

ICS 71.100.30
CCS G 89

MT

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

MT 62-1997

Replacing MT 62-1982

**Test method and judge rules of safety of permissible electric
detonator for coal mining in firedamp
(English Translation)**

Issued on: December 12, 1997

Implemented on: February 1, 1998

Issued by: State Administration of Work Safety

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Foreword

This standard is a standard for the coal industry MT 62-82 Amendments to the "Regulations on the Safety of Coal Mine Permissible Electric Detonators and Their Inspection Methods".

This standard will replace MT from the effective date 62-82.

This standard is proposed by the Department of Science, Technology and Education of the Ministry of Coal Industry.

This standard is under the jurisdiction of the Coal Mine Safety Standardization Technical Committee of the Ministry of Coal Industry.

This standard was drafted. Fushun Branch of China Coal Research Institute.

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This standard entrusts Fushun Branch of the General Research Institute of Coal Science to be responsible for interpretation.

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Underground Combustible Gas Safety of Permissible Electric Detonator in Coal Mine Test methods and judgment rules

1 Scope

This standard specifies the instruments, equipment, test conditions, test procedures and judgments for coal mine allowable electric detonators for underground gas safety testing rule.

This standard applies to electric detonators permitted in coal mines.

2 Reference standards

The following standards contain provisions that, through reference in this standard, constitute provisions of this standard. When this standard was published, the editions shown were all effective. All standards will be revised, and all parties using this standard should explore the possibility of using the latest versions of the following standards.

GB/T

8031-87 Industrial Electric Detonator

3 Method summary

Detonate the electric detonator under test in a specific device filled with a downhole combustible gas-air mixture to detonate the gas mixture the number indicates the safety of the electric detonator to combustible gas.

4 Instruments, equipment and materials

4.1

The explosion box is rolled from steel. Diameter 560 mm, length 1200 mm. One end is closed with a steel plate, and gas mixing pipes on both sides, the air inlet and methane detection port are shown in Figure 1.

1- explosion box; 2- thermometer; 3- methane detection port; 4- fixed detonator bracket; 5- sealing gasket;

6-sealed door; 7-handle; 8-intake valve; 9-exhaust valve; 10-fan; 11-gas mixing pipeline;

12-manual valve; 13-combustible gas inlet valve; 14-air inlet

1 Schematic diagram of underground gas safety test device

4.2

Methane detector. The division value should not be greater than 0.02%.

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4.4 Detonation power. The power supply time should not exceed 4

4.5 Downhole flammable gas for test. Must use the downhole flammable gas approved by the Ministry of Coal Industry. When testing, when the methane concentration is at 9.0%, the total content of other combustible gases should be no more than 0.3%, and the total content of carbon dioxide and excess nitrogen should be no more than 1.0%.

5 Test conditions

5.1

The methane concentration in the combustible gas-air mixed gas in the explosion chamber is $(9.0 \pm 0.3)\%$.

5.2

The temperature in the explosion box is $(20 \pm 10) ^\circ\text{C}$, and the relative humidity should not be greater than 80%.

5.3 Permissible electric detonators in the tested coal mine shall comply with GB/T

Only after the specifications, quality and explosive performance indicators specified in the 8031 standard can the underground be carried out Flammable safety test.

6 Test steps

6.1

Connect the gas inlet of the explosion box to a hose and connect it to a steel cylinder filled with downhole gas.

6.2

Connect the methane detector to the methane detection port.

6.3

Prior to the test, the test sample should be tested with a pyrotechnic tip or an unallowable electric detonator to verify that the test system is normal.

6.4

The first detonator to be tested is horizontally fixed in the center of the explosion box fixing bracket, with the bottom of the tube facing the mouth of the box.

6.5

The open end of the explosion box is closed with kraft paper or plastic film.

6.6

Open the flammable gas inlet valve and the methane detection port valve to fill the downhole flammable gas in the explosion box, and at the same time, start the fan to mix to make the explosion the methane content in the fryer has reached the required concentration.

6.7

Close the valves at 3, 8, 9, 12, and 13 in Figure 1.

6.8

Immediately detonate the detonator under test with an initiating power source. According to the explosion sound or other parameters, determine whether the detonator detonates the gas-air Compound and make a record.

7 Decision rules

7.1

There are 25 rounds of samples in each group, and the detonation frequency is not more than $1/25$ to be qualified. If the detonation frequency is $2/25$, add 25 trials, and the total detonation frequency no more than $2/50$ is still qualified.

7.2

Coal mine allowable millisecond extension of electric detonators, each section as a group for testing.

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