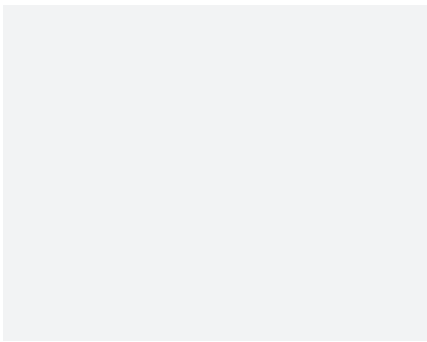




Residential Development Gulf Coast 2009

Investigation:
Tile Floor Failure



BSC was retained by a developer to investigate problems of tile flooring buckling and cracking in six homes of a large residential development. BSC's investigation included on-site investigation of the failures, review of construction processes, review of product manufacturers investigation reports, and a product literature review. The problems identified were due to expansion stresses resulting in the de-bonding of the tile isolation membrane from the concrete floor slabs. Given the small percentage of homes with these failures, BSC noted that this was not indicative of a systemic problem due to design, regional climate factors, or product use. Earlier reports suggested that high moisture emissions measured at the failed slabs were a possible cause for the failure, so BSC checked for distinguishing landscaping, drainage, or soil conditions at the affected homes that might cause this, but found none. Furthermore, BSC pointed out that the current moisture content would be the result of the subsequent impermeable floor cover and did not reflect the original condition of the slab when the membrane was installed. BSC concluded that the cause of failure was specific batch defects of the membrane product or contamination on the slab at the time that the membrane was applied. BSC's final report recommended replacement and repair methods to correct or mitigate these conditions as well as suggesting further investigation that could be done.