TESTS ON HARDENED CONCRETE

NON-DESTRUCTIVE TESTS

REBOUND HAMMER

REBOUND HAMMER

To assess the likely compresive strength of concrete by using rebound hammer.

As per IS: 13311 (Part 2) - 1992.

PRINCIPLE

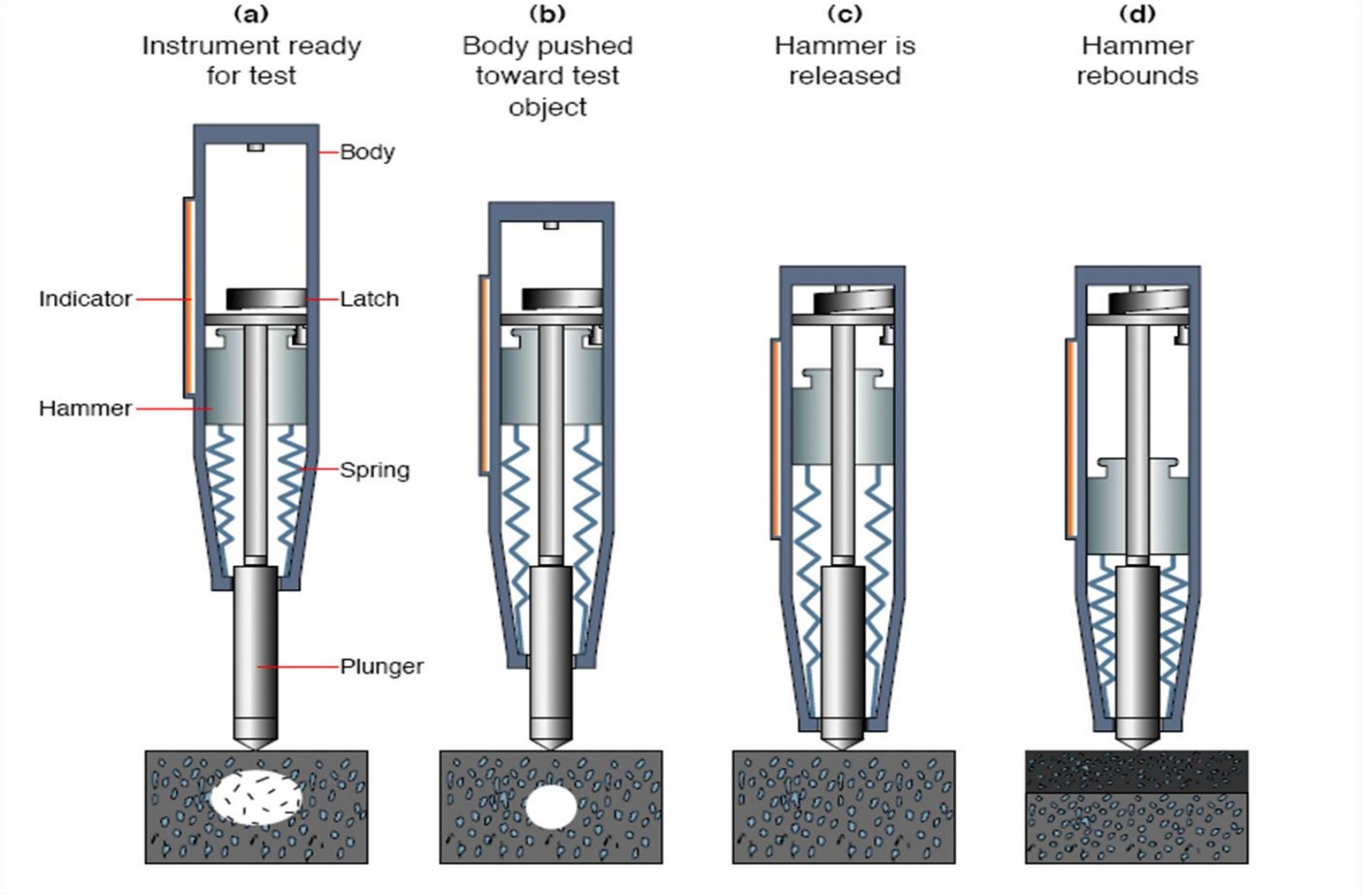
- The rebound of an elastic mass depends on the hardness of the surface against which its mass strikes. When the plunger of the rebound hammer is pressed against the surface of the concrete, the spring-controlled mass rebounds and the extent of such a rebound depends upon the surface hardness of the concrete. The surface hardness and therefore the rebound is taken to be related to the compressive strength of the concrete. The rebound value is read from a graduated scale and is designated as the rebound number or rebound index. The compressive strength can be read directly from the graph provided on the body of the hammer.

APPARATUS

1. The Rebound Hammer has two types
- Graphical Rebound Hammer
- Digital Rebound Hammer
2. Scanner

Scanner

Rebound Hammer



PROCRDURE

- Before commencement of a test, the rebound hammer should be tested against the test anvil, to get reliable results, for which the manufacturer of the rebound hammer indicates the range of readings on the anvil suitable for different types of rebound hammer.

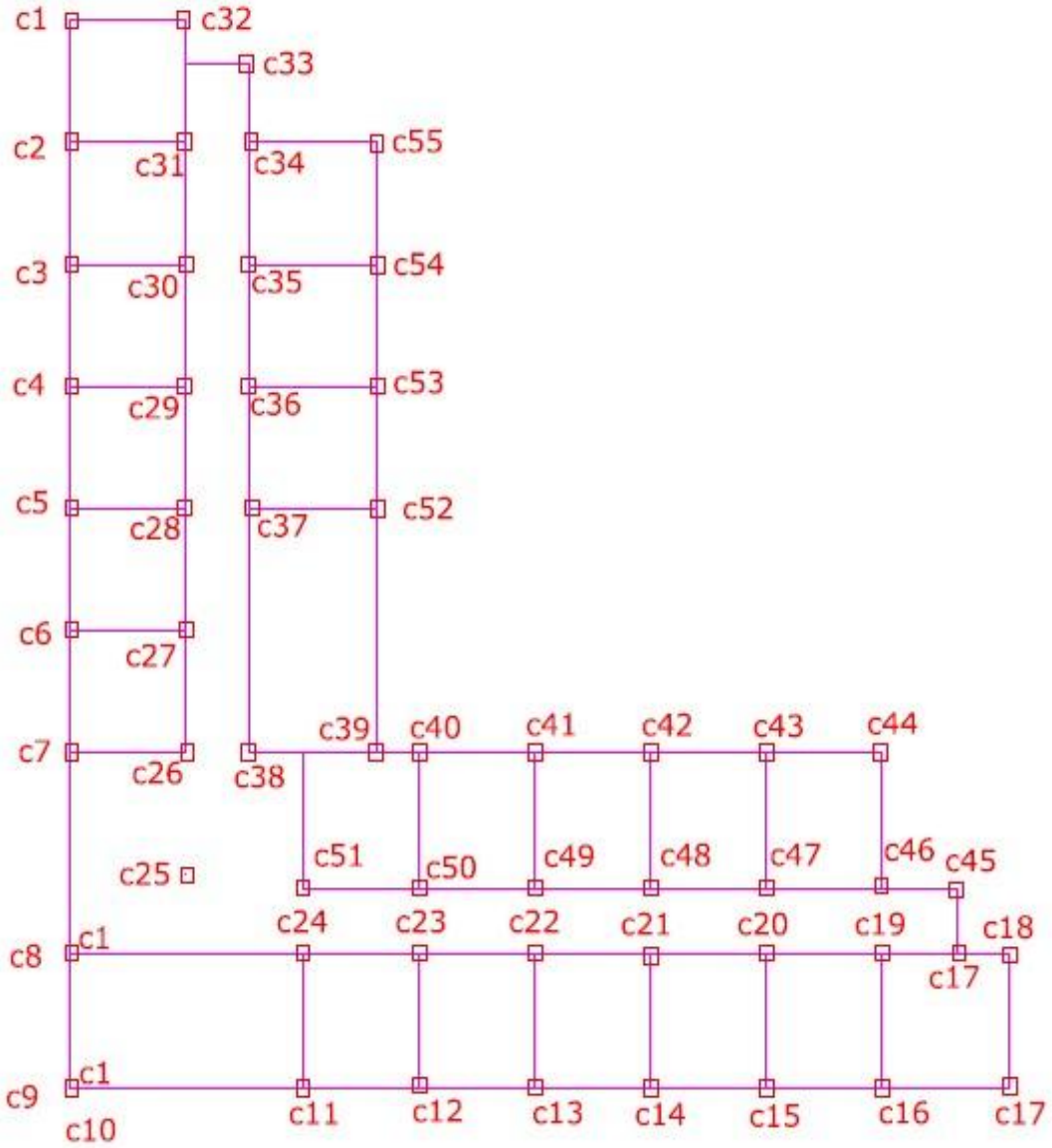
- Apply light pressure on the plunger - it will release it from the locked position and allow it to extend to the ready position for the test.

- Press the plunger against the surface of the concrete, keeping the instrument perpendicular to the test surface. Apply a gradual increase in pressure until the hammer impacts. (Do not touch the button while depressing the plunger. Press the button after impact, in case it is not convenient to note the rebound reading in that position.)

- Take the average of about 15 readings.

Rebound Hammer Testing on Beam,Column,Slab Readings

S.No	Location	Equivalent cube comp.strength (mpa)
1	Column(C23)	28.2
2	Column(C17)	27.5
3	Column(C30)	27.9
4	Column(C24)	26.4
5	Beam(C-17- C(18)	23.0
6	Beam(C24-C25)	23.6
7	Beam(C25-C18)	24.5
8	Floor slab	24.4
9	Floor slab	25.1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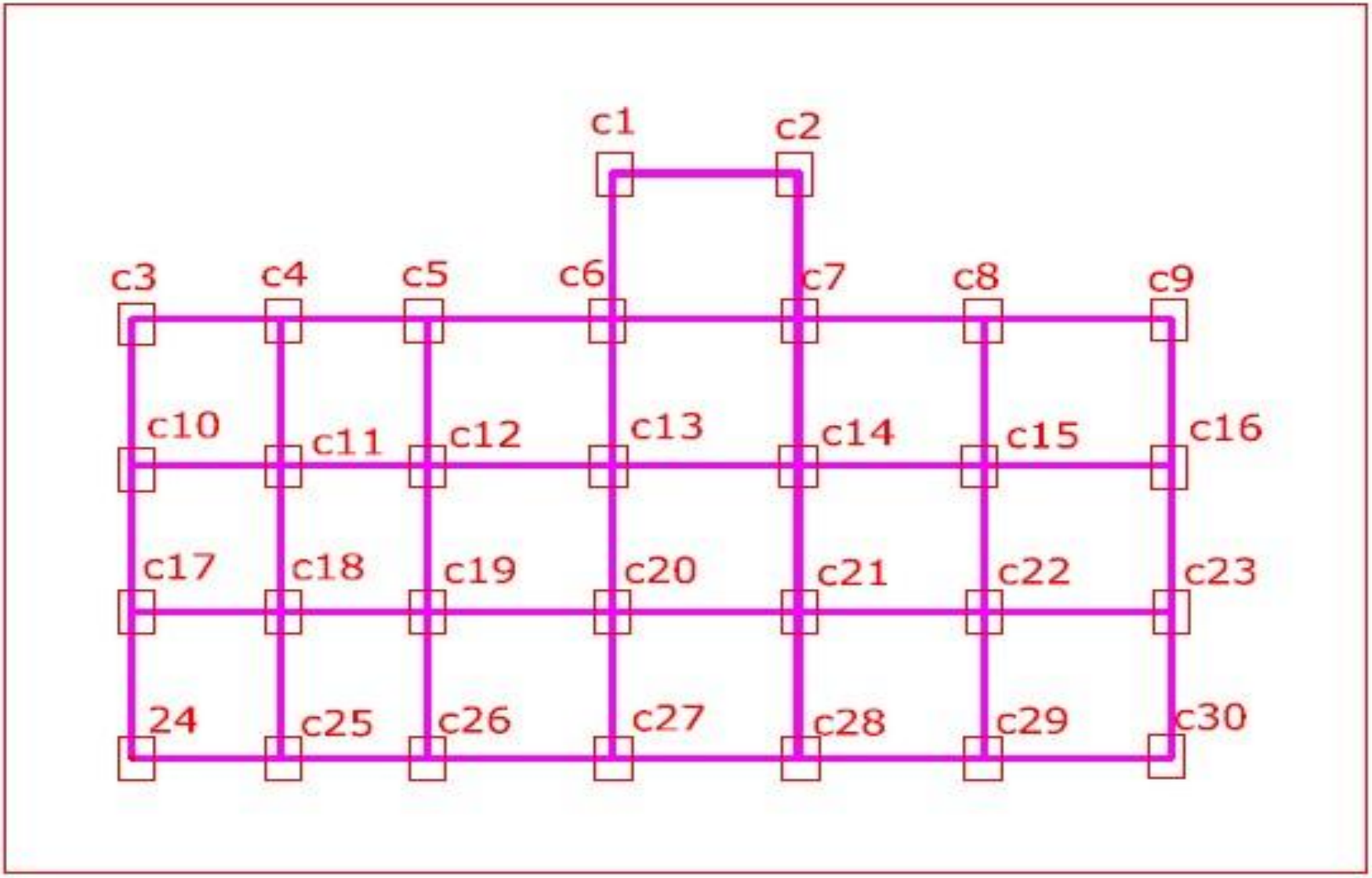
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INTERPRETATION OF RESULTS

- The rebound reading on the indicator scale has been calibrated by the manufacturer of the rebound hammer for horizontal impact, that is, on a vertical surface, to indicate the compressive strength. When used in any other position, appropriate correction as given by the manufacturer is to be taken into account.
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Core Cutter Method

As per 1199-1959

- We can take sample By using core cutter machine & test it in lab.


CONCRETE


CRETE CORE CUTT

CUTTER

Core Test

S.N0	Location	Equivalent Cube Compressive Strength
1	Core(c24)	24.0
2	Core(c16)	25.0
3	Core(c41)	26.0 Please Refer Slide 10,11

Thank you Any Query