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

DZ/T 0276.20-2015

Replacing DY-94

**Regulation for testing the physical and mechanical properties
of rock. Part 20: Test for determining the strength of rock in
triaxial compression**

岩石物理力学性质试验规程 第20部分：岩石三轴压缩强度试验 清晰版
(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 20 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 23. Triaxial strength and deformation test". This part is related to DY-94 the main technical changes are as follows.

- Added three chapters of "normative reference documents", "terms and definitions" and "principles";
- Increased the plot of the (σ_1 - σ_3)-strain relationship curve and the reference method for calculating the deformation modulus and Poisson's ratio;
- Increased the drawing rules for the Mohr circle and its envelope;
- Removed the micrometer to determine the deformation of the axial strain calculation method and the corresponding equipment;
- Revised the size requirements for the production of standard samples;
- Modified the drawing rules for the strength envelope;
- Revised the rock triaxial strength test record table and the rock triaxial deformation test record table.

This part is 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 determining the triaxial compressive strength, internal friction angle ϕ and cohesion C of rock.

This section applies to rock triaxial compression strength test in rock physical and mechanical properties test.

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 0276.18 Test procedures for physical and mechanical properties of rock - Part 18. Rock uniaxial compressive strength test DZ/T 0276.19 Test procedures for physical and mechanical properties of rocks - Part 19. Rock uniaxial compression deformation test

3 Terms and definitions

The following terms and definitions apply to this document.

Triaxial strength test triaxialcompressivetest the rock sample is in a three-way pressurized state until the process of destruction.

Triaxial compression strength triaxialcompressivestrength the rock specimen is subjected to the maximum compressive stress that can be withstood during the three-way pressurized state.

Internal friction angle the internal friction angle consists of two parts. the surface friction of the rock particles and the bite force generated by the intercalation and interlocking between the particles, according to Mohr-Coulomb strength theory, the internal friction angle is numerically equal to the angle between the intensity envelope and the horizontal direction.

Cohesion

Cohesion is also called cohesion. It is the mutual attraction between adjacent parts of the same substance. It is the existence of the same substance.

The performance of the child force. According to the Mohr-Coulomb strength theory, it is

numerically equal to the intercept of the intensity envelope on the longitudinal axis.

4 Principle

The rock triaxial compression strength test measures the strength and deformation of a rock specimen under three-way pressure conditions, according to the Mohr-Coulomb strength on the basis of the compressive strength envelope of the rock sample, the internal friction angle ϕ and the cohesion C of the rock shear strength parameters are obtained.

5 Instruments

5.1

Diamond machine, stone cutting machine, stone grinding machine.