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

DZ/T 0276.27-2015

**Regulation for testing the physical and mechanical properties
of rock. Part 27: Test for determining the deformation of rock
mass(Borehole deformation method)**

岩石物理力学性质试验规程 第27部分：岩体变形试验（钻孔变形法） 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 bolt load test;
- Part 31. Rock sound wave velocity test.

This part is part 27 of DZ/T 0276.

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

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).

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Rock physics and mechanics properties test procedures Part 27. Rock mass deformation test (Drilling deformation method)

1 Scope

This part of DZ/T 0276 specifies the deformation of rock mass by the method of drilling deformation.

This section applies to the rock mass deformation test of soft rock and medium hard rock in rock physical and mechanical properties test.

2 Principle

A radial horizontal pressure is applied to the wall of the hole using a bore dilatometer or a pressure gauge, and the radial deformation of the borehole recorded at each stage of pressure is measured.

3 Basic requirements

3.1

Select the location and depth of the drill according to the engineering design requirements.

3.2

The test hole should be vertical (the hole angle should not exceed 5°), the hole wall should be straight and smooth, and the hole diameter should be determined according to the requirements of the instrument.

3.3

Within the pressure range, the lithology should be uniform and complete; the lithology within 4 times the diameter of the borehole should be the same.

3.4

The distance between the edges of the two pilot pressurization sections shall not be less than the length of the pressurization section. The distance between the edge of the pressurizing section and the orifice should not be less than the pressure the length of the segment, the distance from the bottom of the hole should not be less than 0.5 times the length of the pressurized segment.

3.5

The geological description should include the following.

- a) Rock name, structure and main components.
- b) Type, shape, width and filling properties of the rock mass structure.
- c) Groundwater level, aquifer and aquifer distribution.
- d) Drilling floor plan and borehole histogram.
- e) A detailed description of the drilling process.

4.1 Main instruments and equipment

4.1.1

Drilling pressure gauge or bore dilatometer.

4.1.2

Sweeper.

4.1.3

Simulated tube.

4.1.4

Calibrator.

4.1.5

Orientation rod.

4.1.6

Hydraulic pump and supporting pipeline.

4.2 Installation of drilling pressure gauge

4.2.1

Fill the borehole with water to the orifice, and insert the sweeper into the hole to sweep the hole until the rock mass is not collected three times.