

This is a preview of "ASME V and V 20-2009". Click here to purchase the full version from the ANSI store.



## Verification and Validation in Computations

Standards for Engineers Worldwide

### ASME V&V 10-2006

### ASME V&V 10.1-2012

### ASME V&V 20-2009

These standards specify approaches that quantify the degrees of accuracy inferred from the comparison of solution and data for specified variables at specified validation points. These approaches use concepts from experimental uncertainty analysis to consider the errors and uncertainties in both the solutions and the data.

ASME V&V 10 covers computational solid mechanics, while ASME V&V 20 covers computational fluid dynamics and heat-transfer. Both publications provide the engineering and scientific communities with a common language, conceptual framework and general guidance for implementing the process of computation model verification and validation (V&V). Moreover, the concepts and terminology found within these publications are applicable to a wide-variety of applications and industries.

The present state-of-the-art of V&V does not yet lend itself to writing step-by-step performance codes/standards; rather, the requirements and guidance provided here will enable engineers and practitioners of V&V to better assess and enhance the credibility of computational models. Application of these standards will provide tools for engineers and scientists that use computational modeling and simulation to apply methods for verification of codes and solutions, simulation validation, and assessment of uncertainties in mathematical models, computational solutions, and experimental data.

**These standards become essential resources and references for anyone engaged with computational modeling.**

**Intended for** those engaged with medical devices, material science, defense applications, structural dynamics, automotive, aerospace, civil, mechanical, and nuclear engineering, solid mechanics, fluid and thermal dynamics, and many other industries worldwide.

### Order Today:

Phone: 1.800.843.2763 / 1.973.882.1170

Fax: 1.973.882.8113

Email: [customercare@asme.org](mailto:customercare@asme.org)

Web: [www.asme.org/kb/standards](http://www.asme.org/kb/standards)

### ASME V&V 10-2006, Guide for Verification and Validation in Computational Solid Mechanics

ISBN: 079183042X

No. pages: 36

Digital Download (PDF) / Order No. C0690Q

Print-Book / Order No. C06906

### ASME V&V 10.1-2012, An Illustration of the Concepts of Verification and Validation in Computational Solid Mechanics

ISBN: 9780791834152

No. pages: 32

Digital Download (PDF) / Order No. C0761Q

Print-Book / Order No. C07612

### ASME V&V 20-2009, Guide for Verification and Validation in Computational Fluid Dynamics and Heat Transfer

ISBN: 9780791832097

No. pages: 100

Digital Download (PDF) / Order No. C0730Q

Print-Book / Order No. C07309

### ASME Codes and Standards

ASME is the leading international developer of codes and standards associated with the art, science, and practice of mechanical engineering. Starting with the first issuance of its legendary Boiler & Pressure Vessel Code in 1914, ASME's codes and standards have grown to nearly 600 offerings currently in print.

To learn more, visit

[www.asme.org/kb/standards/standards](http://www.asme.org/kb/standards/standards)