INTERNATIONAL STANDARD

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Refractory mortars —

Part 4: Determination of flexural bonding strength

Mortiers réfractaires —

Partie 4: Détermination de la résistance des liaisons à la flexion

Reference number
ISO 13765-4:2004(E)

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Foreword

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 13765-4 was prepared by Technical Committee ISO/TC 33, *Refractories*.

ISO 13765 consists of the following parts, under the general title *Refractory mortars*:

- *Part 1: Determination of consistency using the penetrating cone method*
- *Part 2: Determination of consistency using the reciprocating flow table method*
- *Part 3: Determination of joint stability*
- *Part 4: Determination of flexural bonding strength*
- *Part 5: Determination of grain size distribution (sieve analysis)*
- *Part 6: Determination of moisture content of ready-mixed mortars*

INTERNATIONAL STANDARD **ISO 13765-4:2004(E)**

Refractory mortars —

Part 4:
Determination of flexural bonding strength

1 Scope

This part of ISO 13765 describes a method of determination of the flexural bonding strength of the bonded face between refractory bricks laid with refractory mortars (after drying and firing).

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 8656-1, *Refractory products — Sampling of raw materials and unshaped products — Part 1: Sampling scheme*

ISO 13765-1, *Refractory mortars — Part 1: Determination of consistency using the penetrating cone method*

ISO 13765-2, *Refractory mortars — Part 2: Determination of consistency using the reciprocating flow table method*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
flexural bonding strength
maximum stress that a specimen can withstand when it is bent on a three-point bending device

4 Principle

A prismatic specimen of a given size is made by bonding two test pieces of refractory brick with the refractory mortar to be tested. After drying and firing, a bending stress is applied at a given loading rate on the bonding face of the specimen at room temperature until failure of the bonding face occurs.

5 Apparatus

5.1 Loading device, consisting of two bearing edges and a loading edge which are parallel to each other, as shown in Figure 1.

The loading edge shall be located between, and isometric to, the two bearing edges. The values of L_s and R, the tolerances for the parallelism of the cross section sides and the parallelism of the top and bottom faces shall be as specified in Table 1. The loading device shall be able to apply a load at a uniform rate on the middle of the specimen and have the loading rate shown in Table 1.

5.2 Mixer, as specified in ISO 13765-1 or ISO 13765-2.