

Contents

Foreword	3
Contents	5
Scope of the National Structural Steelwork Specification for Building Construction	9
Definitions adopted in the National Structural Steelwork Specification for Building Construction	11
Normative References	15
1 Constituent products	15
1.1 Steels.....	15
1.2 Welding consumables	18
1.3 Mechanical fasteners	19
2 Codes of practice for design.....	22
3 Welding.....	23
4 Corrosion and fire protection	26
5 Tolerances	29
6 Miscellaneous	30
Commentary on NSSS – Section 1: Information required by the Steelwork Contractor	33
1 Information required by the Steelwork Contractor	33
1.1 Allocation of design responsibilities.....	33
1.2 Project Specification for structural steelwork.....	34
Commentary on NSSS – Section 2: Materials	59
2 Materials	59
2.1 Constituent products	59
2.2 Steel products.....	59
2.3 Welding consumables.....	63
2.4 Structural fasteners.....	63
2.5 Shear studs.....	64
2.6 Reinforcing steel	65
2.7 Protective treatment materials	65
2.8 Proprietary items.....	65
2.9 Substitution of material or form of components	65
Commentary on NSSS – Section 3: Information provided by the Steelwork Contractor	67
3 Information provided by the Steelwork Contractor.....	68

3.1	Information system.....	68
3.2	Building Information Modelling	68
3.3	General arrangement of components.....	69
3.4	Foundation and wall interface information.....	70
3.5	Fabrication information for components	71
3.6	Erection information	73
3.7	Drawing or information review.....	73
3.8	'As erected' structure	75
Commentary on NSSS – Section 4: Workmanship – general		77
4	Workmanship – general	77
4.1	Identification.....	77
4.2	Handling	78
4.3	Cutting and shaping	78
4.4	Machining	80
4.5	Dressing	80
4.6	Holing	80
4.7	Assembly.....	81
4.8	Curving and straightening	82
4.9	Inspection	84
4.10	Storage.....	84
4.11	Accuracy.....	84
Commentary on NSSS – Section 5: Workmanship – welding		85
5	Workmanship – welding	86
5.1	General.....	86
5.2	Welder qualification.....	87
5.3	Welding procedures	88
5.4	Assembly	89
5.5	Testing of welds.....	90
5.6	Shear stud welding	96
5.7	Welding of reinforcement steel to structural steel.....	96
Commentary on NSSS – Section 6: Workmanship – bolting.....		97
6	Workmanship – bolting.....	97
6.1	Ordinary (non-preloaded) bolt assemblies.....	97
6.2	Fit-up if using non-preloaded bolt assemblies	99
6.3	Preloaded bolt assemblies	99
6.4	Fit-up if using preloaded bolt assemblies	100
Commentary on NSSS – Section 7: Workmanship – accuracy of fabrication.....		101
7	Workmanship – accuracy of fabrication.....	101
7.1	General.....	101
7.2	Permitted deviations for rolled components after fabrication (Δ).....	102
7.3	Permitted deviations for elements of fabricated components (Δ).....	103

7.4	Permitted deviations for plate girder sections (Δ)	105
7.5	Permitted deviations for box sections (Δ)	106
7.6	Permitted deviations for lattice components (Δ)	106
Commentary on NSSS – Section 8: Workmanship – erection.....		107
8	Workmanship – erection	107
8.1	General.....	107
8.2	Site conditions	109
8.3	Pre-construction information	109
8.4	Stability	110
8.5	Erection loads	111
8.6	Lining and levelling	111
8.7	Site welding	111
8.8	Site bolting.....	112
8.9	Certification of completion.....	112
Commentary on NSSS – Section 9: Workmanship – accuracy of erected steelwork		113
9	Workmanship - accuracy of erected steelwork	113
9.1	Permitted deviations for foundations, walls and foundation bolts (Δ).....	113
9.2	Foundation inspection.....	115
9.3	Steelwork.....	115
9.4	Deviations.....	116
9.5	Information for other contractors	116
9.6	Permitted deviations of erected components (Δ).....	117
Commentary on NSSS – Section 10: Protective treatment (corrosion and fire)		123
10	Protective treatment (corrosion and fire)	126
10.1	General.....	126
10.2	Paint systems	127
10.3	Intumescent systems	131
10.4	Surface preparation	146
10.5	Application and inspection of coatings	149
10.6	Coating of surfaces to be encased in concrete.....	156
10.7	Hot dip galvanising.....	156
10.8	Metal spraying	160
Commentary on NSSS – Section 11: Quality management.....		161
11	Quality management.....	161
11.1	Competence of Steelwork Contractor.....	161
11.2	Quality system	161
11.3	Additional inspections and tests.....	166
11.4	Records	166
11.5	Modifications.....	166
Annex A: Selection of Execution Class		167

A.1	Introduction	167
A.1.1	General.....	167
A.1.2	Background to the development of Execution Class	168
A.2	Selection of the Execution Class in accordance with Eurocode 3.....	170
A.2.1	General.....	170
A.2.2	Execution Classes	170
A.2.3	Annex C of BS EN 1993-1-1:2005+A1:2014 and UK National Annex.....	170
References	173