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

DZ/T 0276.10-2015

Replacing DY-94

**Regulation for testing the physical and mechanical properties
of rock. Part 10: Test for determining the swelling property of
rock**

(English Translation)

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Foreword

DZ/T 0276 "Testing Procedures for Physical and Mechanical Properties of Rocks" is divided into 31 parts.

- Part 1. General and general provisions;
- Part 2. Rock moisture test;
- Part 3. Rock particle density test;
- Part 4. Rock density test;
- Part 5. Rock water absorption test;
- Part 6. Rock hardness test;
- Part 7. Rock gloss test;
- Part 8. Rock antifreeze test;
- Part 9. Rock resistance to disintegration test;
- Part 10. Rock expansion test;
- Part 11. Rock erosion test;
- Part 12. Rock acid and alkali resistance test;
- Part 13. Rock specific heat test;
- Part 14. Rock thermal conductivity test;
- Part 15. Rock breakdown voltage and breakdown strength test;
- Part 16. Rock volume resistivity and surface resistivity test;
- Part 17. Rock radioactivity specific activity test;
- Part 18. Rock uniaxial compressive strength test;

- Part 19. Rock uniaxial compression deformation test;
- Part 20. Rock triaxial compression strength test;
- Part 21. Rock tensile strength test;
- Part 22. Rock flexural strength test;
- Part 23. Rock point load strength test;
- Part 24. Rock acoustic wave velocity test;
- Part 25. Rock shear strength test;
- Part 26. Rock mass deformation test (bearing plate method);
- Part 27. Rock mass deformation test (drilling deformation method);
- Part 28. Rock mass strength test (direct shear test);
- Part 29. Rock mass strength test (bearing plate method);
- Part 30. Rock mass bolt load test;
- Part 31. Rock sound wave velocity test.

This part is part 10 of DZ/T 0276.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This part replaces DY-94 "Testing procedures for physical and mechanical properties of rock 14. Expansion test". This part is compared with DY-94, the main technology the changes are as follows.

- Added three chapters of "normative reference documents", "terms and definitions", and "principles";
- Increased the free expansion rate test;
- Modified the accuracy requirements for the calculation results;
- Modified the rock expansion test record table.

This standard was proposed by the Ministry of Land and Resources of the People's Republic of China.

This part is under the jurisdiction of the National Land Resources Standardization Technical Committee (SAC/TC93).

1 Scope

This part of DZ/T 0276 specifies test methods for rock free expansion ratio, lateral restraint expansion ratio and expansion pressure.

This section applies to rock swelling test in rock physical and mechanical properties test, in which rock free expansion test is suitable for water contact Rock that does not disintegrate.

2 Normative references

The following documents are indispensable for the application of this document. 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.

DZ/T 0276.2 Test procedures for physical and mechanical properties of rocks - Part 2. Rock moisture test

3 Terms and definitions

The following terms and definitions apply to this document.

Expansive swelling property the effect of volume expansion after rock sample immersion in water, using free expansion rate, expansion stress, expansion rate under different loads, side without load the coefficient of expansion and other parameters are expressed.

Free expansion rate free swelling rate the ratio of the radial and axial deformation of the rock sample after immersion to the diameter and height of the original sample, expressed as a percentage.

Swelling stress swelling stress the pressure per unit area required to maintain the original shape after the rock sample is immersed in water.

Lateral constraint expansion rate lateral constraint swelling rate the axial deformation of the rock specimen after immersion in water under the condition that the lateral restraint does not produce lateral deformation under axial load (or zero) load the ratio of the quantity to the original height of the test piece, expressed as a percentage.

4 Principle

The rock free expansion test is to determine the ratio of the radial and axial deformation of the rock sample to the diameter and height of the original sample after immersion.

The lateral restraint expansion test of rock is to determine the diameter of the rock sample after water immersion in the case of applying different axial loads to the rock sample.

The ratio of the axial and axial deformation to the diameter and height of the original sample.

The rock expansion stress test is a force applied to a rock specimen after the rock sample is immersed in water to determine the shape of the rock.