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Autoclaved Aerated Concrete

Properties and Structural Design

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Autoclaved Aerated Concrete (AAC) is a material that was developed in Sweden in 1929. It is a lightweight, cellular material that is available as blocks or panels. Widely used in Europe, AAC is relatively new to the United States market. This special publication (SP-226) from ACI contains 13 papers on research related to material properties, acoustic properties and seismic testing as well as code issues and structural design.

The block units are installed with thin bed mortar by masons; they can be reinforced. Panels are reinforced and can be used as wall, floor or roof units. The stated advantages include light weight (approximately a fifth the weight of concrete), good thermal and acoustic insulation, non-combustible, low thermal conductivity, and can be worked with hand tools. Unlike concrete, there are different classes of AAC having compressive strengths between 300 and 1000 psi.

In 2005, the Masonry Standards Joint Committee (ACI 530-05 / ASCE 5-05 / TMS 402-05 - *Building Code Requirements for Masonry Structures*) adopted AAC provisions. Appendix A includes strength design of AAC. These papers helped form those code provisions.

This 150-page publication provides an excellent resource for the structural engineer that wants to get the background and research on the development of AAC in the United States. One paper on design will be useful right away because it has worked out examples. It's worth having a copy on your bookshelf.▪

This book was reviewed by David Biggs, STRUCTURE Editorial Board.