic, and a panel that tears at its fixings in a gale becomes a projectile. For panel moulders, sign fabricators, highway authorities and their inspection bodies.

This document specifies the product structures, dimensions and deviations, technical requirements, test methods, inspection rules, as well as marking, packaging, transportation and

storage requirements for glass fiber reinforced plastic sign base panel for highway.

This document is applicable to the production, inspection and usage of glass fiber reinforced

plastic sign base panel for highway (hereinafter referred to as "glass fiber reinforced sign base

panel").

2 Normative References

The contents of the following documents constitute indispensable clauses of this document through the normative references in the text. In terms of references with a specified date, only

versions with a specified date are applicable to this document. In terms of references without a

specified date, the latest version (including all the modifications) is applicable to this document.

GB 5768.2 Road Traffic Signs and Markings - Part 2: Road Traffic Signs

GB/T 18226 Specification for steel component anticorrosion of highway engineering

GB/T 23827 Road Traffic Sign Plate and Support

GB/T 24721.1-2023 Glass Fiber Reinforced Plastic Product for Highway - Part 1: General Rule

3 Terms and Definitions

This document does not have terms or definitions that need to be defined.

4 Structures, Dimensions and Deviations

4.1 The glass fiber reinforced sign base panel with a diameter or longest side not greater than

1,000 mm should be integrally formed, and the thickness shall not be less than 2 mm; the thickness of the base panel of other sizes shall not be less than 3 mm. When the base panel is

formed by splicing, the minimum distance between the edge of any spliced screw hole on the

base panel and the edge of the base panel and the splicing seam shall not be less than 20 mm,

and the thickness of the base panel shall not be less than 3 mm. When the base panel is formed

by splicing or the thickness of the base panel is less than 3 mm, reinforcement shall be adopted.

In accordance with the stipulations of 6.2 in GB/T 24721.1-2023, conduct the test.

6.3 Test Instruments and Equipment

In accordance with the stipulations of 6.3 in GB/T 24721.1-2023, conduct the test.

6.4 Specimen

6.4.1 General requirements

In accordance with the stipulations of 6.4 in GB/T 24721.1-2023, conduct the test.

6.4.2 Special stipulations

6.4.2.1 The impact resistance and overall load test is tested with formed sign base panel.

6.4.2.2 For the tensile strength and flexural strength tests, the same number of specimens shall

be respectively taken from the sign base panel in the vertical and horizontal directions; the minimum number of specimens in each group for the test of each property is 5 PCS, and the

number of specimens for the flexural strength test in type inspection shall not be less than 6 groups of 30 PCS in both vertical and horizontal directions.

6.5 Structural and Dimensional Deviations

In accordance with the stipulations of GB/T 23827, conduct the test.

6.6 Appearance Quality

Freely place the sign base panel on the test platform with its face up, use a 1 m ruler to measure

the maximum gap between any point on the panel surface and the ruler to obtain the unevenness

of the panel surface. The rest of the test methods shall comply with the stipulations of 6.5 in

GB/T 24721.1-2023.

6.7 General Physical and Mechanical Properties

6.7.1 Tensile strength

In accordance with the stipulations of 6.6.1 in GB/T 24721.1-2023, conduct the test.

6.7.2 Compressive strength

In accordance with the stipulations of 6.6.2 in GB/T 24721.1-2023, conduct the test.

6.7.3 Flexural strength

In accordance with the stipulations of 6.6.3 in GB/T 24721.1-2023, conduct the test.

6.7.4 Impact strength

In accordance with the stipulations of 6.6.4 in GB/T 24721.1-2023, conduct the test.

6.7.5 Density

In accordance with the stipulations of 6.6.5 in GB/T 24721.1-2023, conduct the test.

6.7.6 Barcol hardness

In accordance with the stipulations of 6.6.6 in GB/T 24721.1-2023, conduct the test.

6.7.7 Load deformation temperature

In accordance with the stipulations of 6.6.7 in GB/T 24721.1-2023, conduct the test.

6.8 Flame-retardant Properties

In accordance with the stipulations of 6.7 in GB/T 24721.1-2023, conduct the test.

6.9 Smoke Density

In accordance with the stipulations of 6.8 in GB/T 24721.1-2023, conduct the test.

6.10 Impact resistance

Place the specimen under the standard environmental conditions and adjust for 24 h before testing. The specimen shall be placed flat on the hard ground or on the test bench. Use a 1 kg ?

50 g steel ball to freely drop from a height of 1 m from the panel surface to impact the specimen.

Ensure that the steel ball contacts the specimen only once during the impact process. The impact

point shall be selected from the center point of the specimen and 5 points evenly distributed up,