



Applications for Infrared Thermography as an NDT Method for Buildings

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Abstract

When one wants to construct a building, he/she first hires several prime contractors to manage the construction. An architect is retained to design the building, a structural engineer to design a sound structure, and a general contractor is hired -by bidding or negotiating, to oversee construction and make sure that the project runs smoothly, on time and on budget. The general contractor then sub-contracts the building trade contractors, such as: site work, foundations, steel, masonry, electrical, plumbing, heating, ventilation and air conditioning, roofing, painting, fixtures, finishes and furnishings. All these sub-contractors are given a set of plans, drawings and specifications to follow to construct the building so that it meets the building codes and satisfies the owner's needs.

To ensure that the design specifications are being met, during the construction process, tests are performed. These tests can be cursory and quite subjective in nature. Sometimes the plans are changed in mid-project because the owner decides to make a change to the building. At that time, a change order is executed and the building is retrofitted or deconstructed in part. This destructive activity may reveal faults in the building that were not brought to the attention of the owner during the original testing. At that moment, the owner may call into question the results of other tests and even the integrity of the building itself. This paper discusses applications for NDT of buildings using infrared thermography to ensure that the design specifications are met.