UKTC-SR-002

**Fire Resisting Metal Based Doors**

Scheme for the Certification of Fire Resisting Hinged Doorsets & Roller Shutter Doors made primarily from Metal

1. Introduction

This document outlines the general approval requirements for hinged fire doorsets & roller shutter doors, constructed from metal (normally steel), that are used in life safety and property protection applications.

## It has been prepared in accordance with the requirements of BS EN ISO/IEC 17065:2012 for product certification bodies. In addition to this scheme the other controlled documents are:

1. UKTC-CF-500 UKCA Third-Party Certification and UKCA Marking Applicant Guide.
2. Documentation from the Manufacturer.

**This document refers to the UKTC ”Third-Party Certification and UKCA Marking Applicant Guide”UKTC-CF-500 which should be read in conjunction with this scheme document.**

**Note:** *The Third-Party Certification and UKCA Marking Applicant Guide and other UKTC documents referenced within this scheme document will be at the Revision number stated at the time of application and may change in the future.*

Approvals can be given for hinged doorsets & roller shutter doors, covering fire resistance periods ranging between 30 minutes and 240 minutes and which satisfy one of the following criteria: integrity (E); integrity and insulation (EI) or integrity and radiation (EW) as outlined in more detail in the Scope, herein, as befits the legislation of the country into which the doors are to be sold/installed.

Approval can be given for ‘doorsets’ tested in accordance with:

* BS 476-22:1987
* BS EN 1634-1:2014+A1:2018

The hinged door leaves, and/or frame, may be insulated or uninsulated, with or without the incorporation of fire resisting glass\*(1).

Where the requirements of the relevant country are not known by the applicant it is recommended that UKTC be contacted for advice.

*\*(1) Where the doorframe may consist of an integral part of a glazed screen utilising metal components the certification can [may] be extended to include the screen.*

1. Scope

The scheme provides ongoing independent third-party certification and confirmation of performance of metal fire resisting hinged doorsets with or without substantial areas of fire resisting glass & roller shutter doors to ensure that the performance, installation, marking and classification requirements of the appropriate standard are met and maintained.

Fire doorsets & roller shutter doors covered by this scheme can be approved as fire resisting hinged doorsets & roller shutter doors for 30 min, 60 min, 90 min, 120 min or 240min, applications complying with the criteria of:

* + integrity only ‘E’\*(2)
	+ integrity and insulation ‘EI’\*(3)
	+ integrity and radiation ‘EW’
	+ against the appropriate BS, BS EN, BS ISO Standard (refer to SD02-AA).

The scheme applies to metal doors in metal frames & roller shutter doors.

*\*(2) When tested to BS476-22:1987 they will be evaluated in accordance with Clause 8 (uninsulated doorsets)*

*\*(3) When tested to BS476-22:1987 they will be evaluated in accordance with Clause 6 (fully insulated doorsets) or Clause 7 (partially insulated doorsets).*

1. Definitions

For the purpose of this Scheme Document the following definitions apply:

3.1 Metal Door Leaf

A door leaf constructed from metal components, (normally, but not exclusively, steel, in whole or in part), with or without internal ‘insulation’. The door leaf may be one of the following build types:

1. Sub-frame with metal skins on both faces, with or without stiffeners, screwed, riveted, or welded in place.
2. Sub-frame with metal skin on one face, with or without stiffeners, screwed, riveted, or welded in place.
3. Steel skins in a ‘pan or tray and lid’ configuration with mechanically fastened joints.
4. Steel skin as in c) but with internal stiffeners.
5. Steel skins fastened together by a ‘Dutch Fold’ at the leaf perimeter and with internal stiffeners.
6. Options c) and e), but with a bonded-in honeycomb core instead of internal stiffeners.
7. Options a), c) and d) may also incorporate internal insulation to provide a fire rated insulation performance.
8. Glazed (partially or fully) doorset incorporating aluminium profiles, which may be internally insulated.
9. Aluminium framed fully glazed doorsets incorporating internally insulated aluminium profiles.

The door leaves for options a) to g) may be supplied with or without a glazed aperture. Where glazing is incorporated, this shall be complete with an approved glass and glazing system.

3.2 Metal Door Frame

A frame manufactured from metal (normally, but not exclusively, steel, in whole or in part), comprising vertical jambs and a head section in which the metal door leaf is hung by steel hinges or pivots. The metal frame is normally formed into a profile which incorporates a rebate into which the leaf closes and is typically open backed with fixing straps or cleats through which the frame is fastened into the supporting construction.

The frame may also have:

* a double-rebate profile.
* a dished concave profile if for a double-swing leaf.
* an insulation filling of the appropriate material if for an insulated doorset.
* a built-in threshold plate across the bottom.

3.3 Doorset

A doorset is an assembly consisting of a hinged door leaf, supplied in an associated frame (possibly as part of a glazed screen) together with all hardware, seals, and other components necessary for it to achieve its required performance. The doorset may be a single-leaf type, or a double-leaf where two, door leaves are hung in a double-width door frame. The two leaves may be of unequal width subject to the availability of suitable test or assessment supporting data.

3.4 Metal doorset

A doorset, as described in 3.3, where the leaf (3.1) and the frame (3.2) are made from metal (normally steel, but not exclusively).

3.5 Insulated doors/doorsets

There are two main categories of insulated door leaves, i.e. leaves that have an insulated core:

* Leaves which have acoustic insulation core (i.e. honeycomb core).
* Leaves which have a higher density core which provides a fire rating with regard to insulation. The door frame for this type of doorset should also be insulation filled.

It should be noted that the acoustically insulated leaves provide virtually no insulation with regard to fire rating and can cause an integrity failure due to flaming at any seam or piercing. The ‘fire’ insulated doors may also cause an integrity problem due to the likelihood of increased distortion if fire exposed. It is therefore important that these characteristics are fully evaluated to satisfy the certification process.

3.6 Roller Shutter

A roller shutter is a type of door consisting of many horizontal laths hinged together, supplied either with or without a motor.

3.7 Performance Codes

The following Codes are used in this Scheme Document:

a) EN Doorsets which satisfy the integrity criterion only:

E 30\*(4)

E 60\*(4)

E 90\*(4)

E 120\*(4)

E 240\*(4)

 b) Door leaves or ‘sets’ which satisfy the criteria of integrity and insulation.

 EI 30

 EI 60

 EI 90

 EI 120

 c) Doorsets which satisfy the criteria of integrity, and which do not radiate more than

 15kW/m2 for the number of stated minutes\*(5) defined by the code or fire strategy report.

 EW 30

 EW 60

 EW 90\*(5),

 EW 120\*(5)

 EW 240\*(5)

\*(4) These door assemblies are also known as FD30, FD60, FD90 and FD120 in UK legislation.

\*(5) The radiant heat flux of 15kW/m2 has been selected, because, whilst not being completely safe (i.e. emitting radiation levels that can be withstood indefinitely) these radiation levels can be withstood by persons who traverse the door in no more than two (2) seconds at a distance of one (1) metre away. In almost all cases evacuation will have taken place within thirty (30) minutes, hence there is no requirement for the radiation criteria to be satisfied for a longer duration.

3.8 Configuration Codes

Doorsets are available in a number of common configurations which due to the degree of difficulty that they represent in respect of satisfying the test will limit the Scope of Approval. These various configurations are identified by the following codes:

Latched, Single Acting, Single leaf Doorset LSASD

Latched, Single Acting, Single leaf Doorset with overpanel LSASDOP

Unlatched, Single Acting, Single leaf Doorset ULSASD

Unlatched, Single Acting, Single leaf Doorset with overpanel ULSASDOP

Double Acting Single leaf Doorset DASD

Double Acting Single leaf Doorset with overpanel DASDOP

Latched, Single Acting, Double leaf Doorset LSADD

Latched, Single Acting, Double leaf Doorset with overpanel LSADDOP

Unlatched, Single Acting, Double leaf Doorset ULSADD

Unlatched, Single Acting, Double leaf Doorset with overpanel ULSADDOP

Double Acting, Double leaf Doorset DADD

Double Acting, Double leaf Doorset with overpanel DADDOP

1. Evidence of Performance

Doorsets and roller shutter doors submitted for approval shall be supported by evidence of performance in the form of:

* an Engineering Assessment of the fire resistance issued by an authority recognised as appropriate by UKTC.
* directly relevant test evidence generated by a test carried out by a UKAS (or similarly accredited laboratory).

The scope of approval for the product shall be based upon either;

* the extended Field of Application, which will be derived from the most recent test evidence that supports the application being approved, or
* by the scope of the Engineering Assessment where used.

All testing shall be carried out in a testing facility holding accreditation granted by the appropriate national accreditation body (typically UKAS), or as recognised by UKAS, or by meeting UKTC’s own criteria for test facilities).

To demonstrate the ongoing compliance of the door assembly with the performance type test construction, each certificated product will be audited after either two years or after the manufacture of 10,000 units whichever is the sooner, and this will require testing if in doubt.

The audit test of a door assembly shall take place with the leaf installed with building hardware approved within the scheme and in a frame of the design and construction of the type approved within the scheme.

1. Applications to join the Scheme

To apply for product certification, please complete and return the application form *(refer to Application Form UKTC-CF-100)* together with two complete sets of specification documentation, as detailed:

* Material Specifications including specifications and dimensions of the steel components, dry density, and moisture content of any insulation materials at the time of assembly (where applicable), manufacturing tolerances, adhesives, finishes.
* Drawings of the leaf or roller shutter construction, including any variations needed to extend the Field of Application.
* Description of any mechanical fixings or welding schedule used in the manufacture of the leaf or roller shutter, including material and dimensions.
* Specification of all intumescent sealing materials incorporated at the leaf perimeter, or required as part of the approval specification, including generic type, trade name and dimensions, including variations needed as part of the extended Field of Application.
* For door leaves glazed by the factory; the steel sections used for glazing beads, the edge cover, glazing seal (by trade name or generic description), fixings and fixing centres and approved/offered glass types.
* Installation instructions.
* Details of the Factory Production Control (FPC) procedures, where they exist.

Factory Production Control will ensure compliance of the manufactured product with those requirements that are deemed critical, by UKTC, to the fire resistance performance of the product.

1. Factory Production Control - FPC or Management Systems Certification to BS EN

 ISO 9001:2015

In addition to the initial “Factory Production Control Requirements, checks will be made on the control of the UKTC Certification supplied labels. The fitting instructions sent out with each door leaf & roller shutter will be checked against the requirements derived from the evidence of performance against the relevant test and this scheme document.

A quality management system (QMS) certificated to ISO9001:2015 although recommended is not a mandatory requirement of this scheme.

If an improvement action is raised during the audit an *“Improvement Action Summary Report UKTC-CF-700”* will be completed by the auditor, this will identify the level of the finding (M=Mandatory or R=Recommendation), whether or not evidence of compliance is required and the agreed time frames in which to respond by completing the *“Improvement Action Completion Form UKTC-CF-800”.*

UKTC will only assign an auditor who has documented competence in the auditing and certification of metal based fire doors and doorsets. Auditor competence is documented in our company corporate CV's and are available upon request.

1. Certification

A certificate is awarded following satisfactory completion of the above assessment programme.

As stated on each certificate (see Appendix A) certification is only granted when products “have satisfied the requirements of the UKTC-SR-002 Metal Based Doorset scheme. This includes the testing of products to EN 1634-1:2014+A1:2018 or BS476: Part 22:1987, the inspection of their Factory Production Control, continuing surveillance audits and testing of samples of products taken from production.”

Certificates are valid for five years subject to:

* satisfactory results from any interim product audit tests undertaken in accordance with either BS EN 1634-1:2014+A1:2018, BS 476-22:1987 as appropriate.
* satisfactory surveillance visits to review compliance with the factory production control (FPC) or BS EN ISO 9001 requirements.
* satisfactory results from the required fire test.

For full details of the certification process please read *UKTC-CF-500 UKCA Third-Party Certification and UKCA Marking Applicant Guide* along with *UKTC-CF-400 Customer Agreement* which are provided with the application form.

1. Competence of Applicants Personnel

Personnel performing work affecting product conformity shall be competent on the basis of appropriate education, training skills and experience for which records will be maintained. (i.e. records of degrees, professional qualifications and training, training matrix, etc.). This applies, in particular, to personnel that need to initiate actions preventing product non-conformities from occurring, actions in case of non-conformities and to identify and register product conformity problems.

1. Identification

All certificated doorsets and roller shutter doors manufactured under the scheme shall be identified using an UKTC supplied labelling system, which is to be applied to the hanging edge

of the door leaf or top edge of the door leaf or leaves in the factory prior to despatch. This label shall not be removed or defaced by the door manufacturer or his agents.

*Note: Fitting instructions should incorporate guidance with respect to not overpainting the label.*

The labels identify the fire rating of the door along with the applicable certificate number, the certificated companies’ logo along with the UKTC logo.

Each label is uniquely numbered to provide traceability of the doorset produced which is verified as part of the annual FPC audit.

The use of smart tag technology fitted to the fire door is permitted provided it is supported by appropriate test evidence.

1. UKTC Vault

All the test reports and FOA’s or EXAP’s supplied in support of the products certificated scope will be stored in the UKTC vault and will be publicly available either by scanning the QR code on the doors ensure scheme label or by visiting the UKTC website.

1. Installation

UKTC strongly recommend that the certificated fire doorsets are installed by companies that operate as a member of a third-party certification scheme for fire door installation, as such schemes are designed to ensure that the installation process maintains product conformity.

Appendix A



