

UNCLASSIFIED

TURKISH STANDARDS INSTITUTION

Issue : 75532879-190.01.00.00-439530

18.12.2013

Subject: Examination and Experiment Services (Regarding the request of experiment)

Yediger Ağaç Plastik ve KÖmpozit A. Ş.

(Saray Mah. Keresteciler Sitesi 8. Sokak No: 18-20-22 Kazan)

ANKARA

Regarding: Letter No. 431473 dated 12/12/2013

Examinations and experiments were made on the samples given with your related letter according to TS EN 310, TS EN 317, TS EN 789 and our reports No. 204107 dated 18/12/2013 showing the results and the invoice No. 483512 dated 18/12/2013 are given in the attachment.

Thank you for your contribution to our laboratory by filling the attached survey form and sending it to the address Headship of TSE Test and Calibration Center Construction Materials Laboratory Necatibey Cad No 112 06100 Bakanlıklar Çankaya / ANKARA or to fax number 0312 416 66 18 for evaluation and improvement of the service given to you, valuable customers. You can access the survey form at <http://www.tse.org.tr/docs/laboratuvarlar/müşteri-anketi-rev4.doc> and send us your views, complaints and requests in electronic environment.

For your information

Musa ÇAKIR
Construction Materials Laboratory
Manager for ANKARA
[Signature]

ATTACHMENTS:

- 1- 1 Report (2 copies)
- 2- 1 Invoice
- 3- 1 Sample Consumption, Return and Delivery Protocol
- 4- 1 Customer Survey

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Address: Necatibey Cad No 112 06100 Bakanlıklar Çankaya / ANKARA

Phone: 3124166545

e-mail: bmyilmaz@tse.org.tr

Det. Info: B. M. YILMAZ

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Website: www.tse.org.tr

**HEADSHIP OF TSE TEST and CALIBRATION CENTER CONSTRUCTION MATERIALS LABORATORY
(ANKARA)**

TEST RESULTS

TEST APPLIED	FOUND
(*) Bending Strength (TS EN 310)	In kg/cm; 1. Sample** 193, 2. Sample**169, 3. Sample** 158, 4. Sample** 172, 5. Sample**169, 6. Sample** 184 Average** 174
(*) Bending Elasticity Module (TS EN 310)	In kg/cm ² ; 1. Sample**31260, 2. Sample**30760, 3. Sample**29740, 4. Sample**30640, 5. Sample**29340, 6. Sample**2898 Average**30120
(*) Thickness Dwelling Determination after being put into Water (24 hours) (TS EN 317)	1. Sample** 0.5% 2. Sample** 1.1% 3. Sample** 0.6% 4. Sample** 1.0% 5. Sample** 0.5% 6. Sample** 0.9% 7. Sample** 0.2% 8. Sample** 0.5% Average – 0.7%
Pressure Strength Upright to the Surface (TS EN 789)	In Kg/cm ² ; 1. Sample** 39.6, 2. Sample** 37.5, 3. Sample**39.3, 4. Sample** 39.7, 5. Sample** 39.2, 6. Sample** 39.1 Average** 39.1

RESULT AND THOUGHTS: -----

- This report is valid only for the sample testes.
- This report was issued as two pages and three copies on 18.12.2013.
- This report was issued on request of the related company. It cannot be regarded as Certification of Compliance with Standards. In addition, it cannot be used for announcements and advertisements.

**Republic of Turkey
Gazi University
Deanship of the Faculty of Technology
(Financial Works Units)**

Issue: 11562006-752.01.02-
Subject: Technical Report

**YEDİGER AĞAÇ PLASTİK VE KOM. SAN. TİC. A. Ş.
Saray Mah. Keresteciler Sit. 8 Sok. No: 18-20-22
Kazan/ANKARA**

The polypropylene based composite ground tile products produced by Yediger Ağaç Plastik ve Kompozit A. Ş. With Deckline brand were approved by our Wood Works Engineering Department and the related technical report is attached to this letter.

For your information. Respectfully

Prof. Dr. Mustafa İLBAŞ
Dean
[Signature]

ATTACHMENT:
4 units of Technical Report

Gazi University

TEST REPORT

The tests applied on the samples, which were taken and prepared randomly from the chestnut colored ground tile profiles produced by **DECLINE – Composite Ground Systems**, and the results of these tests are given in Table 3.

Table 3. Color and brightness tests applied on the samples controlled and kept waiting in cold and hot water and the samples of **Decline – Profile Coded D-1420** and their results

TESTS	STANDARD	CONTROL	DRY HOT ENV. WAITING	WAITING IN COLD WATER	BOILING
COLOR (RED)	ASTM-D 2244,	1,76	4,37	1,86	4,47
COLOR (YELLOW)	TS 4318, ISO	40,55	44,98	46,43	48,89
BRIGHTNESS	2813	12,11	12,11	12,22	11,76

CONTROL: Samples taken from the completely produced profile without any process,
WAITING IN COLD WATER: Waiting for 24 hours in water at 20 C +/- 2 C,
DRY HOT ENV. WAITING: Waiting for 24 hours in the cabin at 70 C,
BOILED: samples boiled for 5 hours at 100 degrees

In Decline – Profiles coded D-1420

It has been determined that;

- Red color change occurs at low degree after waiting in cold water, more in dry environment and boiling,
- Yellow color change is the lowest in dry hot environment, then in cold water and the highest after boiling,
- Brightness does not significantly change in all three environments.

[Signature]
Prof Dr. Musa ATAR

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Prof Dr. Mustafa ALTUNOK

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Asst. Prof. Dr. Nihat DÖNGEL

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Gazi University

TEST REPORT

The tests applied on the samples, which were taken and prepared randomly from the chestnut colored ground tile profiles coded D-1420 produced by **DECLINE – Composite Ground Systems**, and the results of these tests are given in Table 4.

Table 4. Non-combustibility tests applied on the samples controlled samples of Decline – Profile Coded D-1420 and their results

TESTS	STANDARD	LOSS OF WEIGHT		FLAME SPREAD (mm)	
		(gr)	(%)	WIDTH	LENGTH
SHORT FLAME (30 sc)	ASTM-D 1360-90a	0.18	1	3.5	5
LONG FLAME (60 sc)	EN 11925-2	0.44	1	4.7	7

In Decline – Profiles coded D-1420

- Flame spread could not reach to 150 mm in both measurements. In this terms, it was determined that the product was successful in short and long flame tests.
- Loss of weight occurred as result of combustion was found as approximately 1% in both tests and surface was not combusted in the tests.

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TEST REPORT

The tests applied on the samples, which were taken and prepared randomly from the chestnut colored ground tile profiles coded D-1420 produced by **DECLINE – Composite Ground Systems**, and the results of these tests are given in Table 1.

Table 1. Mechanical tests applied on controlled and boiled samples of **Decline – Profile Coded D-1420** and their results

TESTS	STANDARD	CONTROL	BOILED
BENDING STRENGTH [N/mm ²]	ISO 178 ASTM 790	54,66	29,99
BENDING ELASTICITY MODULE [N/mm ²]	ISO 178 ASTM 790	12019,66	6849,18
HARDNESS (PLATE) [N/mm ²]	EN 310	57,71	28,52
HARDNESS (PROFILE) [N/mm ²]	EN 310	24,49	12,25
SHOCK STRENGTH [N/mm]	EN 310	10,50	5,88
DENSITY (12%) [N/mm ²]	EN 323	0,96	0,95

The results taken from the tests support use of the profiles in terms of their technological features.

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Republic of Turkey
Gazi University
Faculty of Technology
(Wooden Works Industrial Engineering Department)

Issue: 41751261/800-99/3
Subject: Technical Report

16.01.2014

YEDİGER AĞAÇ PLASTİK VE KOM. SAN. TİC. A. Ş.
Saray Mah. Keresteciler Sit. 8 Sok. No: 18-20-22
Kazan/ANKARA

As result of the tests applied in our department, it was seen that the polypropylene based composite ground tile products produced by Yediger Ađađ Plastik ve Kompozit A. Ş. With Deckline brand are in compliance with the European Union Standards and it was approved by our Department and the related technical report is attached to this letter.

For your information. Respectfully

Prof. Dr. Musa ATAR
Head of Department
[Signature]

ATTACHMENT: Technical Report

Republic of Turkey
Gazi University
Deanship of the Faculty of Technology
(Financial Works Units)

Issue: 11562006-752.01.02-
Subject: Technical Report

YEDİGER AĞAÇ PLASTİK VE KOM. SAN. TİC. A. Ş.
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ATTACHMENT:
4 units of Technical Report

G. U. Faculty of Technology, 06500 Teknikokullar / ANKARA
Tel: 0312 202 28942 – Fax: 0312 212 89 47 – Web Page: <http://www.tf.gazi.edu.tr>

**HEADSHIP OF TSE TEST and CALIBRATION CENTER CONSTRUCTION MATERIALS LABORATORY
(ANKARA)**

TEST RESULTS

TEST APPLIED	FOUND
(*) Bending Strength (TS EN 310)	In kg/cm; 1. Sample** 193, 2. Sample**169, 3. Sample** 158, 4. Sample** 172, 5. Sample**169, 6. Sample** 184 Average** 174
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TEST REPORT

The tests applied on the samples, which were taken and prepared randomly from the chestnut colored ground tile profiles coded D1420 produced by **DECLINE – Composite Ground Systems**, and the results of these tests are given in Table 2.

Table 2. Dimensional stability (dwelling) tests applied on the samples kept waiting in cold water (2 and 24 hours) and dry hot environment (70 C) from the samples of Decline – Profile Coded D-1420 and their amounts of increase (mm)

TESTS	STANDARD	WAITING IN COLD WATER FOR 2 HOURS	WAITING IN COLD WATER FOR 24 HOURS	WAITING IN DRY HOT ENV.
THICKNESS (24 MM)	TS EN 438-2 EN 317	0,19	0,26	0,13
WIDTH (50 MM)		0,24	0,27	0,36
LENGTH (50 MM)		0,22	0,24	0,17
WEIGHT (g)		0,72	1,17	-*

COLD WATER: Water at 20 C +/- 2 C,

DRY HOT ENV. WAITING: Waiting for 24 hours in the cabin at 70 C,

*No weight increase was found after waiting in dry hot (70 C) environment.

In Decline – Profiles coded D-1420

It has been determined that;

- The lowest increase occurs in thickness, then length and the highest in width after waiting in cold water and dry hot environment.
- As the water absorption amount is low, increase of weight is not important.
-

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**HEADSHIP OF TSE TEST and CALIBRATION CENTER CONSTRUCTION MATERIALS LABORATORY
(ANKARA)**

Address Necatibey Cad No 112 06100 Bakanlıklar Çankaya / ANKARA Tel *90(312) 4166528 Fax +90
(312)4166618 E-mail insaatlab@be.org or Web www.tseorg.tr

TEST REPORT

Customer (Name, Address, City etc.)	Yediger Ağaç Plastik ve KOMpozit A. Ş. Saray Mah. Keresteciler Sitesi 8. Sokak No: 18-20-22 Kazan / ANKARA			
Order Date /No	13.12.2013/100039			
Sample Description (Type, Brand, Model etc.)	WPC Polypropylene Based Wood Composite Deck 1000x140x24mm-6 units			
Test Item Receipt Date	12.12.2013			
Date of Test	13.12.2013 – 18.12.2013			
Applied Standard/Method	TS EN 310:1999-04 "Wood Based Plates – Bending Resistance and Bending Elasticity Module Determination" TS EN 317:1999-04 "Shiver Plates and Fiber Plates-Thickness Dwelling Determination after being Put into Water" TS EN 789:2007-07 "Wood Structures – Experiment methods – Wood based plates mechanical features determination"			
Number of Pages of the Report	2			
Remarks	Special Examination			
<p>The Turkish Accreditation Agency(TURKAK) is signatory to the multilateral agreements of the European co-operation for the Accreditation(EA) and of the International laboratory Accreditation(ILAC) for the Mutual recognition of test reports.</p> <p>The test and or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report.</p> <p>This test report was prepared upon customer's request, can not be used as certificate of conformity to standards, does not represent a batch and can not be used as conformity document for advertisements and procurements.</p>				
Seal [Seal]	Date 18.12.2013	Person in Charge of the Test [Signature] Burak Mirac YILMAZ Engineer	Reviewer [Signature] Hasan AKSU Technical Chief	Approved By [Signature] Musa ÇAKIR

This report shall not be reproduced other than in full except with the written permission of the laboratory. Test reports without signature and seal are not valid. This test report represents only tested sample(s), and shall not be used as Product Certificate.