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

GB/T 43215-2023

**Assessment methods for foundation stability of the surface
construction above goaf**

采空区地表建设地基稳定性评估方法

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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. Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents. This document is proposed and coordinated by the China Coal Industry Association. This document was drafted by: Coal Science and Technology Research Institute Co., Ltd., Tiandi Technology Co., Ltd., China Coal Science and Technology Group Shenyang Design Research Institute Co., Ltd., Huaibei Mining (Group) Co., Ltd. The main drafters of this document. Zhang Junying, Jia Xinguo, Chen Qingtong, Hu Bingnan, Li Jie, Chen Kai, Guo Wenyan, Huang Leting, Sun Qingxian, Zhang Bin, Li Hongjie, Han Hongde, Wu Haijun, Lin Huili, Mou Yi, Dong Xianglin, Liu Zhifei, Li Wen, Liu Yixin, Deng Weinan, Li Wei, Wang Zhijie, Li Jianghua, Wang Yong, Bi Zhongwei, Fu Xingyu, Liu Xue, Li Ling, Ai Chang, Yan Jie, Wang Xuan, He Zhao. Stability assessment method for surface construction foundations in goaf areas

1 Scope

GB/T 43215-2023 gives the methods for assessing foundation stability where building is proposed above old mine workings. China has mined coal under land that is now wanted for housing, roads and railways, and the voids left behind do not settle on any schedule: a goaf can stay stable for decades and then collapse, and the surface subsidence that follows is

measured in metres. The assessment has to establish what is down there from records that are often incomplete, and then predict what it will do. The standard sets the general requirements and the division of the work into stages, the working procedures from preparation through the investigation and testing, the predictive evaluation and the report, the scope of assessment and investigation, the goaf survey itself, the stability analysis and the conclusions and recommendations. It took effect on 1 April 2024.

This document stipulates the overall requirements, work procedures, assessment and investigation scope, goaf area adjustment and stability assessment for surface construction foundations in goaf areas. Investigation, surface movement deformation calculation and impact analysis, goaf foundation stability assessment, construction site suitability assessment, prevention measures and deformation monitoring Requirements for testing and results submission. This document is applicable to the stability assessment of surface construction foundations in coal mine goafs, and can be used as a reference in non-coal mines based on specific circumstances.

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations For undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document.

GB/T 23561.1-2009 Methods for determination of physical and mechanical properties of coal and rock Part

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 goaf area goal The space left behind after underground coal resources are mined in a certain way and the surrounding rock instability causes displacement, cracking, fragmentation and collapse of the entire space. Underground area space.

3.2 mining subsidence areaminingsubsidencearea The surface movement range above the goaf caused by underground mining and affected by mining shall be drawn according to the boundary angle or the 10mm subsidence isoline. Determine its scope.

Note. The mining subsidence area is also called a surface moving basin or a surface subsidence basin.

3.3 After the movement of the ground surface stabilizes (the cumulative subsidence does not exceed 30mm for 6 consecutive months), from the time when new buildings (structures) are built on the ground surface, the under-construction