

CONTENTS

		Page
	Foreword	8
	Key technical changes	9
	Acknowledgements	10
	Overview	11
1	Introduction	13
	1.1 Scope	13
	1.2 Limits of applicability	13
	1.3 Application of this Model Code	15
	1.4 Area classification management	17
	1.5 Key terms	17
	1.6 Ventilation	21
	1.7 Buoyancy of release	21
2	The technique of area classification	23
	2.1 Introduction	23
	2.2 Data required for the assessment	23
	2.3 Application	24
	2.4 Area classification approaches	24
	2.5 The area classification drawing	25
	2.6 Apparatus sub-group and temperature class (T class)	26
3	The point source approach for classification of individual sources of release	28
	3.1 Scope	28
	3.2 Explanation of the 'point source' concept as used in this Model Code	28
	3.3 Methodology	28
	3.4 Point Sources	33
	3.5 Application of the point source approach to direct examples	33
	3.6 Equipment where release hole size is known and independent of release frequency	33
	3.7 Equipment where hole size is frequency dependent	39
	3.8 Liquid pools, sumps, interceptors, separators	41
	3.9 Shape factors and hazard radii for pressurised releases	43
4	Effect of ventilation on area classification	45
	4.1 Introduction	45
	4.2 Outdoor areas	46
	4.3 Enclosed areas	50
	4.4 Design considerations	54
	4.5 Effect of ventilation on classification of enclosed areas	56
	4.6 Enclosed areas with no source of internal release within or adjacent to a hazardous area	57

Contents continued...	Page
Annexes	
Annex A	Classification and categorisation of petroleum and flammable fluids 59
A1	EI Classification of petroleum, based (except for liquefied petroleum gases, LPG) on closed cup flash points 59
A2	Relationship between petroleum class and fluid category 63
Annex B	Area classification for hydrogen 65
Annex C	Calculation of hazard radii. 66
Part 1	Background to the calculation of hazard radii in Chapter 3. 67
C1	Introduction. 67
Part 2	Risk-based approach to area classification 76
C2	Introduction. 76
Part 3	Background to risk-based approach 85
C3	Introduction. 85
Annex D	The direct example approach for classification of common facilities in open areas. 89
D1	Scope. 89
D2	Petroleum Class 0 (LPG or similar). 90
D3	Petroleum Classes I, II, III and Unclassified. 94
D4	Transportable container filling and storage 123
D5	Retail service stations and fuel dispensing facilities 125
D6	Vehicle repair, servicing areas and inspection pits 131
D7	Drilling rigs, equipment and well operations. 132
Annex E	Small-scale operations (laboratories and pilot plants) 145
E1	General 145
E2	Hazards associated with particular classes of material. 146
E3	Pilot plants and large scale laboratories 146
Annex F	Background and examples on ventilation of enclosed areas, releases within enclosed areas and associated external hazardous areas. 147
F1	Introduction 147
F2	Natural ventilation of enclosed areas 147
F3	Adequate ventilation of enclosed areas 149
F4	Examples of assessment of adequate ventilation. 151
F5	External hazards. 154
Annex G	Glossary 155
Annex H	References 163