International Standard ISO 4700

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Iron ore pellets — Determination of crushing strength

Boulettes de minerais de fer — Détermination de la résistance à l'écrasement

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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 4700 was developed by Technical Committee ISO/TC 102, *Iron ores*, and was circulated to the member bodies in April 1982.

It has been approved by the member bodies of the following countries :

Australia	India	Spain
Austria	Italy	Sweden
Canada	Japan	United Kingdom
China	Korea, Dem. P. Rep. of	USA
Czechoslovakia	Korea, Rep. of	USSR
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The member body of the following country expressed disapproval of the document on technical grounds :

Netherlands

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Iron ore pellets — Determination of crushing strength

1 Scope and field of application

This International Standard specifies a method for the determination of the crushing strength of fired iron ore pellets.

This method is not applicable to cylindrical agglomerates, briquettes, and reduced iron ore pellets.

2 References

ISO 3081, *Iron ores — Increment sampling — Manual method.*[1)]

ISO 3083, *Iron ores — Preparation of samples — Manual method.*[2)]

3 Definition

For the purpose of this International Standard, the following definition applies :

crushing strength : The applied maximum compressive load at which an iron ore pellet is broken completely, and which is expressed as the mean value of all measurements of test sample.

4 Principle

Application of a compressive load to a single iron ore pellet at a specified speed of the compressive platen until the pellet is broken.

Repetition of this procedure on all pellets of the test sample.

5 Apparatus

The loading and the indicating units should be as follows.

5.1 Loading unit

5.1.1 The loading capacity shall be 10 kN[3)] or greater.

5.1.2 The compressive platens shall be flat and shall be installed in mutually parallel planes; the portion of the surface of platens that will be in contact with the sample shall be made of surface-hardened steel.

5.1.3 A device capable of setting the speed of the compressive platen at 10 to 20 mm/min over the entire test period shall be used.

NOTE — If the platen speed is not constant during the test-cycle, results may differ depending upon the test machine used. More uniform results may be obtained using a test machine that applies a constant load increase.

5.2 Indicating unit

5.2.1 Transmission system of load

5.2.1.1 The means for transmission of the applied load to the indicating unit shall be either a load cell or a lever.

5.2.1.2 The capacity of the load cell shall be at least 10 kN.

5.2.2 Load indicator or recorder

5.2.2.1 The means for indicating the applied load shall be either an electric indicator (recording chart, meter with needle rider or other suitable device) for the load cell type, or a mechanical indicator (gauge equipped with needle rider or other suitable device) for the lever type.

5.2.2.2 When using a load cell the chart recorder pen response time shall be 1,0 s or less for a full-scale deflection.

5.2.2.3 The minimum graduation shall be 1/100 of the full scale.

5.2.2.4 The compression device shall be calibrated regularly.

1) At present at the stage of draft. (Revision of ISO 3081-1973.)

2) At present at the stage of draft. (Revision of ISO 3083-1973.)

3) 10 kN ≈ 1 019,7 kgf.