CERTIFICATE OF APPROVAL
No CF 5597

This is to certify that, in accordance with
TS00 General Requirements for Certification of Fire Protection Products
The undermentioned products of

SEALMASTER
(A DIVISION OF DIXON INTERNATIONAL GROUP LTD)

Brewery Road, Pampisford, Cambridge, CB22 3HG
TEL: 01223 832851

Have been assessed against the requirements of the Technical Schedule(s) denoted below and are approved for use subject to the conditions appended hereto:

CERTIFIED PRODUCT	TECHNICAL SCHEDULE
Sealmaster Delta, Double Fin, Duxbak and 2712 Dropseal Smoke and Acoustic Seals	**TS21 The Contribution of Edge Seals to the Control of Smoke Leakage via Door Assemblies**

Signed and sealed for and on behalf of Warringtonfire Testing and Certification Limited

Paul Duggan
Certification Manager

Issued:	1st December 2017
Reissued:	17th March 2023
Valid to:	16th March 2028

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SEALMASTER

(A DIVISION OF DIXON INTERNATIONAL GROUP LTD)

DELTA, DOUBLE FIN, DUXBAK & 2712 DROPSEAL SMOKE & ACOUSTIC SEALS

1. This certification is provided to the client for their own purposes, and we cannot opine on whether it will be accepted by Building Control authorities or any other third parties for any purpose.

2. This approval relates to the use of the following Sealmaster smoke and acoustic seals.

Product reference
Delta Seal
Double Fin Seal
Duxbak Seal
2712 Dropseal

3. The Sealmaster Delta smoke seals are of the compression/deflection (C/D) type. They are used for sealing door assemblies against leakage of ambient temperature smoke, as defined in BS 476: Part 31.1: 1983. They do not contain intumescent material.

4. The Sealmaster Double Fin and Duxbak smoke seals are of the wiping (WS) type. They are used for sealing door assemblies against leakage of ambient temperature smoke, as defined in BS 476: Part 31.1: 1983. They do not contain intumescent material.

5. The Sealmaster 2712 Dropseals are aluminium cased automatic threshold seals. The Sealmaster 2712 Dropseals are used for sealing the threshold of door assemblies against leakage of ambient temperature smoke, as defined in BS 476: Part 31.1: 1983. They do not contain intumescent material.

6. Within BS 9999, a fire door required to resist the passage of smoke at ambient temperature conditions should, when tested in accordance with BS 476-31.1 with the threshold taped and subjected to a pressure of 25 Pa, have a leakage not exceeding 3 m^3/m/h. The threshold gap should be sealed by a seal either with a leakage rate not exceeding 3m^3/m/h at 25 Pa when tested to BS 476-31.1 or just contacting the floor. Where this is impracticable the threshold gap should not exceed 3 mm at any point.

7. The door seals are approved on the basis of:

   i) Initial type testing
   ii) A design appraisal against TS21
   iii) Certification of quality management system to ISO 9001
   iv) Inspection and surveillance of factory production control

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8. This approval certifies that the above seals are suitable for use with single-acting, hinged, door assemblies required to restrict smoke leakage at ambient temperatures as defined in Appendix B of Approved Document B, 'Fire Safety' to the Building Regulations 2010. It is applicable to latched and unlatched, single leaf and double leaf assemblies consisting of timber faced and edged leaves with timber, cellulosic or mineral cores in timber frames with intumescent edge seals (Code ITT). It is only applicable to assemblies that have been approved, or have been shown by test, to achieve the required period of fire resistance.

9. The following table shows acceptable doorset types and fire resistance periods for the Duxbak, Double Fin and Delta seals:

Door Assembly Type							
Class	ITT			ITM			IMM / MM
	C	H	I-O	C	H	I-O	M
FD20	✓	✓	✓	×	×	×	×
FD30	✓	✓	✓	×	×	×	×
FD60	✓	✓	✓	×	×	×	×

Table 1: Universal Matrix for Field of Application for the Duxbak, Double Fin & Delta Seals

10. The following table shows acceptable doorset types and fire resistance periods for the 2712 dropseal:

Door Assembly Type							
Class	ITT			ITM			IMM / MM
	C	H	I-O	C	H	I-O	M
FD20	✓	✓	✓	×	×	×	×
FD30	✓	✓	✓	×	×	×	×
FD60	✓	✓	✓	×	×	×	×
FD90	✓	✓	✓	×	×	×	×

Table 1: Universal Matrix for Field of Application for the 2712 Dropseal

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11. Doors are classified as the following types:

Type MM - 20 minute to 240 minute doorsets that consist of metallic leaves in metallic frames that do not contain intumescent materials in the frame to leaf gap.

Type IMM - 20 minute to 240 minute doorsets that consist of metallic leaves in metallic frames that contain intumescent materials in the frame to leaf gap.

Type ITT - 20 minute to 120 minute doorsets containing intumescent seals and consisting of non-metallic faced and edged leaves hung in timber frames

Type ITM - 20 minute to 120 minute doorsets containing intumescent seals and consisting of non-metallic faced and edged leaves hung in metal frames.

12. It is sometimes necessary to sub-divide fire doors into the following categories:

Type C - Door leaves where all parts of the construction are of timber or other cellulosic material, e.g., flaxboard, chipboard, fibreboard etc, or leaves where inorganic or mineral based materials are surrounded by softwood or hardwood framing. The mineral based material may be in the form of a solid slab or as sub-facings either side of a void, with or without intermediate rails. The timber framing must be unprotected for not less than 40mm which includes any lipping. The framing may be reinforced by additional timber or similar material at the head or at lock blocks to product a larger frame to support ironmongery.

Type I-O - Door leaves constructed primarily of inorganic, or mineral based materials where the surrounding frame of timber is less than 40mm wide, including any lippings.

Type H - Door leaves where a type ‘C’ door leaf, normally all of cellulosic construction is faced on both sides with an inorganic board or a rigid intumescent sheet material not less than 2mm thick, either as a facing or a sub-facing. This material will extend from leaf edge to leaf edge, excluding any lippings.

Type M - Door leaves where the facings or sub-facings are of a steel construction and where the edges are metal (excluding any seals fitted), including primarily glazed leaves where the structural leaf framing consist of metal sections.

13. The acoustic performance of the above seals is not considered as part of this appraisal.

14. This approval relates to doorsets with gaps of between 3 mm and 4 mm.

15. The Delta / Double Fin seals shall be uninterrupted and fixed around the head and vertical edges of the frame.

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DELTA, DOUBLE FIN, DUXBAK & 2712 DROPSEAL SMOKE & ACOUSTIC SEALS

16. The overall height and width of single-acting, double-leaf assemblies will dictate the maximum permitted length of interruption permitted to the meeting edge. Some typical examples are provided below:

Overall Doorset leakage (Excluding 2712 Dropseal)

Example 1: Overall doorset width, 1600mm
Doorset height, 2000mm
Max. permitted interruption of Duxbak seal at meeting stile, **344mm**

Example 2: Overall doorset width, 2000mm
Doorset height, 2500mm
Max. permitted interruption of Duxbak seal at meeting stile, **430mm**

Example 3: Overall doorset width, 2400mm
Doorset height, 3000mm
Max. permitted interruption of Duxbak seal at meeting stile, **515mm**

Overall Doorset leakage (Including 2712 Dropseal)

Example 1: Overall doorset width, 1600mm
Doorset height, 2000mm
Max. permitted interruption of Duxbak seal at meeting stile, **375mm**

Example 2: Overall doorset width, 2000mm
Doorset height, 2500mm
Max. permitted interruption of Duxbak seal at meeting stile, **469mm**

Example 3: Overall doorset width, 2400mm
Doorset height, 3000mm
Max. permitted interruption of Duxbak seal at meeting stile, **563mm**

The information given in the examples above should not be extrapolated or interpolated.

Further advice for alternative configurations to the examples shown above is available from Sealmaster, who will be able to provide details of acceptable seal interruption levels for doorsets of alternative dimensions.

17. The leaf sizes of single and double-leaf configurations, with no seal interruptions, is unrestricted.

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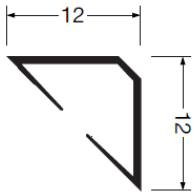
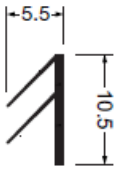
18. The seals shall be installed in accordance with the manufacturer's instructions.

19. The approval relates to on going production. Product and/or its immediate packaging is identified with the manufacturers' name, the product name or number, the CERTIFIRE name or name and mark, together with the CERTIFIRE certificate number and application where appropriate.

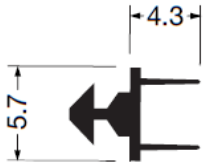


Delta



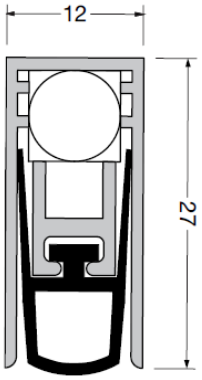
Double Fin

Figure 1. Frame Jambs and Head Seals



Duxbak

Figure 2. Meeting Edge Seal



2712 Dropseal

Figure 3. Threshold Seal

Further Information

Further information regarding the details contained in this certificate may be obtained from Sealmaster (Tel: 01223 832851)

Further information regarding CERTIFIRE certification and other approved products can be obtained from CERTIFIRE (Tel: 01925 646 777)

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