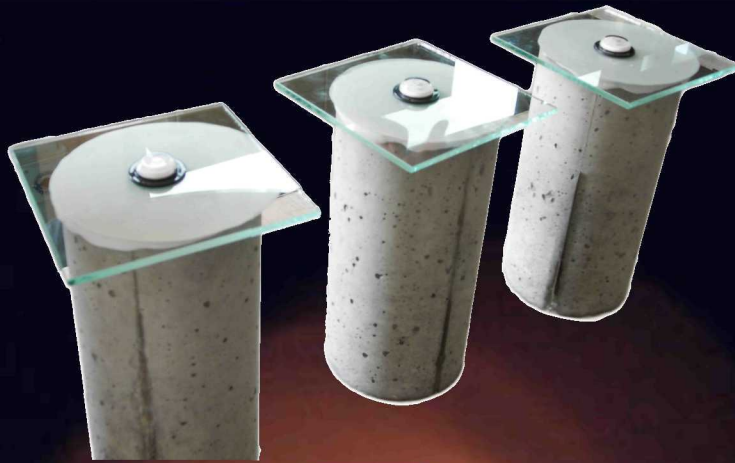


# Capping Materials Comparison



GYPSUM CAPPING



SULFUR CAPPING

NEOPRENE PADS





## Abstract :

Currently there are three capping methods for concrete compress strength testing: sulfur capping, high strength gypsum capping, and neoprene pad non-bounded capping. Below we compare:

1. Test data accuracy. 2. Operation convenience. 3. Hardening time.

After 3 times repeated testing for the 3 capping methods, we found that Gypsum has several prominent advantages over the other methods.

- Providing the best pressure uniformity and data accuracy
- Simple, non-toxic operation. Human-friendly.
- Short hardening time and rapid sample preparation

\* All the experiment were done in KNC (KANJANA CONCRETE), Thailand

## Capping process :

	Material	Operation Temp.	Hardening Time	Operation Range
Gypsum Capping	High Strength Gypsum	Room Temp.	30 mins	0 ~ 9000 psi
Sulfur Capping	Pure Sulfur	~ 140 °C	120 mins	0 ~ 3000 psi
Neoprene Pad	Neoprene Pad	Room Temp.	NA	0 ~ 9000 psi

### •Gypsum capping:





• Sulfur capping:



• Neoprene pad capping:

\* Use new Neoprene pad for the test to eliminate variation



New PAD for the test



~50 Time used



**Test Sample :**

Target compressive strength for concrete cylinder sample: 400 kgf/cm<sup>2</sup>



**Conclusion :**

As the data shows, Gypsum capping creates a superior capping surface with complete flatness perpendicularity and horizontality. Therefore, it can reach the highest compressive strength value and retain stable data anytime. From the operational point of view, Gypsum only needs water to react. It provides a non-toxic, human-friendly environment and also significantly increases the efficiency of sample preparation.

Sulfur Capping is a similar capping material to gypsum, however, it takes a long time to harden. It is foul smelling and toxic.

Neoprene Pads have a lower compressive strength and higher SD value because of the incomplete perpendicularity and horizontality. Furthermore, the neoprene pad test results have higher and higher variation as the used times increase. It is seemingly convenient but quite an inaccurate capping material.

