Report

Critical height of fall impact attenuation

SofSurfaces Europe

064310TO_064318TO

24-03-2020

1 Purpose of the approval

On your instruction, on March 10, 2020 the testing conform EN 1177:2018 of the impact attenuating playground surfacing stated in the reference has been conducted by KIWA ISA Sport. KIWA ISA Sport has been appointed by the Dutch accreditation council (RvA) as a testing laboratory conform to ISO 17025. TÜV Nederland has been appointed by the Ministry of Health, Welfare and Sports (VWS) to conduct approval inspections in conformity with the Amusement and Play Equipment (Commodities Act) Decree.

2 Description and results of the surfacing

The uncertainty of the determination of the critical height of fall is 7% as stated in EN1177:2018.

Filenumber	name	Critical height of fall (HIC < 600 and g_{max} <125)	Rapportnr. ISA-Sport
064310TO	DuraSafe 2.00/5.08	**1,03 m**	191201772-SOF-008
064311TO	DuraSafe 2.25/5.72	**1,27 m**	191201772-SOF-009
064312TO	DuraSafe 2.75/6.99	**1,45 m**	191201772-SOF-010
064313TO	DuraSafe 3.25/8.26	**1,90 m**	191201772-SOF-011
064314TO	DuraSafe 3.75/9.53	**2,20 m**	191201772-SOF-012
064315TO	DuraSafe 4.25/10.80	**2,73 m**	191201772-SOF-013
064316TO	DuraSafe 4.75/12.07	**3,00 m**	191201772-SOF-014

Description:

Rubber tiles, thickness of 52, 59, 73, 83, 96, 107 and 120 mm (depending on type) net size ~ 615 x 615 mm as impact attenuating tiles for playground equipment.

On your specific request to upper limit for the HIC-value was taken on 600 instead of 1000 and the g_{max}-value was taken on 125 instead of 200, which is described in the standard. As a result, the impact of the fall at the height mentioned in our certificate is substantially smaller than permitted. If the tiles would have been tested to normal HIC-value of 1000 and g_{max}-value of 200 the critical height of fall would have been higher.

@064316TO: The critical height of fall is maximised in EN 1176-1:2018 on 3,0 meter. Based on a HIC-value of 600 and g_{max}-value of 125 the critical height of fall would be 3,03 meter. Due to the limitations of EN 1176 our certificates under no circumstances mention a height of fall bigger than 3,0 meter. At this height the DuraSafe 4.75/12.07 did not even reach the HIC value of 600 or the g_{max} value of 125. The HIC value was determined to be 590 and the g_{max} value was determined to be 83 at 3,0 meter. These values are mentioned on the certificate.

Pictures tested tiles:

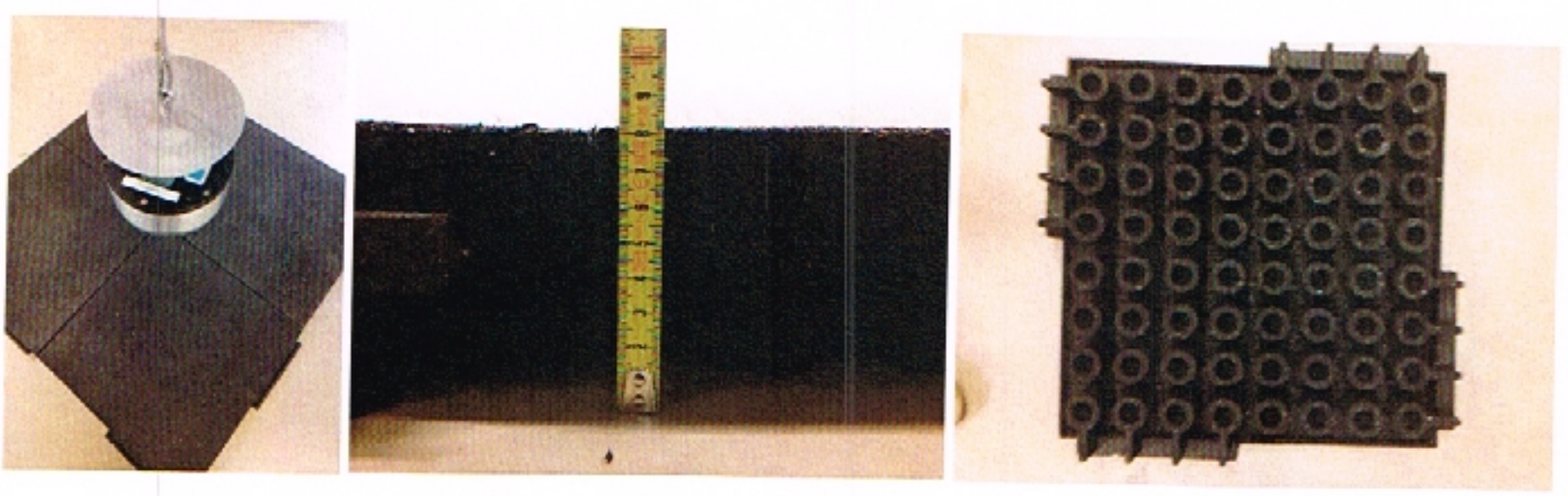
Filenumber	Name	Critical height of fall (HIC < 1000 and g_{max} <200)	Rapportnr. ISA-Sport
064317TO	DuraSafe 2.00/5.08	**1,57 m**	191201772-SOF-016
064318TO	DuraSafe 3.25/8.26	**2,58 m**	191201772-SOF-017

Description:

Rubber tiles, thickness of 52 and 83 mm (depending on type) net size ~ 615 x 615 mm as impact attenuating tiles for playground equipment.

The above mentioned tiles (064317TO and 064318TO) have been tested to the values given in EN1177:2018.

Pictures tested tiles:



3 Checks conducted

The following standards and statutes are applied for this type approval:

1. EN 1177:2018 Impact attenuating playground surfacing - Determination of critical height of fall.
2. Possibly (randomly picked) checking and evaluating the testing procedure

Comments resulting from the visual approval inspection:

SP 101. There are no comments

SP 102. This surfacing has NOT been subject to random check of testing procedure.

4 Assessment of the Technical Construction File (TCF)

The Technical Construction File was assessed on the following points:

1. Installation instructions
2. Technical reports of research
3. User's manual

Comments concerning the TCF inspection:

SP 103. There are no comments

5 Resolutive conditions

Changes in procedure and/or materials in the approved installation may only take place after consultation with TÜV Nederland. A radical change will make it necessary to conduct an additional inspection.