

Contents

Preface	7
List of symbols	9
1 Introduction	11
2 Basic concepts	15
2.1 Random behaviour of dimensions	15
2.2 Characteristics of accuracy	16
2.3 Accuracy conditions	20
2.4 Constituent and resultant dimensions	23
2.5 Basic equations	24
2.6 Conclusions	28
3 Calculation principles	29
3.1 Statistical and simplified statistical analyses	29
3.2 Characteristics of resultant dimensions expressed in linear basic equations	31
3.3 Characteristics of resultant dimensions expressed in basic equations with extremization	33
3.4 General procedure of simplified statistical analysis	35
3.5 Conclusions	39
4 Influence of assembly on resulting accuracy	41
4.1 General notes	41
4.2 A one-dimensional component in a space	42
4.3 Positionally determined erection	44
4.4 Positionally redundant erection	46
4.5 Estimate for the coefficient of correlation for controlled dimensions	48
4.6 Positionally determined erection using the centre lines of a component and a space	50
4.7 Conclusions	52
5 Horizontal assemblies of one-dimensional components	55
5.1 A one-dimensional component erected in a space	55

5.2 A series of components erected according to set out joint centres	61
5.3 A series of components erected according to the total length	68
5.4 A horizontal component erected on two vertical components	78
6 Horizontal assemblies of two-dimensional components	85
6.1 A two-dimensional component erected in a space	86
6.2 A series of components erected according to set out joint centres	96
6.3 A series of components erected according to the total length	107
6.4 A horizontal component erected on two vertical components	126
7 Vertical assemblies	139
7.1 A group of components erected according to a set out height	140
7.2 A group of components erected according to the highest point	148
7.3 A storey erected according to a set out height	156
7.4 A storey erected according to the highest point	163
8 Accuracy analysis of frame cladding	173
8.1 Gable cladding – horizontal assembly	174
8.2 Gable cladding – vertical assembly	181
8.3 Front cladding (full components) – horizontal assembly	185
8.4 Front cladding (full components) – vertical assembly	192
8.5 Front cladding (parapet components) – horizontal assembly	197
8.6 Front cladding (parapet components) – vertical assembly	204
8.7 Calculation results	207
9 Calculation of dimensional accuracy including inherent deviations	211
9.1 Accuracy characteristics including inherent deviations	211
9.2 Accuracy conditions including inherent deviations	214
9.3 Calculation principles including inherent deviations	216
9.4 Determination of inherent deviations	218
9.5 A one-dimensional component erected in a space	221
9.6 Conclusions	227
10 Conclusions	229
Appendix	233
A Coefficients of extremization	233
B Crooked edges and unevenness of surfaces	235
C Non-parallel component edges and surfaces	238
D Variants of erection of a two-dimensional component into a space	239
E Modifications of a storey height	247
Bibliography	251
Supplement: Table I Coefficients of extremization	257
Index	259