



TÜRK STANDARDLARI ENSTİTÜSÜ
DENEY ve KALİBRASYON
MERKEZİ BAŞKANLIĞI
YAPI MALZEMELERİ YANGIN VE AKUSTİK
LABORATUVAR MÜDÜRLÜĞÜ



TURKISH STANDARDS INSTITUTION
HEADSHIP OF TEST and CALIBRATION CENTER
CONSTRUCTION MATERIALS FIRE AND ACOUSTICS LABORATORY

AYDINLI MAH. ULUS SOK. NO:7/1 TUZLA/İSTANBUL

Tel: +902165600561 Faks: e-mail: yalitim@tse.org.tr

www.tse.org.tr

AB-0001-T

558895

02-26

MUAYENE VE DENEY RAPORU
TEST REPORT

Deneysel Talep Eden/Firma : YELKEN KALIP PENCERE-KAPI AKS.VE METAL SAN.TİC.A.Ş.
(Adı, Adresi, Şehir vb.) BATTALGAZİ MAH. AHMET HAŞİM CAD. NO:27 /1 ESENYURT
Requesting/Customer (Name, Address, City etc.)

Deneysel Talep Tarihi / No : 2.10.2025 / 2025-315362
Order Date/No.

Numunenin Tanımı : 2025-366570, Double leaves fire door, -, -, -, -, 1.00, adet
(Cins, Marka, Sınıf, Tip, Tür, Model vb.)
Sample Description (Type, Mark, Class, Model etc.)

Numune Kabul Tarihi : 21.10.2025
Sample Receipt Date

Deneysel Yapıldığı Tarih : 02.01.2026 / 17.02.2026
Date of Test

Uygulanan Standart Metot : TS EN 13501-2/Yapı mamülerinin ve yapı elemanlarının yangın sınıflandırması -
Applied Standard/Method Bölüm 2: Havalandırma hizmetleri hariç, yangına direnç ve/veya duman kontrol deneylerinden elde edilen verileri kullanarak sınıflandırma / Fire classification of construction products and building elements - Part 2: Classification using data from fire resistance and/or smoke control tests, excluding ventilation services

Raporun Sayfa Sayısı : 7
Number of pages of the report

Deneysel Sonucu : -
Test Result

Açıklamalar : TS EN 13501-2:2023 Fire classification of construction products and building
Remarks elements - Part 2: Classification using data from fire resistance and/or smoke control tests, excluding ventilation services

Yukarıda tanımlanan numune için laboratuvarımızda yapılan muayene ve deneylerden elde edilen sonuçlar müteakip sayfalarda verilmiştir.
The testing and/or measurement results are given on the following pages which are part of this report.

Deneysel laboratuvarları olarak faaliyet gösteren TSE Deneysel ve Kalibrasyon Merkezi Başkanlığı Deneysel Laboratuvarları TÜRKAK'tan AB-0001-T ile TS EN ISO/IEC 17025:2017 standardına göre akredite edilmiştir.

TSE Headship of Test and Calibration Center Testing Laboratories accredited by TÜRKAK under registration number AB-0001-T for TS EN ISO/IEC 17025:2017 as test laboratory.

TÜRKAK deneysel raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanıma anlaşması imzalanmıştır.

TURKAK is a signatory to the European co-operation for Accreditation (EA) Multilateral Agreement (MLA) and to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the recognition of test reports.

Deneysel ve/veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deneysel metodları bu raporun tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir.

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.



Tarih
Date
17.02.2026

Deneysel Sorumlusu
Person in charge of test
HALİL SAYIM

Kontrol Eden
Reviewer
AHMET BUMİN BAYRAM

Onaylayan
Approved by
SENCER GÜVEN

Bu rapor, hazırlayan laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve karekodsuz raporlar geçersizdir. Bu rapor, müşteri tarafından laboratuvara ulaştırılan numuneler üzerinde yapılan deneysel sonuçlarını içermekte olup, "Ürün Belgesi" yerine geçmez.
This test 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 report contains the test results performed on the samples delivered to the laboratory by the customer and does not replace the "Product Certificate".

Bu doküman elektronik ortamda imzalanmıştır. (This document has been signed with e-signature.)
Doğrulama adresi: <https://basvuru.tse.org.tr/uye/QRKodDogrulama?code=DB62E1>



MUAYENE - DENEY SONUÇLARI TEST RESULTS



CLASSIFICATION OF THE FIRE RESISTANCE IN ACCORDANCE WITH TS EN 13501-2:2023

SPONSOR

YELKEN KALIP PENCERE-KAPI AKS.VE METAL
SAN.TİC.A.Ş.
BATTALGAZİ MAH. AHMET HAŞİM CAD. NO:27 /1
ESENYURT

PREPARED BY

TSE Building Materials Fire and Acoustics Laboratory
Aydınlı Mah. Ulus Sok. No:7/1 Tuzla/İSTANBUL/TÜRKİYE

1. INTRODUCTION

This classification report defines the resistance to fire classification of single acting (opening away from the furnace) double leaves metal door set with metal frame test sample with " description was sponsored by "YELKEN KALIP PENCERE-KAPI AKS.VE METAL SAN.TİC.A.Ş.", in accordance with the procedures given in TS EN 13501-2:2023 using data from resistance to fire test.

2. DETAILS OF CLASSIFICATION REPORT

2.1. General

The classified product is defined as single acting (opening away from the furnace) double leaves metal door set with metal frame test sample with " description sponsored by "YELKEN KALIP PENCERE-KAPI AKS.VE METAL SAN.TİC.A.Ş.". The classified product was tested at 02 January 2026 at TSE Construction Materials Fire and Acoustics Laboratory according to TS EN 1634-1+A1:2018.

2.2. Description

Single acting (opening away from the furnace) double leaves metal door set with metal frame test sample " description is fully described in the test report in support of classification listed in 3.1.

3 TEST REPORTS AND TEST RESULTS IN SUPPORT OF THE CLASSIFICATION

3.1 Test Reports

Following test reports were taken into account in the determination of this classification.

Laboratory	Sponsor	Test Report Reference No	Test Method
TSE Construction Materials Fire and Acoustics Laboratory	YELKEN KALIP PENCERE- KAPI AKS.VE METAL SAN.TİC.A.Ş.	558828	TS EN 1634- 1+A1:2018
		02-26	



MUAYENE - DENEY SONUÇLARI TEST RESULTS

3.2 Test Results

Performances	Criteria	Time (completed minute)	Failure (minute and second)
INTEGRITY (E)	Sustained flaming	71	71 min 1 sec
	Cracks or openings in excess of $\Phi 6$ (150mm)	75	No failure
	Cracks or openings in excess of $\Phi 25$	75	No failure
	Ignition of a cotton pad	75	No failure
INSULATION (I₂)	Average temperature, increase of $\Delta 140^{\circ}\text{C}$	75	No failure
	Maximum temperature on leaf/leaves, increase of $\Delta 180^{\circ}\text{C}$	75	No failure
	Maximum temperature on the frame, increase of $\Delta 360^{\circ}\text{C}$	75	No failure
RADIATION (W)	-	No measurement.*	

Test Duration: The test was terminated at 75th minute at the request of the sponsor.

Test date: 02.01.2026

*An element which satisfies the thermal insulation criterion is also deemed to satisfy the Radiation (W) requirement for the same period.

4 CLASSIFICATION AND FIELD OF APPLICATION

4.1 Reference of Classification

This classification has been carried out in accordance with Clause 7 of TS EN 13501-2:2023.

4.2 Classification

Single acting (opening away from the furnace) double leaves metal door set with metal frame test sample " description is classified according to the following combinations of performance parameters and classes as appropriate.

R	E	I	W		t	t	-	M	S	-	C	IncSlow	sn	ef	r
---	---	---	---	--	---	---	---	---	---	---	---	---------	----	----	---

CLASSIFICATION OF FIRE RESISTANCE

E 60	CATEGORY "B"
EI₂ 60	CATEGORY "B"
EW 60	

Note: The sample was tested opening away from the furnace.



MUAYENE - DENEY SONUÇLARI TEST RESULTS

4.3 Field Of Direct Application

This classification is valid for the following end use applications.

The field of direct application of the results taken from the TS EN 1634-1+A1:2018, Clause 13, Annex B and Annex C.

4.3.1 General

The field of direct application defines the allowable changes to the test specimen following a successful fire resistance test. These variations can be applied automatically without the need for the sponsor to seek additional evaluation, calculation or approval.

NOTE: When extended product size requirements are envisaged, the dimensions of certain components within the test specimen can be less than those intended to be used at full size in order to maximize the extrapolation of the test results by modelling the interaction between components at the same scale.

4.3.2 Materials and construction

4.3.2.1 General

Unless otherwise stated in the following text, the materials and construction of the doorset or openable window shall be the same as that tested. The number of leaves and the mode of operation (e.g. sliding, single action or double action) shall not be changed.

4.3.2.2 Specific restrictions on materials and construction

4.3.2.2.1 Metal construction

The dimensions of metal wrap around frames may be increased to accommodate increased supporting construction thickness. The thickness of the metal may also be increased by up to 25 %.

The type of metal shall not be changed from that tested.

The number of stiffening elements for uninsulated doors and the number and type of fixings of such members within the panel fabrication may be increased proportionally with the increase in size but shall not be reduced.

4.3.2.3 Decorative finishes

4.3.2.3.1 Paint

Where the paint finish is not expected to contribute to the fire resistance of the door, alternative paints are acceptable and may be added to door leaves or frames for which unfinished test specimens were tested. Where the paint finish contributes to the fire resistance of the door (e.g. intumescent paints) then no change shall be permitted.

4.3.2.3.2 Decorative laminates

Decorative laminates and timber veneers up to 1,5 mm thickness may be added to the faces (but not the edges) of doors that satisfy the insulation criteria (normal or supplementary procedure).

Decorative laminates and timber veneers applied to door leaves that do not satisfy the insulation criteria (normal or supplementary procedure) and/or those in excess of 1,5 mm thickness shall be tested as part of the test specimen. For all doorsets tested with decorative laminate faces, the only variations possible shall be within similar types and thicknesses of material (e.g. for colour, pattern, supplier).

MUAYENE - DENEY SONUÇLARI TEST RESULTS

4.3.2.4. Fixings

The number of fixings per unit length used to attach doorsets to supporting constructions may be increased, but shall not be decreased and the distance between fixings may be reduced but shall not be increased.

4.3.2.5 Building hardware

The number of hinges and dog bolts may be increased but shall not be decreased.

Where a doorset has been tested with a door closing device fitted, but with the retention force released in accordance with 10.1.4, the doorset may be provided either with or without that closing device, i.e. where self closing characteristics are not required.

Note1: The number of movement restrictors such as locks and latches is not covered by direct application.

Note2: Interchange of building hardware is not covered by the field of direct application.

4.3.3 Permissible size variations

4.3.3.1 General

Doorsets of sizes different from those of tested specimens are permitted within certain limitations, but the variations are dependent on product type and the length of time that the performance criteria are fulfilled.

The increase and decrease of dimensions permitted by the field of direct application are applicable to the overall size and to each door leaf, each side panel and each over panel independently.

4.3.3.2 Test periods

The amount of variation of size permitted is dependent on whether the classification time was just reached (Category 'A') or whether an extended time (Category 'B') in accordance with the values shown in Table 1 were fulfilled before the test was concluded.

The test was successfully carried out 71 minutes for integrity (E) and insulation (I₂).

Classification time (min)	All performance criteria fulfilled for at least minutes
15	18
20	24
30	36
45	52
60	68

Table 1. Category B overrun requirements

MUAYENE - DENEY SONUÇLARI TEST RESULTS

4.3.3.3 Size variation related to product type

4.3.3.3.1 Hinged and pivoted doorsets and openable windows

4.3.3.3.1.1 Size Variation (Accordance with Annex B of standard TS EN 1634-1)

Category B

The test sample is classified E 60 (CATEGORY “B”) and EI_L 60 (CATEGORY “B”) since reach the time periods specified in TS EN 13501-2:2023 Clause 7.5.5.4 and TS EN 1634-1+A1:2018 Clause 13.3.2. The allowable size increase and decrease in the test sample for these classification periods and lower periods are as follows.

Note: Size variations do not apply to doors that meet the radiation criteria with integrity (EW) .

-Size reduction to 50 % width and 75 % height of the tested specimen is the limit of variation.

-Size increase is permitted only for Category B classifications which are required to satisfy integrity or integrity and insulation and then only up to:

- Up to 15 % in height
- Up to 15 % in width
- Up to 20 % in total area

Note:In case of size variation in length and width, attention should be paid area limitation.Dimensions are given from unexposed side.

Leaf size	Tested	Minimum	Maximum
Width (active leaf)	915 mm	458 mm	1052 mm
Height (active leaf)	2085 mm	1564 mm	2398 mm
Area (active leaf)	1,9078 m ²	-	2,2893 m ²
Width (passive leaf)	870 mm	435 mm	1001 mm
Height (passive leaf)	2085 mm	1043 mm	2398 mm
Area (passive leaf)	1,8140 m ²	-	2,1767 m ²

Table 2. Permitted size variations for Category B

4.3.3.3.1.2 Other changes

For smaller doorset sizes the relative positioning of movement restrictors (e.g. hinges and latches) shall remain the same as tested or any change to the distances between them will be limited to the same percentage reduction as the decrease of test specimen size.

For larger doorset sizes the following shall also apply:

-the height of the latch above floor level shall be equal to or greater than the tested height, and such increase in height shall be at least proportional to the increase in door height;

-the distance of the top hinge from the top of door leaf shall be equal to or less than that tested; The distance should less than 210 mm.

-the distance of the bottom hinge from bottom of door leaf shall be equal to or less than that tested; The distance should less than 235 mm.

-where three hinges or distortion preventers are used, the distance between the bottom of the door leaf and centre restraint shall be equal to or greater than that tested.

MUAYENE - DENEY SONUÇLARI TEST RESULTS

4.3.3.3.1.3 Gaps

The gap measurement points and the gap measurement values are given in Figure 7.1 and Table 1.1 in the test report.

Permitted gap size in application given in the table below.

Measurement section	No	Mean Value (mm)	Maximum Value (mm)	Maximum Permitted Gap Size (mm)
Right leaf (passive leaf) hinged edge to frame	b_{1,2,3}	4,80	5,50	7,15
Right leaf (passive leaf) to frame head	b_{4,5,6}	3,63	4,40	6,02
Left leaf (active leaf) to frame head	b_{7,8,9}	6,22	6,50	8,36
Left leaf (active leaf) hinged edge to frame	b_{10,11,12}	6,28	7,50	8,89
Between the two leaves	b_{13,14,15}	6,50	6,90	8,70
Left (active) leaf bottom edge to sill	b_{16,17,18}	2,72	5,25	5,98
Right (passive) leaf bottom edge to sill	b_{19,20,21}	9,20	13,20	13,20

Table 3. Permitted gap size in application (mm)

The minimum size of the primary gaps may be reduced.

The permitted gap size may be different for different parts of the door.

4.3.5 Supporting constructions

4.3.5.1 Rigid standard supporting constructions (low density)

The fire resistance of a doorset tested in a high or low density rigid standard supporting construction as specified in EN 1363-1 can be applied to a doorset mounted in the same manner in a wall provided the density and the thickness of the wall are equal to or greater than that in which the doorset was tested. Since a wall with thickness of 20 cm was used in the test, this classification is valid for wall applications of 20 cm and above. Since a wall with density of 450 kg/m³ was used in the test, this classification is valid for wall applications of 450 kg/m³ and above.

4.3.5.2 Specific rules for hinged or pivoted doorsets

-For insulated metal door leaves hung in metal frames, there is no applicability of results in rigid standard supporting construction to flexible constructions or vice versa; to cover rigid and flexible types, tests shall be undertaken in each type of standard supporting construction.

5 LIMITATIONS

This classification report does not represent type approval or certification of the product.

Signed

Approved

Halil SAYIM

Sencer GÜVEN

Testing Expert (Physicist)

Laboratory Manager

This document is electronically signed.