

Sand Rammer for Sand Specimen NKR

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This apparatus is for preparing specimens for permeability test and strength test following the standard set by the molding sand research committee of Japan Foundrymen's Society (NIK). It consists of a base, a weight, a ramming rod, and a crank.

The crank lifts up the weight before dropping it. The dropped weight hits down the ramming rod which slides in a sand cylinder fixed to the base. The sand in the cylinder is rammed to a specified dimension with a constant energy.



● Attachments

sand cylinder	2 pieces (one is as a spare part)
sand cylinder receptacle	1 piece
sand push rod	1 piece

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1 Preparation of strength test pieces

A sand cylinder is inserted in a receptacle to the depth of about 15 mm and held by hand. 140 to 175 g of the sand to be tested is slowly poured in the cylinder and the surface is scraped flat. The handle is pulled toward the operator to lift the ramming rod. The cylinder containing the sand together with the receptacle is set on the base on which the ramming rod head is slowly placed until it is supported by the sand surface. Then the crank is rotated three times toward the operator to give three ramming actions.

The sand specimen thus rammed can be used as a test piece of the standard dimension of 50 mm, if the indicator on the ramming rod indicates a value within the allowance of ± 1 mm. If the indication is outside the limiting lines of the allowance, the test piece can not be used for testing, and the same process must be repeated by adjusting the amount of the initial sand volume until a test piece of a proper dimension is obtained. Once a proper dimension is confirmed, the ramming rod is lifted up and the cylinder is taken out. The sand test piece is pushed out using the push rod.

NOTE: This apparatus can also be used for preparing test pieces of the height of 75 mm as specified by JSPS, the Japan Society for The Promotion of Science.

2 Preparation of permeability test pieces

A sand cylinder is inserted in a receptacle and sand of 140 to 175 g for testing is poured in it and rammed in the same manner as that for strength test. The height of the test piece must be $50 \text{ mm} \pm 1 \text{ mm}$. If for green sand testing, the sand is not pushed out, but put in the permeability tester as contained in the cylinder.

NOTE:

Ramming weight	6.5 kg (± 10 g)
Drop distance	50 mm
Accompanying weight	apprx. 2 kg
Ramming action	3 times
Standard dimension	
* Permeability test	50 mm in diameter 50 mm in height (± 1 mm)
* Strength test	50 mm in diameter 50 mm in height (± 1 mm)

The apparatus is recommended to be placed on a concrete basement, considering the effects of strong impacts. The desirable height of the basement may be about 500 to 600 mm.

* The "block" attached on top of the apparatus is for rapid indication of sand moisture. The indicator has six screws of different lengths. The screws can be switched for different moisture % by pulling a hexagonal rod for rotation. The lengths of the screws are adjusted beforehand by testing with sand whose moisture has been measured by a standard moisture tester.

Manufactured by



NAKAYAMA CO.,LTD.

■ Main Office

〒451-0066 Nagoya, Nishi-ku, Kodama 3-37-22
TEL.052-521-1171 FAX.052-521-1180
E-mail. info@nakayama-meps.co.jp
Offical Site. <http://www.nakayama-meps.co.jp/>

■ East Japan Office

TEL.024-545-6588
FAX.024-544-6588

■ West Japan Office

TEL.090-7970-6448
FAX.082-253-1241

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