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RAVEN®
Door & Window
Sealing Systems

Raven Sealing Systems for Smoke Doors

Deemed-to-Satisfy
Smoke Doors

Performance Solutions
Smoke Doors

Fire Rated Labelled
Smoke Doors

raven.com.au

ISO 9001 SYSTEM CERTIFICATION SGS
Cert. No. AU96/678

JAS-ANZ

75
EST. 1950

RAVEN®

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Accredited

IDWL INTERNATIONAL DOOR & WINDOW LABORATORIES

NATA Accreditation No. 16929

ilac-MRA

International Door and Window laboratories Pty Ltd is NATA accredited for weather testing and smoke testing of doors and windows, and slip and luminance testing.

Associated Memberships / Certified with

ISO 9001 SGS Cert. No. AU96/678

Global GreenTag CERTIFIED

certifire CF 5710

Sedex Member

NATSPEC ProductPartner

FPA AUSTRALIA GOLD MEMBER Fire Protection Association Australia

ADHA Architectural Door Hardware Association

A family owned Australian business

General

Deemed-to-Satisfy Smoke Doors

Performance Solutions Smoke Doors

Fire Rated Labelled Smoke Doors

Celebrating 75 Years

Established in 1950, Raven Products is an Australian family owned and operated company that pioneered the door and window seal industry in Australasia. Raven has grown to become one of the most trusted brands in the building hardware industry providing innovative, quality tested and certified door and window sealing systems for architects, designers, engineers and builders.

The Raven brand is synonymous with quality, value and service which is why Raven is the brand that is consistently relied on and recommended here in Australia and overseas.

Raven offer a tested and certified range of door and window sealing systems for the containment of energy and the exclusion of noise, fire, smoke, vermin, insects and bushfire embers.

As a world leader in its field with products distributed across the globe, Raven's founding principals remain true - to provide the best products at the best price supported by the best service.

About Raven

Service and Advice You Can Trust

When architects, engineers and builders are faced with door and window sealing challenges in design, compliance or function, they turn to Raven.

With a long list of patents and design registrations, Raven has developed much of the technology and led many of the advances in weather, acoustic, fire and smoke sealing systems. This is why you can rely on Raven for the best advice – after all, this is how many of our innovative products were born.

We have a team of specialists on-hand to provide expert advice to assist with developing the most suitable and cost-effective solutions to even the most challenging problems. With over 70 years in manufacturing and supporting the building industry, Raven remains at the forefront; Raven understands the complexities, challenges and creative requirements.

For informative and professional support, please telephone 1800 888 123 or email our technical assistance team at: tech.advice@raven.com.au.

Solutions on Your Doorstep

With modern despatch centres in Australia and Asia, we can deliver tailored sealing systems around the corner or across the globe. Raven's advanced ISO 9001 quality management production systems can build and deliver colour matched products weeks ahead of other manufacturers.

Our network of distributors and transport systems can deliver anywhere in the world from desert mining sites in outback Australia, mid ocean oil and gas rigs, Antarctic research stations to the bustling cities of London, Dubai or Shanghai.

So when you call on Raven to deliver the ideal sealing system – you can be sure that's exactly what we will do.

Raven Architectural & Acoustic Catalogues

Visit raven.com.au to download the latest Raven Architectural Product Catalogue and the Raven Acoustic Catalogue.

Our Name is Your Guarantee

We will never put our name to a product until we are fully satisfied that it is not just easy to fit and highly durable, but it can withstand the appropriate extremes and complies with the latest building code regulations and standards.

Our name and 70+ year reputation is your guarantee of reliability and quality.

Quality Control That Sets New Standards

Our commitment to quality extends from research, development and testing through to manufacture, delivery, ease of application, durability and after sales service regardless of the project size or complexity.

With a professional team of engineers, designers and international certified testing facilities; Raven is the brand that architects, designers, engineers and builders can rely on.

Every Raven seal is rigorously assessed and tested to meet the most demanding Australian and international standards, including life cycle performance from the prototype phase and construction through to batch testing of the final manufactured product. Raven maintains control over every aspect of its range carefully selecting materials and suppliers to ensure a superior end product. We also take our environmental responsibility just as seriously, operating to environmental ISO 14001 standards.

Raven's focus on innovation has provided sealing solutions for the building industry for decades. Our commitment to our products has meant the development of:

- NATA accredited laboratory testing facilities to Australian and international standards
- ISO 9001 Quality Management System accreditation
- Operates to ISO 45001 OHS Management
- Operates to ISO 14001 EMS
- Global GreenTag CertTM verified and certified
- Australian design awards
- A library of patents and design registrations.

SYSTEM CERTIFICATION ISO 9001 SGS
Cert. No. AU96/678

JAS-ANZ

Global GreenTag CERTIFIED

International Research and Development

Our enduring commitment to innovation and quality keeps Raven at the industry forefront, by providing effective performance driven sealing systems that meet or exceed our clients' expectations.

Raven's international research, product development and testing facilities means we are constantly developing new and innovative ways to respond to the rapid advances in the building industry. Our specialist research and development engineers work tirelessly to meet the ongoing needs of the building industry often pre-empting new challenges and providing innovative products to suit. All Raven products are designed to comply with international building regulations and requirements. Continuous monitoring and accreditation to international quality standard ISO 9001 underscores the company's determination to deliver products that are proven to be the best.

Actively identifying advances in the industry, Raven is at the forefront, developing the technology and the products to suit. We see our role not only as designers and manufacturers of quality products, but also as partners to architects, engineers, and builders. Our aim is to enhance building design and safety, reduce construction costs, and importantly, improve efficiency

Internationally Accredited Testing

Compliance and Certification

Designed to meet or exceed Australian, New Zealand and European standards and building codes, Raven offer a tested and certified range of door and window sealing systems for the containment of energy the exclusion of noise, weather, insects, vermin, fire, smoke and bushfire embers.

Don't put your project at risk with products that only claim Deemed-to-Satisfy. This means they may not have undergone the same rigorous laboratory testing and certification processes as Raven.

With in-house NATA accredited testing facilities, Raven's design and engineering team can quickly develop new and innovative ways to respond to the advances in the building industry here and around the world. Our array of patents and numerous design awards stand as testament to this commitment.

You can rest easy in the knowledge that Raven will provide you with the most tested and compliant systems available on every project.

Internationally Accredited Testing

Raven door and window seals are tested and certified by internationally recognised accredited laboratories, including but not limited to, IDWL, CSIRO, BRANZ, Warringtonfire, and UL. Seals undergo weather, acoustic, fire and smoke testing to verify their conformance to national and international codes and regulations.

Weather testing is performed in a NATA accredited laboratory that sees door and window assemblies pelted with rain and wind pressures up to 300km per hour - that's cyclonic conditions! Weather tests on door and window assemblies are conducted in accordance with AS 2047 and AS/NZS 4420 series Standards.

A state-of-the-art acoustic laboratory tests Raven sealed door sets to EN ISO 10140 series Standards with ratings to ISO 717-1.

Fire tests are performed by internationally recognised fire laboratories to Australian and international standards AS 1530.4, EN 1634-1, BS 476 Pt. 20 & 22 and UL 10C.

NATA accredited laboratories test Raven seals on solid core smoke doors and fire rated door assemblies to ambient and medium temperature smoke at 200 degrees Celsius in accordance with AS 1530.7 and EN 1634-3 series Standards.

Using This Catalogue

The Problem

For doors and windows to function, they must have gaps between their edges and the frame to allow for easy operation and to accommodate normal building movement.

However, these gaps can allow the intrusion of draughts, dust, insects, rain, noise, vermin, fire, smoke or bushfire embers. Unsealed doors and windows allows the leakage of heating and cooling which significantly increases energy costs and reduces the energy efficiency of other design elements of a building.

The Solution

The solution is to fit a Raven sealing system which seals the gaps around doors and windows against a combination of intrusions and leakages. Properly selected and installed, a complete and continuous seal can be achieved for all door and window types without impeding their normal use.

Optimum "sealing systems" can be achieved by combining the appropriate Raven door bottom seals, threshold plates, perimeter seals and meeting stile seals.

Product Selection

When choosing Raven sealing systems, you should consider:

- What type of protection is required?
- What type of door or window do you want to seal?
- Does it provide protection without impeding normal door or window function?
- Is it compatible with other door or window hardware?
- What type of duty is required?
- Is it for an external, internal, residential or a commercial situation?
- What are the building code requirements?

Duty Levels

Icons have been used to assist specifiers and builders to select the right duty level to meet the expected duty cycle for each building class.

L **Light Duty**
Generally used in residential and light traffic areas such as Class 1 – 4 Buildings.

M **Medium Duty**
Generally used in commercial and medium traffic areas such as Class 3 – 6 Buildings.
- Office spaces
- Shops
- Commercial accommodation

H **Heavy Duty**
Generally used in heavy pedestrian and wheeled traffic areas such as Class 5 – 10 Buildings.
- Public hospitals
- Airports
- Factories
- Shopping centres

Applications

Icons have been used to help identify appropriate seals for various applications to make product selection easier. All seals are designed to meet most standards and in most cases, perform more than one function.

Weather

Energy, Draughts and Dust

Light

Insects and Vermin

Antimicrobial
Raven gaskets and cover strips contain antimicrobial compounds. Independently tested against E. Coli, Strep and MRSA.

Ambient (Cold) Smoke
Temperatures up to 70°C.

Medium Temperature Smoke (NCC S12C4)
Temperatures of 200°C for 30 minutes (smoke doors).

Fire and Hot Smoke
Fully developed fires exceeding 600°C (intumescent seals).

Fire (Approved)
In accordance with AS/NZS 1905.1.

BAL - LOW
Bushfire Attack Level in accordance with AS 3959.

Up to BAL - 29
Bushfire Attack Level in accordance with AS 3959.

Up to BAL - 40
Bushfire Attack Level in accordance with AS 3959.

Up to BAL - FZ (Flame Zone)
Bushfire Attack Level in accordance with AS 3959.

Noise – Acoustic

Access and Mobility

Smoke Door Sealing Systems

Building Code Regulations

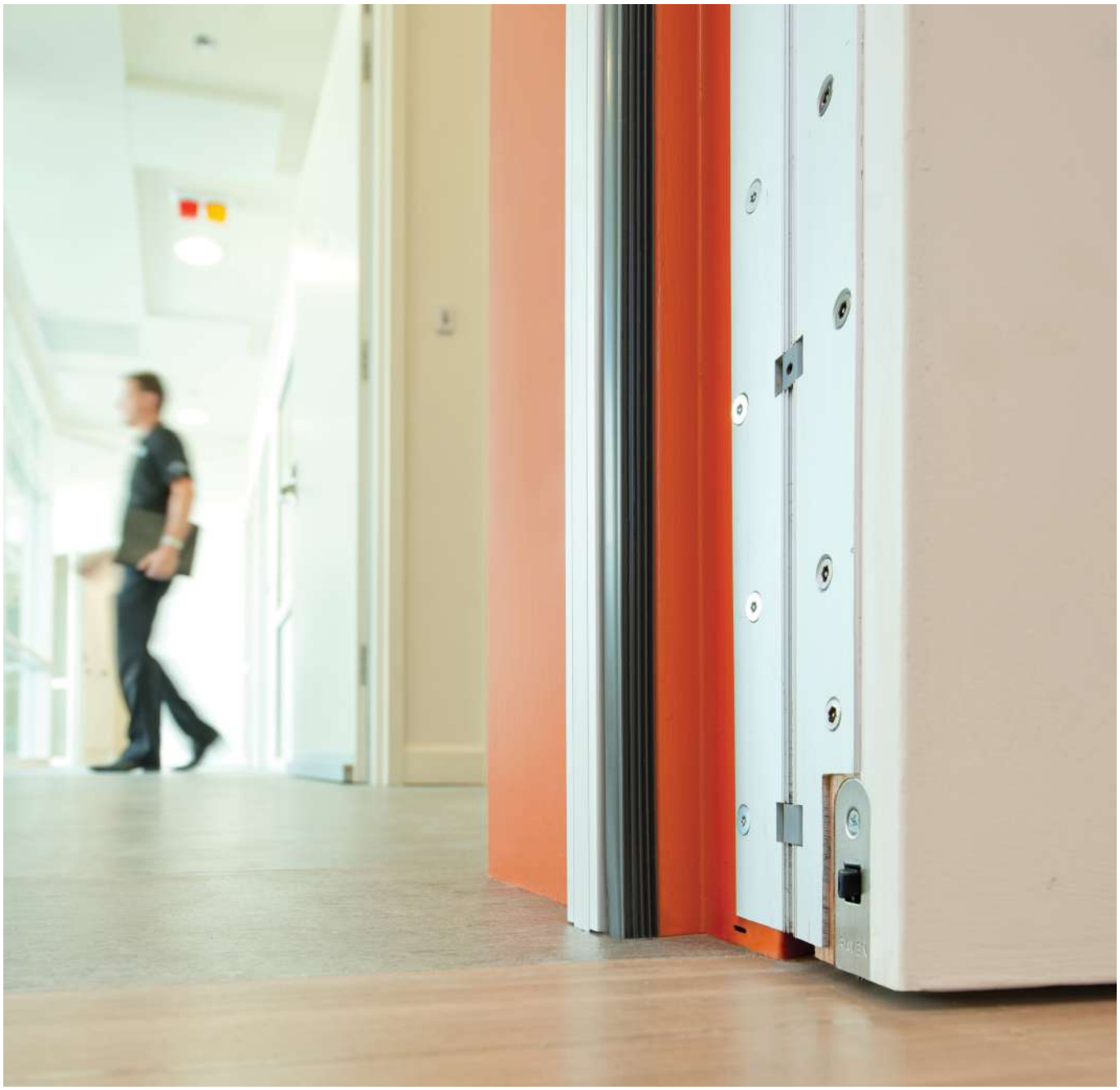
NCC Class 2 to Class 9 Buildings (hospitals, aged care facilities, hotels, high rise apartments and shopping centres)

In the event of a fire emergency, life and safety is the most critical requirement for the occupants of a building. Ambient (cold) and Medium temperature smoke that is generated by a fire must be contained quickly in order to provide safe areas within a building.

Smoke compartmentation is a mandated requirement of the Australian NCC and most building codes and regulatory authorities overseas. Smoke sealing, "Smoke Doors" (solid core doors) helps provide a physical barrier that impedes the spread of toxic fumes and smoke from one room to another. Smoke sealed doors also help to protect egress routes allowing occupants a safe passage when exiting the building during a fire alarm emergency.

Raven pioneered smoke door sealing systems, their design effectively reduces smoke leakage around the door margins of smoke doors including applications that require fire rated door assemblies. Raven sealing systems comprise perimeter seals, meeting stile seals and door bottom seals. All are tested and certified to the applicable Australian and international standards.

In Australia, smoke doors and the use of fire rated doors are required to be smoke sealed to limit the leakage of ambient (cold) smoke and medium temperature smoke up to 200 degrees Celsius for 30 minutes. Refer NCC S12C4. In addition to the Deemed-to-Satisfy requirements, Raven has tested and certified its smoke sealing systems to AS 1530.7 and EN 1634-3.



Smoke Door Sealing Systems

Building Code Regulations

AUS National Construction Code (NCC) S12C4

Class 2 to Class 9 buildings

S12C4 Construction Deemed-to-Satisfy for smoke doors

A smoke door of one or two leaves satisfies **S12C4** if it is constructed as follows:

(a) The leaves are side-hung to swing—
  (i) in the direction of egress; or
  (ii) in both directions.

(b) The leaves are solid-core and at least 35 mm thick, or are capable of resisting smoke at 200°C for 30 minutes.

(c) The leaves are fitted with smoke seals.

(d) The leaves—
  (i) are normally in the closed position; or
  (ii) operate such that—
    (A) they are closed *automatically* with the *automatic* closing operation initiated by smoke detectors, installed in accordance with the relevant provisions of AS 1670.1, located on each side of the doorway not more than 1.5 m horizontal distance from the doorway; and
    (B) in the event of power failure to the door, they will fail-safe in the closed position.

(e) The leaves return to the fully closed position after each manual opening.

(f) Any glazing incorporated in the door complies with AS 1288.

(g) If a glazed panel is capable of being mistaken for an unobstructed exit, the presence of the glass must be identified by an opaque mid-height band, mid-rail, crash-bar or other opaque construction.

Related Building Codes

There are several standards, which refer to seal properties and testing for fire and smoke:

AUS / NZ

Requirements are noted in the Australian National Construction Code (NCC) and New Zealand NZBC C (Protection from Fire).

UK / EU

Requirements are noted in the British Building Regulations Approved Document B.

USA

Requirements are noted in the Building Code and the Residential Code IBC 2000.

NZ Building Code C (Protection from Fire)

Acceptable Solution for Buildings other than Risk Group SH

C6.1 Fire doors and smoke control doors

C6.1.1 *Fire doors* shall be evaluated in circumstances representative of their use in service, and shall comply with NZS 4520 Fire-resistant doorsets.

Smoke control doors

C6.1.2 A door shall be deemed to be a *smoke control door* if, in addition to the requirements in this Acceptable Solution for *smoke control doors*:

a) The door is a fire door that is fitted with appropriate smoke seals, or

b) It is *constructed* with solid core leaves. Solid timber core leaves, when used, shall have a leaf thickness of no less than 35 mm, and

c) It is provided with smoke seals as required by this Acceptable Solution. Smoke seals shall be in continuous contact with the mating element, and located so as to minimise interruption by hardware, and

d) The frames are constructed of timber, and the jambs are no less than 30 mm thick, and

e) Any vision panel cut-outs are no less than 150 mm from the leaf edges, and

f) The maximum average clearances (excluding pre-easing) are
  i) Leaf to frame 3 mm
  ii) Leaf to leaf 5 mm
  iii) Leaf to top of any floor covering 10 mm, and g) Any additional facings are adhesive fixed, and

g) Any additional facings are adhesive fixed, and

h) It is provided with signage identifying it as a *smoke control door* in accordance with Acceptable Solution F8/AS1.

4.16.5 *Doorsets* shall be clearly marked to show their *FRR* and, if required, to show their smoke stopping capability. Other signage requirements shall be as specified in Paragraph 3.16.

UK / EU Building Regulations

Within Approved Document B, certain door sets within a building are identified as where smoke control door sets are required; tested to BS 476 Section 31.1 or EN 1634-3 1983 Method for measuring smoke penetration through door sets and shutter assemblies. Those door sets identified as smoke control doors designated by an S after the fire rating, i.e., FD30S, FD60S etc., should have a leakage rate not exceeding 3 m^3/m/h from the head and jambs when tested at 25 Pa pressure.

Smoke Door Sealing Systems

Introduction and Reference Standards

Smoke Doors

Selecting the correct sealing system

Smoke seals are designed to contain smoke within a room or corridor and can be a combination of mechanical, compression and sweep seals.

C Ambient (Cold) Smoke

Smoke that has come down to ambient temperature after drifting from the fire can be a life threatening concoction. The majority of Raven door seals contain cold smoke and therefore can be used to upgrade existing doors. Seals are normally tested to AS 1530.7 and EN 1634-3 (BS 426 Sect. 31.1). Smoke leakage rates from these standards of up to 3 $m^3/h/m$ of the door perimeter gap at 25 pascals excluding the threshold, is normally required. Raven seals easily exceed this criteria.

M200°C Medium Temp. Smoke (200°C for 30 minutes)

Smoke doors require seals to withstand greater temperatures (200 degrees Celsius for 30 minutes) to conform to the NCC specification S12C4 requirement for "Smoke Doors".
Medium temperature smoke seals are required where the smoke is closer to the source of the fire and consequently at a higher temperature.

Sealing components are generally made from extruded silicon or tested high temperature PVC's and TPE's, and in the case of brush strip seals, nylon with a high temperature resistant barrier fin.

H Fire & Hot Smoke Intumescent Seals

For fire engineered solutions (referred to as "performance solutions" in the NCC), fire engineers may require hot smoke seals. Intumescent seals are used for this purpose to seal against hot gases above 200°C.

Smoke Seal Testing

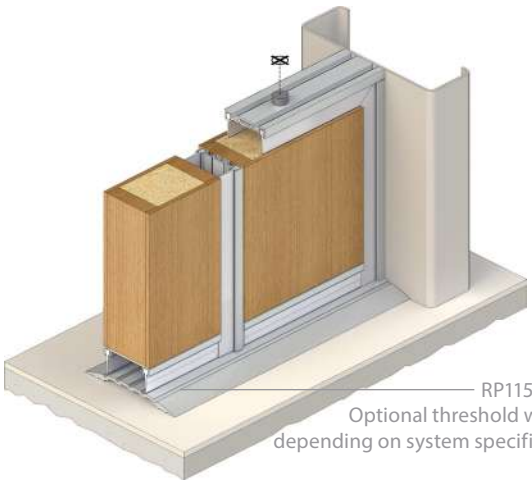
Raven smoke seals are tested in accordance with AS/NZS 1530.7 & BS EN 1634-3. The seals are required to meet accepted smoke leakage rates at various pressure differentials.

Tested systems to AS 1530.7 meeting the smoke leakage rates specified in AS 6905 Pt. 2.4 parts (a) & (b) meet the requirements of NCC specification S12C4 Construction Deemed-to-Satisfy for smoke doors, i.e. smoke door assemblies having been exposed for 30 minutes or greater at 200°C, with leakage rates of up to 25 m^3/h at 25 Pa for single doors and 40 m^3/h for pairs of doors. Leakage rates are corrected to standard reference conditions. These leakage rates or better are commonly specified in fire engineered solutions. Raven have many tested solutions on proprietary doors to meet these requirements.

In the UK and EU Sa and Sm ratings to BS EN 13501-2 may be required. These ratings require tested smoke door assemblies to have met the leakage rates of up to 3 $m^3/m/h$ of the door perimeter gap at 25 Pa for ambient temperatures "Sa". For medium temperature 20 m^3/h for single doors and 30 m^3/h for pairs of doors at a pressure differential of 50 Pa at 200°C "S_{200}". Tests are conducted to EN 1634-3.

Threshold Plates in Sealing Systems

Aluminium threshold plates can be used under a smoke door when the gap exceeds the specifications of the door bottom seal or to provide an optimum sealing surface for the door bottom seal.



RP115 shown
Optional threshold will vary depending on system specifications

Deemed-to-Satisfy Smoke Doors

Effective combinations of smoke and acoustic seals tested on solid core doors that meet the requirements for NCC S12C4 Construction Deemed-to-Satisfy for smoke doors, UK Approved Document B and NZBC C/AS2 4.16.2(b).

These systems meet the leakage rates specified in AS 6905 when the door assembly is installed to NCC S12C4. Meets leakage rates specified in BS EN 13501-2 "Sa", "S_{200}" classification.

Single Doors

These systems have been smoke leakage performance tested to:

AS 1530.7: ≤ 25m³/h @ 25 Pa when exposed to 200°C > 30 minutes in accordance with AS 6905, when the door assembly is installed to NCC S12C4.

EN 1634-3: ≤ 3m³/h/m @ 25 Pa for ambient, and ≤ 20m³/h @ 50 Pa for medium temperature in accordance with BS EN 13501-2.

Pairs of Doors

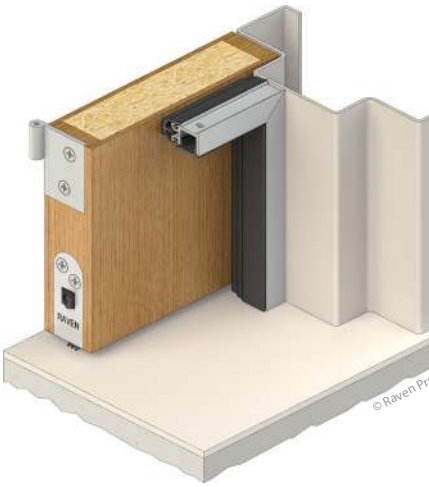
These systems have been smoke leakage performance tested to:

AS 1530.7: ≤ 40m³/h @ 25 Pa when exposed to 200°C > 30 minutes in accordance with AS 6905, when the door assembly is installed to NCC S12C4.

EN 1634-3: ≤ 3m³/h/m @ 25 Pa for ambient, and ≤ 30m³/h @ 50 Pa for medium temperature in accordance with BS EN 13501-2.

RAVEN SEALING SYSTEM NO.

RSS-014-B



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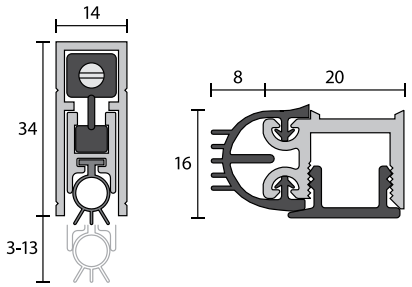
Fitness For Purpose Certificate No. IDWL18-026-RP8Si.
RP10Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP10Si.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	35mm	Fully Morticed



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RAVEN SEALING SYSTEM NO.

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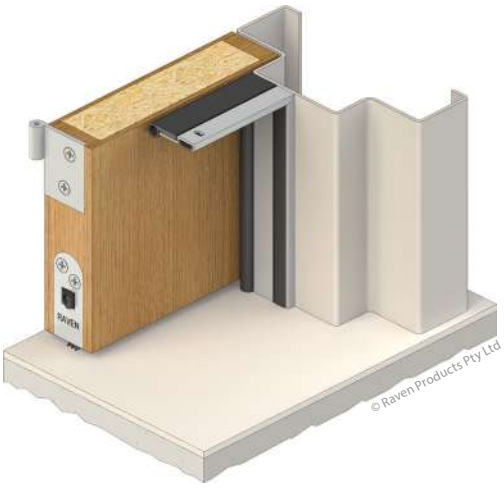

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RP23
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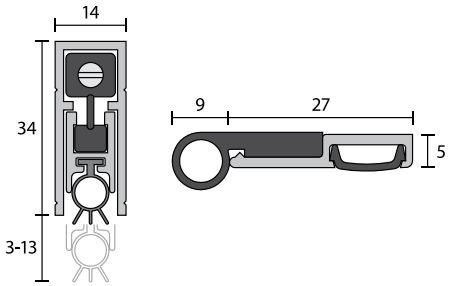
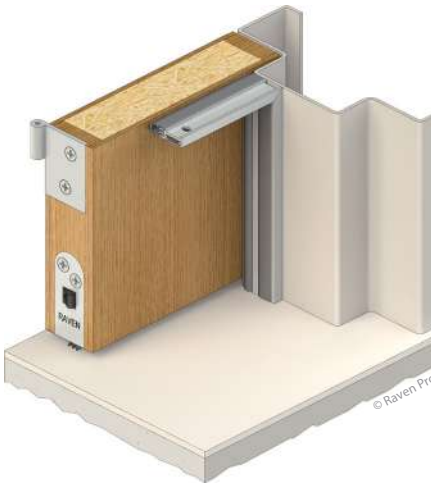


RP8Si RP23

Please note: drawings not to scale

RAVEN SEALING SYSTEM NO.

RSS-080-D



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RP78Si
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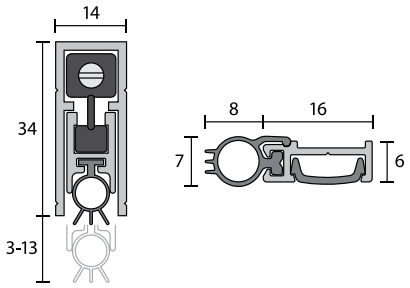
Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	35mm	Fully Morticed



RP8Si RP78Si

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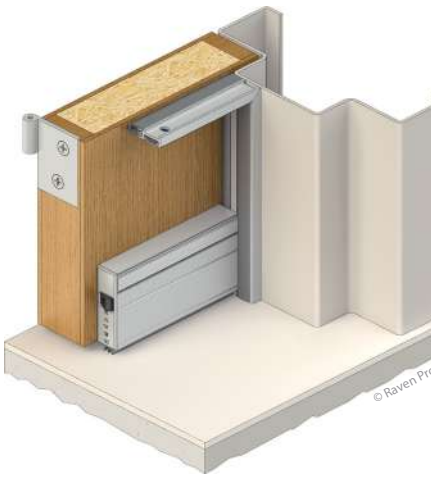

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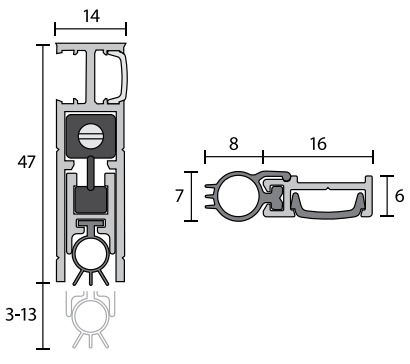
Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	35mm	Face Mounted



RP35Si RP78Si

Please note: drawings not to scale

RAVEN SEALING SYSTEM NO.

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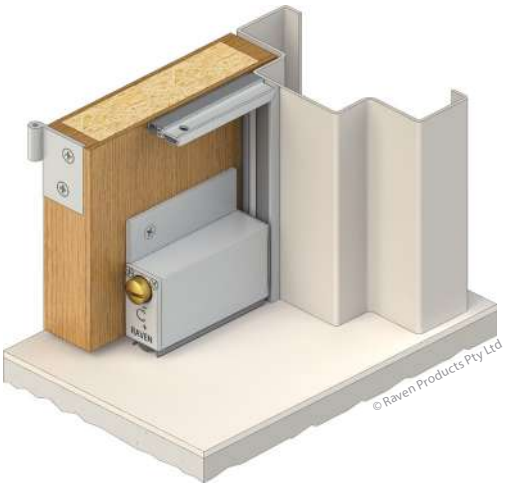

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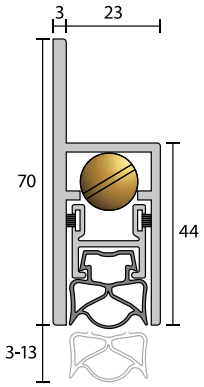
Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	35mm	Face Mounted



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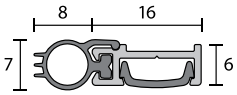

RP78Si

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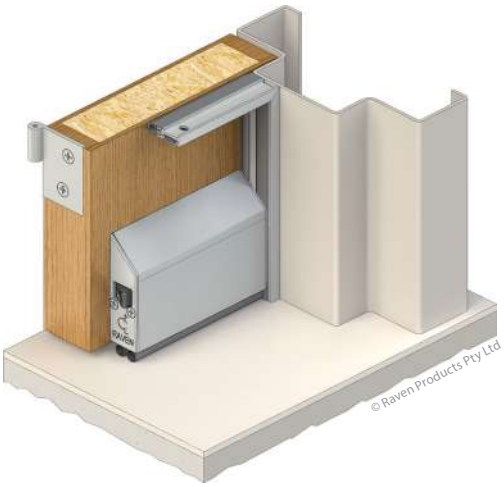

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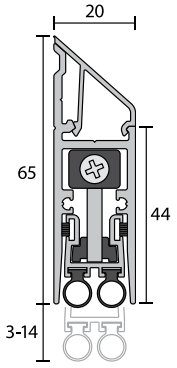
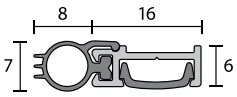
RP78Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP78Si.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	35mm	Face Mounted



RP128Si

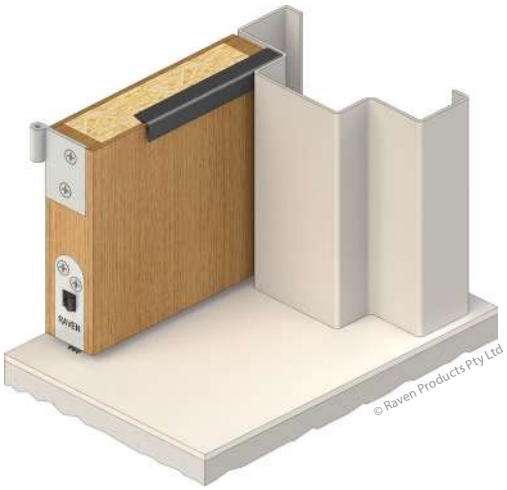


RP78Si

Please note: drawings not to scale

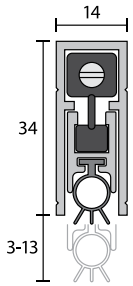
RAVEN SEALING SYSTEM NO.

RSS-022-B

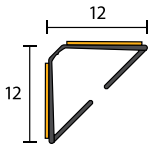


RP8Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP8Si.
RP120
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP120.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	35mm	Fully Morticed



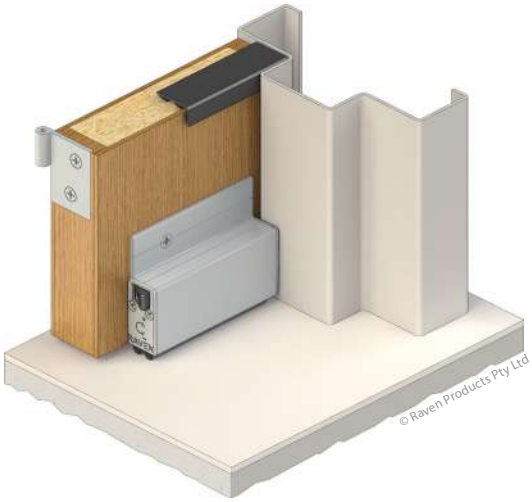
RP8Si



RP120

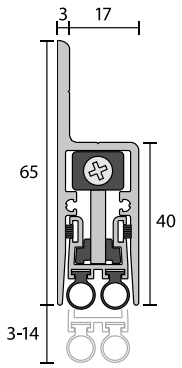
RAVEN SEALING SYSTEM NO.

RSS-024-A

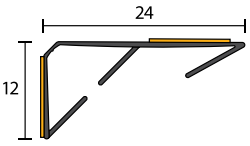


RP126Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP126Si.
RP124
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP124.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	35mm	Face Mounted



RP126Si



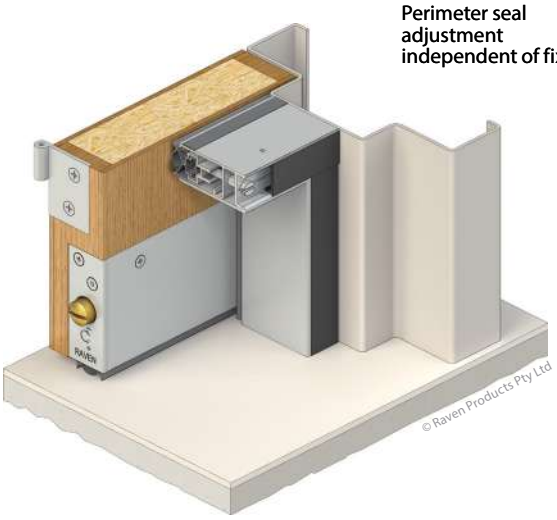
RP124

Please note: drawings not to scale

RAVEN SEALING SYSTEM NO.

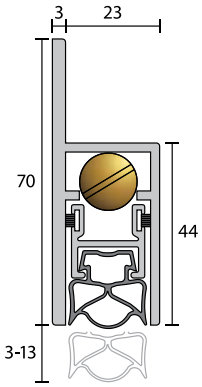
RSS-044-D

Perimeter seal adjustment independent of fixings

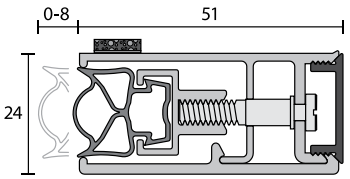


RP38Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP38Si.
RP24Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP24Si.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	40mm	Semi-Morticed



RP38Si

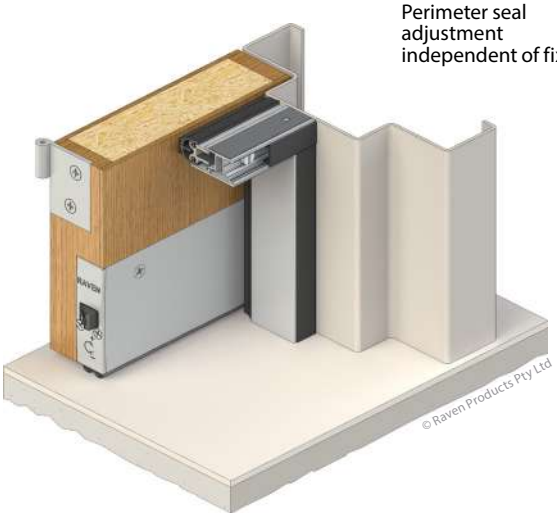


RP24Si

RAVEN SEALING SYSTEM NO.

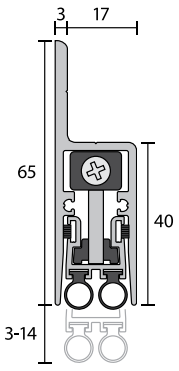
RSS-097-A

Perimeter seal adjustment independent of fixings

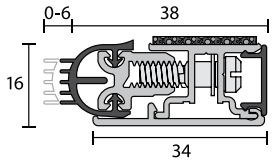


RP126Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP126Si.
RP87Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP87Si.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	40mm	Semi-Morticed



RP126Si

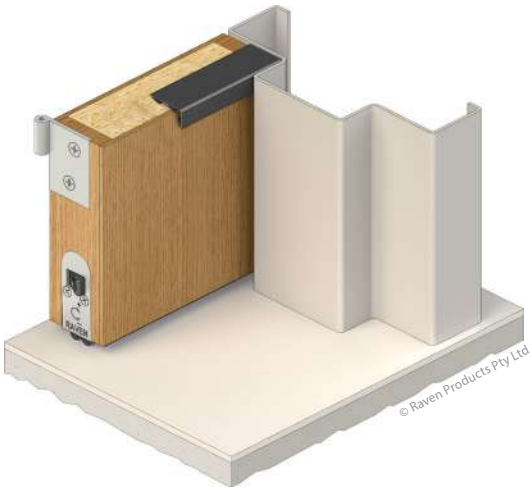


RP87Si

Please note: drawings not to scale

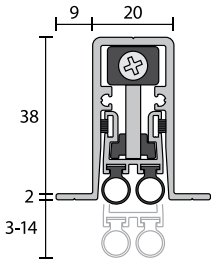
RAVEN SEALING SYSTEM NO.

RSS-025-B

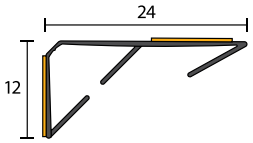


RP127Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP127Si.
RP124
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP124.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	40mm	Fully Morticed



RP127Si

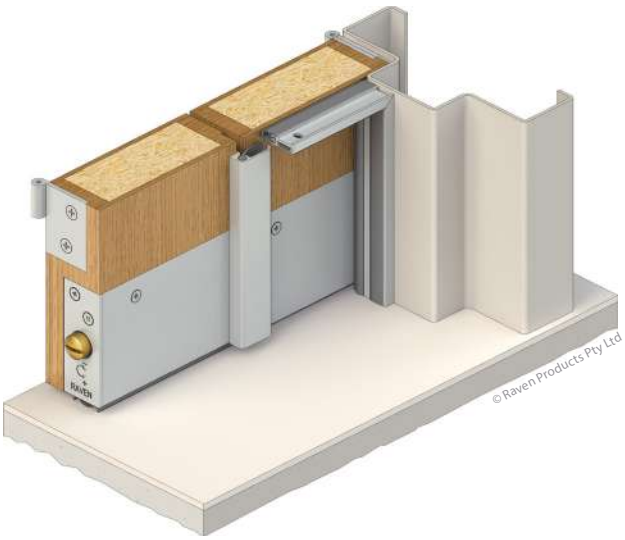


RP124

Please note: drawings not to scale

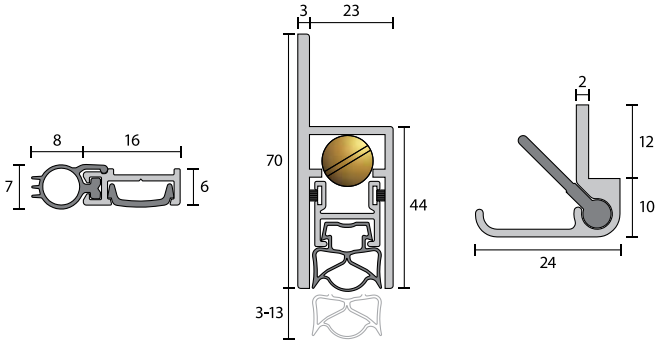
RAVEN SEALING SYSTEM NO.

RSS-075-B



RP78Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP78Si.
RP38Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP38Si.
RP16Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP16Si.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	40mm	Semi-Morticed

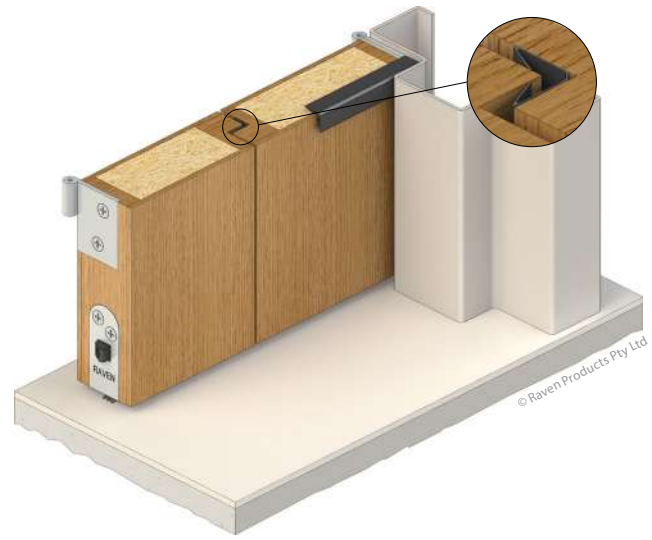


RP78Si **RP38Si** **RP16Si**

Please note: drawings not to scale

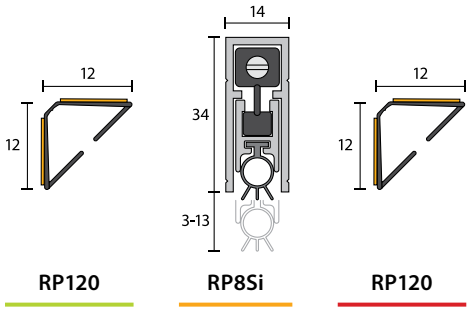
RAVEN SEALING SYSTEM NO.

RSS-023-A



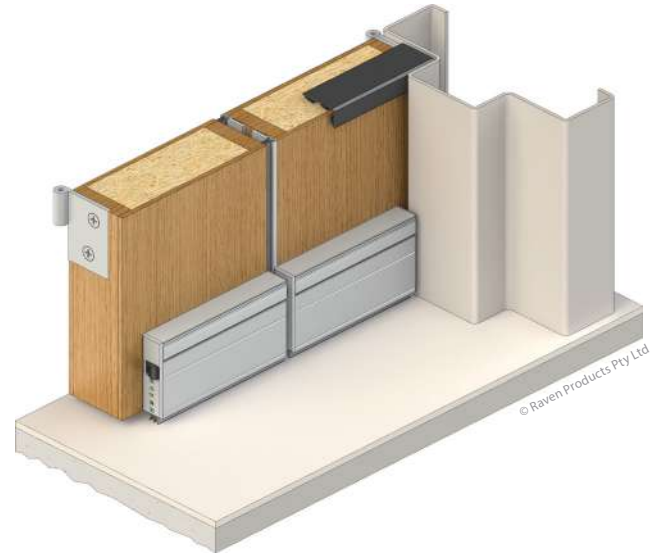
RP120
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP120.
RP8Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP8Si.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	40mm	Fully Morticed



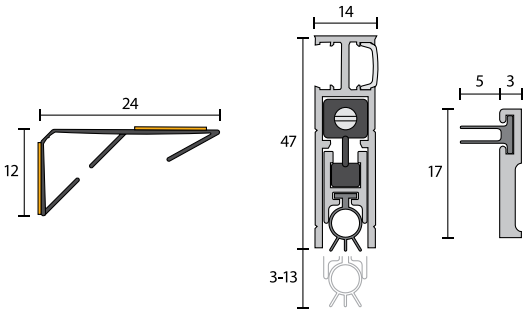
RAVEN SEALING SYSTEM NO.

RSS-028-A



RP124
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP124.
RP35Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP35Si.
RP71Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP71Si.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	40mm	Face Mounted



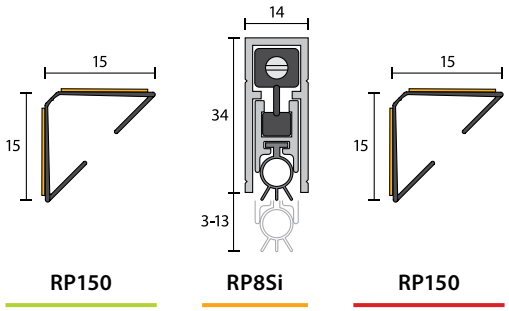
Please note: drawings not to scale

RAVEN SEALING SYSTEM NO.

RSS-036-A

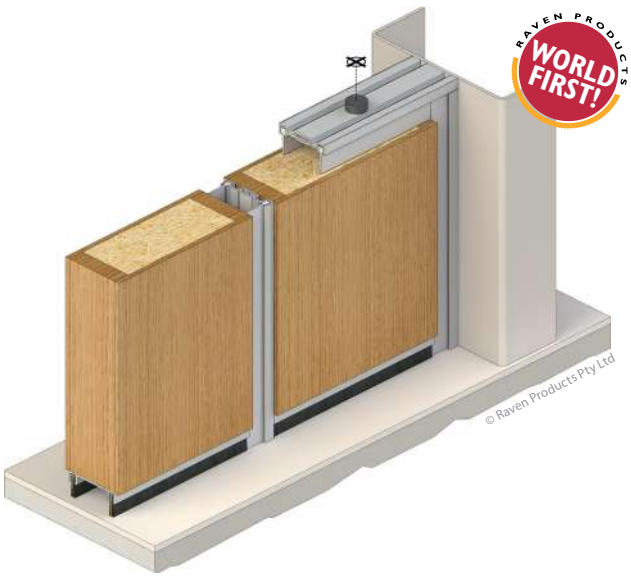
RP150
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP150.
RP8Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP8Si.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	40mm	Fully Morticed



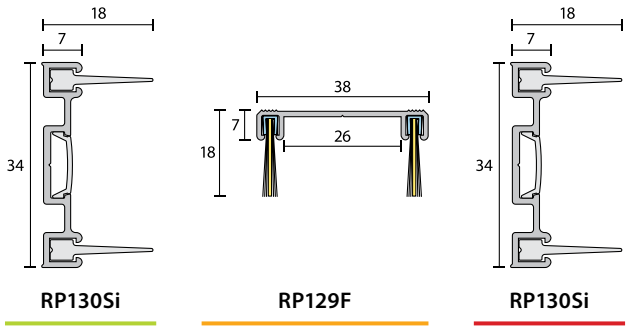
RAVEN SEALING SYSTEM NO.

RSS-031-B



RP130Si
Fitness For Purpose Certificate No. IDWL18-026-RP130Si.
RP129F
Fitness For Purpose Certificate No. IDWL18-026-RP129F.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Pivot	40mm	Underside Mounted



Please note: drawings not to scale

Performance Solutions Smoke Doors

These systems may be used where the source of exposure could be from either side of the door opening and can be used where a fire engineered solution may be required. Effective combinations of smoke and acoustic seals tested on solid core doors that meet the requirements for NCC S12C4 Construction Deemed-to-Satisfy for smoke doors, UK Approved Document B and NZBC C/AS2 4.16.2(b). Tested to AS 1530.7 and EN 1634-3.

All systems open towards positive pressure (fire side).

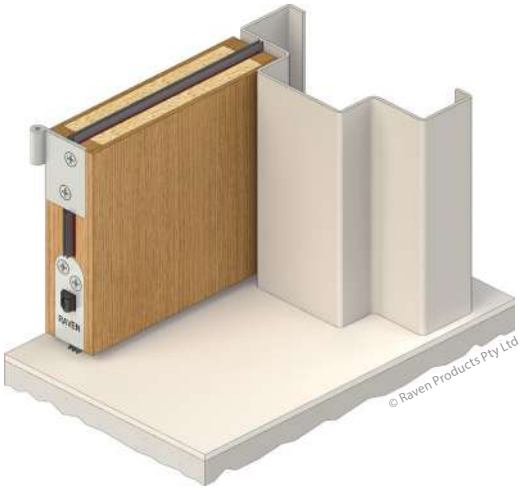
Smoke Leakage Rates

AS 1530.7
≤ 25m³/h @ 25 Pa for single doors and ≤ 40m³/h @ 25 Pa for double doors when exposed to 200°C for 30 minutes in accordance with AS 6905.

EN 1634-3
Sa; ≤ 3m³/h/m @ 25 Pa excluding the threshold for ambient.
S_{200}; ≤ 20m³/h @ 50 Pa for single doors, and ≤ 30m³/h @ 50 Pa for ambient and 200°C for double doors in accordance with BS EN 13501-2.

RAVEN SEALING SYSTEM NO.

RSS-067-A

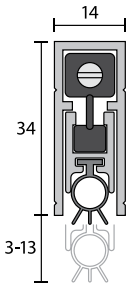


Exposure	Leakage rate correction	Leakage rate Q (m³/h) at a pressure differential of:		
		10Pa	25Pa	50Pa
Ambient	SRC*	7.8	13.2	19.3
Medium 200°C	SRC*	4.4	8.1	15.6
Medium 200°C > 30 min	SRC*	5.4	10.9	18.3

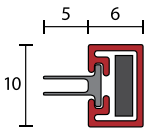
* Standard Reference Conditions

RP8Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP8Si.
RP76Si
Fitness For Purpose Certificate No. IDWL18-026-RP76Si.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	35mm	Fully Morticed



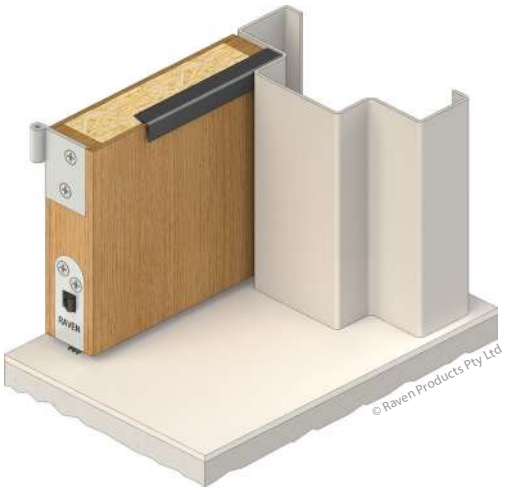
RP8Si



RP76Si

RAVEN SEALING SYSTEM NO.

RSS-022-B

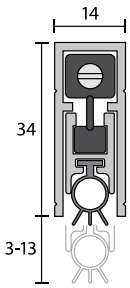


Exposure	Leakage rate correction	Leakage rate Q (m³/h) at a pressure differential of:		
		10Pa	25Pa	50Pa
Ambient	SRC*	2.5	4.4	6.8
Medium 200°C	SRC*	< 2.0	< 2.0	4.2
Medium 200°C > 30 min	SRC*	4.7	7.9	10.3

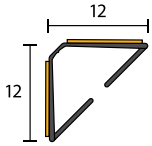
* Standard Reference Conditions

RP8Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP8Si.
RP120
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP120.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	35mm	Fully Morticed



RP8Si

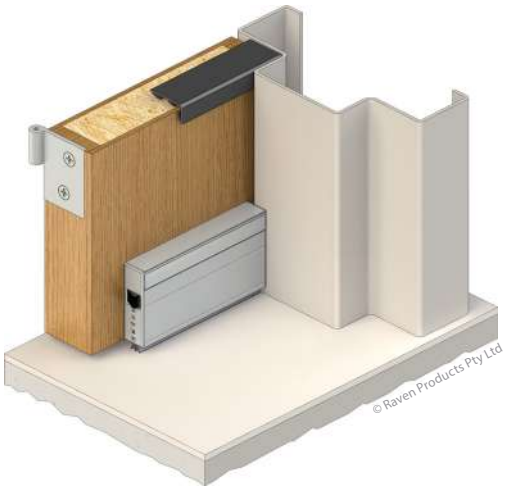


RP120

Please note: drawings not to scale

RAVEN SEALING SYSTEM NO.

RSS-027-A

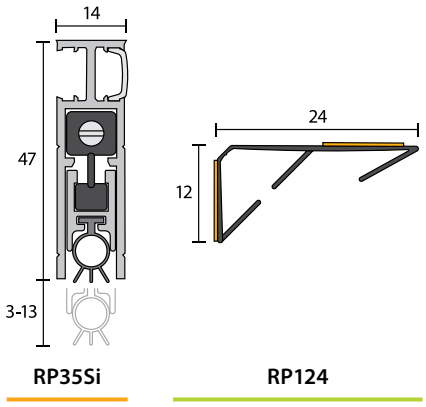


Exposure	Leakage rate correction	Leakage rate Q (m³/h) at a pressure differential of:		
		10Pa	25Pa	50Pa
Ambient	SRC*	0.6	1.2	1.9
Medium 200°C	SRC*	< 2.0	< 2.0	2.6
Medium 200°C > 30 min	SRC*	5.1	12.0	19.7

* Standard Reference Conditions

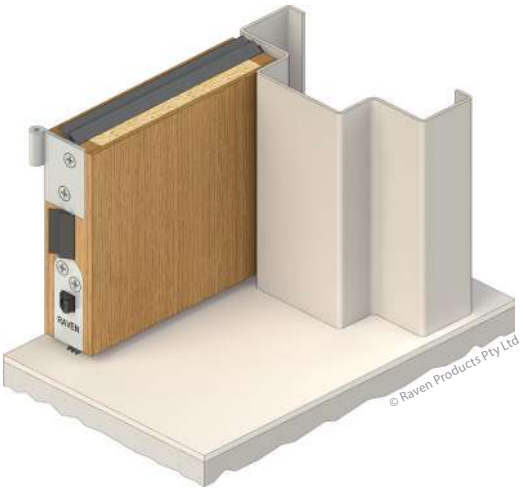
RP35Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP35Si.
RP124
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP124.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	35mm	Face Mounted



RAVEN SEALING SYSTEM NO.

RSS-059-A

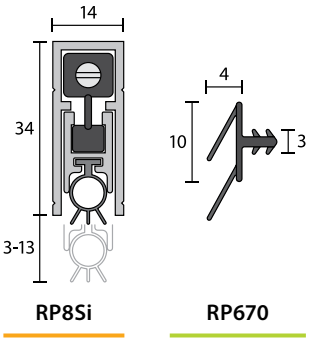


Exposure	Leakage rate correction	Leakage rate Q (m³/h) at a pressure differential of:		
		10Pa	25Pa	50Pa
Ambient	SRC*	8.0	13.6	20.0
Medium 200°C	SRC*	4.1	9.9	13.1
Medium 200°C > 30 min	SRC*	4.6	9.7	13.5

* Standard Reference Conditions

RP8Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP8Si.
RP670
Fitness For Purpose Certificate No. IDWL18-026-RP670.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	35mm	Fully Morticed



Please note: drawings not to scale

RAVEN SEALING SYSTEM NO.

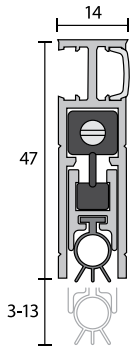
RSS-115-A

Exposure	Leakage rate correction	Leakage rate Q (m³/h) at a pressure differential of:		
		10Pa	25Pa	50Pa
Ambient	SRC*	0.8	1.6	2.4
Medium 200°C	SRC*	3.4	3.5	< 2.0
Medium 200°C > 30 min	SRC*	10.7	17.9	17.2

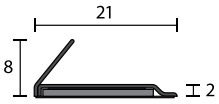
* Standard Reference Conditions

RP35Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP35Si.
RP160
Fitness For Purpose Certificate No. IDWL18-026-RP160.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	35mm	Face Mounted



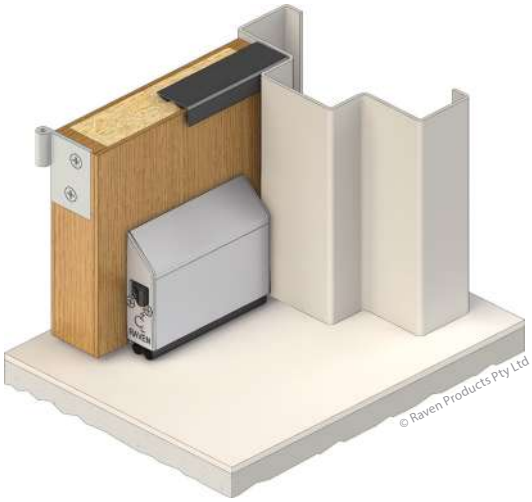
RP35Si



RP160

RAVEN SEALING SYSTEM NO.

RSS-116-A

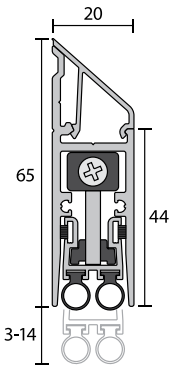


Exposure	Leakage rate correction	Leakage rate Q (m³/h) at a pressure differential of:		
		10Pa	25Pa	50Pa
Ambient	SRC*	1.6	2.7	3.9
Medium 200°C	SRC*	< 2.0	3.5	2.9
Medium 200°C > 30 min	SRC*	3.3	6.2	12.5

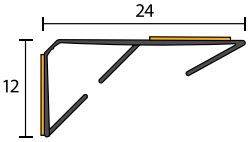
* Standard Reference Conditions

RP128Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP128Si.
RP124
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP124.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	35mm	Face Mounted



RP128Si

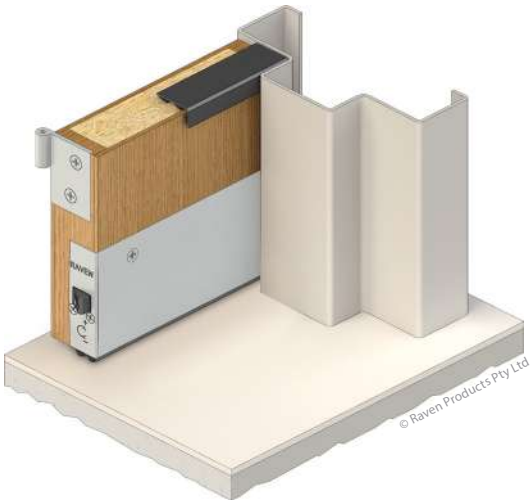


RP124

Please note: drawings not to scale

RAVEN SEALING SYSTEM NO.

RSS-024-B

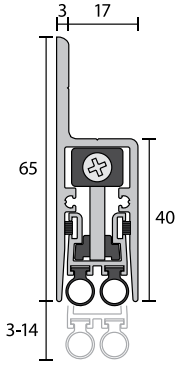


Exposure	Leakage rate correction	Leakage rate Q (m³/h) at a pressure differential of:		
		10Pa	25Pa	50Pa
Ambient	SRC*	< 2.0	< 2.0	< 2.0
Medium 200°C	SRC*	< 2.0	< 2.0	< 2.0
Medium 200°C > 30 min	SRC*	< 2.0	2.5	4.1

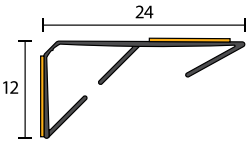
* Standard Reference Conditions

RP126Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP126Si.
RP124
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP124.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	40mm	Semi-Morticed



RP126Si

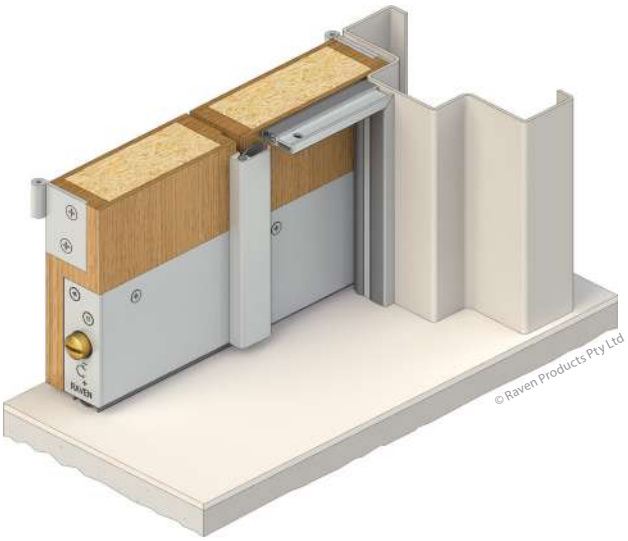


RP124

Please note: drawings not to scale

RAVEN SEALING SYSTEM NO.

RSS-075-A

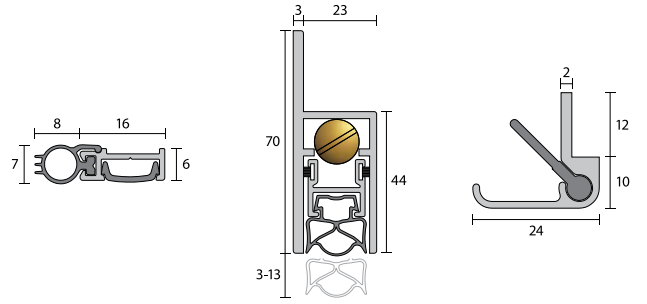


Exposure	Leakage rate correction	Leakage rate Q (m³/h) at a pressure differential of:		
		10Pa	25Pa	50Pa
Ambient	SRC*	4.9	8.9	13.5
Medium 200°C	SRC*	< 2.0	3.1	5.2
Medium 200°C > 30 min	SRC*	< 2.0	2.3	3.7

* Standard Reference Conditions

RP78Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP78Si.
RP38Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP38Si.
RP16Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP16Si.

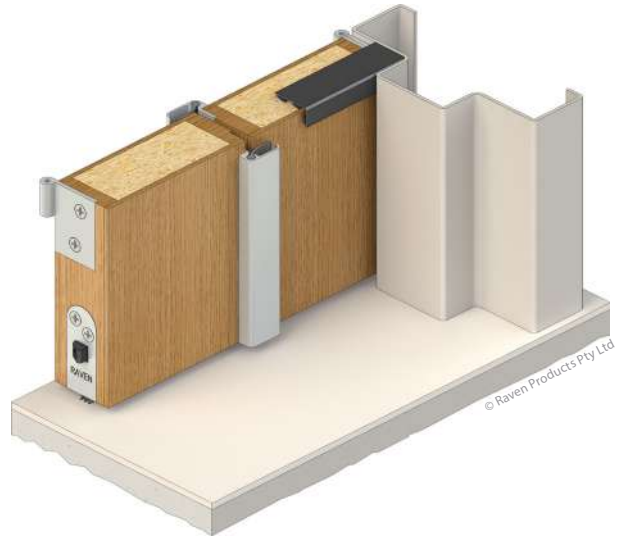
Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	46mm	Semi-Morticed



RP78Si | RP38Si | RP16Si

RAVEN SEALING SYSTEM NO.

RSS-030-A

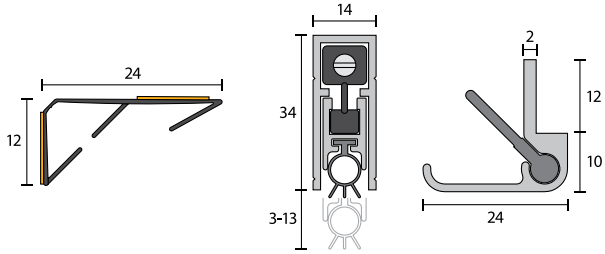


Exposure	Leakage rate correction	Leakage rate Q (m³/h) at a pressure differential of:		
		10Pa	25Pa	50Pa
Ambient	SRC*	3.3	6.2	9.3
Medium 200°C	SRC*	< 2.0	3.5	4.7
Medium 200°C > 30 min	SRC*	< 2.0	5.1	9.5

* Standard Reference Conditions

RP124
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP124.
RP8Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP8Si.
RP16Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP16Si.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	40mm	Fully Morticed

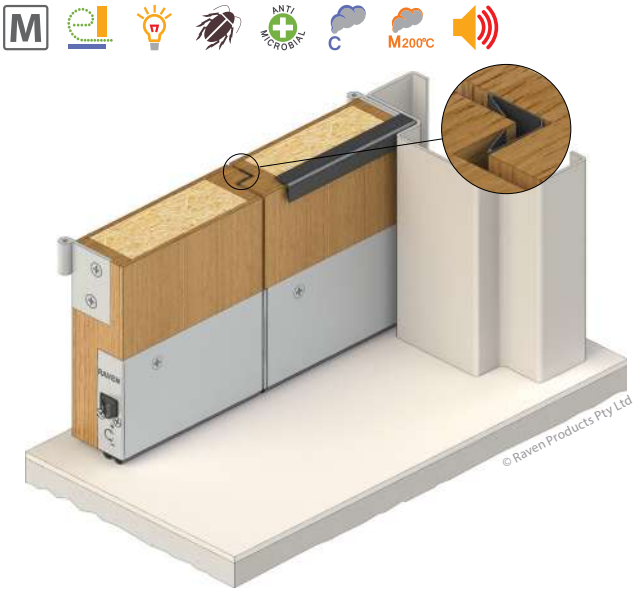


RP124 | RP8Si | RP16Si

Please note: drawings not to scale

RAVEN SEALING SYSTEM NO.

RSS-035-A



Exposure	Leakage rate correction	Leakage rate Q (m³/h) at a pressure differential of:		
		10Pa	25Pa	50Pa
Ambient	SRC*	3.5	6.2	9.5
Medium 200°C	SRC*	2.9	3.5	8.2
Medium 200°C > 30 min	SRC*	4.6	7.9	11.5

* Standard Reference Conditions

RP150

Certifire Cert. CF 5710.

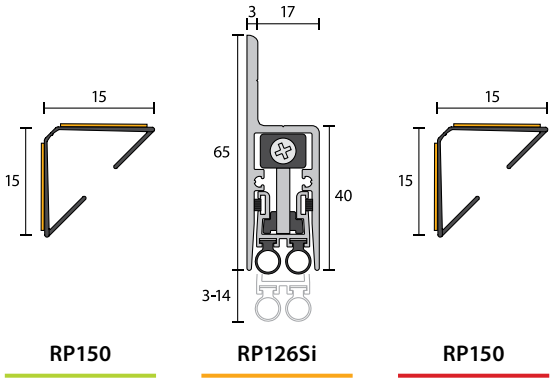
Fitness For Purpose Certificate No. IDWL18-026-RP150.

RP126Si

Certifire Cert. CF 5710.

Fitness For Purpose Certificate No. IDWL18-026-RP126Si.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	40mm	Semi-Morticed



RAVEN SEALING SYSTEM NO.

RSS-031-B

Exposure	Leakage rate correction	Leakage rate Q (m³/h) at a pressure differential of:		
		10Pa	25Pa	50Pa
Ambient	SRC*	5.8	9.8	15.1
Medium 200°C	SRC*	3.0	5.1	12.2
Medium 200°C > 30 min	SRC*	3.3	5.8	11.4

* Standard Reference Conditions

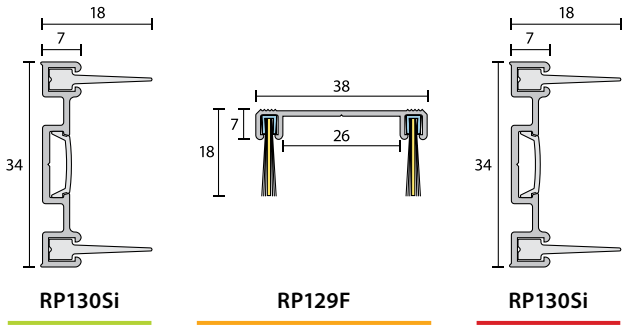
RP130Si

Fitness For Purpose Certificate No. IDWL18-026-RP130Si.

RP129F

Fitness For Purpose Certificate No. IDWL18-026-RP129F.

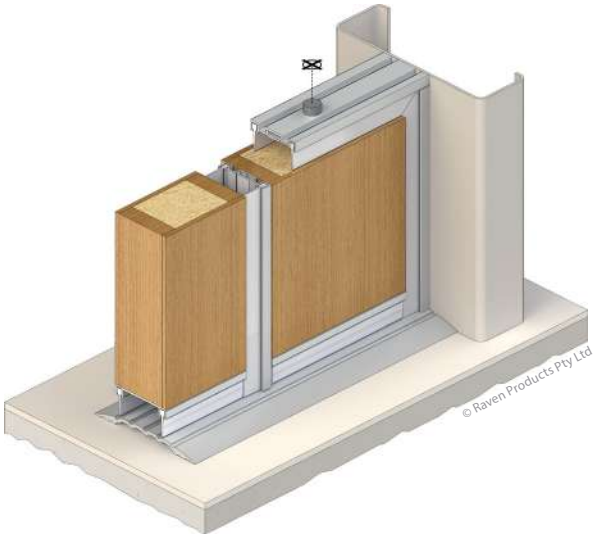
Door Type	Door Thickness	Door Bottom Seal Installation Type
Pivot	40mm	Underside Mounted



Please note: drawings not to scale

RAVEN SEALING SYSTEM NO.

RSS-032-B



Exposure	Leakage rate correction	Leakage rate Q (m³/h) at a pressure differential of:		
		10Pa	25Pa	50Pa
Ambient	SRC*	3.5	8.1	14.2
Medium 200°C	SRC*	3.3	7.9	11.2
Medium 200°C > 30 min	SRC*	6.6	12.2	18.0

* Standard Reference Conditions

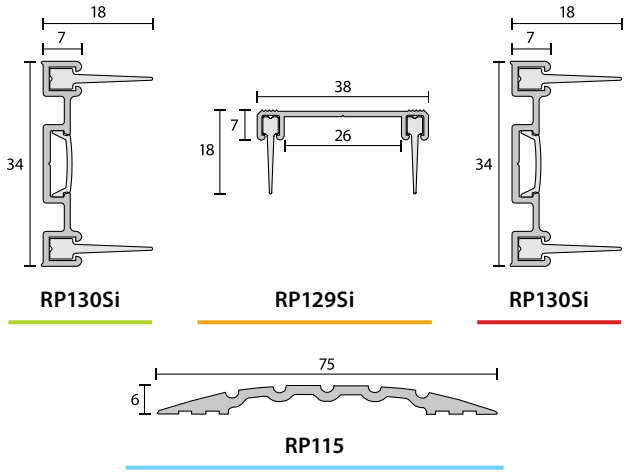
RP130Si

Fitness For Purpose Certificate No. IDWL18-026-RP130Si.

RP129Si

Fitness For Purpose Certificate No. IDWL18-026-RP129Si.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Pivot	40mm	Underside Mounted



Please note: drawings not to scale

Fire Rated Labelled Smoke Doors

Fire doors in Australia need to be installed to AS 1905.1 as mandated by the NCC. This means the fire door has a Fire Resistance Level (FRL) as determined in the fire test method AS 1530.4 where door sets are subject to extreme temperatures in a full scale fire test simulating a fire emergency. The door set is then given an FRL which is a nominal grading period in minutes for structural adequacy/integrity/ insulation. Fire doors are not structural members of a building so therefore have for example an FRL of -/120/60 where the FRL is 0 for structural adequacy/120 minutes for integrity/60 minutes for insulation. This is represented in NZ as FRR -/120/60 or in the UK for integrity as FD120 or in Europe IE120.

Door hardware including door seals are then tested to evaluate there is no reduction in the established FRL of that fire door.

Effective combinations of smoke and acoustic seals for fire rated butt hinged doors that have been tested and/or assessed to AS 1530.4 and BS 476 Pt. 22 (similar to BS EN 1634-1). These seals meet the requirements for NCC S12C4 Construction Deemed-to-Satisfy for smoke doors, NZBC C (Protection from Fire), UK Approved Document B and standard BS 5588. These systems meet the leakage rates specified in AS 6905 when the door assembly is installed to NCC S12C4. Meets leakage rates specified in BS EN 13501-2 "Sa", "S_{200}" classification.

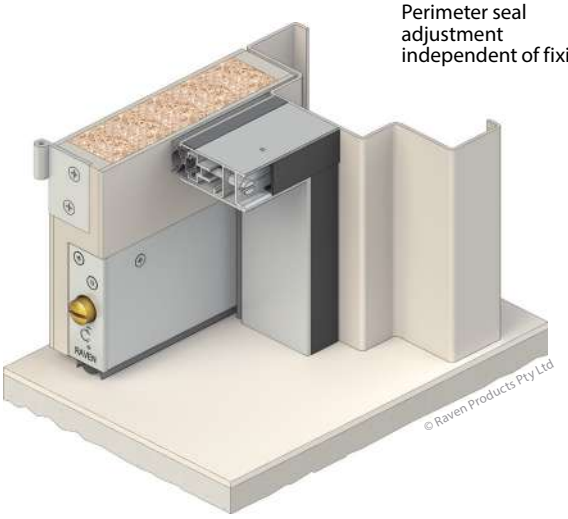
These systems have been smoke leakage performance tested to:

AS 1530.7: ≤ 25m^3/h @ 25 Pa when exposed to 200°C > 30 minutes in accordance with AS 6905.

EN 1634-3: ≤ 3m^3/h/m @ 25 Pa for ambient, and ≤ 20m^3/h @ 50 Pa for medium temperature in accordance with BS EN 13501-2.

RAVEN SEALING SYSTEM NO.

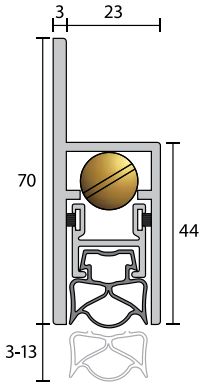
RSS-044-B



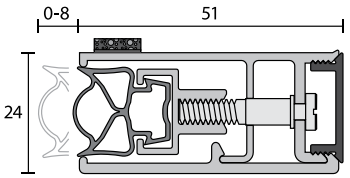
Perimeter seal adjustment independent of fixings

RP38Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP38Si.
RP24Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP24Si.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	47mm	Semi-Morticed



RP38Si



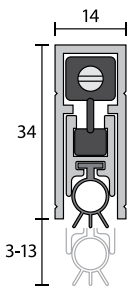
RP24Si

RAVEN SEALING SYSTEM NO.

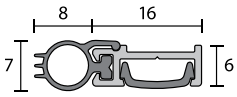
RSS-080-C

RP8Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP8Si.
RP78Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP78Si.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	38mm	Fully Morticed



RP8Si

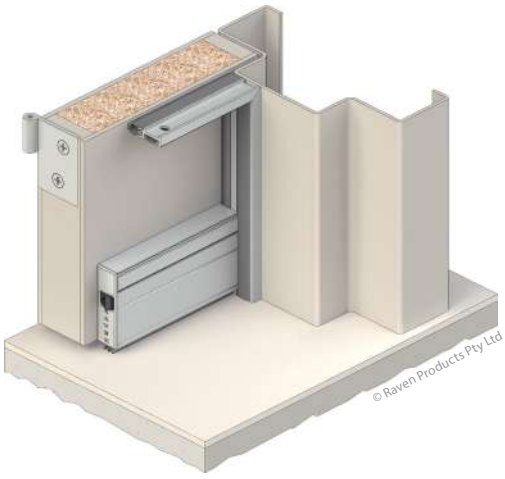


RP78Si

Please note: drawings not to scale

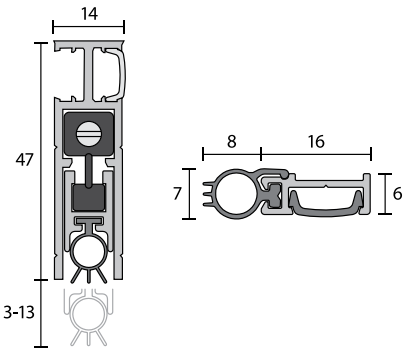
RAVEN SEALING SYSTEM NO.

RSS-073-A



RP35Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP35Si.
RP78Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP78Si.

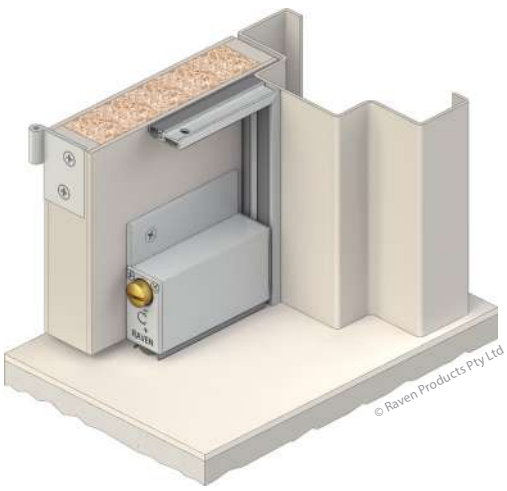
Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	38mm	Face Mounted



RP35Si **RP78Si**

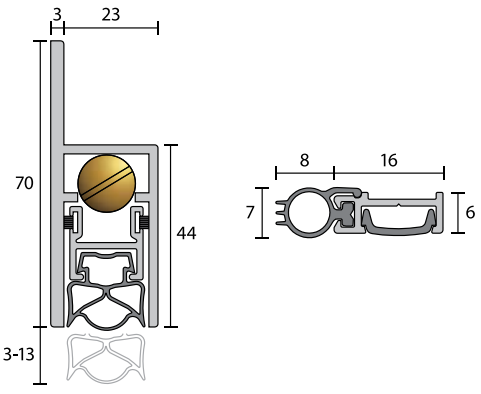
RAVEN SEALING SYSTEM NO.

RSS-074-A



RP38Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP38Si.
RP78Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP78Si.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	38mm	Face Mounted

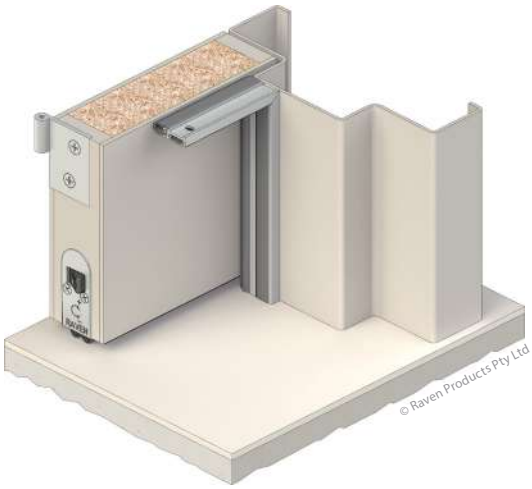


RP38Si **RP78Si**

Please note: drawings not to scale

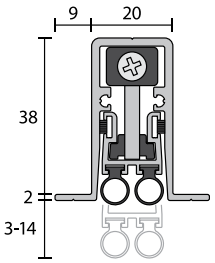
RAVEN SEALING SYSTEM NO.

RSS-072-A

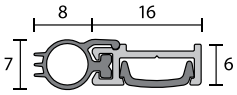


RP127Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP127Si.
RP78Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP78Si.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	47mm	Fully Morticed



RP127Si

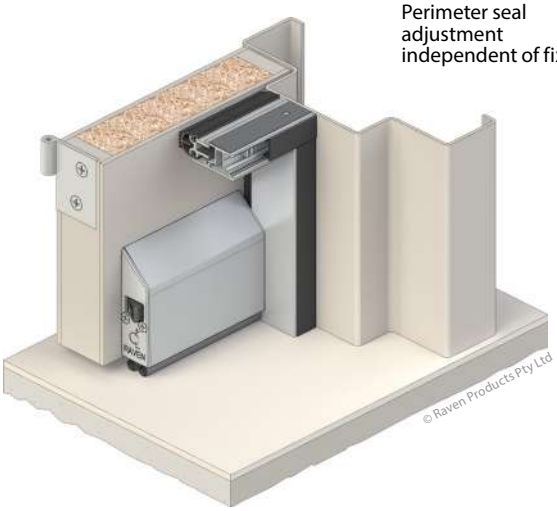


RP78Si

RAVEN SEALING SYSTEM NO.

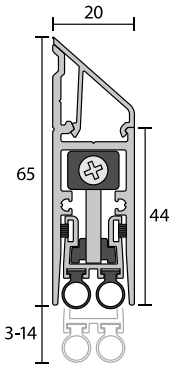
RSS-098-A

Perimeter seal adjustment independent of fixings

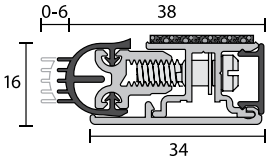


RP128Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP128Si.
RP87Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP87Si.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	38mm	Face Mounted



RP128Si



RP87Si

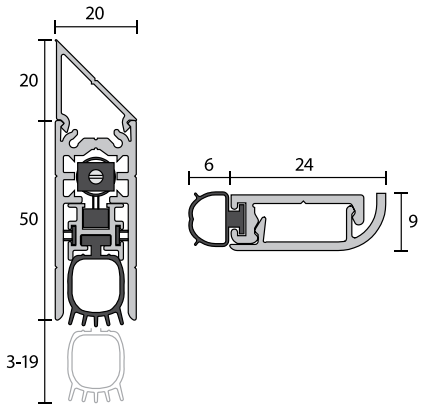
Please note: drawings not to scale

RAVEN SEALING SYSTEM NO.

RSS-101-A

RP99Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP99Si.
RP93Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP93Si.

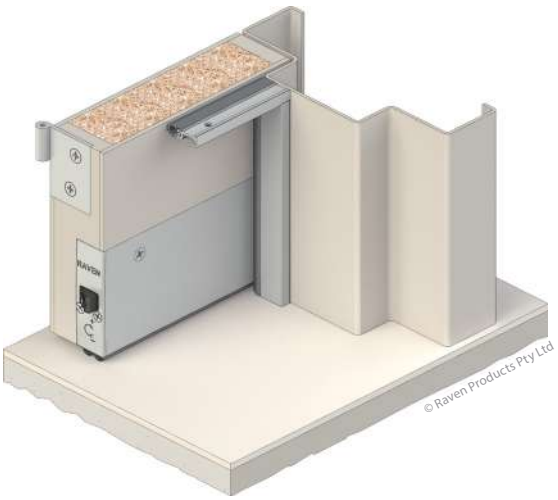
Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	47mm	Fully Morticed



RP99Si RP93Si

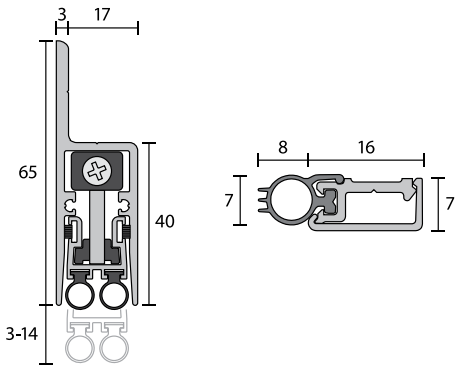
RAVEN SEALING SYSTEM NO.

RSS-102-A



RP126Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP126Si.
RP94Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP94Si.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	38mm	Semi-Morticed



RP126Si RP94Si

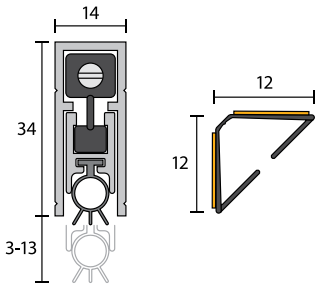
Please note: drawings not to scale

RAVEN SEALING SYSTEM NO.

RSS-022-A

RP8Si
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP8Si.
RP120
Certifire Cert. CF 5710.
Fitness For Purpose Certificate No. IDWL18-026-RP120.

Door Type	Door Thickness	Door Bottom Seal Installation Type
Butt Hinged	38mm	Fully Morticed



RP8Si **RP120**

Please note: drawings not to scale

Index

By Product Code

By System Number

Guarantee

Raven seals are guaranteed for 2 years against defects in materials and workmanship, provided seals are fitted in accordance with manufacturer's specifications. Defective goods identified by Raven will be replaced. However, NO claim for work done thereon or damage incurred will be allowed.

Self-adhesive backed; closed cell and open cell foam tape seals are not guaranteed. Defective goods identified by Raven may be replaced. Experience has shown that even for one and the same objective, the exact requirements may vary due to site and environmental conditions that are outside Raven Products control; this includes the surfaces to which self-adhesive products are being installed.

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