

Pouring concrete on post-tension floor before long holidays like Songkran while leaving the strands unstressed. Would there be any impact?

Pouring concrete on post-tension floor before long holidays like Songkran while leaving the strands unstressed. Would there be any impact?

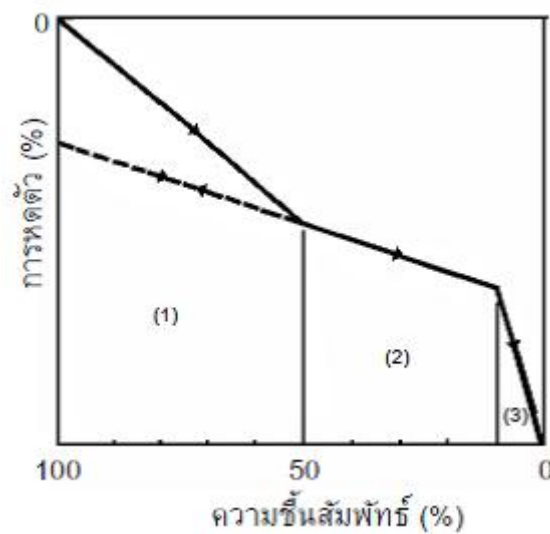


Next week will be a long holiday of Songkran festival, just like every year. During this long vacation, some impact may affect the construction of post-tension floor including the case when the concrete is poured to construct the post-tension floor before the long holiday which it would then be left unattended with strands unstressed in which the operator would plan to come back and stress them later after Songkran. In general, steel reinforced concrete contains shrinkage and temperature steel. As for post-tension floor, it can rely on its compressive strength to prevent shrinkage from temperature. However, leaving the strands unstressed would leave the post-tension floor a concrete floor with no protection system against temperature shrinkage until the operator returns to stress the strands. During this time, the lack of care on concrete curing may cause it to crack.

CAUSE OF CRACKS

Cracking in the phase that the concrete is already hardened is a kind of crack that is called drying shrinkage. There are two main causes that lead post-tension floor with unstressed strands to cracking:

1.Relative humidity: Since this period of the year is a period with low relative humidity. The floor will lose additional humidity after the concrete hardens which causes additional shrinkage and eventual cracks.



2. Summer temperature is very high during midday. It is one of the reasons why post-tension floor loses humidity which leads to cracking.

CRACK PREVENTION

If it is inevitably necessary to leave the placed concrete without strand stressing. The best crack prevention is curing quality, such as water retention during the long break or cure it with wet sacks and regularly fill the sacks with water especially during hot weather. Do not leave the sacks to dry as when they are dry, the dried sacks in contact with post-tension floor will drain even more humidity out of the concrete therefore, it is important to remind the caretaker at the construction site to regularly fill the sacks with water and maintain their soaking wet condition.

Pouring concrete on post-tension floor before long holidays like Songkran while leaving the strands unstressed. Would there be any impact?



Figure exhibits curing through temporary bordering to retain water.



Figure exhibits curing by wet sacks which requires a staff to maintain regular water filling once the sacks start to dry.

Compile By

Mr.Parkpoome Vanitkamonnunu (Senior Professional Engineer 1924)