

APPENDIX C

INDIVIDUALLY SUBSTANTIATED DESIGN METHOD

When the design analysis and methodology are not based on authoritative documents or design guides, this method of validation may be used in lieu of code provisions. The code requires a peer review in Section 104.3.4 for any methods falling into this category.

The questions that need to be answered to determine if a design method using an unsubstantiated document is appropriate include:

- Who developed the engineering standards, design guides, and standards of practice proposed for use?
- Who evaluates them on their ability to perform their intended function?
- Who validates them?
- Who deems them to be acceptable?
- How are they included in the system such that, once accepted, they can be readily used?

The individually substantiated design method was created to provide a mechanism to promote innovation but in a structured manner. An example may be the application of a new design method that was developed through a Ph.D. thesis. This method can be used once a higher level of review, perhaps a peer review and validation, has occurred relative to the appropriateness and limits of the methods application. Once a document is considered a design guide or an authoritative document, a higher level of confidence and comfort exists relative to the use of the document for design.

The design professional may use the approach of comparing the design with a compliant prescriptive code design or with a performance-based design utilizing a design guide or authoritative document to demonstrate compliance with the intent of the performance code.

