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May 30, 1990

RECEIVED

JUN - 1 1990

G. B. WEST

Mr. Gerald B. West
Vice President - General Manager
INSTEEL CONSTRUCTION SYSTEMS, INC.
2610 Sidney Lanier Drive
Brunswick, GA 31526

Dear Mr. West:

As you requested, I calculated the thickness of concrete on each side of a polystyrene core needed to provide fire endurances of 3 and 4 hours. My calculations are attached.

Note that for 3 hr, the thickness of each wythe of concrete must be at least 2.49 in., and for 4 hr, 3.11 in. By applying a 1.10 factor of safety to the fire endurances, these thicknesses increase to 2.68 in. and 3.32 in., respectively. These latter values are overly conservative in my opinion. With carbonate aggregate concrete, the required thickness of a concrete wall is only 6.6 in. for 4 hr, whereas a total thickness of 6.64 in. of concrete would be needed for an Insteel wall. With the smaller aggregate size and the polystyrene core the Insteel panels will certainly have a longer fire endurance than the solid concrete wall made with 3/4 in. aggregate.

In my opinion each concrete wythe should be 2 1/2 in. for a 3-hr fire endurance and 3 1/8 in. for 4 hours.

Let me know if you have any questions.

Sincerely,

THE CONSULTING ENGINEERS GROUP, INC.

Armand H. Gustafarro
Armand H. Gustafarro
Consulting Engineer

AHG:mr

encl.