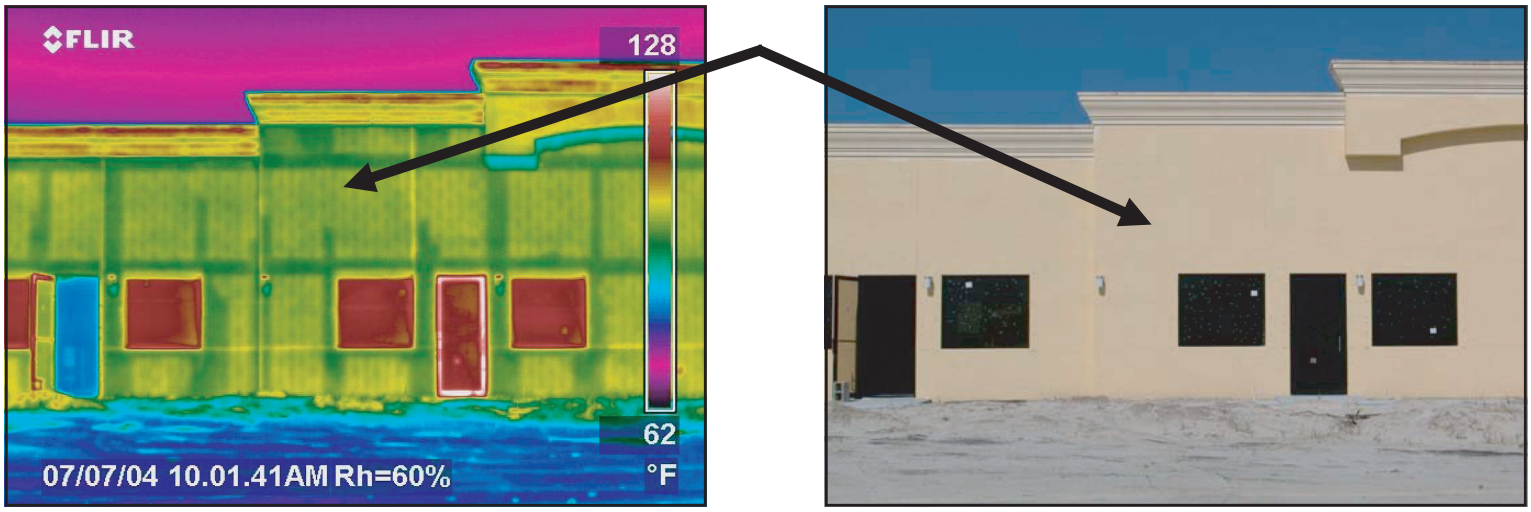
INFRARED THERMOGRAPHY FOR STRUCTURAL INSPECTIONS

- Accurate Results
- Cost Effective
- Non-Destructive
- Annual PM



The use of infrared thermography as a standard in the quality assurance and quality control of grouted masonry construction is becoming more common every year. Masonry is one of the most commonly used building materials in the building industry. Virtually any building erected today utilizes either clay or concrete masonry to form the foundations, wall, columns, or cladding systems in some area of the structure. Masonry, when properly constructed, is a robust, versatile, and cost effective material that affectively resists most loads commonly encountered in building construction.

When Hurricane Andrew hit Florida's east coast in 1992, many of the structures that were destroyed were improperly constructed. We find many problems with the construction of CMU walls, but judge these defects are almost always never caused by fraud. Instead poor supervision on the jobs is the cause for the poor quality. Some buildings are effectively grouted, but it take extreme and costly measures. For years, the only way that a building owner could look into the masonry wall was to drill (or hammer) a hole in it. This testing is ineffective as only a small area is tested.. X-ray testing is so slow and expensive, that it is usually cheaper to knock the wall down and start over if its structural integrity is called into question. If the owner really wants to make sure that the grouting and rebar are in the wall, the most popular means is to require installation of inspection ports or holes. This usually provides a good indication that the cells have been completely grouted. However, inspection holes on the bottom of the structure does not ensure a solid thorough pore. If voids are present in the grouted cell, they can reduce the structural capacity of the systems and, in the case of reinforced masonry, can limit the effectiveness of the steel reinforcement and reduce the out-of-plane resistance to lateral design load. These voids can also collect water leading to interior damage and corrosion of the reinforcement.

Today, infrared technology is the best tool for the surveying of a masonry wall to find deficiencies in the structural components and/or the thermal envelop. It's a fast, inexpensive, and accurate method of quality control of grouted masonry and also provides photo documentation of the project.

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