

ICS 19.020
CCS D 00

DZ

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

DZ/T 0276.31-2015

**Regulation for testing the physical and mechanical properties
of rock. Part 31: Test for determining the sound velocity of rock
of rock mass**

岩石物理力学性质试验规程 第31部分：岩体声波速度测试 清晰版
(English Translation)

Issued on: February 4, 2015

Implemented on: April 1, 2015

Issued by: Ministry of Land and Resources

Table of Contents

- Foreword
- 1 Scope
- 2 Normative references
- 3 Principle
- 4 Basic requirements
- 4.1 Measuring point arrangement

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 31 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).

1 Scope

This part of DZ/T 0276 specifies the test method for determining the acoustic velocity of rock mass.

This section applies to the measurement of rock mass acoustic velocity 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 0276.24 Test procedures for physical and mechanical properties of rocks - Part 24.
Rock acoustic wave velocity test

3 Principle

By obtaining the propagation time and spectral characteristics of the elastic wave, combined with the geological features of the measured rock mass, the lithology, mass and weathering process of the rock mass the degree and the degree of development of the fracture are quantitatively determined.

4.1 Measuring point arrangement

4.1.1

The measuring points may be selected from representative engineering rock mass parts in flat boring, drilling, wind drilling or surface outcrops.

4.1.2

The line for isotropic rock mass should be arranged in a straight line; for the anisotropic rock mass, the parallel and vertical rock mass should be respectively Structural plane layout.

4.1.3

The distance between two adjacent measuring points, when using transducer excitation, the distance should be 1m~3m; when using electric spark excitation, the distance should be 10m~30m; when using hammering excitation, the distance is not less than 3m.

4.1.4

In the single hole test, the distance between the transmitting point and the receiving point shall not be less than 0.5m, and the moving distance of the transducer shall not be less than 0.1m.

4.1.5

The two bore axes for the penetration test between the holes are parallel to each other, and the transmitting and receiving transducers should be in the same plane. Any depth in the hole the distance should be equal to the distance between the center points of the two orifices.

4.1.6

When performing the hole penetration test in drilling or wind drilling, the transducer should be moved from 0.1m to 1.0m each time.