

JIS

JAPANESE INDUSTRIAL STANDARD

Testing method for crushing strength and modulus of rupture of castable refractories

JIS R 2553—1992

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by

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In the event of any doubt arising,
the original Standard in Japanese is to be final authority.



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Testing method for crushing strength and
modulus of rupture of castable refractories

R 2553-1992

1. Scope

This Japanese Industrial Standard specifies the testing methods for bending strength and compressive strength of castable refractories and light weight castable refractories, hereinafter referred to as the "castable refractories", after curing, drying and burning.

Remarks 1. The applicable standards to this Standard are as given in the following:

JIS R 2551-Sampling method for castable refractories

JIS Z 8401-Rules for rounding off of numerical values

JIS Z 8801-Test sieves

2. Units and numerical values given in { } in this Standard are in accordance with the traditional units, and are appended for informative reference.

2. Sample

The sample of required amount shall be taken in accordance with JIS R 2551, and taking care so as not to absorb moisture, and be subjected to the test after the temperature of sample has reached room temperature.

3. Apparatus and instruments

3.1 Balance The balance used shall generally be of 0.05 % in sensibility in respect to the mass.

3.2 Thermometer The thermometer used shall be the etched-stem mercury-in thermometer having a scale of 0 to 150°C.

3.3 Pyrometer The pyrometer used shall be a thermocouple thermometer, radiation thermometer or optical pyrometer.

3.4 Kneading apparatus3.4.1 In the case of hand kneading

- (1) The materials of blade, trowel, spoon and bowl shall be those of having no influence on the characteristics of castable refractories, and the inside surfaces of blade, trowel, spoon and bowl shall be finished to such a degree as to not cause adherence of the castable refractories.
- (2) The shapes and dimensions of the bowl and spoon shall generally be in accordance with Fig. 1.

- (3) The shape and dimensions of the trowel shall be given in Fig. 2 as an example.

3.4.2 In the case of mechanical kneading

- (1) The shapes and dimensions for the blades of the universal mixer shall be as given in Fig. 3 as an example.

Furthermore, the number of rotations of its rotating device shall be 140 to 220 times per minute as a standard.

- (2) The shapes and dimensions of the blades of the mortar mixer shall be as given in Fig. 4 for an example.

Furthermore, the number of rotations of its rotating device shall be 25 to 40 times per minute as a standard.

- (3) For a kneading apparatus, the universal mixer or mortar mixer may be used as agreed between the parties concerned.

Fig. 1. Dimensions of bowl and spoon

Unit: mm

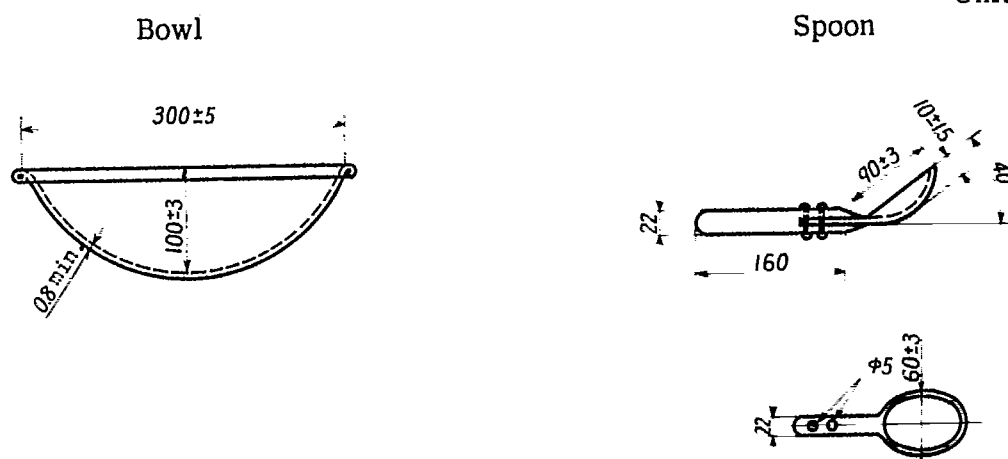


Fig. 2. An example of dimensions of trowel

Unit: mm

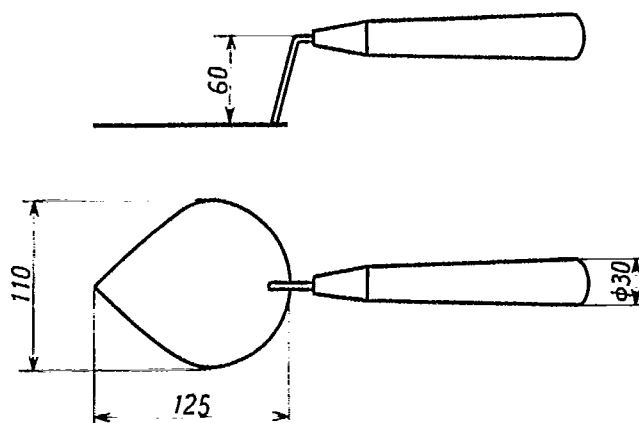


Fig. 3. An example of universal mixer

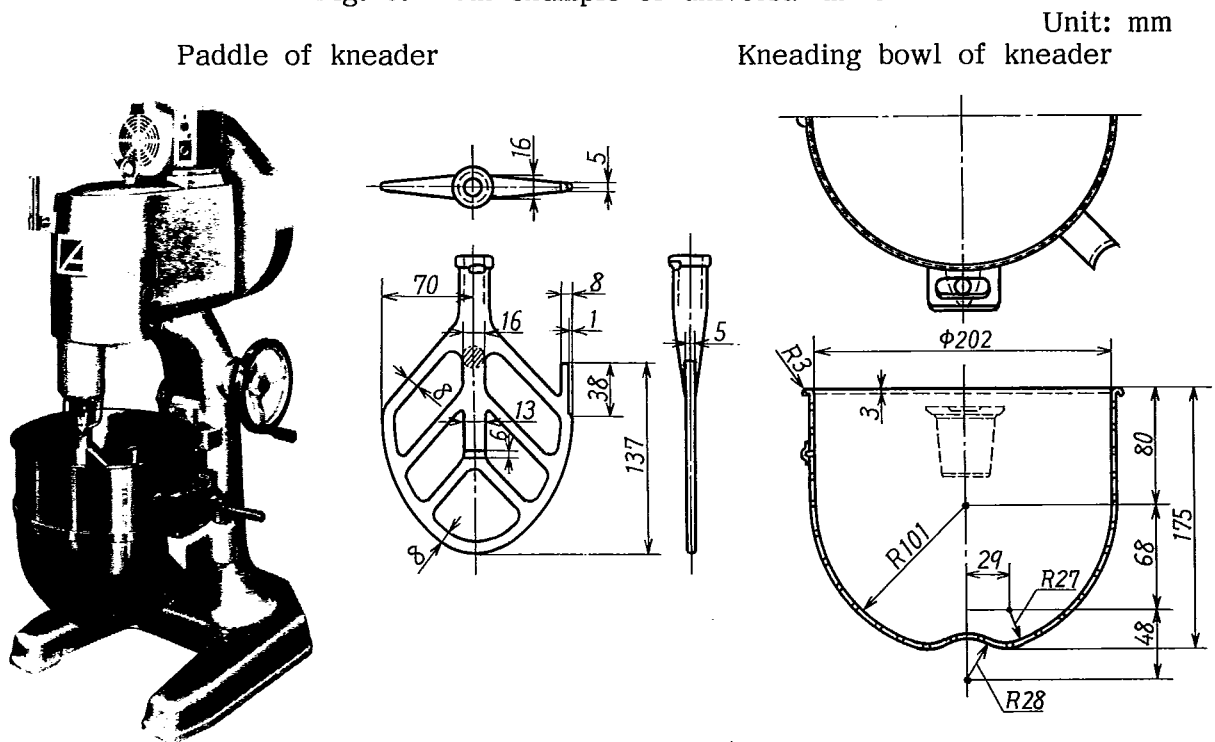


Fig. 4. An example of mortar mixer

