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

GB/T 35453-2017

Rigid polyurethane foam board for frozen soil subgrade

冻土路基用硬质聚氨酯泡沫板 (DLPU)

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard proposed by the China Light Industry Federation. This standard by the National Plastics Standardization Technical Committee (SAC/TC48) centralized. This standard was drafted unit. Red Polaroid Group Co., Ltd., China Communications First Highway Survey and Design Institute Co., Ltd., the third railway survey Observation Design Institute Group Co., Ltd., Langfang Arima Innovation and Technology Co., Ltd. The main drafters of this standard. Wang Shuangjie, Yao Zhihong, Chen Jianbing, Yuan Haishun, Cui Weixiao, Zhu Dongpeng, Wei Hua, Leng Jingyan, Gao Chunqing, Zhangchaolin, Zhu Li, Fu Zhenhua, Huang Jianhua, Xing Xiaogang, Li Xia. Frozen soil subgrade with rigid polyurethane foam board (DLPU)

1 Scope

China's national standard for the rigid polyurethane foam board used in permafrost subgrades. It specifies the terms and definitions, the classification and marking, the technical requirements, the test methods, the inspection rules and the marking, transport, packaging and storage. The board is used to keep frozen ground frozen, and that is a stranger requirement than it sounds. A road or railway built on permafrost changes the thermal regime beneath it: the embankment absorbs heat, the ground under it thaws, and the ice that was holding the soil together turns to water, so the ground consolidates and the formation settles unevenly. That is the mechanism that destroys infrastructure across the Qinghai-Tibet plateau and the northeast, and it is worsening as the climate warms. A layer of closed-cell insulation within the embankment slows the summer heat reaching the frozen soil. What the standard has to guarantee is that the board keeps its thermal resistance and its compressive strength after years buried under a moving load and repeated freezing.

This standard specifies the terms and definitions, classification and marking of the rigid polyurethane foam board (DLPU) of permafrost subgrade, technical requirements, test Methods, inspection rules, marking, transport, packaging and storage. This standard applies to frozen soil roads, railway subgrade with rigid polyurethane foam board (hereinafter referred to as "DLPU").

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 2918-1998 plastic sample conditioning and testing of the standard environment
Plastics - Determination of linear dimensions of foam and rubber Foams and rubber -
Determination of apparent density Representation and determination of rules for repair of
numerical values and limit values

GB/T 8170-2008 Determination of water absorption of rigid foam Test methods for
dimensional stability of rigid foams GB/T 8811-2008

GB/T 8812.1-2007 Determination of flexural properties of rigid foam - Part 1. Basic bending
test Compression properties of rigid foams - Determination of

GB/T 8813-2008 Insulating materials - Determination of steady - state thermal resistance
and related characteristics - Protection of hot plate method

GB/T 10294-2008 Thermal insulating materials - Determination of steady - state thermal
resistance and related characteristics - Heat flow meter method

GB 11121 gasoline engine oil Plastics - Determination of resistance to liquid chemicals
GB/T 11547-2008

GB/T 16422.3-2014 plastic laboratory exposure test methods - Part 3. Fluorescent UV lamp

GB 17930 vehicle gasoline GB 19147 vehicle diesel

GB/T 20672-2006 Determination of compressive creep of rigid foam under specified load
and temperature conditions Standard test methods for long - term performance and
durability of common concrete GB/T 50082-2009

ISO 20394-2007 Insulating materials Determination of resistance to freeze-thaw
(Thermal-insulatingmaterials-Determinationof freeze-thawresistance

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 For permafrost regions highway, railway subgrade insulation rigid polyurethane foam
board.

3.2 Coefficient of variation coefficientofvariation The sample standard deviation is divided
by the absolute value of the non-zero sample mean.