

ISO/TR 24679-2:2017-07 (E)

Fire safety engineering - Performance of structure in fire - Part 2: Example of an airport terminal

Contents		Page
Foreword		iv
Introduction		v
1	Scope	1
2	Normative references	1
3	Terms, definitions and symbols	1
4	Design strategy for fire safety of structures	3
5	Quantification of the performance of structures in fire	3
5.1	Step 1: Scope of the project for fire safety of structures	3
5.1.1	Built environment characteristics	3
5.1.2	Fuel loads	4
5.1.3	Mechanical actions	5
5.2	Step 2: Identify objectives, functional requirements and performance criteria for fire safety of structures	6
5.3	Step 3: Trial design plan for fire safety of structures	7
5.4	Step 4: Design fire scenarios and design fires	9
5.4.1	Design fire scenarios	10
5.4.2	Design fires (thermal actions)	11
5.5	Step 5: Thermal response of the structure	17
5.5.1	Smoke temperature from FDS simulation	17
5.5.2	Calculating steel temperature exposed to smoke	19
5.6	Step 6: Mechanical response of the structure	20
5.6.1	Deformation analysis of the structure	21
5.6.2	Strength analysis of the main span under fire exposure	22
5.7	Step 7: Assessment against the fire safety objectives	26
5.8	Step 8: Documentation of the design for fire safety of structures	27
5.9	Factors and influences to be considered in the quantification process	28
5.9.1	Material properties	28
5.9.2	Effect of continuity and restraint (interaction between elements and materials)	30
5.9.3	Use of test results	30
5.9.4	Fire spread routes	30
6	Guidance on use of engineering methods	31
Annex A (informative)	Views and plans of the airport terminal	32
Bibliography		34