

ISO 16730-1:2015-08 (E)

Fire safety engineering - Procedures and requirements for verification and validation of calculation methods - Part 1: General

Contents	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Documentation	4
4.1 General	4
4.2 Technical documentation	4
4.2.1 General	4
4.2.2 Description of the calculation method	4
4.2.3 Description of the verification and validation of the calculation method	5
4.2.4 Worked examples	6
4.3 User's manual	6
4.3.1 General	6
4.3.2 Program description	6
4.3.3 Installation and operating instructions	6
4.3.4 Program considerations	7
4.3.5 Input data description	7
4.3.6 External data files	7
4.3.7 System control requirements	7
4.3.8 Output information	8
4.3.9 Sample problems/worked examples	8
4.3.10 Error handling	8
5 Methodology	8
5.1 General	8
5.2 Verification	11
5.2.1 Code checking	11
5.2.2 Temporal and spatial discretization	11
5.2.3 Iterative convergence and consistency tests	12
5.2.4 Review of the numerical treatment of models	12
5.3 Validation	12
5.3.1 General	12
5.3.2 Open validation procedure	13
5.3.3 Blind validation procedure	13
5.3.4 Reporting of validation	14
5.3.5 Specific considerations in comparison of predictions with data	15
5.4 Review of the theoretical and experimental basis of probabilistic models	15
5.5 Sensitivity analysis	16
5.6 Quality assurance	16
6 Requirements for reference data to validate a calculation method	17
6.1 General requirements	17
6.2 Specific requirements for validation data	18
Annex A (informative) Guidance on audits in ISO 9000 family of standards	19

Annex B (informative) Uncertainty	20
Annex C (informative) Example validation methods	22
Annex D (informative) Methods for sensitivity analysis	31
Annex E (informative) Quality assurance methodology	34
Bibliography	39