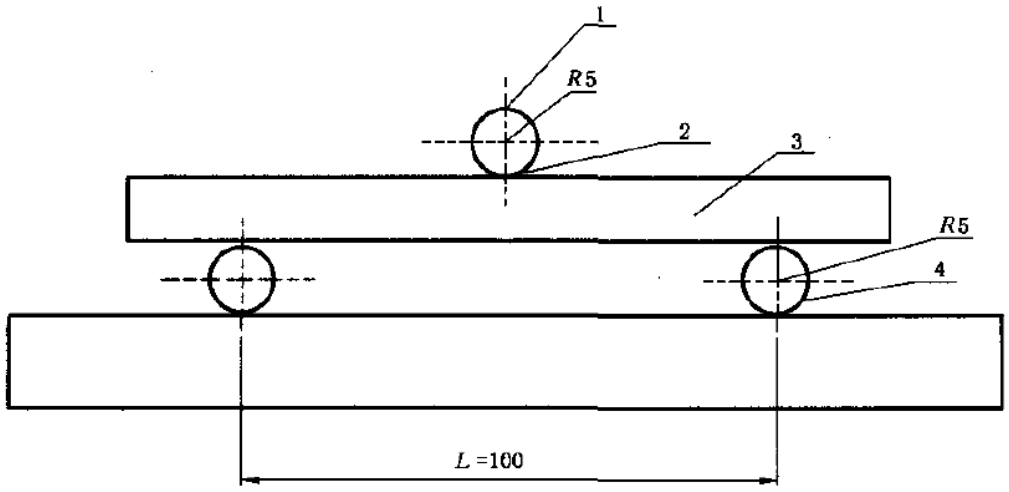
Test methods of bending strength of tubular ceramic membrane

1. Apparatus

Cutting machine
Electric drying oven
Electronic scale
Electric furnace
Bending strength instrument
Conical flask

2. Original bending strength

2.1 cutting 4pcs ceramic membrane with length of 120mm as specimen
2.2 procedure
a. test with bending strength instrument;
b. adjust the support span to 100mm, put the specimen on the support beam;
c. loaded at constant load rate 10N/S until failure and wrote down the breaking force value.
2.3 the arithmetic mean of all values obtained shall be calculated as final test result



1. Loading point 2. Clamp 3. Specimen 4. Support beam
Chart A. Bending strength instrument

3. Acid and alkaline-resistance of ceramic membrane

3.1 cutting 8pcs of ceramic membrane with length of 120mm as specimen
3.2 procedure
a. clean with ultrasonic washer for 5 minutes;
b. dry the specimen in an oven at 110 ℃ for 2 hours;

c. put the 8pcs specimens each 4pcs in two 3000ml conical flask separately;

d. put 2000ml of 20% HNO3 solutions and 10% NaOH solution in two conical flask separately;

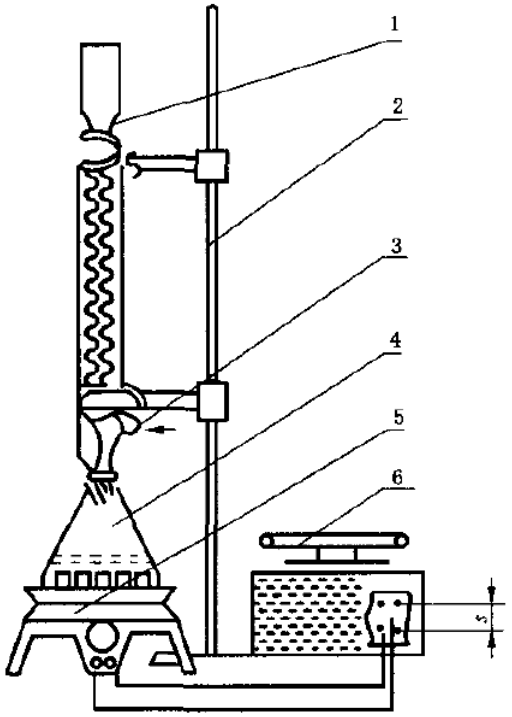
e. fitting with a reflux condenser, heating the solutions and specimens by electric furnace with voltage regulator. Adjust the voltage to make the solutions boiling within 20 minutes and keep gently boiling condition for 4 hours. After that, close the furnace;

f. after 30 minutes cool down, adding 100ml distilled water from the top of condenser. Take the conical flask, dump the liquid and take out the specimens. flushing the specimens with plenty of water for 1 hour until the indicator test for neutral;

g. dry the specimen in an oven at 110 ℃ for 2 hours.

3.3 test of bending strength same as item 2.2

3.4 the arithmetic mean of all values obtained shall be calculated as final test result



1.outlet 2.support frame 3.inlet 4.conical flask 5.electric furnace 6.voltage regulator

Chart B. Test apparatus for Acid and alkaline-resistance