NAKAYAMA
Co.,Ltd.

NK-009

Mold Hardness Tester

This mold hardness tester can be directly applied to molds as manufactured on the casting floor from furan sand, phenol sand, CO_2 sand, or shell molding sand.

1. Simple and portable mold hardness tester for easy on-floor-testing.
2. Density of self-hardened molds can be adjusted from the test results.
3. Great contribution to high quality products.
4. A limiter is provided for setting an allowance range of hardness.
5. A red hand is provided to indicate the maximum measurement.

- Size：(H123×W55×D24mm)
- Weight：About 160g

NK-406

COMPRESSIVE STRENGTH METER

This tester measures green sand compression strength in kg/cm^2 as manufactured on the casting floor. It can be applied to a wide flat mold surface as well as to a narrow mold surface.

1. The conventional test pieces used on universal strength testers are not necessary.
2. Compressive strength can be obtained directly from molds (cope or drag) as produced.

- Size：(H140×W60×D34mm)
- Weight：About 230g

NK-021

GREEN SAND MOLD HARDNESS TESTER

This is an easy-to-use green sand mold hardness tester applied to green sand mold surface as manufacture on the floor.

● Specifications

Type	NK-021(stay-in-place needle)
Spring Load	1.030N-2.324N(105gf-237gf)
Press Needle	5.08mm(hemispheric)

- Size：(H108×W60×D22mm)
- Weight：About 190g

● Relationship between Hardness and Sand Mold Condition

Mold Condition	Hardness Reading
Very soft rammed sand mold	to 20
Soft rammed sand mold	from 20 to 35
Normal rammed sand mold	from 35 to 60
Hard rammed sand mold	from 60 to 75
Very hard rammed sand mold	75 and up

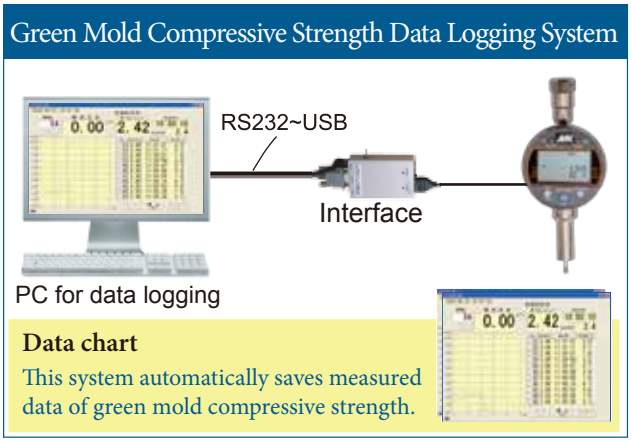
Mold Hardness Tester NK-009

Set a mold surface horizontally. Hold the tester securely with hand and lower it vertically at a constant speed pressing it on the mold surface. The maximum value is read immediately after the contact. Measurement made askew or upward or on a vertical surface may lead to erroneous results. Though the testing method is simple, care must be exercised for stable measurement;

1. Use a test mold with a flat test surface accompanied with an opposing surface which also is flat and parallel to the test surface.
2. Stand upright and try to lower the tester at a speed as constant as possible. Normally the maximum value is read. However, the value after a certain time from the moment of contact may be used in some cases. In such a case, the value may depend on the time, particularly when the indication decreases with time during contacting.

COMPRESSIVE STRENGTH METER NK-406

1. Insert the needle slowly into the surface of the mold at right angle.
2. Keep inserting the needle until touching the stopper. The displayed digital figure is then read off. Data obtained by this tester is similar to those obtained by the standard molding sand strength tester.



GREEN SAND MOLD HARDNESS TESTER NK-021

The precision of this hardness tester has been calibrated in the upright position. In other positions certain errors could occur in the mechanism of the tester.Ensure to use the tester only in the upright position.

For measurement,hold the hardness tester firmly in the hand and press it at a constant speed vertically with the flat surface of the tester parallel to the sand mold surface. As soon as the flat surface comes in direct contact with the sand mold surface, read the indicated maximum value. Mote that measurement in tilted or horizontal directions involves inaccuracy. The hardness tester is equipped with limiters to define the upper and the lower tolerance.If a hardness range of 50±5 is defined,for example ,you can set the limiters to the upper limit(55) and the lower limit(45),so that you can confirm easily that the measured values are within the tolerance. The hardness tester has also a (red) stay-in-place needle to show the maximum value of each measurement.Follow the procedures below for setting and reading.

1. Turn the kno in the middle of the scale counterclockwise and position the red stay-in-place needle near the 0-position.
2. Make measurements in this condition. When the flat surface of the hardness tester is released from the specimen,the indicator returns to 0 with the stay-in-place needle showing the maximum value(the highest hardness indicated).

NAKAYAMA Co.,Ltd.

January, 2013 2nd edition
April, 2016 3rd edition

■ **Haed Office** 3-37-22 Kodama, Nishi-ku, Nagoya-City 451-0066 Japan
Tel:+81-52-521-1171 Fax:+81-52-521-1180
E-mail: info@nakayama-meps.co.jp

■ **Website;** http://www.nakayama-meps.co.jp/

■ **Eastern Japan business office**
Tel: +81-24-545-6588 Fax: +81-24-544-6588