

DIN EN 1176-1:2017-12 (E)

Playground equipment and surfacing - Part 1: General safety requirements and test methods

Contents		Page
European foreword		4
Introduction		7
1	Scope	8
2	Normative references	8
3	Terms and definitions	9
4	Safety requirements	17
4.1	Materials	17
4.1.1	General	17
4.1.2	Flammability	17
4.1.3	Timber and associated products	18
4.1.4	Metals	18
4.1.5	Synthetics	18
4.1.6	Dangerous substances	18
4.2	Design and manufacture	19
4.2.1	General	19
4.2.2	Structural integrity	19
4.2.3	Accessibility for adults	20
4.2.4	Protection against falling	20
4.2.5	Finish of equipment	24
4.2.6	Moving parts	24
4.2.7	Protection against entrapment	24
4.2.8	Protection against injuries during movement and falling	29
4.2.9	Means of access	38
4.2.10	Connections	41
4.2.11	Consumable components	41
4.2.12	Ropes	41
4.2.13	Chains	43
4.2.14	Foundations	43
4.2.15	Heavy suspended rigid beams	44
4.2.16	Bouncing facilities	45
5	Verification of compliance and reports	47
5.1	General	47
5.2	Confirming the adequate level of impact attenuation after installation of impact attenuating surfacing	47
6	Information to be provided by the manufacturer/supplier	47
6.1	Information to be provided by the manufacturer/supplier of playground equipment	47
6.1.1	General product information	47
6.1.2	Pre-information	48
6.1.3	Installation information	48
6.1.4	Inspection and maintenance information	49
6.2	Information to be provided by the manufacturer or supplier of impact attenuating surfacing	50
6.2.1	Pre-information for impact attenuating surfacing	50
6.2.2	Installation information for impact attenuating surfacing	51

6.2.3	Inspection and maintenance information for impact attenuating surfacing	51
6.2.4	Identification of impact attenuating playground surfacing	52
7	Marking	52
7.1	Equipment identification	52
7.2	Basic level mark	52
Annex A	(normative) Loads	53
Annex B	(normative) Method of calculation of structural integrity	60
Annex C	(normative) Physical testing of structural integrity	72
Annex D	(normative) Test methods for entrapment	74
Annex E	(informative) Overview of possible entrapment situations	89
Annex F	(informative) Illustrations of calculation of free height of fall (FHF)	91
Annex G	(informative) Illustration of sieve test	97
Annex H	(normative) Procedure for confirming the adequate level of impact attenuation after installation of impact attenuating surfacing	99
Annex I	(informative) A deviations	100
Bibliography	102