



Home Inspection Services Newsletter

March 1, 2007

Educational Section: **Post Tension Slab**

Post Tension slab foundations utilize high-strength steel to **actively** reinforce residential slabs in order to **minimize differential movement**, **reduce cracking**, and **increase performance**. Originally utilized in areas where expansive soils resulted in structural movement, **PT** slab's excellent performance, ease of construction, and economy have made them common place for new residential construction.

The Process: Steel cables (called **tendons**) are spaced approximately 4 feet apart (in a grid pattern) in the center of the slab thickness (the **red lines in the picture** are the tendons). The concrete is then poured. When the concrete has cured to a minimum of 2000 PSI (3 to 10 days as recommended by the Post-Tensioning Institute), each cable is tensioned with a load of 33,000 Pounds by means of a hydraulic jack. A 50 FT cable will stretch about 4 inches. The "loaded" cables are held in tension by a recessed anchor and wedge assembly. The cables ends are then cut off and coated to prevent corrosion, and the recessed area in the slab is grouted. Neither the cables nor anchors are visible in the finished slab. A stamp is placed in the concrete in a visible area (garage floor) stating "**post tension slab, do not cut or drill**". This is important!

What are some of the key elements of the process?

- **No kinks:** Tendons may have gentle bends around pipes, etc
- Tendons to be **located in the center** of the slab (held off the ground by "chairs"). Consult engineered drawings if different.
- **Positioning & securing the anchors** before pouring concrete
- The **timing of the tensioning** to prevent cracking
- **Rust proofing** the exposed tendons, and anchors
- Integrity of the **sheathing** (Tendon consist of 7 strands of steel coated with grease and sheathed in Polyethylene or Polypropylene)

Note: PT slabs can still **crack**, especially if the contractor waits too long to stress the tendons.

Inspection Item for Feb.: **Water Heater**

(Each month, we select appropriate items so that over a 12 month period you are reminded to attend to most common household maintenance/inspection items.)
The most common symptom of a **failed water heater** is water leakage. With your **flashlight** in hand, check the platform, the casing (signs of rust), the piping connections (for corrosion and leakage), and the valves.

Question of the Month: **What is Bird Stop?**

Bird Stop is the plastic or metal material that fills the scalloped end of tile at the roof edge. Bird stop is designed to keep birds from nesting under the roof tiles while allowing the roof to breath (important for the life of the roof). Bird stop is standard on new builds and is relatively inexpensive to add to older tiled roofs.

Safety Tip of the Month: **Ingress/Egress**

Egress: Exiting a home through the bedroom window can be a life saver in times of emergency. Do you have an operable and accessible window in each bedroom? We frequently see furniture blocking windows and windows that will not open with normal force. If bedroom windows have security bars be sure that they can be opened from the inside.

Ingress: Are your locks effective? We inspect sliding doors on a weekly basis where the locks are no longer aligned and the “locked” sliders can be opened with a little extra force or by pushing the door in slightly.

Drawing for March: **\$25 Starbucks gift card**

To enter, send a reply email with “March Drawing” in the subject along with your name and Ph# to Lauren@hainspect.com Laurie D of Scottsdale was February’s winner.

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Daryl Gates



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Inspection class for realtors: Arizona Academy of Real Estate (Bell and 99th Ave) offers a 3 credit hour course “lowering risk through inspection”. This monthly course is taught by Mark Andrews (yours truly) and is offered Wednesday morning, March 28. Please contact the Academy for details. Ph# 623 505 5300