

ΠΙΣΤΟΠΟΙΗΤΙΚΟ ΔΑΠΕΔΟΥ ΠΑΙΧΝΙΔΟΤΟΠΟΥ
CERTIFICATE of PLAYGROUND SURFACING

Κάτοχος Πιστοποιητικού:
Holder of Certificate:

ΚΑΤΑΣΚΕΥΕΣ ΔΑΠΕΔΩΝ ΜΟΝ. Ε.Π.Ε.
Kataskeves Dapedon Ltd

KDF
Sports Flooring Systems & Building Materials

Αριθμός Πιστοποιητικού:
Certificate Number:

0877349 / 4315134/ 2020

Μονάδα Παραγωγής:
Production Facility:

ΜΗΤΡΟΠΟΛΕΩΣ 19, ΘΕΣΣΑΛΟΝΙΚΗ
MITROPOLEOS 19, THESSALONIKI

Σήμα Πιστοποίησης:
Certification Mark:



Προϊόν:
Product:

ΔΑΠΕΔΑ ΠΑΙΧΝΙΔΟΤΟΠΩΝ
PLAYGROUND SURFACING

Μοντέλα:
Model(s):

Χυτό δάπεδο EPDM 50, EPDM 70, EPDM 100
(τεχνικά χαρακτηριστικά στο Π-1 / technical data in ANNEX-1)

Πρότυπα Ελέγχου:
Inspection Standards:

EN 1176-1:2017, EN 1177:2018
Διαδικασία Πιστοποίησης Εξοπλισμού Παιδικών Χαρών και
Παιχνιδότοπων TUV HELLAS / TUV Hellas internal regulation of certification
for Playgrounds

Έκθεση ελέγχου HIC:
Inspection report HIC:

IR: 4306177, 4315111, 4315134

Ισχύς πιστοποιητικού:
Valid until:

26/03/2023

Αρχική έκδοση:
Initial version:

27/03/2020

Με το παρόν πιστοποιείται ότι το ανωτέρω προϊόν πληροί τις απαιτήσεις των προτύπων ελέγχου.
Hereby is certified that the above mentioned equipment conforms to the requirements of the inspection standards.

Ημερομηνία:
Date:

27/03/2020

Για την TUV Hellas (TUV NORD) AE
For TUV HELLAS (TUV NORD) SA

Ο Υπεύθυνος Πιστοποίησης:
Responsible for Certification:

Λ. Ζάχος
L. Zachos

Σε καμία περίπτωση δεν μπορούν να αποδοθούν στην TUV HELLAS και τους επιθεωρητές της ευθύνες για βλάβες του εξοπλισμού ή ατυχήματα σε κάθε πρόσωπο ή χρήστη, που οφείλονται σε κακή χρήση, κακή λειτουργία, κακή συντήρηση, εκούσια βλάβη ή φθορά υλικού και σε μεταβολή των χαρακτηριστικών του εξοπλισμού. Τεχνητά δάπεδα που πρόκειται να κατασκευαστούν επί τόπου στο χώρο εφαρμογής συστήνεται να δοκιμάζονται επί τόπου.

Η συμμόρφωση με τις απαιτήσεις της οδηγίας REACH (PAH) και του προτύπου EN 71-3 αποδεικνύεται με έκθεση δοκιμών από ανεξάρτητα εργαστήρια. Ο κατασκευαστής οφείλει η παραγωγή του προϊόντος του να συμμορφώνεται διαρκώς με τις απαιτήσεις των προτύπων ελέγχου και να ενημερώνει το φορέα για κάθε αλλαγή στην παραγωγή ή τις πρώτες ύλες.

In no case responsibility for equipment failures or accidents to any person or user resulting from misuse, improper operation, improper maintenance, intentional harm or material damage and from changes occurred to the essential characteristics of the equipment, can be assumed to TUV HELLAS and its inspectors.

Surfacing intended to be manufactured on site it's recommended to be tested on site.

The compliance with requirements of the REACH directive (PAH) and EN 71-3 standard is covered with test report independent laboratories. The manufacturer production should continuously comply with the requirements of the standards and inform the certification Body for any change in production or raw materials.

ΠΑΡΑΡΤΗΜΑ / ANNEX 1 :

0877349 / 4315134/ 2020

TUV HELLAS
TUV NORD GROUP

Κωδικός/ Code: SAFEPOL 40SBR + 10EPDM

Περιγραφή/ Description: Συνεχής επιφάνεια τεχνητού ελαστικού δαπέδου από υπόστρωμα SBR και άνω στρώση EPDM / Continuous roof wet surface from SBR granules and EPDM top layer.

Υλικό/ Material: Ανακυκλωμένο Ελαστικό – SBR, κόλλα πολυουρεθάνης, Τρίμα EPDM / SBR granules, polyurethane binder, EPDM granules top layer.

Διαστάσεις/ Dimensions: Δείγμα 1000mm x 1000mm ±5mm / Sample 1000mm x 1000mm ± 5mm

Πάχος/ Thickness: 50mm ±3mm (40 mm SBR, 10 mm EPDM)

Κρίσιμο Ύψος Πτώσης/ Critical Fall Height: 1,4m (±7%)

Κωδικός/ Code: SAFEPOL 60SBR + 10EPDM

Περιγραφή/ Description: Συνεχής επιφάνεια τεχνητού ελαστικού δαπέδου από υπόστρωμα SBR και άνω στρώση EPDM / Continuous roof wet surface from SBR granules and EPDM top layer.

Υλικό/ Material: Ανακυκλωμένο Ελαστικό – SBR, κόλλα πολυουρεθάνης, Τρίμα EPDM / SBR granules, polyurethane binder, EPDM granules top layer.

Διαστάσεις/ Dimensions: Δείγμα 1000mm x 1000mm ±5mm / Sample 1000mm x 1000mm ± 5mm

Πάχος/ Thickness: 70mm ±3mm (60 mm SBR, 10 mm EPDM)

Κρίσιμο Ύψος Πτώσης/ Critical Fall Height: 1,7m (±7%)

Κωδικός/ Code: SAFEPOL 90SBR + 10EPDM

Περιγραφή/ Description: Συνεχής επιφάνεια τεχνητού ελαστικού δαπέδου από υπόστρωμα SBR και άνω στρώση EPDM / Continuous roof wet surface from SBR granules and EPDM top layer.

Υλικό/ Material: Ανακυκλωμένο Ελαστικό – SBR, κόλλα πολυουρεθάνης, Τρίμα EPDM / SBR granules, polyurethane binder, EPDM granules top layer.

Διαστάσεις/ Dimensions: Δείγμα 1000mm x 1000mm ±5mm / Sample 1000mm x 1000mm ± 5mm

Πάχος/ Thickness: 100mm ±3mm (90 mm SBR, 10 mm EPDM)

Κρίσιμο Ύψος Πτώσης / Critical Fall Height: 2,03m (±7%)

Το παρόν εκδόθηκε την 27/03/2020 και αποτελεί αναπόσπαστο μέρος του πιστοποιητικού/ This annex issued on 27/03/2020 and is an integral part of the certificate:

0877349 / 4315134/ 2020



1. HIC measurement results for Pour Wet Rubber Surface 50mm



Report information

Generated on: 2020-03-18
Method: Method 1 Laboratory
Report Nr. 4306177
Inspection company: TUV HELLAS
Inspector: E. Kosmetos
Norm: EN 1177:2018

Product information

Product type: Pour Wet Rubber Surface 1000mm x 1000mm
Material: SBR + EPDM
Thickness: 40mm + 10mm EPDM (Upper layer)
Client: KDF LTD
CFH 1.40m (uncertainty 7%)

Location

Location: TUV HELLAS
Location address: MESOGEION 282 - CHOLARGOS
Location description:

Device

Device: Wireless HIC TESTER
Device Description: HC19014
Device type: HIC METER
Device type descr.:



2. Results for session '2020-03-17'

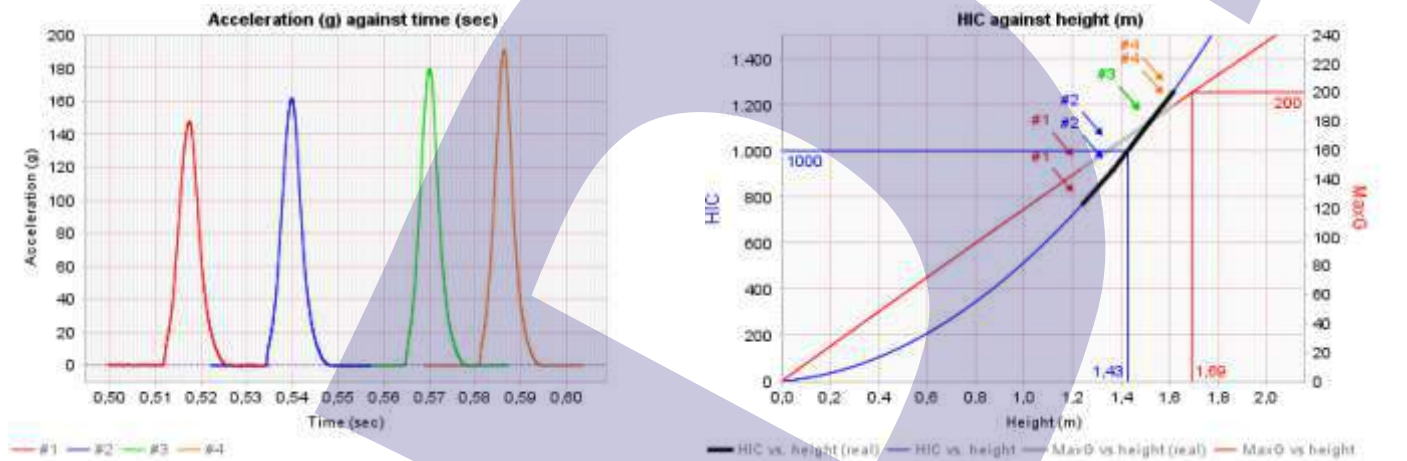
Position

Position: 1
 Position description:
 Surface type: Pour Wet Rubber Surface
 Surface type descr.: Sbr + Epdm

Session

Session date: 2020-03-17
 Critical height Hic: **1,43 m**
 Critical height MaxG: **1,69 m**
 Critical HIC: **1000,00**
 Critical MaxG: **200,00**
 Description: 50mm

Measurement #	HIC	HIC time	Drop height	Acceleration	Impact velocity	Fall time
#1	772	5,190 ms	1,24 m	148 G	4,94 m/s	0,503 sec
#2	917	4,950 ms	1,36 m	162 G	5,17 m/s	0,527 sec
#3	1126	4,680 ms	1,52 m	180 G	5,46 m/s	0,556 sec
#4	1255	4,560 ms	1,61 m	191 G	5,63 m/s	0,574 sec



3. Results for session '2020-03-17'

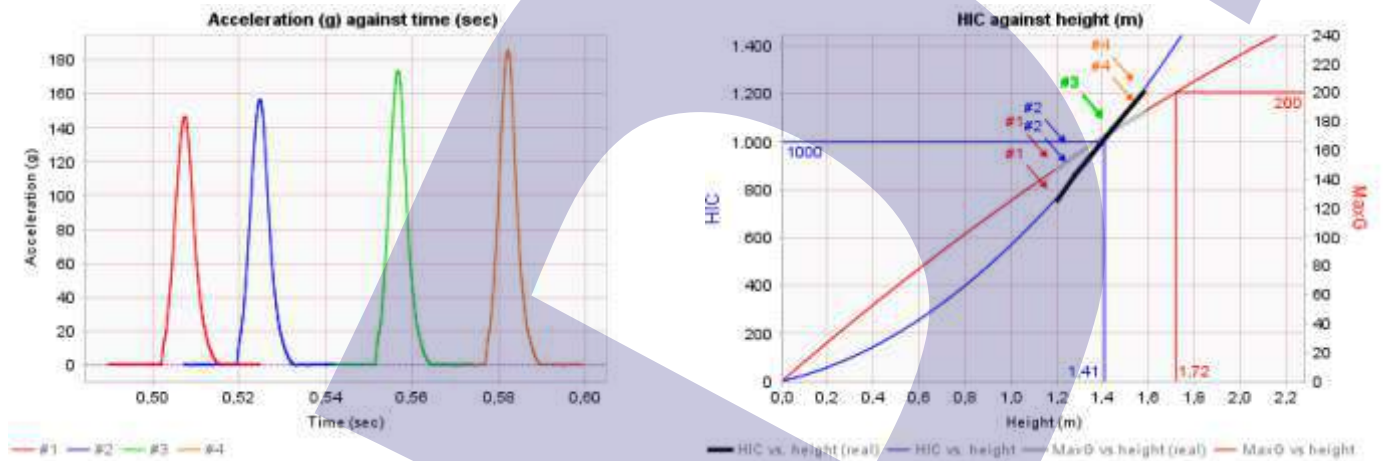
Position

Position: 2
 Position description:
 Surface type: Pour Wet Rubber Surface
 Surface type descr.: Sbr + Epdm

Session

Session date: 2020-03-17
 Critical height Hic: **1,41 m**
 Critical height MaxG: **1,72 m**
 Critical HIC: **1000,00**
 Critical MaxG: **200,00**
 Description: 50mm

Measurement #	HIC	HIC time	Drop height	Acceleration	Impact velocity	Fall time
#1	755	5,130 ms	1,20 m	147 G	4,86 m/s	0,495 sec
#2	866	5,010 ms	1,28 m	157 G	5,02 m/s	0,512 sec
#3	1055	4,740 ms	1,44 m	173 G	5,32 m/s	0,543 sec
#4	1206	4,620 ms	1,58 m	186 G	5,56 m/s	0,567 sec



4. Results for session '2020-03-17'

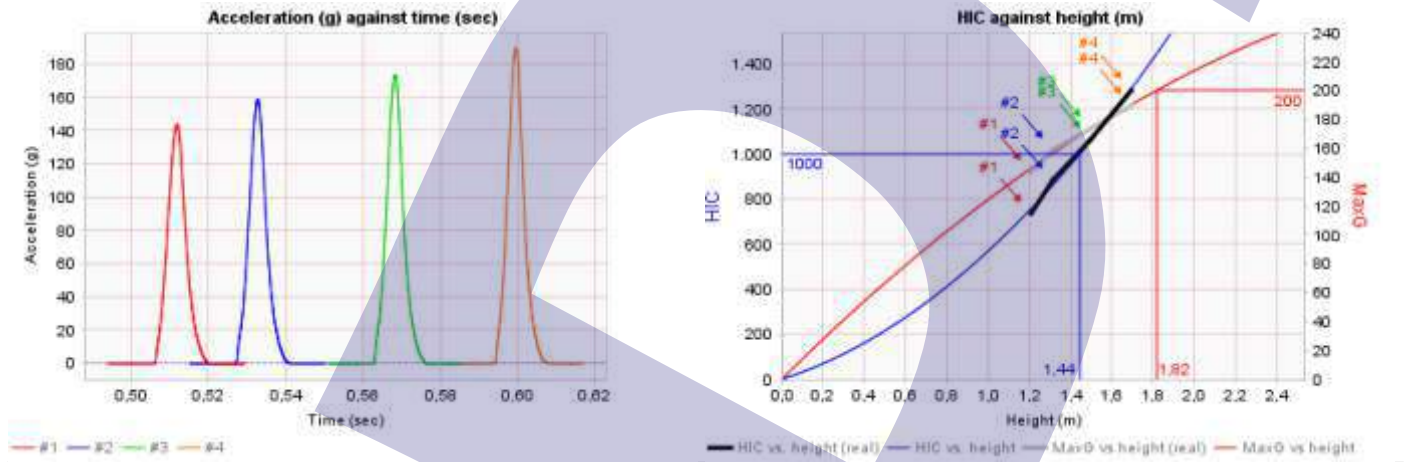
Position

Position: 3
 Position description:
 Surface type: Pour Wet Rubber Surface
 Surface type descr.: Sbr + Epdm

Session

Session date: 2020-03-17
 Critical height Hic: **1,44 m**
 Critical height MaxG: **1,82 m**
 Critical HIC: **1000,00**
 Critical MaxG: **200,00**
 Description: 50mm

Measurement #	HIC	HIC time	Drop height	Acceleration	Impact velocity	Fall time
#1	735	5,280 ms	1,21 m	143 G	4,87 m/s	0,496 sec
#2	884	5,010 ms	1,31 m	159 G	5,08 m/s	0,517 sec
#3	1064	4,800 ms	1,50 m	174 G	5,42 m/s	0,552 sec
#4	1283	4,650 ms	1,69 m	189 G	5,77 m/s	0,588 sec



5. Results for session '2020-03-17'

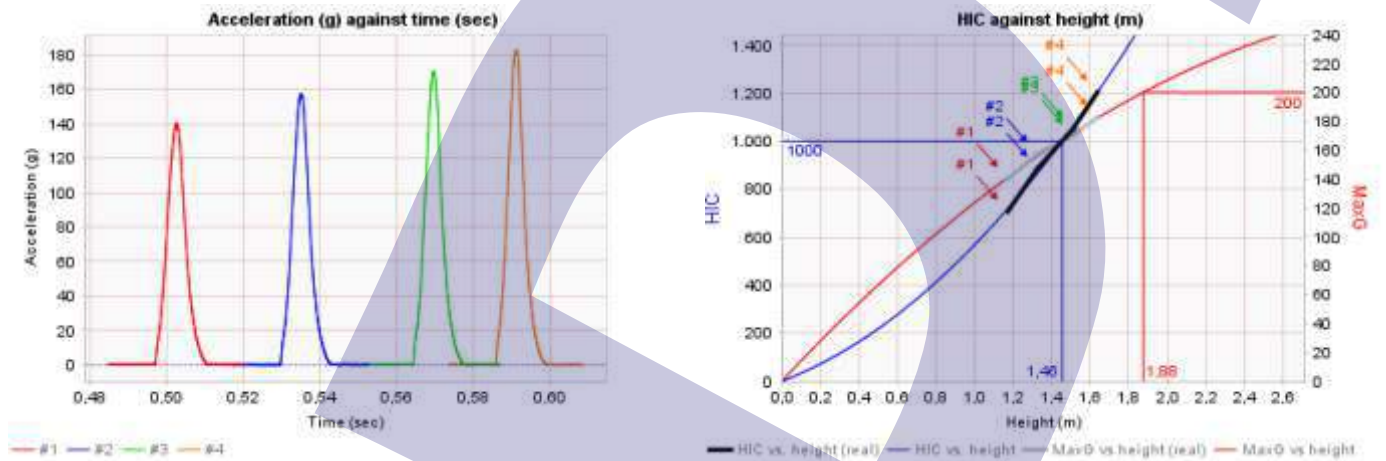
Position

Position: 4
 Position description:
 Surface type: Pour Wet Rubber Surface
 Surface type descr.: Sbr + Epdm

Session

Session date: 2020-03-17
 Critical height Hic: **1,46 m**
 Critical height MaxG: **1,88 m**
 Critical HIC: **1000,00**
 Critical MaxG: **200,00**
 Description: 50mm

Measurement #	HIC	HIC time	Drop height	Acceleration	Impact velocity	Fall time
#1	706	5,370 ms	1,17 m	140 G	4,80 m/s	0,489 sec
#2	885	5,070 ms	1,33 m	157 G	5,10 m/s	0,520 sec
#3	1050	4,950 ms	1,51 m	170 G	5,44 m/s	0,555 sec
#4	1203	4,770 ms	1,64 m	183 G	5,67 m/s	0,578 sec



6. Results for session '2020-03-17'

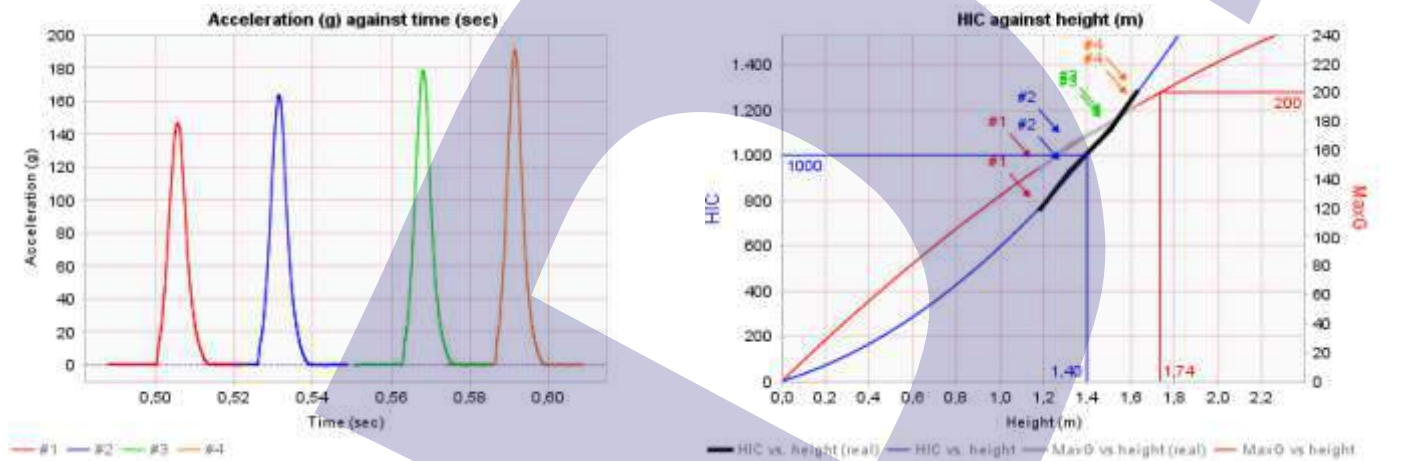
Position

Position: 5
 Position description:
 Surface type: Pour Wet Rubber Surface
 Surface type descr.: Sbr + Epdm

Session

Session date: 2020-03-17
 Critical height Hic: **1,40 m**
 Critical height MaxG: **1,74 m**
 Critical HIC: **1000,00**
 Critical MaxG: **200,00**
 Description: 50mm

Measurement #	HIC	HIC time	Drop height	Acceleration	Impact velocity	Fall time
#1	761	5,130 ms	1,19 m	147 G	4,82 m/s	0,492 sec
#2	926	4,830 ms	1,32 m	164 G	5,09 m/s	0,518 sec
#3	1115	4,680 ms	1,51 m	179 G	5,44 m/s	0,555 sec
#4	1277	4,530 ms	1,63 m	191 G	5,65 m/s	0,576 sec



7. Results for session '2020-03-17'

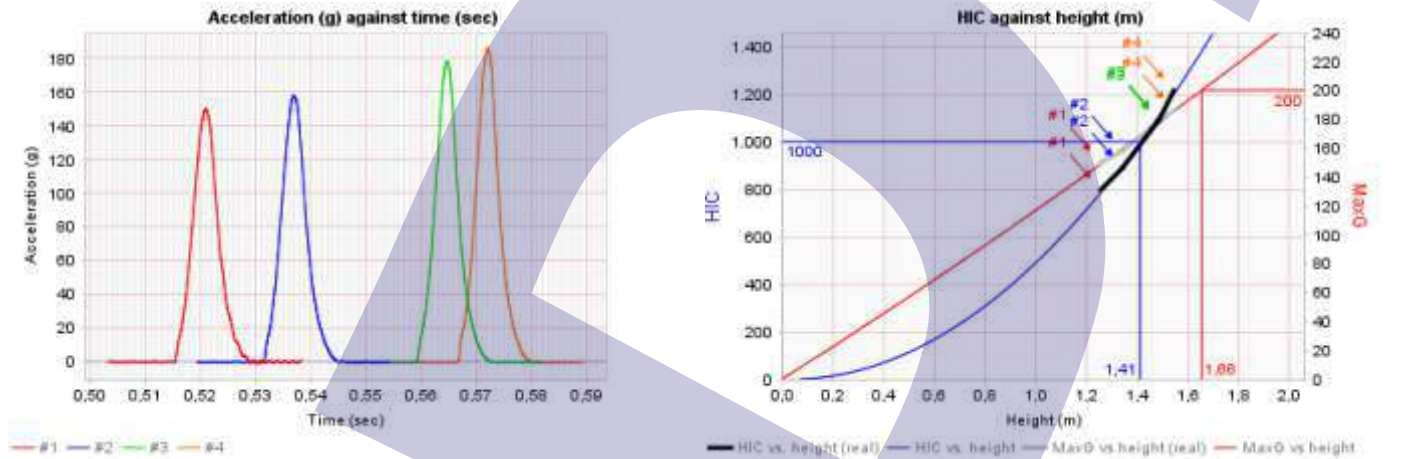
Position

Position: 6
 Position description:
 Surface type: Pour Wet Rubber Surface
 Surface type descr.: Sbr + Epdm

Session

Session date: 2020-03-17
 Critical height Hic: **1,41 m**
 Critical height MaxG: **1,66 m**
 Critical HIC: **1000,00**
 Critical MaxG: **200,00**
 Description: 50mm

Measurement #	HIC	HIC time	Drop height	Acceleration	Impact velocity	Fall time
#1	797	5,130 ms	1,26 m	150 G	4,97 m/s	0,506 sec
#2	889	5,040 ms	1,34 m	158 G	5,13 m/s	0,523 sec
#3	1093	4,680 ms	1,49 m	178 G	5,40 m/s	0,551 sec
#4	1216	4,590 ms	1,55 m	186 G	5,51 m/s	0,561 sec



8. Results for session '2020-03-17'

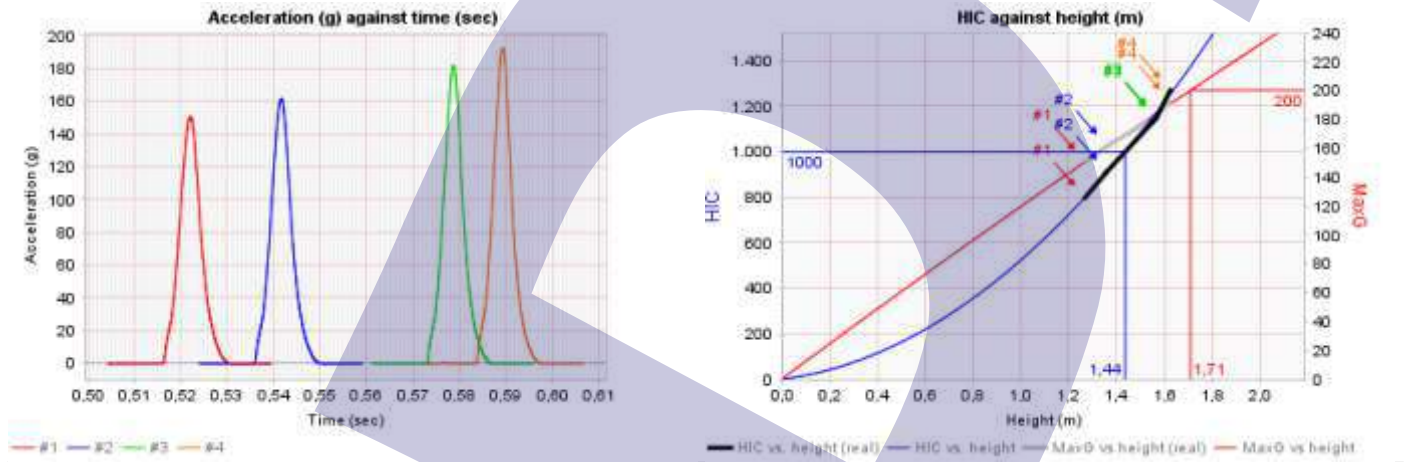
Position

Position: 7
 Position description:
 Surface type: Pour Wet Rubber Surface
 Surface type descr.: Sbr + Epdm

Session

Session date: 2020-03-17
 Critical height Hic: **1,44 m**
 Critical height MaxG: **1,71 m**
 Critical HIC: **1000,00**
 Critical MaxG: **200,00**
 Description: 50mm

Measurement #	HIC	HIC time	Drop height	Acceleration	Impact velocity	Fall time
#1	798	5,160 ms	1,27 m	150 G	4,99 m/s	0,509 sec
#2	912	4,980 ms	1,36 m	161 G	5,17 m/s	0,527 sec
#3	1146	4,710 ms	1,57 m	182 G	5,54 m/s	0,565 sec
#4	1270	4,560 ms	1,63 m	192 G	5,65 m/s	0,576 sec



9. Results for session '2020-03-17'

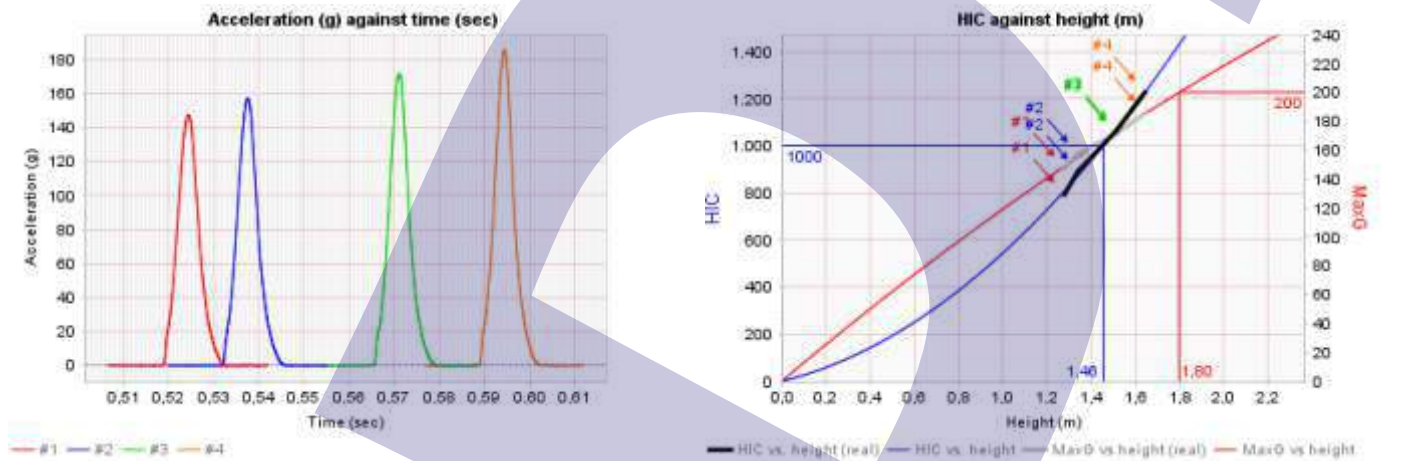
Position

Position: 8
 Position description:
 Surface type: Pour Wet Rubber Surface
 Surface type descr.: Sbr + Epdm

Session

Session date: 2020-03-17
 Critical height Hic: **1,46 m**
 Critical height MaxG: **1,80 m**
 Critical HIC: **1000,00**
 Critical MaxG: **200,00**
 Description: 50mm

Measurement #	HIC	HIC time	Drop height	Acceleration	Impact velocity	Fall time
#1	793	5,280 ms	1,28 m	147 G	5,01 m/s	0,511 sec
#2	891	5,100 ms	1,34 m	157 G	5,13 m/s	0,523 sec
#3	1063	4,950 ms	1,51 m	172 G	5,45 m/s	0,555 sec
#4	1227	4,740 ms	1,64 m	186 G	5,68 m/s	0,579 sec



10. Results for session '2020-03-17'

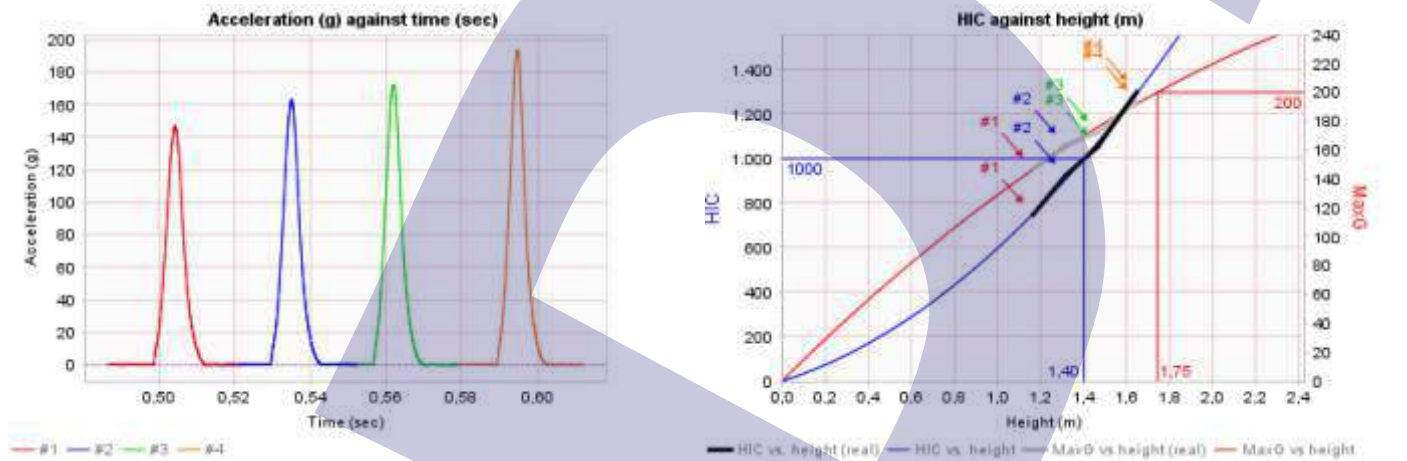
Position

Position: 9
 Position description:
 Surface type: Pour Wet Rubber Surface
 Surface type descr.: Sbr + Epdm

Session

Session date: 2020-03-17
 Critical height Hic: **1,40 m**
 Critical height MaxG: **1,75 m**
 Critical HIC: **1000,00**
 Critical MaxG: **200,00**
 Description: 50mm

Measurement #	HIC	HIC time	Drop height	Acceleration	Impact velocity	Fall time
#1	748	5,130 ms	1,17 m	147 G	4,79 m/s	0,488 sec
#2	924	4,890 ms	1,32 m	163 G	5,09 m/s	0,518 sec
#3	1053	4,830 ms	1,47 m	172 G	5,36 m/s	0,547 sec
#4	1298	4,560 ms	1,65 m	194 G	5,69 m/s	0,580 sec



ΕΚΘΕΣΗ ΔΟΚΙΜΩΝ ΕΞΟΠΛΙΣΜΟΥ ΠΑΙΧΝΙΔΟΤΟΠΩΝ

Μέτρηση κρίσιμου ύψους πτώσης σε δάπεδα ασφαλείας παιχνιδότοπων

TEST REPORT OF PLAYGROUND EQUIPMENT

Determination of critical fall height of impact attenuating playground surfacing

Πελάτης Customer	:	Κατασκευές Δαπέδων ΜΟΝ. Ε.Π.Ε. Κορομηλά 5, Θεσσαλονίκη
Αίτηση Application no.	:	83/2017-05-09
Προδιαγραφές ή Πρότυπα Specifications or standards	:	ΕΛΟΤ EN 1177 (2008), ΕΛΟΤ EN 1176-1 (2008)
Ημερομηνία Παραλαβής Δείγματος Time of receipt of samples	:	2017-04-18
Δοκιμασθέντα δείγματα Samples tested	:	Δάπεδο παιχνιδότοπων Playground impact attenuating surfacing
Ημερομηνία δοκιμής Test date:	:	2017-05-09

A) ΠΕΡΙΓΡΑΦΗ ΔΕΙΓΜΑΤΟΣ SAMPLE DESCRIPTION

Υλικό δαπέδου
Surfacing material

Δάπεδο ασφαλείας / Impact attenuating surface
1000X1000X60mm

:

Υλικό κατασκευής / Material of Tiles made of :

- 1) Styrene-butadiene Rubber (SBR)- recycle rubber ελαστικό στυρενίου-βουταδιενίου (SBR) - ανακυκλωμένο ελαστικό
- 2) Resin-Bound / συνδετικό υλικό από ρητίνη 3) Ethylene Propylene Diene Monomer Rubber (EPDM)

Μετρηθείσες διαστάσεις *
(διακύμανση)
Measured dimensions *
(variation)

:

1000X1000X (60,1 έως 59,3) mm

- * για την εύρεση του πάχους η κάθε πλάκα μετριέται σε δυο τυχαία σημεία στην κάθε της πλευρά.
- * the thickness of each tile is measured at two random points on each side

B) ΣΥΝΘΗΚΕΣ ΔΟΚΙΜΗΣ TEST CONDITIONS

Θερμοκρασία (° C) :

Temperature (° C):

26

Υγρασία (R.H. %) :

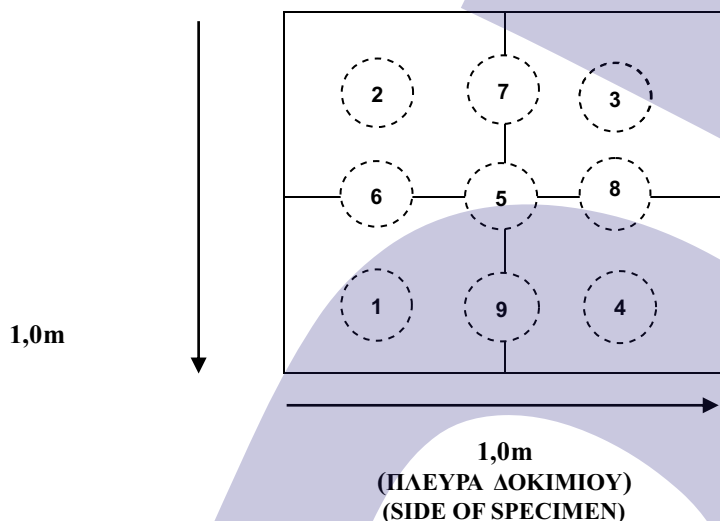
Rel. Humidity (R.H. %) :

Γ) ΦΩΤΟΓΡΑΦΙΑ ΔΕΙΓΜΑΤΟΣ PHOTO OF TEST SPECIMEN



D) ΔΙΑΓΡΑΜΜΑ ΡΙΨΕΩΝ DROP HEIGHT DIAGRAM

Το δοκίμιο τοποθετήθηκε σε σκληρή επιφάνεια μέσα σε ένα πλαίσιο. Οι διακεκομμένοι κύκλοι δείχνουν τα σημεία ρίψης του ομοιώματος κεφαλής.
 The specimen is placed inside a frame on a hard surface. The dotted circles indicate the drop points of the head form.



E) Γραφική παράσταση της μικρότερης τιμής του κριτηρίου τραυματισμού κεφαλής (HIC) συναρτήσει του ύψους πτώσης και οι επί μέρους μετρήσεις για τις 9 ρίψεις.
 Curves of HIC values against drop height and individual measurements.

Σημείο/Point 1

Ύψος πτώσης/ Drop height (cm)	Τιμή κριτηρίου τραυματισμού κεφαλής (HIC value)
146	789,8
155	947,8
163	1036,5
172	1054,7

Critical fall height: 1.60 m

Σημείο/Point 2

Ύψος πτώσης/ Drop height (cm)	Τιμή κριτηρίου τραυματισμού κεφαλής (HIC value)
149	901,2
154	987,1
168	1057,8
178	1124,5

Critical fall height: 1.60 m

Σημείο/Point 3

Ύψος πτώσης/ Drop height (cm)	Τιμή κριτηρίου τραυματισμού κεφαλής (HIC value)
151	899,1
158	941,7
164	1038,7
167	1054,8

Critical fall height: 1.60 m

Σημείο/Point 4

Ύψος πτώσης/ Drop height (cm)	Τιμή κριτηρίου τραυματισμού κεφαλής (HIC value)
136	835,1
152	974,0
163	1051,5
160	1050,7

Critical fall height: 1.60 m

Σημείο/Point 5

Ύψος πτώσης/ Drop height (cm)	Τιμή κριτηρίου τραυματισμού κεφαλής (HIC value)
127	684,1
126	716,8
158	1050,8
162	1121,2

Critical fall height: 1.60 m

Σημείο/Point 6

Ύψος πτώσης/ Drop height (cm)	Τιμή κριτηρίου τραυματισμού κεφαλής (HIC value)
150	992,2
125	745,7
159	1037,7
164	1054,5

Critical fall height: 1.60 m

Σημείο/Point 7

Ύψος πτώσης/ Drop height (cm)	Τιμή κριτηρίου τραυματισμού κεφαλής (HIC value)
115	625,8
135	763,9
155	1016,0
168	1062,0

Critical fall height: 1.60 m

Σημείο/Point 8

Ύψος πτώσης/ Drop height (cm)	Τιμή κριτηρίου τραυματισμού κεφαλής (HIC value)
132	802,1
151	990,9
165	1064,7
159	1049,8

Critical fall height: 1.60 m

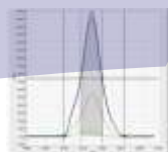
Σημείο/Point 9

Ύψος πτώσης/ Drop height (cm)	Τιμή κριτηρίου τραυματισμού κεφαλής (HIC value)
140	899,6
142	954,7
160	1041,5
166	1086,8

Critical fall height: 1.60 m

F) Γραφική παράσταση της επιτάχυνσης σε σχέση με το χρόνο για μία ρίψη, από ύψος 1,55 m , στο σημείο 7.

Trace of acceleration against time and curve of HIC values against drop height, point 7, drop height of 1,55 m.



G) ΚΡΙΣΙΜΟ ΥΨΟΣ ΠΤΩΣΗΣ CRITICAL FALL HEIGHT

Σημεία που γίνονται οι ρίψεις Drop points	Αρ. Σημείου Point no.	Ύψος Πτώσης (m) που αντιστοιχεί σε τιμή HIC=1000 Drop height corresponding to HIC=1000
I) Ρίψεις στο κέντρο του κάθε δοκιμίου Drops at the center of each specimen	1	1,60
	2	1,60
	3	1,60
	4	1,60
II) Ρίψεις στο σημείο που ενώνονται τα τέσσερα δοκίμια Drops at the junction of four specimens	5	1,60
III) Ρίψεις στο μέσο της ένωσης δυο δοκιμίων Drops at the junction of two specimens	6	1,60
	7	1,60
	8	1,60
	9	1,60

Κρίσιμο ύψος πτώσης
Critical fall height:

1,6 m

Το κρίσιμο ύψος πτώσης ορίζεται ως το μικρότερο ύψος ρίψης που δίνει την τιμή 1000 για οποιαδήποτε από τις ρίψεις.

The critical fall height is defined as the lowest drop height producing HIC=1000 obtained from any of the drop tests .

Η τιμή του “ελεύθερου ύψους πτώσης” του εξοπλισμού παιχνιδιού (βλ. Παρ. 3.6 του προτύπου ΕΛΟΤ EN 1176-1:2008), στον οποίο πρόκειται να χρησιμοποιηθεί δάπεδο από το εν λόγω υλικό, εγκατεστημένο σύμφωνα με τις οδηγίες του κατασκευαστή του, πρέπει να είναι μικρότερη ή ίση από την τιμή του κρίσιμου ύψους πτώσης.

The value of the “free height of fall” of playground equipment (cf. clause 3.6 of standard ELOT EN 1176 -1:2008), where a surface area made from the material tested, and installed according to the instructions of its manufacturer, must be less or equal than the critical fall height.

Η παρούσα Έκθεση Δοκιμών περιλαμβάνει αποτελέσματα και μετρήσεις οι οποίες αναφέρονται αποκλειστικά και μόνο στα συγκεκριμένα δείγματα που δοκιμάστηκαν και στις δοκιμές που πραγματοποιήθηκαν όπως αναλυτικά αναφέρονται στο παρόν έγγραφο. Η έκδοση του εγγράφου αυτού, δεν δηλώνει Έγκριση, Πιστοποίηση ή Επιτήρηση από την EBETAM A.E. για οποιοδήποτε προϊόν. Η εκπλήρωση των απαιτήσεων των παραγράφων 4 και 6 του ΕΛΟΤ EN 1176-1 (2008) δεν εξετάζεται στην παρούσα δοκιμή, παρόλο που το υλικό δοκιμής οφείλει να τις πληροί.

Το παρόν έγγραφο δε θα αναπαραχθεί, χωρίς τη γραπτή έγκριση της EBETAM, παρά μόνο σε πλήρη μορφή.

This Test Report contains results and measurements that apply only to the particular samples tested and to the specific tests carried out as they are detailed herein.

The issuing of this Test Report, does not indicate any measure of Approval, Certification or Surveillance by MIRTEC S.A. of any product. The conformity of the product with clauses 4 and 6 of ELOT EN 1176-1 (2008) is not examined in this test, although the test material should comply with.

Reproduction of this document is allowed only in an integral form.

Ολοκλήρωση δοκιμών: 2017-05-09
End of tests



N. Σκορδαράς
Υπεύθυνος Τομέα Παιγνιδότοπων



I. Δημητριάδης
Δ/ντης Γρ. Αθηνών

Intertek Consumer Goods GmbH · Würzburger Straße 152 · 90766 Fürth · Germany

KATASKEVES DAPEDON LTD - KDF
MRS. Maria Nikolaidoy
Mitropoleos 19
54024 Thessaloniki
GREECE

Fürth, May 11/2020

TEST REPORT No. FUTYP2020-01959-A

Date sample received: March 06/2020
Period of testing: March 19/2020 – April 29/2020
Technical Director: Kerstin Scharrer

Sample description: PU Binder 1118



For the test results please refer to next pages

Test order

Test of a product for migration of certain elements acc. to EN 71 part 3

Summary	Results
DIN EN 71-3 (Safety of toys) – Migration of certain elements	pass

Sample description:

No. 22:	PU binder
---------	-----------

Test results

Abbreviations:
n.d. = not determinable (< LoQ)
LoQ = limit of quantification

1. Migration of certain elements

1.1 Migration of certain elements -17 Elements- according to DIN EN 71-3

Sampling, extraction: DIN EN 71-3:2019-08
Measurement: ICP-OES: DIN EN ISO 11885:2009-09 / Hg: DIN EN ISO 17852:2008-04 (AFS)

Test results in mg/kg

Parameter	LoQ	limit value category III	Sample No. 22
Aluminium	10	70 000 (28 130) [†]	n.d.
Antimony	2	560	n.d.
Arsenic	1	47	n.d.
Barium	10	18 750	n.d.
Boron	10	15 000	n.d.
Cadmium	0.1	17	n.d.
Chromium (III)	3	460	n.d.
Cobalt	1	130	n.d.
Copper	10	7 700	n.d.
Lead	0.5	23	n.d.
Manganese	10	15 000	n.d.
Mercury	0.5	94	n.d.
Nickel	5	930	n.d.
Selenium	2	460	n.d.
Strontium	10	56 000	n.d.
Tin	3	180 000	n.d.
Zinc	10	46 000	n.d.

[†] new limit for Aluminium valid as of May 20th, 2021; see directive (EU) 2019/1922

1.2 Migration of certain elements -Chromium VI- according to DIN EN 71-3

Sampling, extraction: DIN EN 71-3:2019-08
Measurement IC- Matrix Elimination

Test results in mg/kg

	LoQ	limit value category III	Sample No. 22
Chromium VI	0.01	0.053	n.d.

Conclusion

The tested sample of the presented product "**PU Binder 1118**" conforms to the requirements of DIN EN 71 Part 3 category 3.

General note:

This report has been prepared for the titled project or named part thereof and should not be relied upon or used for any other project without an independent check being carried out as to its suitability and prior written authority of Intertek being obtained. Intertek accepts no responsibility or liability for the consequences of this document being used for a purpose other than the purposes for which it was commissioned. Any person using or relying on the document for such other purposes agrees, and will by such use or reliance be taken to confirm his agreement to indemnify Intertek for all loss or damage resulting therefrom. Intertek accepts no responsibility or liability for this document to any party other than the person by whom it was commissioned.

We would like to point out, that Intertek can't provide legally binding assessments referring to isolated cases. The individual legal advice in Germany is reserved to the legal advisory professions and a binding interpretation is subject to the court of justice.

Copying excerpts or otherwise reproducing parts of the test report is permitted only with the consent of the laboratory accepting the order. This report pertains only to the test item(s).

All testing requests are subject to our Terms and Conditions available on www.intertek.com.

END OF REPORT

Intertek Consumer Goods GmbH · Würzburger Straße 152 · 90766 Fürth · Germany

KATASKEVES DAPEDON LTD - KDF
MRS. Maria Nikolaidoy
Mitropoleos 19
54024 Thessaloniki
GREECE

Fürth, May 12/2020

TEST REPORT No. FUTYP2020-01959-C

Date sample received: March 06/2020
Period of testing: March 19/2020 – April 29/2020
Technical Director: Kerstin Scharrer

Sample description: EPDM Granulates E1, E2, E7, E8, E11, E12, E13, E15, E16, E17, E18, E19, E20



For the test results please refer to next pages

Test order

Test of products for polycyclic aromatic hydrocarbons

Summary	Results
Further requirements	<i>pass</i>

Sample description:

No. 1:	Granulate E1 (red rose)
No. 2:	Granulate E2 (orange)
No. 7:	Granulate E7 (brown)
No. 8:	Granulate E8 (dark brown)
No. 11:	Granulate E11 (light blue)
No. 12:	Granulate E12 (dark blue)
No. 13:	Granulate E13 (purple)
No. 15:	Granulate E15 (light grey)
No. 16:	Granulate E16 (dark grey)
No. 17:	Granulate E17 (light green)
No. 18:	Granulate E18 (blue)
No. 19:	Granulate E19 (light brown)
No. 20:	Granulate E20 (EPDM red 0,5-1,5 mm)

Test results

Abbreviations:
n.d. = not determinable (< LoQ)
LoQ = limit of quantification

1. Polycyclic Aromatic Hydrocarbons according to US-EPA+ 2 EFSA PAH and according to Regulation (EC) No. 1907/2006 (REACH) Annex XVII No. 50

Test method: AfPS GS 2019:01 PAK (2019-05)
Limit of quantification: 0.1 mg/kg

Test results in mg/kg

Parameter	CAS-No.	Sample No. 1	Sample No.2	Sample No. 7	Sample No. 8
1 Naphthalene	91-20-3	0.26	0.14	0.14	0.18
2 Acenaphthylene	208-96-8	n.d.	n.d.	n.d.	n.d.
3 Acenaphthene	83-32-9	n.d.	n.d.	n.d.	n.d.
4 Fluorene	86-73-7	0.66	0.22	0.23	0.68
5 Phenanthrene	85-01-8	1.9	0.40	0.46	1.1
6 Anthracene	120-12-7	0.22	n.d.	n.d.	n.d.
7 Fluoranthene	206-44-0	0.39	0.14	0.18	n.d.
8 Pyrene	129-00-0	n.d.	n.d.	0.21	n.d.
9 Benzo(a)anthracene	56-55-3	0.23	n.d.	n.d.	n.d.

Polycyclic Aromatic Hydrocarbons - continued

Test results in mg/kg

Parameter	CAS-No.	Sample No. 1	Sample No.2	Sample No. 7	Sample No. 8
10 Chrysene	218-01-9	0.28	n.d.	n.d.	n.d.
∑11+12 Benzo(b)fluoranthene + Benzo(j)fluoranthene	205-99-2 + 205-82-3	n.d.	n.d.	n.d.	n.d.
13 Benzo(k)fluoranthene	207-08-9	n.d.	n.d.	n.d.	n.d.
14 Benzo(e)pyrene	192-97-2	n.d.	n.d.	0.21	n.d.
15 Benzo(a)pyrene	50-32-8	n.d.	n.d.	n.d.	n.d.
16 Indeno(1,2,3-cd)pyrene	193-39-5	n.d.	n.d.	n.d.	n.d.
17 Dibenzo(a,h)anthracene	53-70-3	n.d.	n.d.	n.d.	n.d.
18 Benzo(ghi)perylene	191-24-2	n.d.	n.d.	n.d.	n.d.
Sum 15 PAH		3.3^b	0.40^b	0.88^b	1.1^b

^a For summation according to AfPS GS 2019:01 PAK the following PAH are not included: Acenaphthylene, Acenaphthene, Fluorene

^b Only contents from 0.2 mg/kg were used for summation.

Parameter	CAS-No.	Sample No. 11	Sample No. 12	Sample No. 13	Sample No. 15
1 Naphthalene	91-20-3	0.34	0.30	n.d.	n.d.
2 Acenaphthylene	208-96-8	n.d.	n.d.	n.d.	n.d.
3 Acenaphthene	83-32-9	n.d.	n.d.	n.d.	n.d.
4 Fluorene	86-73-7	0.19	n.d.	0.32	0.21
5 Phenanthrene	85-01-8	0.87	0.61	0.65	0.53
6 Anthracene	120-12-7	n.d.	n.d.	n.d.	n.d.
7 Fluoranthene	206-44-0	0.25	0.16	n.d.	0.16
8 Pyrene	129-00-0	n.d.	n.d.	n.d.	0.15
9 Benzo(a)anthracene	56-55-3	n.d.	n.d.	n.d.	n.d.
10 Chrysene	218-01-9	0.15	0.12	n.d.	n.d.
∑11+12 Benzo(b)fluoranthene + Benzo(j)fluoranthene	205-99-2 + 205-82-3	n.d.	n.d.	n.d.	n.d.
13 Benzo(k)fluoranthene	207-08-9	n.d.	n.d.	n.d.	n.d.
14 Benzo(e)pyrene	192-97-2	n.d.	n.d.	n.d.	n.d.
15 Benzo(a)pyrene	50-32-8	n.d.	n.d.	n.d.	n.d.
16 Indeno(1,2,3-cd)pyrene	193-39-5	n.d.	n.d.	n.d.	n.d.
17 Dibenzo(a,h)anthracene	53-70-3	n.d.	n.d.	n.d.	n.d.
18 Benzo(ghi)perylene	191-24-2	n.d.	n.d.	n.d.	n.d.
Sum 15 PAH		1.5^b	0.91^b	0.65^b	0.53^b

^a For summation according to AfPS GS 2019:01 PAK the following PAH are not included: Acenaphthylene, Acenaphthene, Fluorene

^b Only contents from 0.2 mg/kg were used for summation.

Polycyclic Aromatic Hydrocarbons - continued

Test results in mg/kg

Parameter	CAS-No.	Sample No. 16	Sample No. 17	Sample No. 18	Sample No. 19
1 Naphthalene	91-20-3	n.d.	n.d.	n.d.	n.d.
2 Acenaphthylene	208-96-8	n.d.	n.d.	n.d.	n.d.
3 Acenaphthene	83-32-9	n.d.	n.d.	n.d.	n.d.
4 Fluorene	86-73-7	n.d.	n.d.	0.45	n.d.
5 Phenanthrene	85-01-8	n.d.	0.12	0.81	0.12
6 Anthracene	120-12-7	n.d.	n.d.	n.d.	n.d.
7 Fluoranthene	206-44-0	n.d.	n.d.	n.d.	n.d.
8 Pyrene	129-00-0	n.d.	n.d.	n.d.	n.d.
9 Benzo(a)anthracene	56-55-3	n.d.	n.d.	n.d.	n.d.
10 Chrysene	218-01-9	n.d.	n.d.	n.d.	n.d.
Σ11+12 Benzo(b)fluoranthene + Benzo(j)fluoranthene	205-99-2 + 205-82-3	n.d.	n.d.	n.d.	n.d.
13 Benzo(k)fluoranthene	207-08-9	n.d.	n.d.	n.d.	n.d.
14 Benzo(e)pyrene	192-97-2	n.d.	n.d.	n.d.	n.d.
15 Benzo(a)pyrene	50-32-8	n.d.	n.d.	n.d.	n.d.
16 Indeno(1,2,3-cd)pyrene	193-39-5	n.d.	n.d.	n.d.	n.d.
17 Dibenzo(a,h)anthracene	53-70-3	n.d.	n.d.	n.d.	n.d.
18 Benzo(ghi)perylene	191-24-2	n.d.	n.d.	n.d.	n.d.
Sum 15 PAH		n.d.^b	n.d.^b	0.81^b	n.d.^b

^a For summation according to AfPS GS 2019:01 PAK the following PAH are not included: Acenaphthylene, Acenaphthene, Fluorene

^b Only contents from 0.2 mg/kg were used for summation.

Parameter	CAS-No.	Sample No. 20
1 Naphthalene	91-20-3	n.d.
2 Acenaphthylene	208-96-8	n.d.
3 Acenaphthene	83-32-9	n.d.
4 Fluorene	86-73-7	n.d.
5 Phenanthrene	85-01-8	n.d.
6 Anthracene	120-12-7	n.d.
7 Fluoranthene	206-44-0	n.d.
8 Pyrene	129-00-0	n.d.
9 Benzo(a)anthracene	56-55-3	n.d.
10 Chrysene	218-01-9	n.d.
Σ11+12 Benzo(b)fluoranthene + Benzo(j)fluoranthene	205-99-2 + 205-82-3	n.d.
13 Benzo(k)fluoranthene	207-08-9	n.d.
14 Benzo(e)pyrene	192-97-2	n.d.
15 Benzo(a)pyrene	50-32-8	n.d.
16 Indeno(1,2,3-cd)pyrene	193-39-5	n.d.
17 Dibenzo(a,h)anthracene	53-70-3	n.d.
18 Benzo(ghi)perylene	191-24-2	n.d.
Sum 15 PAH		n.d.^b

^a For summation according to AfPS GS 2019:01 PAK the following PAH are not included: Acenaphthylene, Acenaphthene, Fluorene

^b Only contents from 0.2 mg/kg were used for summation.

Conclusion

The tested sample of the presented products “**EPDM Granulates E1, E2, E7, E8, E11, E12, E13, E15, E16, E17, E18, E19, E20**” conform to the EC-Regulation 1907/2006, Annex XVII No. 50.

Remark

Requirements acc. to AfPS GS 2019:01 PAK (Utilization for GS-mark from July 1st, 2020) and Regulation (EC) No. 1907/2006, Annex XVII No. 50

Parameter	Category 1	Category 2		Category 3		Limit value acc. to EC regulation 1907/2006, Annex XVII No. 50	
	Materials intended to be put into the mouth, or materials in toys according to Directive 2009/48/EC or materials in articles for use by children up to three years of age with prolonged skin contact (longer than 30s) when used as intended	Materials, not covered by category 1, with prolonged skin contact (longer than 30s) or repeated short-term skin contact when used as intended or in a foreseeable way		Materials, not covered by category 1 or category 2, with short-term skin contact (up to 30 s) when used as intended or in a foreseeable way		Toys, including activity toys, and childcare articles – Components rubber or plastic components that come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity, under normal or reasonably foreseeable conditions of use	Articles shall not be placed on the market for supply to the general public, if any of their rubber or plastic components that come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity, under normal or reasonably foreseeable conditions of use
		a. Use by children	b. other consumer products	a. Use by children	b. other consumer products		
Benzo[a]pyrene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1	0.5	1
Benzo[e]pyrene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1	0.5	1
Benzo[a]anthracene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1	0.5	1
Benzo[b]fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1	0.5	1
Benzo[j]fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1	0.5	1
Benzo[k]fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1	0.5	1
Chrysene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1	0.5	1
Dibenzo[a,h]anthracene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1	0.5	1
Benzo[ghi]perylene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1	-	-
Indeno[1,2,3-cd]pyrene mg/kg	< 0,2	< 0.2	< 0.5	< 0.5	< 1	-	-
Phenanthrene, Pyrene, Anthracene, Fluoranthene, mg/kg	< 1 – Sum	< 5 – Sum	< 10 – Sum	< 20 – Sum	< 50 – Sum	-	-
Naphthalene mg/kg	< 1	< 2		< 10		-	-
Sum 15 PAH mg/kg	<1	< 5	< 10	< 20	< 50	-	-
Evaluation	-	-	-	-	-	pass	-

General note:

This report has been prepared for the titled project or named part thereof and should not be relied upon or used for any other project without an independent check being carried out as to its suitability and prior written authority of Intertek being obtained. Intertek accepts no responsibility or liability for the consequences of this document being used for a purpose other than the purposes for which it was commissioned. Any person using or relying on the document for such other purposes agrees, and will by such use or reliance be taken to confirm his agreement to indemnify Intertek for all loss or damage resulting therefrom. Intertek accepts no responsibility or liability for this document to any party other than the person by whom it was commissioned.

We would like to point out, that Intertek can't provide legally binding assessments referring to isolated cases. The individual legal advice in Germany is reserved to the legal advisory professions and a binding interpretation is subject to the court of justice.

Copying excerpts or otherwise reproducing parts of the test report is permitted only with the consent of the laboratory accepting the order. This report pertains only to the test item(s).

All testing requests are subject to our Terms and Conditions available on www.intertek.com.

END OF REPORT



Intertek Consumer Goods GmbH · Würzburger Straße 152 · 90766 Fürth · Germany

KATASKEVES DAPEDON LTD - KDF
MRS. Maria Nikolaidoy
Mitropoleos 19
54024 Thessaloniki
GREECE

Fürth, May 11/2020

TEST REPORT No. FUTYP2020-01959-B

Date sample received: March 06/2020
Period of testing: March 19/2020 – April 29/2020
Technical Director: Kerstin Scharrer

Sample description: EPDM Granulate E2 + PU Binder 1118



For the test results please refer to next pages

Test order

Test of products for polycyclic aromatic hydrocarbons

Summary	Results
Further requirements	<i>pass</i>

Sample description:

No. 23:	Granulate E2+PU binder (mixed in the ration 100:20)
---------	---

Test results

Abbreviations:

n.d. = not determinable (< LoQ)

LoQ = limit of quantification

1. Polycyclic Aromatic Hydrocarbons according to US-EPA+ 2 EFSA PAH and according to Regulation (EC) No. 1907/2006 (REACH) Annex XVII No. 50

Test method: AfPS GS 2019:01 PAK (2019-05)

Limit of quantification: 0.1 mg/kg

Test results in mg/kg

Parameter	CAS-No.	Sample No. 23
1 Naphthalene	91-20-3	n.d.
2 Acenaphthylene	208-96-8	n.d.
3 Acenaphthene	83-32-9	n.d.
4 Fluorene	86-73-7	n.d.
5 Phenanthrene	85-01-8	0.19
6 Anthracene	120-12-7	n.d.
7 Fluoranthene	206-44-0	n.d.
8 Pyrene	129-00-0	0.21
9 Benzo(a)anthracene	56-55-3	n.d.
10 Chrysene	218-01-9	n.d.
∑11+12 Benzo(b)fluoranthene + Benzo(j)fluoranthene	205-99-2 + 205-82-3	n.d.
13 Benzo(k)fluoranthene	207-08-9	n.d.
14 Benzo(e)pyrene	192-97-2	n.d.
15 Benzo(a)pyrene	50-32-8	n.d.
16 Indeno(1,2,3-cd)pyrene	193-39-5	n.d.
17 Dibenzo(a,h)anthracene	53-70-3	n.d.
18 Benzo(ghi)perylene	191-24-2	n.d.
Sum 15 PAH		0.21^b

^a For summation according to AfPS GS 2019:01 PAK the following PAH are not included: Acenaphthylene, Acenaphthene, Fluorene

^b Only contents from 0.2 mg/kg were used for summation.

Conclusion

The tested sample of the presented products **“EPDM Granulate E2 + PU Binder 1118”** conforms to the requirements of AfPS GS 2019:01 PAK, Category 1 (Materials intended to be put into the mouth, or materials in toys according to Directive 2009/48/EC or materials in articles for use by children up to three years of age with prolonged skin contact (longer than 30s) when used as intended) and EC-Regulation 1907/2006, Annex XVII No. 50.

Remark

Requirements acc. to AfPS GS 2019:01 PAK (Utilization for GS-mark from July 1st, 2020) and Regulation (EC) No. 1907/2006, Annex XVII No. 50

Parameter	Category 1	Category 2		Category 3		Limit value acc. to EC regulation 1907/2006, Annex XVII No. 50	
	Materials intended to be put into the mouth, or materials in toys according to Directive 2009/48/EC or materials in articles for use by children up to three years of age with prolonged skin contact (longer than 30s) when used as intended	Materials, not covered by category 1, with prolonged skin contact (longer than 30s) or repeated short-term skin contact when used as intended or in a foreseeable way		Materials, not covered by category 1 or category 2, with short-term skin contact (up to 30 s) when used as intended or in a foreseeable way		Toys, including activity toys, and childcare articles – Components rubber or plastic components that come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity, under normal or reasonably foreseeable conditions of use	Articles shall not be placed on the market for supply to the general public, if any of their rubber or plastic components that come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity, under normal or reasonably foreseeable conditions of use
		a. Use by children	b. other consumer products	a. Use by children	b. other consumer products		
Benzo[a]pyrene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1	0.5	1
Benzo[e]pyrene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1	0.5	1
Benzo[a]anthracene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1	0.5	1
Benzo[b]fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1	0.5	1
Benzo[j]fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1	0.5	1
Benzo[k]fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1	0.5	1
Chrysene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1	0.5	1
Dibenzo[a,h]anthracene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1	0.5	1
Benzo[ghi]perylene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1	-	-
Indeno[1,2,3-cd]pyrene mg/kg	< 0,2	< 0.2	< 0.5	< 0.5	< 1	-	-
Phenanthrene, Pyrene, Anthracene, Fluoranthene, mg/kg	< 1 – Sum	< 5 – Sum	< 10 – Sum	< 20 – Sum	< 50 – Sum	-	-
Naphthalene mg/kg	< 1	< 2		< 10		-	-
Sum 15 PAH mg/kg	<1	< 5	< 10	< 20	< 50	-	-
Evaluation	pass	pass	-	pass	-	pass	-

General note:

This report has been prepared for the titled project or named part thereof and should not be relied upon or used for any other project without an independent check being carried out as to its suitability and prior written authority of Intertek being obtained. Intertek accepts no responsibility or liability for the consequences of this document being used for a purpose other than the purposes for which it was commissioned. Any person using or relying on the document for such other purposes agrees, and will by such use or reliance be taken to confirm his agreement to indemnify Intertek for all loss or damage resulting therefrom. Intertek accepts no responsibility or liability for this document to any party other than the person by whom it was commissioned.

We would like to point out, that Intertek can't provide legally binding assessments referring to isolated cases. The individual legal advice in Germany is reserved to the legal advisory professions and a binding interpretation is subject to the court of justice.

Copying excerpts or otherwise reproducing parts of the test report is permitted only with the consent of the laboratory accepting the order. This report pertains only to the test item(s).

All testing requests are subject to our Terms and Conditions available on www.intertek.com.

END OF REPORT