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Structural Engineering Forensic Evaluation of Misdiagnosed Concrete Masonry Wall Cracking

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Abstract : Given that concrete masonry walls are expected to experience shrinkage combined with thermal expansion and contraction, and in some cases even carbonation, throughout their service life, cracking is to be expected. However, after concrete masonry walls have been placed into service, originally anticipated and accounted for cracking is often misdiagnosed as a structural defect. Such misdiagnoses often result in or are used to support litigation. This paper begins by discussing the causes and types of anticipated cracking within concrete masonry walls followed by a discussion on the processes and analyses that exists for properly evaluating them and their significance. From here, the paper then presents a case of misdiagnosed concrete masonry cracking and the flawed logic employed to support litigation.

Keywords : concrete masonry, masonry wall cracking, structural defect, structural damage, construction defect, forensic investigation
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