

TECHNICAL SPECIFICATION

**ISO/TS
29761**

First edition
2015-12-15

Fire safety engineering — Selection of design occupant behavioural scenarios

*Ingénierie de la sécurité incendie — Sélection de scénarios de
dimensionnement du comportement des occupants*



Reference number
ISO/TS 29761:2015(E)

© ISO 2015



COPYRIGHT PROTECTED DOCUMENT

© ISO 2015, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

	Page
Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Fire safety engineering applications	4
4.1 The role of occupant behaviour scenarios in fire safety design	4
4.2 The role of design occupant behavioural scenarios in fire safety design	4
5 Focusing the steps of ISO 16733-1 for a life safety objective	6
5.1 Overview of the procedure	6
5.2 Step 1 — Identify the specific safety challenges	6
5.3 Step 2 — Location of fire	6
5.4 Step 3 — Type of fire	7
5.5 Step 4 — Potential complicating hazards leading to other fire scenarios	7
5.6 Step 5 — Systems and features impacting fire	7
5.7 Step 6 — Occupant actions impacting fire	8
5.8 Steps 7 to 9 — Scenario selection	8
6 Design occupant behavioural scenarios	8
6.1 Characteristics of occupant behavioural scenarios	8
6.2 Identification of occupant behavioural scenarios	9
6.2.1 General	9
6.2.2 Step A — Number of occupants and distribution of occupants	10
6.2.3 Step B — Characteristics of the occupant population	11
6.2.4 Step C — Activities of occupants	11
6.2.5 Step D — Presence and training of staff	12
6.3 Selection of design occupant behavioural scenarios	12
6.3.1 General	12
6.3.2 Step E — Occupant characteristics matrix	12
6.3.3 Considerations on selecting scenarios	13
6.3.4 Final selection and documentation	13
6.3.5 Sensitivity analysis of parameters affecting life safety objectives	14
7 Design occupant behaviour	15
7.1 General	15
7.2 Basic characteristics	18
7.2.1 General	18
7.2.2 Pre-travel activity time	19
7.2.3 Exit choice	19
7.2.4 Travel time	19
7.2.5 Intervention by fire services and other emergency responders	20
7.2.6 Intervention by others	20
7.2.7 Completion of the evacuation	20
7.3 Parameters provided by the design occupant behavioural scenario	20
7.4 Parameters to be defined	20
7.4.1 Pre-travel activity time	20
7.4.2 Exit choice	21
7.4.3 Travel speed	21
7.4.4 Parameters that need to be defined when simplistic calculation models are employed	22
7.5 Estimates of evacuation time and occupant condition	22
7.5.1 General	22
7.5.2 Simple calculation methods for evacuation time	22
7.5.3 Advanced calculation methods for evacuation time	22