

ICS 07.060
CCS A 47



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

GB/T 20481-2026

Replacing GB/T 20481-2017

Grades of meteorological drought

气象干旱等级

Issued on: March 31, 2026

Implemented on: July 1, 2026

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

- 1 Scope
- 4 Precipitation anomaly percentage
- 5 Relative Humidity Index
- 6 Standardized Precipitation Index
- 7 Standardized precipitation evapotranspiration index
- 8 Meteorological Drought Composite Index

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. This document replaces GB/T 20481-2017 "Meteorological Drought Classification". Compared with GB/T 20481-2017, the only changes are structural adjustments and editing. Aside from the sexual alterations, the main technical changes are as follows:

- a) The values of the weighting coefficient and adjustment coefficient of the Meteorological Drought Composite Index (MCI) were changed, and the seasonal adjustment coefficient was changed to a control coefficient. Numbers (see Chapter 8, Appendix F; Chapter 9 and Appendix H of the 2017 edition);
- b) The Palmer Drought Index and its calculation method have been removed (see Chapter 8 and Appendix F of the 2017 edition);
- c) The mathematical function in Formula (B.1) of Appendix B has been modified, and the logarithmic function $\lg$ has been changed to the logarithmic function $\ln$ (see Appendix B, 2017 edition). Appendix D);
- d) The calculation of the meteorological drought composite index for short-sequence meteorological observation stations has been added (see Appendix D). 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 by the China Meteorological Administration. This document is under the jurisdiction of the National Technical Committee on Climate and Climate Change Standardization (SAC/TC540). This document was drafted by: National Climate Center, Chinese Academy of Meteorological Sciences, Henan Provincial Climate Center, and China Institute of Water Resources and Hydropower Research. Research Institute. The main drafters of this document are. Zou Xukai, Gao Rong, Zhang Cunjie, Zhang Wenqian, Yan Yan, Zhu Yeyu,

Qu Yanping, Zhou Guangsheng, Zhang Qiang, and Song Yanling. Li Wei, Zhang Xuejun, Liu Yaxing. The release history of this document and the document it replaces is as follows:

---First published in.2006 as GB/T 20481-2006, and revised for the first time in.2017;

---This is the second revision.

Drought is a highly complex issue with a wide range of implications, typically categorized into meteorological drought, agricultural drought, hydrological drought, ecological drought, and socio-economic drought. Drought, etc. Meteorological drought is a natural phenomenon, mainly caused by a shortage of surface water due to natural precipitation and evapotranspiration, which affects human activities' access to water resources. The balance between source and demand is also the basis for the causes and monitoring and assessment of other types of drought. The Comprehensive Meteorological Drought Index (CI) was proposed in GB/T 20481-2006, published in.2006.GB/T 20481-2017 further refined this standard. In.2017, CI was revised and optimized, introducing a 60-day standardized weighted precipitation index, adding a 150-day standardized precipitation index, and seasonality. Adjustment coefficients were used to create the Meteorological Drought Composite Index (MCI). The MCI comprehensively reflects factors such as precipitation weights at different time scales and in different periods. The applicability of the material has been significantly improved, demonstrating good results in meteorological drought monitoring operations and services. This document is based on MCI and crop... The correlation of drought-affected areas was analyzed, and the values of the MCI weighting coefficient and adjustment coefficient were readjusted. The calculation of atmospheric conditions using short-sequence observation stations was also supplemented. Methods such as the drought composite index. Meteorological drought level

1 Scope

GB/T 20481-2026 is the Chinese national standard covering how a drought is graded - the indices computed from precipitation, temperature and evapotranspiration over different periods, and the thresholds that separate mild from moderate, severe and extreme drought. The grade triggers a response, so where the thresholds sit is a practical question and not an academic one. It replaces GB/T 20481-2017 and has been in force since 1 July 2026. It was issued on 31 March 2026 and has been in force since 1 July 2026, replacing GB/T 20481-2017. The document is under the responsibility of the China Meteorological Administration. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document specifies the percentage of precipitation anomaly, relative humidity index, standardized precipitation index, standardized precipitation evapotranspiration index, and meteorological... Calculation and classification of the drought composite index. This document applies to meteorological drought monitoring, assessment, and research in fields

such as meteorology, agriculture, and hydrology.

4 Precipitation anomaly percentage

4.1 Index Calculation To calculate the percentage anomaly in precipitation, first calculate the average annual precipitation for a given period using formula (1), then calculate the average annual precipitation for that period using formula (2). Precipitation anomaly percentage.

4.2 Classification Precipitation anomaly percentage is used to determine the degree of meteorological drought on a monthly or longer scale. The meteorological drought levels based on precipitation anomaly percentage are shown in Table 1. Division.

5 Relative Humidity Index

5.1 Index Calculation To calculate the relative humidity index, first calculate the difference between the precipitation and the potential evapotranspiration during a certain period, and then divide it by the potential evapotranspiration during the same period. The relative humidity index is calculated according to formula (3).

5.2 Classification The relative humidity index is used to determine the severity of meteorological drought on a ten-day or longer timescale. The meteorological drought levels based on the relative humidity index are shown in Table 2. Division.

6 Standardized Precipitation Index

6.1 Index Calculation The standardized precipitation index is calculated by fitting a gamma probability distribution to the precipitation over a specific period and then standardizing it to a normal distribution. The meteorological drought index for calculating precipitation anomalies is used. The standardized precipitation index is calculated according to Appendix B.

6.2 Classification Standardized precipitation index (SPI) is used to compare and assess the degree of meteorological drought in different regions and time periods. Meteorological drought is assessed using the SPI. The grades are divided according to Table 3.

7 Standardized precipitation evapotranspiration index

7.1 Index Calculation To calculate the standardized precipitation evapotranspiration index, the difference between precipitation and potential evapotranspiration over a given period is first expressed using a Log-Logistic probability distribution. After fitting, the data is standardized to a normal distribution, and a meteorological drought index is calculated to indicate the degree to which water surplus/deficit deviates from the long-term average level. Standardized precipitation evapotranspiration... The index is calculated according to

Appendix C.

7.2 Classification The standardized precipitation evapotranspiration index is used to determine the severity of meteorological drought, as well as agricultural and ecological drought. The meteorological drought level is classified according to Table 4.

8 Meteorological Drought Composite Index

8.1 Index Calculation The comprehensive meteorological drought index is calculated by first considering the cumulative effect of drought in the early stages of drought development, the water balance, and the "regulation system" of different regions. The "number" and "weighting coefficient" are used to comprehensively consider the influence of drought indices at different scales in the previous period. The comprehensive meteorological drought index of short-sequence meteorological observation stations is calculated according to Appendix D. The meteorological drought index of long-sequence precipitation data observation stations is calculated according to formula (4).

8.2 Classification The meteorological drought composite index is used to determine the daily-scale real-time meteorological drought severity in regions with high precipitation variability and frequent agricultural droughts. (Meteorology) The meteorological drought levels of the comprehensive drought index are classified according to Table 5. GB/T 20481-2026. Meteorological Drought Levels ICS

07.060 CCSA

47 National Standards of the People's Republic of China Replaces GB/T 20481-2017 Meteorological drought level Published on 2026-03-

31 Implemented on July 1, 2026 State Administration for Market Regulation The State Administration for Standardization issued a statement.