



Prüfzentrum für Bauelemente

Dipl.-Ing. (FH) Rüdiger Müller

Fenster • windows
Rollläden • shutters
Türen + Tore • doors
Fassaden • curtain walling
Baubeschläge • building hardware
March 03, 2017 RM/YA

TEST REPORT NO. 17/01-A001-B1

Version 1.en

PfB-Internal-No. 17/04-A154

Initial type testing (ITT) of performance characteristics in accordance with EN 14351-1 :2006 + A2 : 2016 “Windows and doors - Product standard, performance characteristics - Part 1: Windows and external pedestrian doorsets– German version EN 14351-1:2006 + A2:2016”

Order No. 17/01-A001

Applicant Ege Profil Tic. ve San.A.Ş.
10003 Sokak No:5 AOSB
35620 Çiğli / İzmir
Türkiye

Product type Single sash sliding door with fixed side part, PVC, Double glazing

Product name Legend Slide

Conducted tests

- Air Permeability
- Water Tightness
- Resistance to Wind Load
- Operating force

Test Certificate No. 17/01-A001-Z1 of March 03, 2017
issued by **PfB**

Responsible test person Dipl.-Ing. (FH) Rüdiger Müller

This report consists of 7 pages. The following are included as appendix:

- 1 Data sheet air permeability (attachment 1 of 16)
- 1 Data sheet water tightness (attachment 2 of 16)
- 1 Data sheet resistance to wind load (attachment 3 of 16)
- 14 Images of test sample (attachment 4 to 10 of 16)
- 5 Pages technical documentation (attachment 12 to 15 of 16)

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Attachment

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1 Introduction and Scope

The customer Ege Profil confirmed the order by mailing the submission form on the 23 January 2017 to **PfB** Turkey, Atatürk Oganize Sanayi Bolgesi 10045 Sokak No 7, 35620 Çiğli – Izmir, Turkey. The order includes the Initial Type Test (ITT) for the performance according EN 14351-1 : 2006 + A2 : 2016. The former test was performed in collaboration between **PfB** Turkey and the notified Body inspection authority Prüfzentrum für Bauelemente (**PfB**) on 30 January 2017.

The tests were conducted according below standards:

- EN 1026 : 2000-06 “Windows and doors –Air permeability –Test method”;
- EN 1027 : 2000-06 “Windows and doors –Water tightness –Test method”;
- EN 12211 : 2000-12 “Windows and doors –Resistance to wind load –Test method”;
- EN 12046-1 : 2003 “Operating forces –Test method – Windows”

The test results were classified according to below standards:

- EN 12207 : 2000-06 “Windows and doors –Air permeability –Classification”;
- EN 12208 : 2000-06 “Windows and doors –Water tightness –Classification”;
- EN 12210 : 2003-08 “Windows and doors –Resistance to wind load – Classification”;
- EN 14351-1 : 2006 + A2:2016 “Windows and doors – Product standard”;
- EN 13115 : 2001 “Windows –Classification of mechanical properties – Racking, torsion and operating forces”

2 Test Sample

2.1 Sampling and Test Sample Labelling

The test sample was delivered to **PfB** on 30 January 2017 by Ege Profil. The test sample was delivered mounted in a steel sub frame (cross section 50 mm x 100 mm). The jointing between door frame and mounting frame was sealed by practical guidance.

Test sample	Labelling by customer	Labelling by PfB
Single sash sliding door with fixed side part, PVC, Double glazing	Legend Slide	17/01-A001-P1

2.2 Technical Documentation

On 24 February 2017 the customer completed drawings and technical fact sheets with regard to the test sample submitted by e-mail. They have been provided with a **PfB** endorsement and attached to this test report. The applicant is responsible for the correctness and accuracy of the statements. These statements were reviewed only at random by **PfB**:

- “Legend Slide 2A” (attachment 11)
- “Legend Slide 2B” (attachment 12)
- “Legend Slide 2C” (attachment 13)
- “Legend Slide 2D” (attachment 14)
- “Legend Slide 2E” (attachment 15)

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2.3 Technical Data of the Test Sample

Test sample no. 17/01-A001-P1

Single sash sliding door with fixed side part, PVC, double glazing:

Total outside dimension (w x h): 2000 mm x 2100 mm,

Casement dimensions (w x h) : 1010 mm x 2035 mm,

Profile cross section: Frame approx. 149 mm x 65 mm,
 Casement approx. 76 mm x 69 mm,

Sealing: TPE

Closing/Locking system: Siegenia

- right/left 2 hook pin on handle side,
- top/bottom none
- fastening 2 screw per fixing plate,

Glazing/infill: 4-16-4 double glazing, air, dry sealing.

More details of the configuration of the test sample are given in 2.2 Technical Documentation.

2.4 Documentation of Test Sample

For documentation of the sample digital photos were taken, which will be archived together with the sample pieces of the gaskets for 10 years by **PfB**.

3 Used Test Equipment and Gauges

Following equipments are used for the mentioned tests:

- Test wall with Inventory number 35001,
 (Producer: Holten-Prueftechnik GmbH) connected
 with software for data acquisition for control and application
 of air pressure, measurement of air leakage rate and water
 spray with a controlled rate,
- 3 length measurement potentiometer (Mitutoyo Absolute). 35101, 35102, 35103,
- 1 Dial indicating torque wrench 35200

The measurement tolerance of the test-wall is in the limits of the requirements of the standard. The latest calibrations were done on 14th May 2016.

4 Test

4.1 Person in Charge and Date of the Test

Person in charge	Rüdiger Müller
Test person	Yigit Altug
Date	30.01.2017
Person present from the customer	Didem Kale

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4.2 Description of the Test and Test Results

All corners of glass beads the silicone treated.(Image 13-14)

The moving sash closed with extra power to bottom and top corners with wood hammer after every opening before tests.(Image 1)

4.2.1 Operating Force according EN 12046-1

Before the air tightness test is conducted, the operating forces on the window handle were determined. The average of 3 measurements is for opening 6 Nm and for closing 9 Nm (class 1 according to EN 13115).

4.2.2 Air Permeability Test according to EN 1026

On the outside face of the test sample first the positive pressure (over pressure) and then the negative pressure (suction) was applied. In order to determine the air leakage rate of the test sample, the pressure was slowly increased by steps of 50 Pa up to 300 Pa after this the steps of 150 Pa were applied up to 600 Pa. The leakage rates at the pressure steps were measured and recorded for 10 seconds.

The equation $V_0 = V_x \cdot 293 / (273 + T_x) \cdot P_x / (101,3)$ according EN 1026 was applied in order to convert the air amount to the 'Normal volume' under 'Normal conditions' and atmospheric pressure, where T_x is the air temperature in the measurement column and P_x the pressure of the air pressure during the test.

The results of the tests are given in table of the Data sheet 1: Air Permeability according to EN 1026 (attachment 1).

In the mentioned data sheets the measured values are converted to 'normal conditions' and related to the joint length and the surface area. Results were represented in given charts.

4.2.3 Water Tightness Test according to EN 1027

The test sample is tested according to Method A mentioned in standard EN 1027 (single water spraying line with 5 nozzles). For 15 minutes water sprayed to the surface of the test sample with no pressure.

The details are recorded and represented in Data sheet 2: Water tightness according to EN 1027 (attachment 2).

4.2.4 Resistance to Wind Load Test according to EN 12211

After preparation, 3 pushes were applied according to standard. Afterwards, resistance to wind load according EN 12210 Table 1 were increased in steps of 400 Pa according to the wind load classes. After dismantling the potentiometers, 50 cycles of consecutive positive and negative pressure tests with 1000 Pa is applied. In the following air permeability test according to EN 1026 no significant change was observed.

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In the security test top of handle side of sash separated from safety pins at +2600Pa. (Image 11-12) Because of that reason resistance the wind load classification reduced by 1 class. The security test finalized with pressure of ± 2400 Pa. No damage or operational difference has occurred after the safety tests. The test results are represented in Data sheet 3: Resistance to wind load according to EN 12211 (attachment 3).

5 Classification of the Test Results

Based on the test results according to paragraph 4.2.1 to 4.2.4 the following classification can be applied.

Test report no.17/01-A001-B1 Test sample no.17/01-A001-P1 Single sash sliding door with fixed side part, PVC, double glazing	Air Permeability EN 12207	Water Tightness EN 12208	Resistance to Wind Load EN 12210	Operating Forces EN 13115
Tested as delivery	Class 4	Class 8A	C4/B4	Class 1

6 Application Range

According to EN 14351-1 the test results can be applied to similar door structures (Annex E of the standard, clause 3.4) with the same dimension or smaller.

For resistance to wind load the results defined in this test report might be applied to door which satisfy the similar design conditions with maximum height 2100 mm and width 2000 mm.

The air permeability and water tightness characteristics are exceptions to the above general rule. In this case, the classes achieved also apply to door assemblies of the same type of opening with smaller sizes and larger sizes up to + 50% compared to the size tested.

Conditions

For smaller door elements, the number of closing points may be reduced as long as their distance is not increased compared to the test sample. Furthermore attention has to be paid to the corners of the casement where the distance of the closing points may not significantly vary from the tested door.

7 General

This Test Report is intended for the applicant only and must not be published, wholly or in part, without prior permission of both the applicant and **PfB**.

Test Certificate No. 17/01-A001-Z1 was issued for publication purposes.

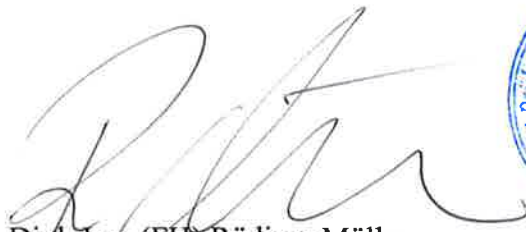
The original document will be sent to the customer. The customer also receives a copy of the document in pdf format. One copy remains with **PfB**.

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The results may only be applied exclusively on the tested test sample. Test results may be used for similar doors only if structure, material, components and production procedure are the same as the tested door.

PfB declares that they can not be claimed for recourse with regard to the content of the report.

This report is valid as long as the Standard EN 14351-1: 2006 + A2 : 2016 is in force and no essential changes of the structure and/or production procedure has been taken place.


Dipl. Ing. (FH) Rüdiger Müller
Head of Institute


Stephanskirchen
March 03, 2017


Yiğit Altuğ
Responsible Official

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DataSheet 1: Air permeability EN 1026

Sample description: Single sash sliding door with fixed side part, PVC, double glazing

Testdate: 30.01.2017

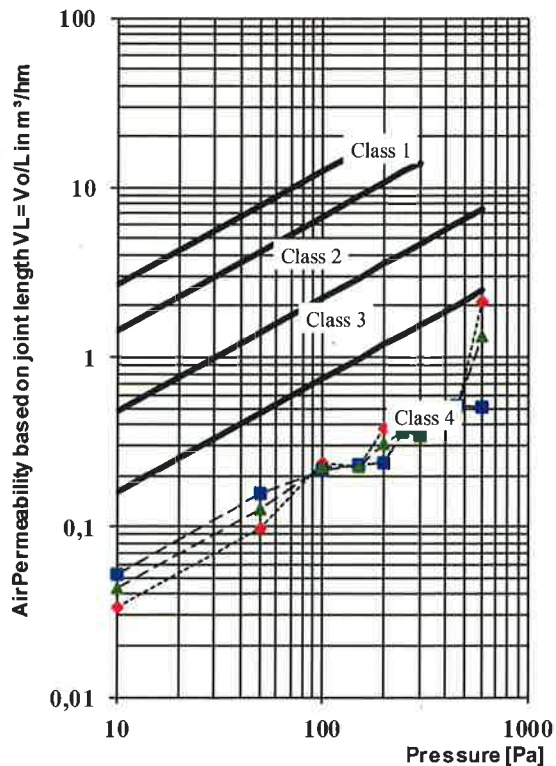
Sample number 17/01-A001-P1 Condition: Tested as delivery

Measurements [mm]: Outer dimensions W: 2000
Outer dimensions H: 2100
Casement dimension W: 1010
Casement dimension H: 2035

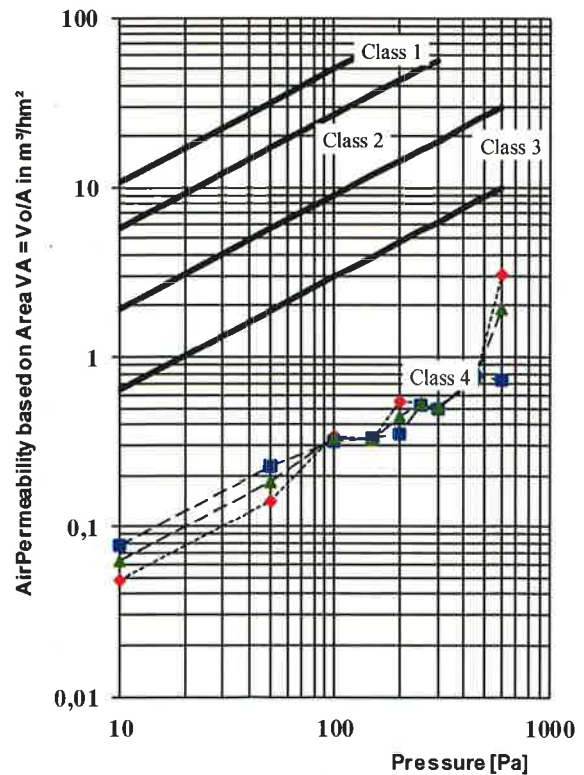
Relative Humidity 49 %
atmospheric pressure: 1005 hPa
Temperature: 10 °C
Joint length L: 6,09 m
Area A: 4,20 m²

Table : airpermeability V_0 (corrected to normal conditions: 293 K, 101,3 kPa)

Test pressure difference (Pa)	10	50	100	150	200	250	300	450	600
V1 (pressure) (m ³ /h)	0,2	0,6	1,5	1,4	2,3	2,2	2,1	3,0	12,9
V2 (Suction) (m ³ /h)	0,3	0,9	1,3	1,4	1,5	2,2	2,1	3,2	3,1
V3 (average) (m ³ /h)	0,3	0,8	1,4	1,4	1,9	2,2	2,1	3,1	8,0
airpermeability based on jointlength									
VL1 (Druck) (m ³ /hm)	0,03	0,10	0,24	0,22	0,38	0,37	0,35	0,50	2,12
VL2 (Sog) (m ³ /hm)	0,05	0,16	0,22	0,23	0,24	0,36	0,34	0,53	0,51
VL3 (Mittelwert) (m ³ /hm)	0,04	0,13	0,23	0,23	0,31	0,37	0,35	0,51	1,32
airpermeability based on area									
VA1 (Druck) (m ³ /hm ²)	0,05	0,14	0,35	0,32	0,55	0,53	0,51	0,72	3,08
VA2 (Sog) (m ³ /hm ²)	0,08	0,22	0,31	0,33	0,35	0,53	0,50	0,76	0,74
VA3 (Mittelwert) (m ³ /hm ²)	0,06	0,18	0,33	0,33	0,45	0,53	0,50	0,74	1,91



— Class 1 to Class 4 acc TS EN 12207
 - - - - - VL1 (Pressure)
 - - - - - VL2 (Suction)
 - - - - - VL3 (Average)



— Class 1 to Class 4 acc TS EN 12207
 - - - - - VA1 (Pressure)
 - - - - - VA2 (Suction)
 - - - - - VA3 (Average)

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Measurements [mm] :	Outer dimensions W:	2000	Relative Humidity	49 %
	Outer dimensions H:	2100	atmospheric pressure:	1005 hPa
	Casement dimension W:	1010	Temperature:	10 °C
	Casement dimension H:	2035	Joint length L:	6,09 m
			Area A:	4,20 m²



Testtype A (unprotected)		5 nozzles per row								Testdate:	30.01.17
Pressure (Pa)	0	50	100	150	200	250	300	450	600		
Time t (min)	15	5	5	5	5	5	5	5	5		
Pass? yes / no	yes	yes	yes	yes	yes	yes	yes	yes	no		
TS EN 12208, Class	1A	2A	3A	4A	5A	6A	7A	8A	9A		
Comment:											
Water breakthrough:	Water leakage from bottom glass beads of sash at 600 Pa										
Changes:	tested as delivery										

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Datasheet 3: Resistance to windload (deflection) EN 12211

Sample description: Single sash sliding door with fixed side part, PVC, double glazing

Note:

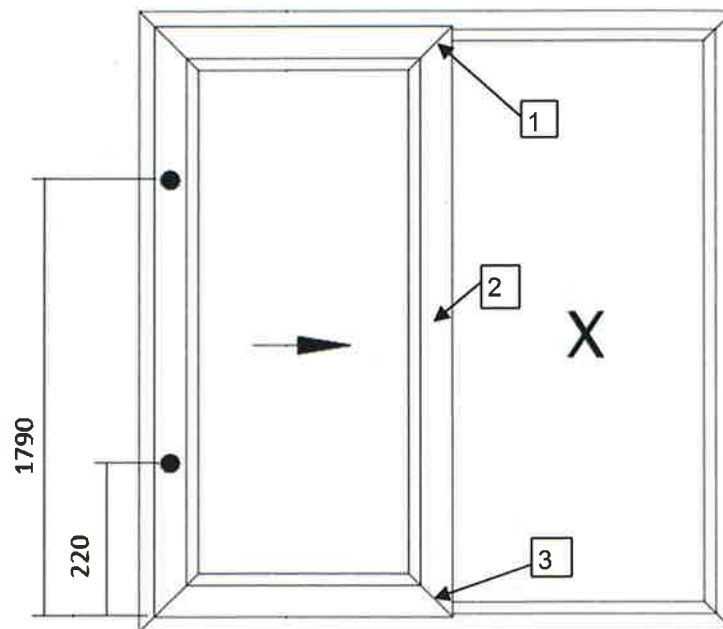
Testdate: 30.01.2017

Sample number 17/01-A001-P1

Measurements [mm]:	Outer dimensions W:	2000	Relative Humidity	49 %
	Outer dimensions H:	2100	atmospheric pressure:	1005 hPa
	Casement dimension W:	1010	Temperature:	10 °C
	Casement dimension H:	2035	Joint length L:	6,09 m
			Area A:	4,20 m²

Frontal view sketch

critical length 2000 mm



- = Fixing point
- = Measurement point
- 1 = Measurement point number

Table 1: Test of frontal deflection

Pressure/Suction [Pa]	Frontal deflection				Frontal deflection			
	Measuring point in [mm], pressure				Measuring point in [mm], suction			
	Meas. pnt. 1	Meas. pnt. 2	Meas. pnt. 3	f	Meas. pnt. 1	Meas. pnt. 2	Meas. pnt. 3	f
400	0,77	1,86	0,48	1,24	-1,40	-2,20	-0,84	-1,08
800	1,68	4,00	1,16	2,58	-2,31	-4,34	-1,59	-2,39
1200	2,54	6,02	1,94	3,78	-2,95	-6,42	-2,46	-3,72
1600	3,60	8,35	2,62	5,24	-3,60	-8,51	-3,17	-5,13
2000	4,65	11,42	3,92	7,14	-4,19	-10,83	-3,65	-6,91
Border Values	A (L/150)	B (L/200)	C (L/300)		A (L/150)	B (L/200)	C (L/300)	
	13,3	10,0	6,7		13,3	10,0	6,7	

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Image 1:

Test sample No.17/01-A001-P1,
on the test rig.



Image 2:

Test sample No.17/01-A001-P1,
deflection gauges placed on the
sample for wind load testing.



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Image 3:

Test sample No.17/01-A001-P1,
water leakage.

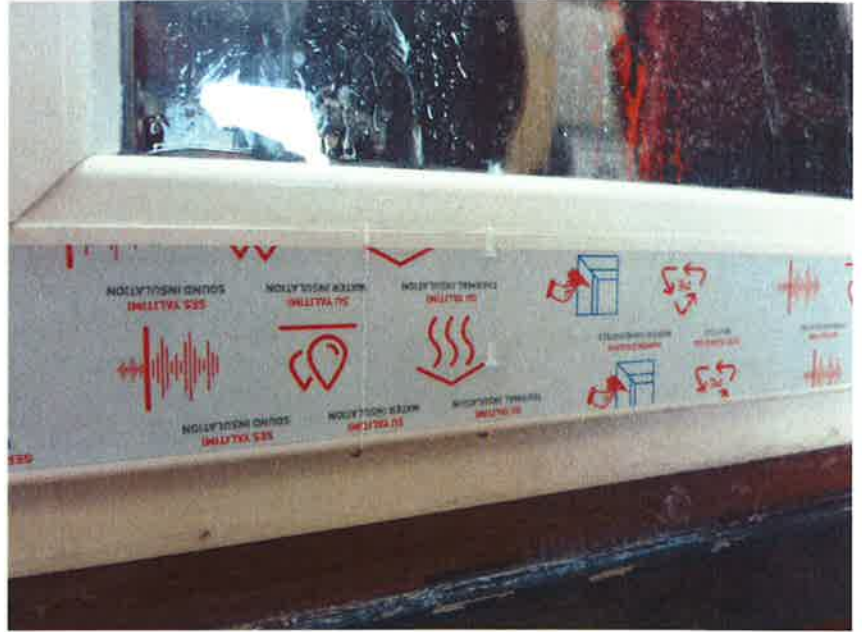


Image 4:

Test sample No.17/01-A001-P1,
sliding rail.



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Image 5:

Test sample No.17/01-A001-P1,
sealing.



Image 6:

Test sample No.17/01-A001-P1,
sealing.



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Image 7:

Test sample No.17/01-A001-P1,
sash sealing.

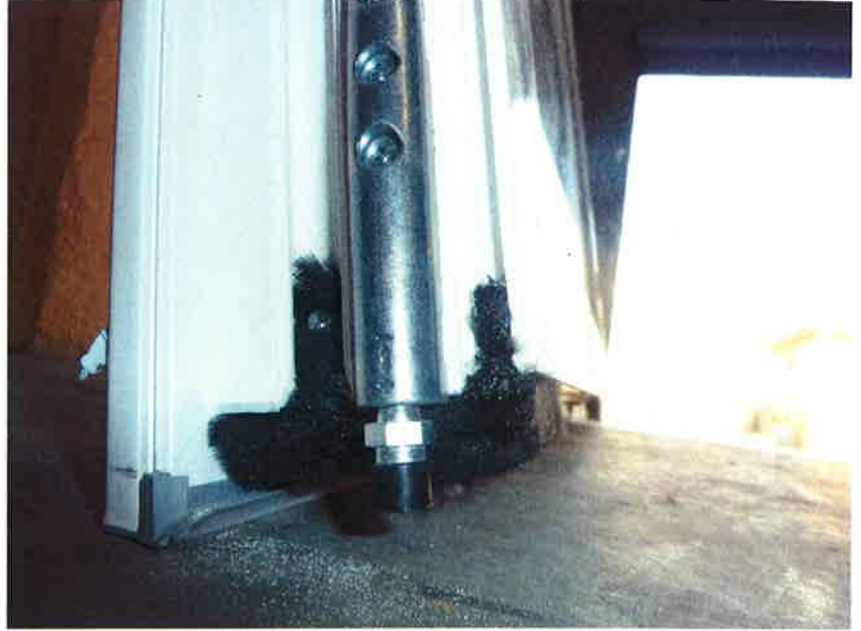
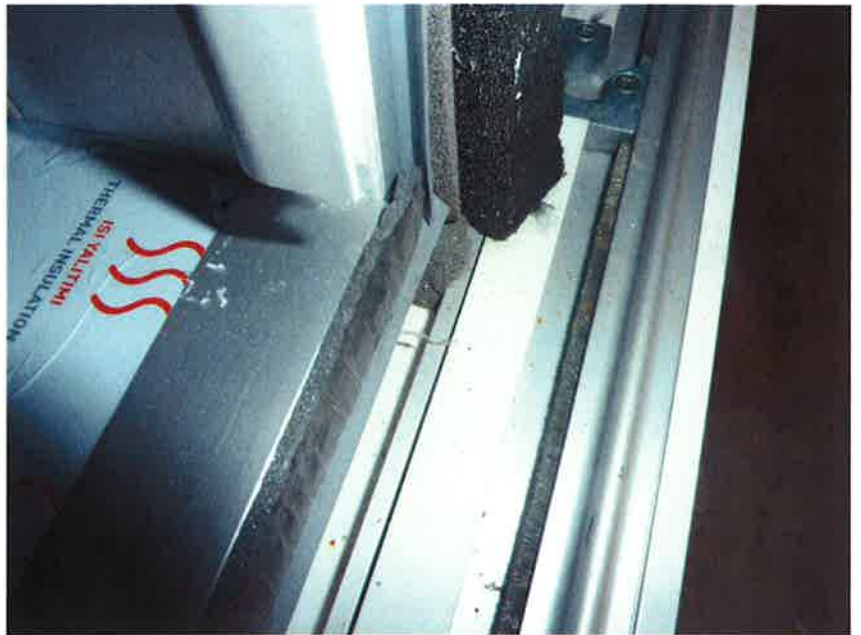


Image 8:

Test sample No.17/01-A001-P1,
sealing.



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Image 9:

Test sample No.17/01-A001-P1,
sash sealing.



Image 10:

Test sample No.17/01-A001-P1,
locking hook.



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Image 11:

Test sample No.17/01-A001-P1,
sash opening at security test.



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Image 12:

Test sample No.17/01-A001-P1,
safety pin deformation.

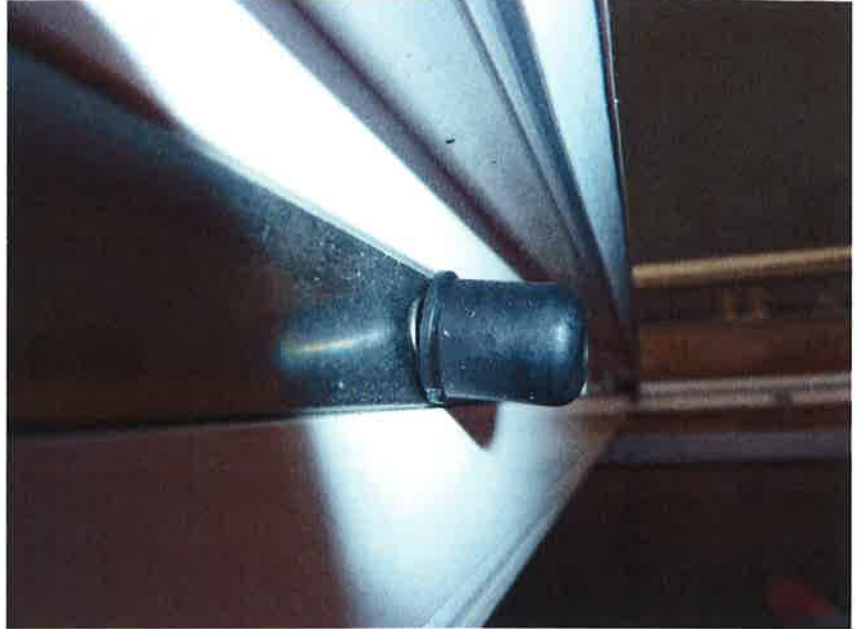


Image 13:

Test sample No.17/01-A001-P1,
silicone application.



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Image 14:

Test sample No.17/01-A001-P1,
silicone application.

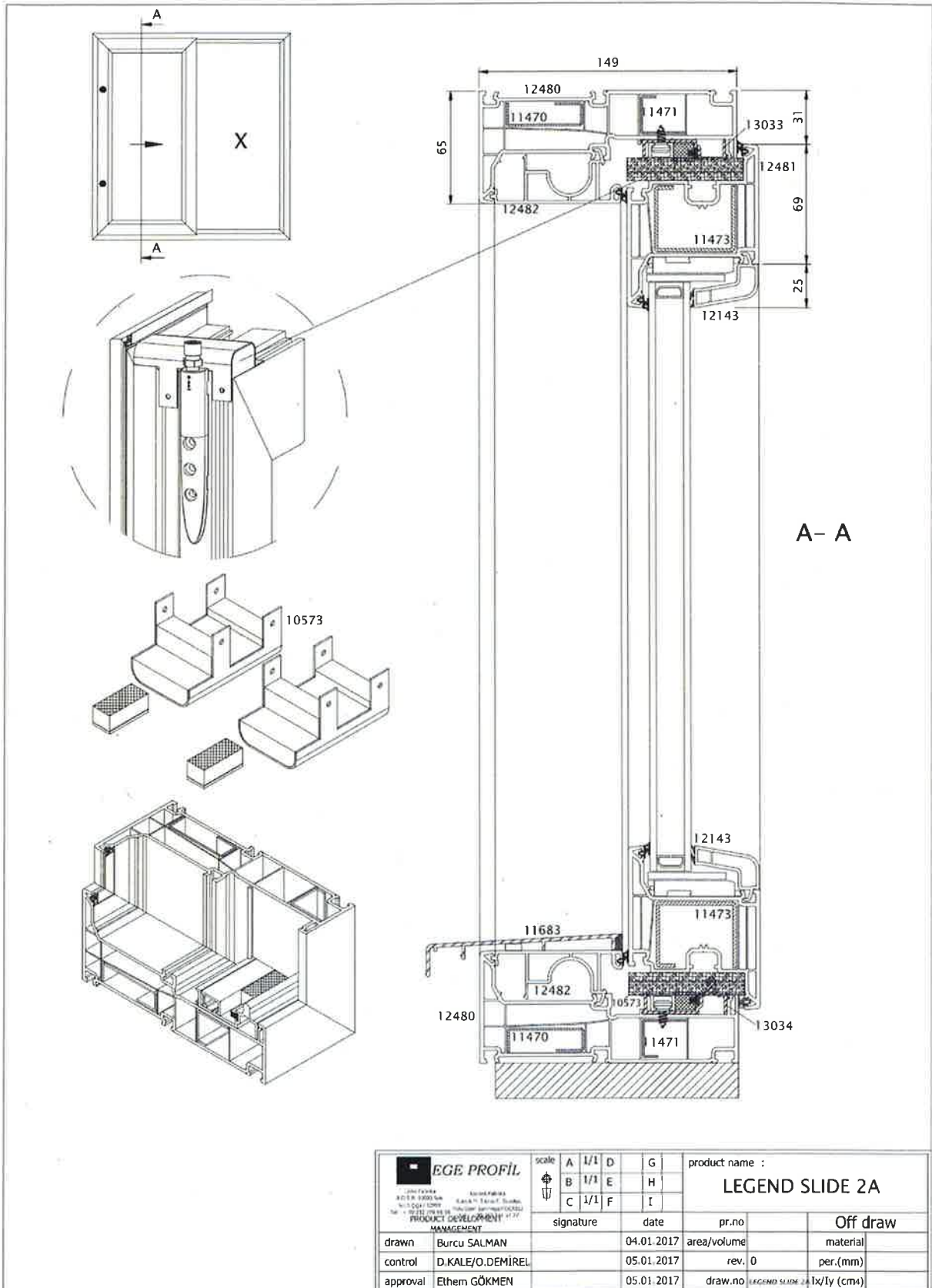


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EGE PROFİL İzmir Fabrika A.O.S.B. 10003 Sok. No:5 Çiğli /İZMİR Tel : + 90 232 396 59 98 Kocaeli Fabrika Kazım H. İnönü C. Gıdaçlı Yokuşun Sarımsak/KOCAELİ Tel : + 90 262 571 57 27	SECTIONS-LEGEND SLIDE Legend Slide Test Sample (2000 x 2100)	2A
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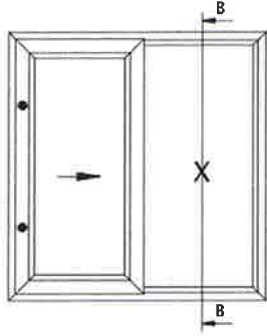
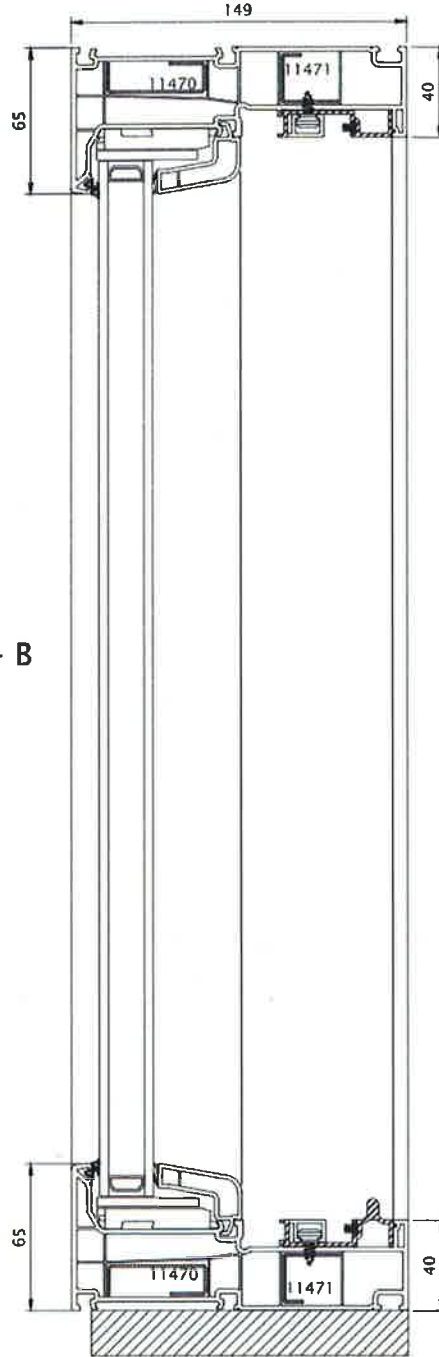
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Ege Profil Tic. ve San.A.Ş., Türkiye



SECTIONS-LEGEND SLIDE

Legend Slide Test Sample (2000 x 2100)

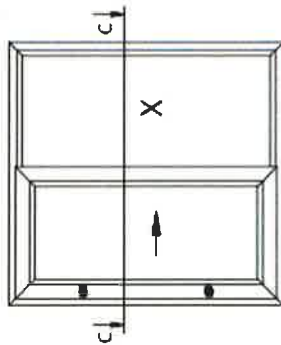
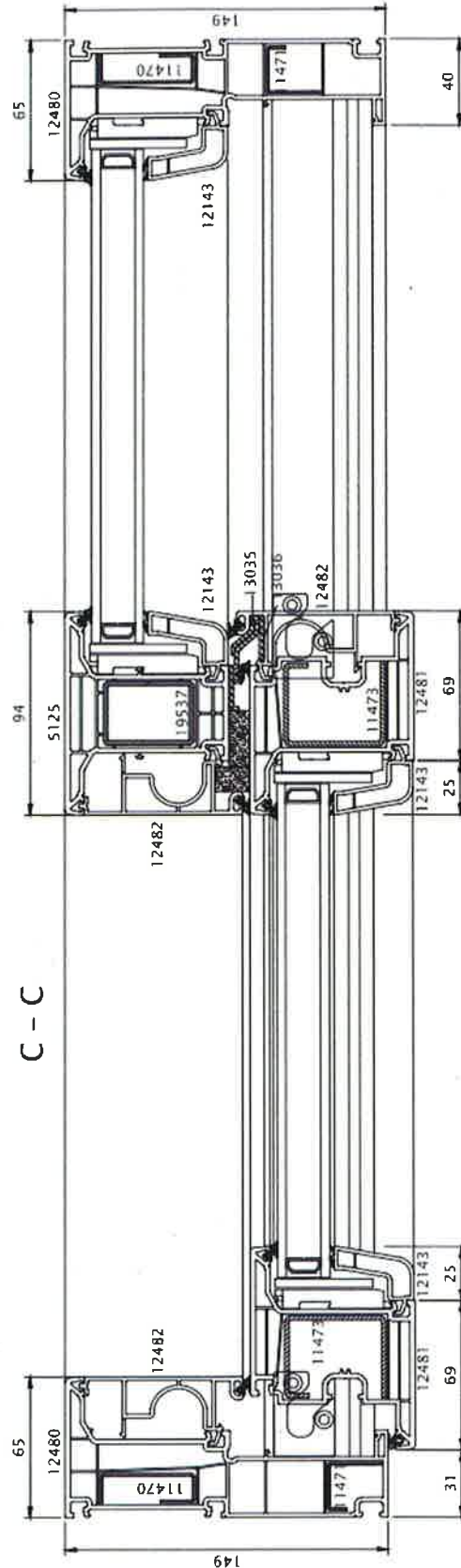
2B**B - B**

 EGE PROFİL İzmir Kurumu İstanbul Kurumu 41010 00000 Sok. 34090 00000 Sok. No: 10 Kat: 10 No: 10 Kat: 10 Tic. Sic. No: 270900 Tic. Sic. No: 270900 İletişim: 0312 222 2222 İletişim: 0312 222 2222		 scale		A	1/1	D	G	product name :	
				B	1/1	E	H	LEGEND SLIDE 2B	
				C	1/1	F	I		
PRODUCT DEVELOPMENT		signature		date		pr.no		Off draw	
drawn	Burcu SALMAN			04.01.2017		area/volume		material	
control	D.KALE/O.DEMİREL			05.01.2017		REV. 0		per.(mm)	
approval	Ethem GÖKMEN			05.01.2017		draw.no		LEGEND SLIDE 2B 1x/1y (cm)	

Ege Profil Tic. ve San.A.Ş., Türkiye

CEGE PROFIL

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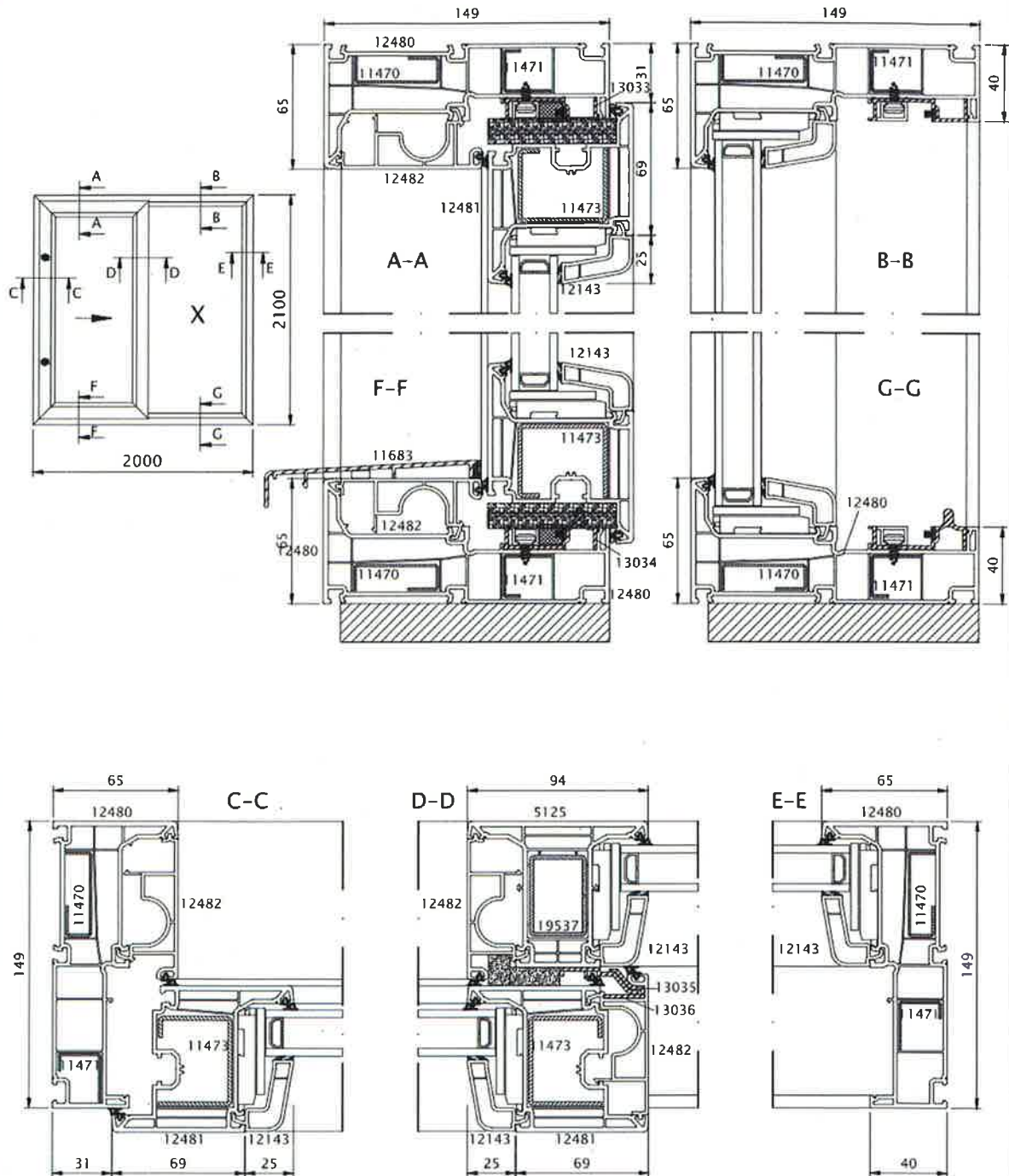
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Ege Profil Tic. ve San.A.Ş., Türkiye

**SECTIONS-LEGEND SLIDE**

Legend Slide Test Sample (2000 x 2100)

2D

EGE PROFİL		Scale				product name :	
Dış Tic. Pazarlama A.O.S.B. 10003 Sok. No:5 Çiftlik (2000) Yolu Üstü, Sarıyer, 34090 Tel: +90 232 789 10 10 Fax: +90 232 789 10 22		A	1/1	D	G	LEGEND SLIDE 2D	
		B	1/1	E	H		
		C	1/1	F	I		
PRODUCT DEVELOPMENT		signature		date		pr.no	Off draw
drawn	Burcu SALMAN			04.01.2017		area/volume	material
control	D.KALE/O.DEMİREL			05.01.2017		rev. 0	per.(mm)
approval	Ethem GÖKMEK			05.01.2017		draw.no	LEGEND SLIDE 2D 1x/1y (cm4)

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Ege Profil Tic. ve San.A.Ş., Türkiye

EGE PROFİL
İzmir - Türkiye
A.O.S.B. KURUMSAL
No:5 ÇİĞIR / ÜMRİT
Tel. : + 90 232 398 99 99
Fax : + 90 362 373 57 27

SECTIONS-LEGEND SLIDE
Legend Slide Test Sample (2000 x 2100)

2E

PVC PROFILES			
12480	12481	5125	12482
12425	12483	12147	12143

REINFORCEMENTS			
11470	11471	11473	19537

ALUMINIUM PROFILES			
13033	13035	11683	
13034	13036		

ACCESSORY PRODUCTS			
MECHANICAL JOINT 12192	C STRIKER	TAPE	10575 10574 12963 10573-LS INSULATION/STOPPING KIT

EGE PROFİL		scale	A	1/1	D	G	product name :
İzmir - Türkiye A.O.S.B. KURUMSAL No:5 ÇİĞIR / ÜMRİT Tel. : + 90 232 398 99 99 Fax : + 90 362 373 57 27		B <td data-kind="ghost"></td> <td>1/1<td>E<td>H</td><td data-kind="parent" data-rs="2">LEGEND SLIDE 2E</td></td></td>		1/1 <td>E<td>H</td><td data-kind="parent" data-rs="2">LEGEND SLIDE 2E</td></td>	E <td>H</td> <td data-kind="parent" data-rs="2">LEGEND SLIDE 2E</td>	H	LEGEND SLIDE 2E
Kocaeli Filialı Kültür M. İnönü C. Sıdrolu Tina Liren Sarımsak KOCALİ Tel. : + 90 362 373 57 27		C <td data-kind="ghost"></td> <td>1/1<td>F<td>I</td><td data-kind="ghost"></td></td></td>		1/1 <td>F<td>I</td><td data-kind="ghost"></td></td>	F <td>I</td> <td data-kind="ghost"></td>	I	
PRODUCT DEVELOPMENT MANAGEMENT		signature		date		pr.no	Off draw
drawn Burcu SALMAN				04.01.2017		area/volume	material
control D.KALE/O.DEMİREL				05.01.2017		rev. 0	per (mm)
approval Ethem GÖKMEN				05.01.2017		draw.no	bx/ly (cm4)