

METHODOLOGY

Overview

In this section, the methodology used to develop the three-dimensional and equivalent wall models is presented. The theoretical background is included in Appendix A. Equations from the Appendix are referenced in brackets with the letter A and the equation number, for example (An).

A flowchart summarizing the various stages of model development is shown in Figure 3.1. The development is a four-step procedure as follows.

Step 1: Develop 3-D Model: A 3-D model of the wall assembly is developed in the HEATING 7.2 computer program

Step 2: Generate 3-D Wall Results: The HEATING 7.2 program is run to convergence and the wall total R-value and Response Factors are determined (see Section 3.2.1)

Step 3: Generate Equivalent Wall: The structural coefficients and equivalent wall layers for the simplified model are generated (see Section 3.2.2)

Step 4: Compare 3-D and Equivalent Wall Models: The transfer function coefficients for the complex and simple models are compared to ensure that the simple model is a reasonable representation of the complex model. (see Section 5)

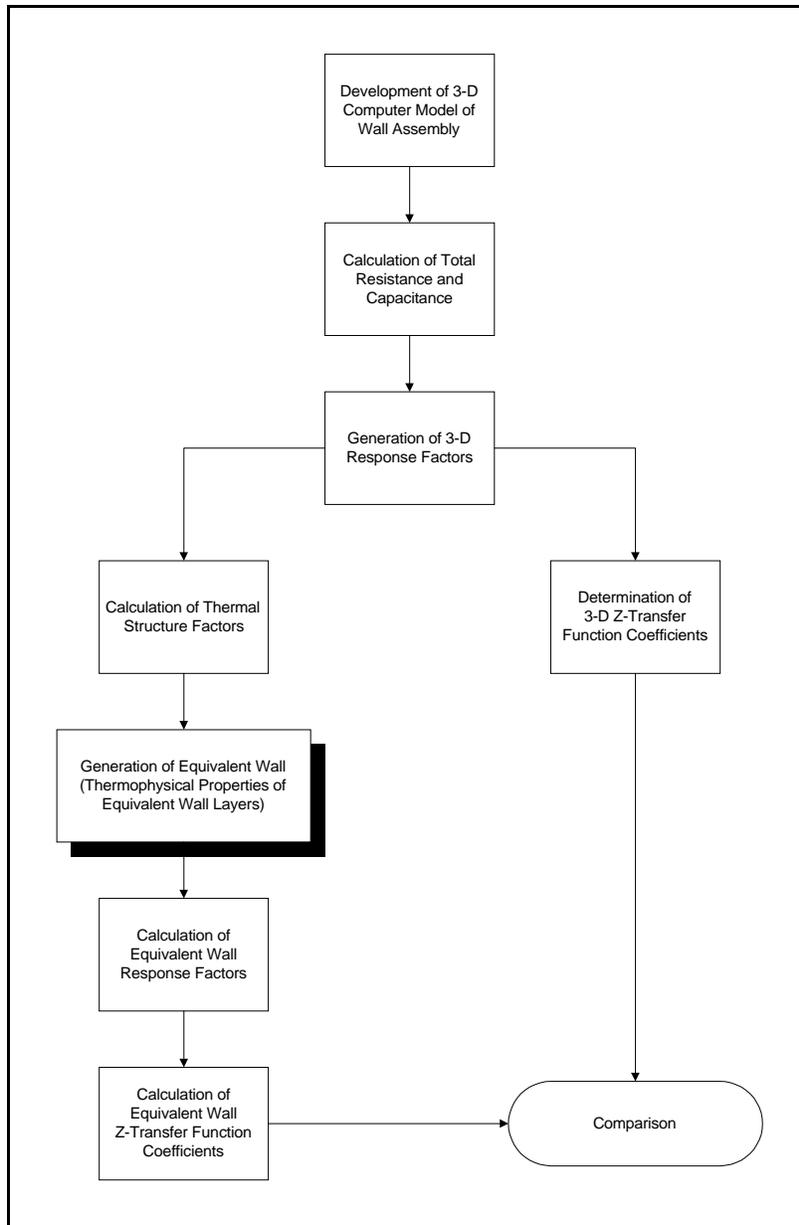


Figure 0.1 Model Development Flowchart