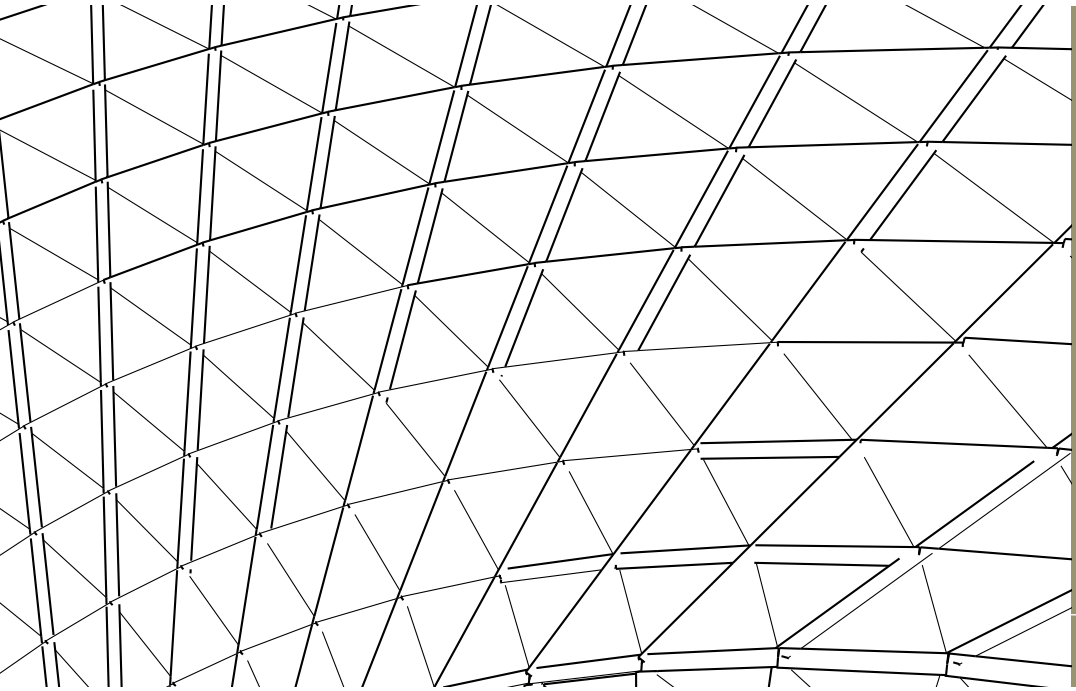


# Section E

External Walls | 10/2025

Click on the side tabs to return to section contents page

# EXTERNAL WALLS

Click on the links below to navigate to page

# INTRODUCTION

The following Knauf external wall systems are outlined in this section.

- OutRwall® Residential
- OutRwall® Commercial
- Brick Veneer Walls
- Fireclad®

# OUTRWALL® RESIDENTIAL

## Description

Knauf OutRwall Residential exterior wall systems are fire, acoustic and thermal rated boundary wall systems specifically for Class 1 and 10a buildings. Designed for domestic houses, townhouses, terraces and detached buildings, OutRwall Residential systems are used when external walls of buildings are within close proximity to the allotment boundary or another building on the same allotment. Knauf OutRwall Residential systems can be used for both timber and steel framing.

Figure E1: **Example of Knauf Timber OutRwall Residential**

Figure E2: **Example of Knauf Steel OutRwall Residential**

## Design Options

### Fire Resistance Level (FRL)

Knauf OutRwall Residential systems can achieve FRL up to FRL 60/60/60 from the outside.

### Acoustic Performance

Knauf OutRwall Residential systems can achieve acoustic ratings up to $R_w$ 48.

### Thermal Performance

The system values $R_{ti(SUM)}$ and $R_{ti(WIN)}$ provided have been calculated based on a thermal path through the wall cavity and does not allow for any thermal bridging.

The NCC requires thermal bridging to be accounted for to determine the Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$. Thermal bridging may significantly reduce the Total R-Value, particularly for Steel OutRwall Systems. In such cases, addressing the shortfall in Total R Value may require employing, a larger cavity, denser insulation, a thermal break or a combination of these measures.

Refer to an ESD consultant to determine Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$, tailored to your project's framing design and cladding system.

## Materials

### Plasterboard Linings

- 10 mm / 13 mm SHEETROCK ONE
- 10 mm SHEETROCK PLUS
- 13 mm WetStop
- 13 mm / 16 mm MultiStop ONE

### External Cladding

Any type of non-combustible lightweight cladding (unless noted otherwise).

- Fibre cement cladding
- Weatherboard
- Steel or aluminium cladding

### Pliable Building Membrane

Building membrane to NCC requirements.

### Insulation

- KI 50G14 insulation (R1.3)
- KI 90G24 insulation (R2.5)
- KI 90G32 insulation (R2.7)

### Screws

Refer to General Information – Materials section for plasterboard screw types.

### Caulking

H.B. Fuller Firesound™ sealant.

# INTRODUCTION

## Design Consideration

- Refer to NCC Fire Resistance requirements for external walls.
- Refer to Timber Stud Walls section for load bearing capacities of fire rated timber framed walls.
- Refer to Rondo or structural engineer for load bearing capacities of fire rated steel framed walls.
- Beware of flanking sound effects on acoustic performance (refer to General Information – Design).
- Water resistant linings must be used in wet areas.
- Water and fire-resistant plasterboard must be used on the outer side of framing where required.
- Plasterboard linings on the outer side of framing must be protected by an approved building membrane.
- Refer to General Information – Design for notes on Condensation and Ventilation.
- Refer to NCC, ABCB Housing Provision and ESD consultant for thermal requirements.
- External cladding must be installed on battens or top hats.

## Installation

### General

- Fire rated and acoustic systems must be installed strictly in accordance with Knauf specifications in order to achieve stated FRL and acoustic ratings.
- Refer to Systems+ and online CAD Finder for detailed system specifications.
- Timber or steel framing shall be installed in accordance with Structural Engineer's design and manufacturer's specification to relevant Australian Standards.

### Jointing and Finishing

- Stop and finish face layers of internal linings with the appropriate Knauf jointing system (refer to Knauf Plasterboard Installation Manual). Joints and junctions in inner layers of multiple layer systems are not required to be stopped.
- Paper tape must be used in fire rated and wet area systems.
- Taping and setting is not required for external MultiStop ONE linings as plasterboard is covered with an external cladding system.

To view the full range of installation details, scan QR code below.

# OUTRWALL® COMMERCIAL

## Description

Knauf OutRwall Commercial exterior wall system is a fire, acoustic and thermal rated boundary wall systems specifically for Class 2-9 buildings. When combined with various non-combustible cladding systems, OutRwall Commercial systems are used when external walls of buildings such as commercial, industrial, institutional, low, medium and high-rise residential constructions. Knauf OutRwall Commercial systems can be used for both timber and steel framing.

Figure E3: **Example of Knauf Timber OutRwall Commercial System**

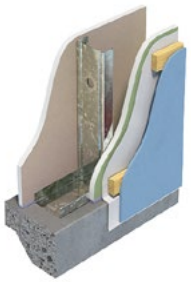


Figure E4: **Example of Knauf Steel OutRwall Commercial**

## Design Options

### Fire Resistance Level (FRL)

Knauf OutRwall Commercial systems can achieve FRL up to FRL 120/120/120 from both directions.

### Acoustic Performance

Knauf OutRwall Commercial have can achieve acoustic ratings up to $R_W$ 57.

### Thermal Performance

The system values $R_{ti(SUM)}$ and $R_{ti(WIN)}$ provided have been calculated based on a thermal path through the wall cavity and does not allow for any thermal bridging.

The NCC requires thermal bridging to be accounted for to determine the Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$. Thermal bridging may significantly reduce the Total R-Value, particularly for Steel OutRwall Systems. In such cases, addressing the shortfall in Total R Value may require employing, a larger cavity, denser insulation, a thermal break or a combination of these measures.

Refer to an ESD consultant to determine Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$, tailored to your project's framing design and cladding system.

# INTRODUCTION

## Materials

### Plasterboard Linings

- 10 mm SHEETROCK ONE
- 10 mm SHEETROCK PLUS
- 13 mm / 16 mm FireStop
- 13 mm / 16 mm MultiStop ONE

### External Cladding

Any type of non-combustible lightweight cladding (unless noted otherwise).

### Pliable Building Membrane

Building membrane to NCC requirements.

### Insulation

- KI 50G14 insulation (R1.3)
- KI 90G24 insulation (R2.5)
- KI 90G32 insulation (R2.7)

### Screws

Refer to General Information – Materials section for plasterboard screw types.

### Caulking

H.B. Fuller Firesound™ sealant.

## Design Consideration

- Refer to Multi-Residential section for thermal resistance requirements for external walls in 2 and 3 buildings.
- Refer to NCC and ESD consultant for thermal requirements.
- For other notes, refer to OutRwall Residential section.

## Installation

### General

- Fire rated and acoustic systems must be installed strictly in accordance with Knauf specifications in order to achieve stated FRL and acoustic ratings.
- Refer to Systems+ and online CAD Finder for detailed system specifications.
- Timber or steel framing shall be installed in accordance with Structural Engineer's design and manufacturer's specification to relevant Australian Standards.

### Jointing and Finishing

- Stop and finish face layers of internal linings with the appropriate Knauf jointing system (refer to Knauf Plasterboard Installation Manual). Joints and junctions in inner layers of multiple layer systems are not required to be stopped.
- Paper tape must be used in fire rated and wet area systems.
- Taping and setting is not required for external MultiStop ONE linings as plasterboard is covered with an external cladding system.

To view the full range of installation details, scan QR code below.

# INTRODUCTION

## BRICK VENEER WALLS

### Description

Knauf Brick Veneer wall systems utilise fire rated or non-fire rated brick veneer and Knauf internal linings direct fixed to steel or timber framing.

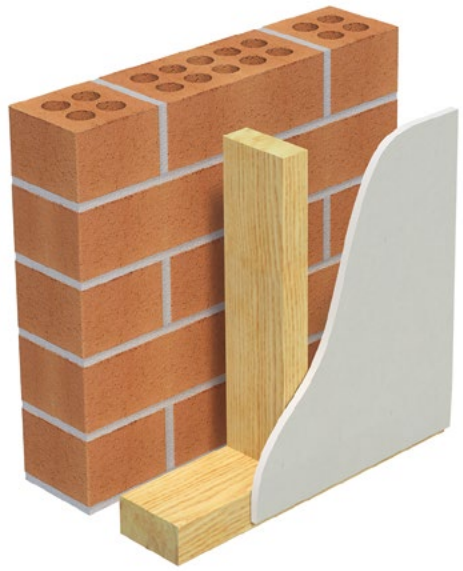


Figure E5: **Example of Knauf Brick Veneer Wall System**

### Design Options

Knauf Brick Veneer wall systems are available in non-fire rated or fire rated configurations up to FRL 120/120/120 from both sides.

Acoustic ratings have been provided for systems with 70 mm and 90 mm studs. All acoustic ratings are based on 110 mm clay brick 170 kg/m$^2$ and 50 mm gap between brick veneer and internal framing.

### Materials

#### Design Consideration

- 10 mm SHEETROCK ONE
- 13 mm FireStop
- 16 mm FireStop

#### Brick Veneer

- Non-fire rated Brick Veneer (min 110 mm clay brick 170 kg/m$^2$)
- FRL 60/60/60 Brick Veneer
- FRL 90/90/90 Brick Veneer
- FRL 120/120/120 Brick Veneer

#### Insulation

KI 90G24 insulation (R2.5).

#### Screws

Refer to General Information – Materials section for plasterboard screw types.

#### Caulking

H.B. Fuller Firesound sealant.

### Design Considerations

See OutRwall Residential notes.

### Installation

- Brick veneer must be constructed in accordance with NCC and AS 3700 Masonry Structures.
- See OutRwall Residential for other Installation notes.

To view the full range of installation details, scan QR code below.

# INTRODUCTION

## FIRECLAD®

### Description

Knauf Fireclad is a lightweight fire rated external wall system for portal framed industrial buildings that require fire protection from the outside.

Fireclad consists of multiple layers of MultiStop ONE plasterboard attached to steel girts behind external steel cladding.



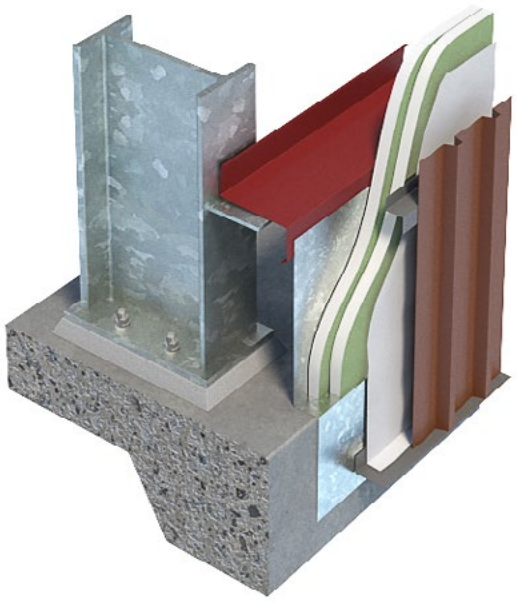


Figure E6: **Example of Knauf Fireclad® System**

### Design Options

Knauf Fireclad systems are available in Fire Resistance Levels up to 120/120/120 from outside only.

### Materials

#### Plasterboard Linings

- 13 mm MultiStop ONE
- 16 mm MultiStop ONE

#### External Cladding

Approved external steel cladding on girts by others.

#### Pliable Building Membrane

Building membrane to NCC requirements.

#### Screws

Refer to General Information – Materials section for plasterboard screw types.

#### Caulking

H.B. Fuller Firesound™ sealant.

### Design Considerations

- Refer to NCC Fire Resistance requirements for external walls.
- The weight of the Fireclad system should be supported by the steel frame or reacted through to the floor slab using girt bridging or sag rods.
- Plasterboard linings must be protected by an approved building membrane and external cladding system (by others).
- Fire rated details are available where the Fireclad system is penetrated by pipes, cables, ducts and windows, for various treatments at gutters and base of walls, and where control joints or transitions to non-fire rated areas are required.

### Installation

Refer to Knauf Fireclad brochure and online CAD Finder for installation instructions and details.

To view the full range of installation details, scan QR code below.

# OUTRWALL® RESIDENTIAL

## OWT.1

**NON-FIRE RATED**

**ACOUSTIC RATINGS** RT&A TK778-14F01
**THERMAL BASIS:** JMF REPORT 274G

Based on studs @ 450 mm ctrs

| SYSTEM | INTERNAL LINING | EXTERNAL LINING | WALL WIDTH mm | NOM 80 + CLADDING | | NOM 100 + CLADDING | |
|---|---|---|---|---|---|---|---|
| | | | STUD SIZE mm | 70 | | 90 | |
| | | | INSULATION* | $R_w$ ($R_w$+$C_{tr}$) | $R_{ti(SUM)}$/$R_{ti(WIN)}$** | $R_w$ ($R_w$+$C_{tr}$) | $R_{ti(SUM)}$/ $R_{ti(WIN)}$** |
| **OWT.1A** | 1x10 mm SHEETROCK ONE | Nil | KI 50G14 | 27(23) | R1.73 / R1.88 | 27(24) | R1.80 / R1.95 |
| | | | KI 90G24 | - | - | 29(25) | R2.80 / R3.01 |
| | | | KI 90G32 | - | - | 30(26) | R3.00 / R3.21 |
| **OWT.1C** | 1x10 mm SHEETROCK PLUS | Nil | KI 50G14 | 30(25) | R1.73 / R1.88 | 30(26) | R1.80 / R1.95 |
| | | | KI 90G24 | - | - | 32(27) | R2.80 / R3.01 |
| | | | KI 90G32 | - | - | 33(28) | R3.00 / R3.21 |

* KI 50G14 - 50 mm glasswool insulation 14 kg/m³ density
KI 90G24 - 90 mm glasswool insulation 24 kg/m³ density
KI 90G32 - 90 mm glasswool insulation 32 kg/m³ density

** The system values $R_{ti(SUM)}$ and $R_{ti(WIN)}$ provided have been calculated based on a thermal path through the wall cavity and does not allow for any thermal bridging. The NCC requires thermal bridging to be accounted for to determine the Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$. Refer to an ESD consultant to determine Total R-Value, tailored to your project's framing design and cladding system.

### SYSTEM DESCRIPTION

**Internal Lining:**
1x10 mm non-fire resistant lining
**Framing:** Timber Studs
**Insulation:** Refer to table
**External Lining:**
Nil
**External Cladding:**
Lightweight External Cladding on battens over Building membrane to NCC requirements.

## OWT30.1

**FIRE RESISTANCE LEVEL**
LB **30/30/30**
FROM OUTSIDE ONLY

**FRL Basis:** FC16195

**ACOUSTIC RATINGS** RT&A TK778-14F01
**THERMAL BASIS:** JMF REPORT 274G

Based on studs @ 450 mm ctrs

| SYSTEM | INTERNAL LINING | EXTERNAL LINING | WALL WIDTH mm | NOM 93 + CLADDING | | NOM 113 + CLADDING | |
|---|---|---|---|---|---|---|---|
| | | | STUD SIZE mm | 70 | | 90 | |
| | | | INSULATION* | $R_w$ ($R_w$+$C_{tr}$) | $R_{ti(SUM)}$/$R_{ti(WIN)}$** | $R_w$ ($R_w$+$C_{tr}$) | $R_{ti(SUM)}$/$R_{ti(WIN)}$** |
| **OWT30.1A** | 1x10 mm SHEETROCK ONE | 1x13 mm MULTISTOP ONE | KI 50G14 | 37(29) | R1.78 / R1.93 | 37(30) | R1.85 / R2.00 |
| | | | KI 90G24 | - | - | 39(31) | R2.85 / R3.06 |
| | | | KI 90G32 | - | - | 39(31) | R3.05 / R3.26 |
| **OWT30.1C** | 1x10 mm SHEETROCK PLUS | 1x13 mm MULTISTOP ONE | KI 50G14 | 39(30) | R1.78 / R1.93 | 39(31) | R1.85 / R2.00 |
| | | | KI 90G24 | - | - | 41(32) | R2.85 / R3.06 |
| | | | KI 90G32 | - | - | 41(32) | R3.05 / R3.26 |

* KI 50G14 - 50 mm glasswool insulation 14 kg/m³ density
KI 90G24 - 90 mm glasswool insulation 24 kg/m³ density
KI 90G32 - 90 mm glasswool insulation 32 kg/m³ density

** The system values $R_{ti(SUM)}$ and $R_{ti(WIN)}$ provided have been calculated based on a thermal path through the wall cavity and does not allow for any thermal bridging. The NCC requires thermal bridging to be accounted for to determine the Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$. Refer to an ESD consultant to determine Total R-Value, tailored to your project's framing design and cladding system.

### SYSTEM DESCRIPTION

**Internal Lining:**
1x10 mm non-fire resistant pbd
**Framing:** Timber Studs
**Insulation:** Refer to table
**External Lining:**
1x13 mm MultiStop ONE
**External Cladding:**
Lightweight External Cladding on battens over Building membrane to NCC requirements.

For the full range of Knauf systems refer to **knauf.com/en-AU/knauf-gypsum/services/tools/eselector**
Blue text indicates systems and products suitable for wet areas.

# OUTRWALL® RESIDENTIAL



## OWT60.1

**FIRE RESISTANCE LEVEL**
LB **60/60/60+**
CF **23†**
FROM OUTSIDE ONLY

**FRL Basis:** FC16195

### SYSTEM DESCRIPTION

**Internal Lining:**
1x10 mm non-fire resistant lining
**Framing:** Timber Studs
**Insulation:** Refer to table
**External Lining:**
1x16 mm MultiStop ONE
**External Cladding:**
Lightweight External Cladding on battens over Building membrane to NCC requirements.

**ACOUSTIC RATINGS** RT&A TK778-14F01
**THERMAL BASIS:** JMF REPORT 274G
Based on studs @ 450 mm ctrs

| SYSTEM | INTERNAL LINING | EXTERNAL LINING | WALL WIDTH mm | NOM 96 + CLADDING | | NOM 116 + CLADDING | |
|---|---|---|---|---|---|---|---|
| | | | STUD SIZE mm | 70 | | 90 | |
| | | | INSULATION* | $R_w$ ($R_w$+$C_{tr}$) | $R_{ti(SUM)}$/$R_{ti(WIN)}$** | $R_w$ ($R_w$+$C_{tr}$) | $R_{ti(SUM)}$/$R_{ti(WIN)}$** |
| **OWT60.1A ‡** | 1x10 mm SHEETROCK ONE | 1x16 mm MULTISTOP ONE | KI 75G11 | - | - | 37(30) | R2.35 / R2.58 |
| | | | KI 90G24 | - | - | 39(31) | R2.89 / R3.10 |
| | | | KI 90G32 | - | - | 39(31) | R3.09 / R3.29 |
| **OWT60.1G ‡** | 1x10 mm SHEETROCK PLUS | 1x16 mm MULTISTOP ONE | KI 75G11 | - | - | 40(32) | R2.35 / R2.58 |
| | | | KI 90G24 | - | - | 42(33) | R2.89 / R3.10 |
| | | | KI 90G32 | - | - | 42(33) | R3.09 / R3.29 |
| **OWT60.1N** | 1x10 mm SHEETROCK ONE | 1x16 mm MULTISTOP ONE (+ JH CLADDING) | KI 50G14 | 41(32) | R1.83 / R1.98 | 41(33) | R1.90 / R2.05 |
| | | | KI 90G24 | - | - | 43(34) | R2.90 / R3.11 |
| | | | KI 90G32 | - | - | 43(34) | R3.10 / R3.30 |
| **OWT60.1O** | 1x10 mm SHEETROCK PLUS | 1x16 mm MULTISTOP ONE (+ JH CLADDING) | KI 50G14 | 44(34) | R1.83 / R1.98 | 44(35) | R1.90 / R2.05 |
| | | | KI 90G24 | - | - | 46(36) | R2.90 / R3.11 |
| | | | KI 90G32 | - | - | 46(36) | R3.10 / R3.30 |

* KI 50G14 - 50 mm glasswool insulation 14 kg/m³ density
KI 75G11 - 75 mm glasswool insulation 11 kg/m³ density
KI 90G24 - 90 mm glasswool insulation 24 kg/m³ density
KI 90G32 - 90 mm glasswool insulation 32 kg/m³ density
** The system values $R_{ti(SUM)}$ and $R_{ti(WIN)}$ provided have been calculated based on a thermal path through the wall cavity and does not allow for any thermal bridging. The NCC requires thermal bridging to be accounted for to determine the Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$. Refer to an ESD consultant to determine Total R-Value, tailored to your project's framing design and cladding system.
\+ Must include specified minimum Knauf insulation inside cavity to achieve FRL
† Refer to Charfactor design tables for maximum vertical loads on load bearing fire rated walls
‡ 90 mm stud only

## OWT60.2

**FIRE RESISTANCE LEVEL**
LB **60/60/60+**
CF **23†**
FROM OUTSIDE ONLY

**FRL Basis:** FC16195

### SYSTEM DESCRIPTION

**Internal Lining:**
1x13 mm non-fire resistant lining
**Framing:** Timber Studs
**Insulation:** Refer to table
**External Lining:**
1x16 mm MultiStop ONE
**External Cladding:**
Lightweight External Cladding on battens over Building membrane to NCC requirements.

**ACOUSTIC RATINGS** RT&A TK778-14F01
**THERMAL BASIS:** JMF REPORT 274G
Based on studs @ 450 mm ctrs

| SYSTEM | INTERNAL LINING | EXTERNAL LINING | WALL WIDTH mm | NOM 99 + CLADDING | | NOM 119 + CLADDING | |
|---|---|---|---|---|---|---|---|
| | | | STUD SIZE mm | 70 | | 90 | |
| | | | INSULATION* | $R_w$ ($R_w$+$C_{tr}$) | $R_{ti(SUM)}$/$R_{ti(WIN)}$** | $R_w$ ($R_w$+$C_{tr}$) | $R_{ti(SUM)}$/$R_{ti(WIN)}$** |
| **OWT60.2A** | 1x13 mm SHEETROCK ONE | 1x16 mm MULTISTOP ONE | KI 50G14 | 41(31) | R1.84 / R1.99 | 41(32) | R1.91 / R2.06 |
| | | | KI 90G24 | - | - | 43(33) | R2.91 / R3.12 |
| | | | KI 90G32 | - | - | 43(33) | R3.11 / R3.31 |
| **OWT60.2B** | 1x13 mm WETSTOP | 1x16 mm MULTISTOP ONE | KI 50G14 | 41(31) | R1.84 / R1.99 | 41(32) | R1.91 / R2.06 |
| | | | KI 90G24 | - | - | 43(33) | R2.91 / R3.12 |
| | | | KI 90G32 | - | - | 43(33) | R3.11 / R3.31 |

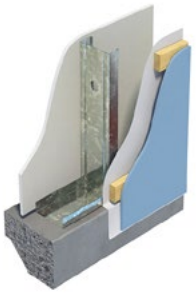
* KI 50G14 - 50 mm glasswool insulation 14 kg/m³ density
KI 90G24 - 90 mm glasswool insulation 24 kg/m³ density
KI 90G32 - 90 mm glasswool insulation 32 kg/m³ density
** The system values $R_{ti(SUM)}$ and $R_{ti(WIN)}$ provided have been calculated based on a thermal path through the wall cavity and does not allow for any thermal bridging. The NCC requires thermal bridging to be accounted for to determine the Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$. Refer to an ESD consultant to determine Total R-Value, tailored to your project's framing design and cladding system.
\+ Must include specified minimum KI 50G11 inside cavity to achieve FRL
† Refer to Charfactor design tables for maximum vertical loads on load bearing fire rated walls

For the full range of Knauf systems refer to **knauf.com/en-AU/knauf-gypsum/services/tools/eselector**
Blue text indicates systems and products suitable for wet areas.

# OUTRWALL® RESIDENTIAL

## OWS.1

**NON-FIRE RATED**



### SYSTEM DESCRIPTION

**Internal Lining:**
1x10 mm non-fire resistant lining
**Framing:** Rondo lipped steel studs
**Insulation:** Refer to table
**External Lining:**
Nil
**External Cladding:**
Lightweight External Cladding on battens over Building membrane to NCC requirements.

**ACOUSTIC RATINGS** RT&A TK778-14F01
**THERMAL BASIS:** JMF REPORT I274H
Based on studs @ 450 mm ctrs

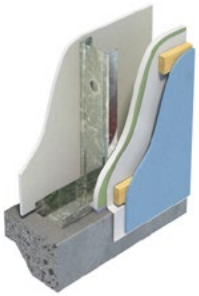
| SYSTEM | INTERNAL LINING | EXTERNAL LINING | WALL WIDTH mm | NOM 80 + CLADDING | | | NOM 100 + CLADDING | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | STUD SIZE mm | 70 | | | 90 | | |
| | | | | 0.75 BMT | 1.15 BMT | $R_{ti(SUM)}$/ $R_{ti(WIN)}$** | 0.75 BMT | 1.15 BMT | $R_{ti(SUM)}$/ $R_{ti(WIN)}$** |
| | | | INSULATION* | $R_w$ ($R_w$+$C_{tr}$) | $R_w$ ($R_w$+$C_{tr}$) | | $R_w$ ($R_w$+$C_{tr}$) | $R_w$ ($R_w$+$C_{tr}$) | |
| OWS.1A | 1x10 mm SHEETROCK ONE | Nil | KI 50G14 | 28(24) | 26(23) | R1.73 / R1.88 | 29(25) | 27(24) | R1.80 / R1.95 |
| | | | KI 90G24 | - | - | - | 31(27) | 29(26) | R2.80 / R3.01 |
| | | | KI 90G32 | - | - | - | 32(28) | 30(27) | R3.00 / R3.21 |
| OWS.1C | 1x10 mm SHEETROCK PLUS | Nil | KI 50G14 | 31(26) | 29(25) | R1.73 / R1.88 | 32(27) | 30(26) | R1.80 / R1.95 |
| | | | KI 90G24 | - | - | - | 34(29) | 32(28) | R2.80 / R3.01 |
| | | | KI 90G32 | - | - | - | 35(30) | 33(29) | R3.00 / R3.21 |

* KI 50G14 - 50 mm glasswool insulation 14 kg/m³ density
KI 90G24 - 90 mm glasswool insulation 24 kg/m³ density
KI 90G32 - 90 mm glasswool insulation 32 kg/m³ density
** The system values $R_{ti(SUM)}$ and $R_{ti(WIN)}$ provided have been calculated based on a thermal path through the wall cavity and does not allow for any thermal bridging. The NCC requires thermal bridging to be accounted for to determine the Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$. Refer to an ESD consultant to determine Total R-Value, tailored to your project's framing design and cladding system.

## OWS30.1

**FIRE RESISTANCE LEVEL**
NLB **-/30/30**
LB **30/30/30**
FROM OUTSIDE ONLY

**FRL Basis:** FC16195



### SYSTEM DESCRIPTION

**Internal Lining:**
1x10 mm non-fire resistant lining
**Framing:** Rondo lipped steel studs
**Insulation:** Refer to table
**External Lining:**
1x13 mm MultiStop ONE
**External Cladding:**
Lightweight External Cladding on battens over Building membrane and thermal break to NCC requirements.

**ACOUSTIC RATINGS** RT&A TK778-14F01
**THERMAL BASIS:** JMF REPORT I274H
Based on studs @ 450 mm ctrs

| SYSTEM | INTERNAL LINING | EXTERNAL LINING | WALL WIDTH mm | NOM 93 + CLADDING | | | NOM 113 + CLADDING | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | STUD SIZE mm | 70 | | | 90 | | |
| | | | | 0.75 BMT | 1.15 BMT | $R_{ti(SUM)}$/ $R_{ti(WIN)}$** | 0.75 BMT | 1.15 BMT | $R_{ti(SUM)}$/ $R_{ti(WIN)}$** |
| | | | INSULATION* | $R_w$ ($R_w$+$C_{tr}$) | $R_w$ ($R_w$+$C_{tr}$) | | $R_w$ ($R_w$+$C_{tr}$) | $R_w$ ($R_w$+$C_{tr}$) | |
| OWS30.1A | 1x10 mm SHEETROCK ONE | 1x13 mm MULTISTOP ONE | KI 50G14 | 39(31) | 35(30) | R1.78 / R1.93 | 40(32) | 36(31) | R1.85 / R2.00 |
| | | | KI 90G24 | - | - | - | 42(33) | 38(32) | R2.85 / R3.06 |
| | | | KI 90G32 | - | - | - | 42(33) | 38(32) | R3.05 / R3.26 |
| OWS30.1C | 1x10 mm SHEETROCK PLUS | 1x13 mm MULTISTOP ONE | KI 50G14 | 41(33) | 39(32) | R1.78 / R1.93 | 42(34) | 40(33) | R1.85 / R2.00 |
| | | | KI 90G24 | - | - | - | 44(35) | 42(34) | R2.85 / R3.06 |
| | | | KI 90G32 | - | - | - | 44(35) | 42(34) | R3.05 / R3.26 |

* KI 50G14 - 50 mm glasswool insulation 14 kg/m³ density
KI 90G24 - 90 mm glasswool insulation 24 kg/m³ density
KI 90G32 - 90 mm glasswool insulation 32 kg/m³ density
** The system values $R_{ti(SUM)}$ and $R_{ti(WIN)}$ provided have been calculated based on a thermal path through the wall cavity and does not allow for any thermal bridging. The NCC requires thermal bridging to be accounted for to determine the Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$. Refer to an ESD consultant to determine Total R-Value, tailored to your project's framing design and cladding system.

For the full range of Knauf systems refer to **knauf.com/en-AU/knauf-gypsum/services/tools/eselector**
Blue text indicates systems and products suitable for wet areas.

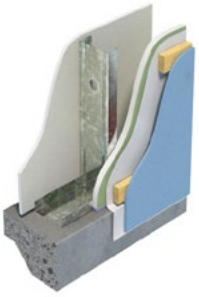
# OUTRWALL® RESIDENTIAL



## OWS60.1

**FIRE RESISTANCE LEVEL**
NLB **-/60/60+**
LB **60/60/60+** ACR 20%
FROM OUTSIDE ONLY

**FRL Basis:** FC16195



### SYSTEM DESCRIPTION

**Internal Lining:**
1x10 mm non-fire resistant lining
**Framing:** Rondo lipped steel studs
**Insulation:** Refer to table
**External Lining:**
1x16 mm MultiStop ONE
**External Cladding:**
James Hardie fibre cement cladding (min 10 kg/m²) on 35 mm top hats over Building membrane to NCC requirements.

**ACOUSTIC RATINGS** RT&A TK778-14F01
**THERMAL BASIS:** JMF REPORT I274H
Based on studs @ 450 mm ctrs

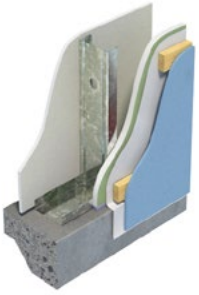
| SYSTEM | INTERNAL LINING | EXTERNAL LINING | WALL WIDTH mm | NOM 96 + CLADDING | | | NOM 116 + CLADDING | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | STUD SIZE mm | 70 | | | 90 | | |
| | | | | 0.75 BMT | 1.15 BMT | $R_{ti(SUM)}$/ $R_{ti(WIN)}$** | 0.75 BMT | 1.15 BMT | $R_{ti(SUM)}$/ $R_{ti(WIN)}$** |
| | | | INSULATION* | $R_w$ ($R_w$+$C_{tr}$) | $R_w$ ($R_w$+$C_{tr}$) | | $R_w$ ($R_w$+$C_{tr}$) | $R_w$ ($R_w$+$C_{tr}$) | |
| **OWS60.1A** | 1x10 mm SHEETROCK ONE | 1x16 mm MULTISTOP ONE (+ JH CLADDING) | KI 50G14 | 43(35) | 39(34) | R1.83 / R1.98 | 44(36) | 40(35) | R1.90 / R2.05 |
| | | | KI 90G24 | - | - | - | 46(37) | 42(36) | R2.90 / R3.11 |
| | | | KI 90G32 | - | - | - | 47(37) | 43(36) | R3.10 / R3.30 |
| **OWS60.1E** | 1x10 mm SHEETROCK PLUS | 1x16 mm MULTISTOP ONE (+ JH CLADDING) | KI 50G14 | 45(37) | 41(36) | R1.83 / R1.98 | 46(38) | 42(37) | R1.90 / R2.05 |
| | | | KI 90G24 | - | - | - | 48(39) | 44(38) | R2.90 / R3.11 |
| | | | KI 90G32 | - | - | - | 48(39) | 44(38) | R3.10 / R3.30 |

* KI 50G14 - 50 mm glasswool insulation 14 kg/m³ density
KI 90G24 - 90 mm glasswool insulation 24 kg/m³ density
KI 90G32 - 90 mm glasswool insulation 32 kg/m³ density
** The system values $R_{ti(SUM)}$ and $R_{ti(WIN)}$ provided have been calculated based on a thermal path through the wall cavity and does not allow for any thermal bridging. The NCC requires thermal bridging to be accounted for to determine the Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$. Refer to an ESD consultant to determine Total R-Value, tailored to your project's framing design and cladding system.
+ Must include specified minimum KI 50G11 inside cavity to achieve FRL
† Refer Engineer for maximum heights for load bearing walls with ACR 20%

## OWS60.2

**FIRE RESISTANCE LEVEL**
NLB **-/60/60+**
LB **60/60/60+** ACR 20%
FROM OUTSIDE ONLY

**FRL Basis:** FC16195



### SYSTEM DESCRIPTION

**Internal Lining:**
1x13 mm non-fire resistant lining
**Framing:** Rondo lipped steel studs
**Insulation:** Refer to table
**External Lining:**
1x16 mm MultiStop ONE
**External Cladding:**
Lightweight External Cladding on battens over Building membrane and thermal break to NCC requirements.

**ACOUSTIC RATINGS** RT&A TK778-14F01
**THERMAL BASIS:** JMF REPORT I274H
Based on studs @ 450 mm ctrs

| SYSTEM | INTERNAL LINING | EXTERNAL LINING | WALL WIDTH mm | NOM 99 + CLADDING | | | NOM 119 + CLADDING | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | STUD SIZE mm | 70 | | | 90 | | |
| | | | | 0.75 BMT | 1.15 BMT | $R_{ti(SUM)}$/ $R_{ti(WIN)}$** | 0.75 BMT | 1.15 BMT | $R_{ti(SUM)}$/ $R_{ti(WIN)}$** |
| | | | INSULATION* | $R_w$ ($R_w$+$C_{tr}$) | $R_w$ ($R_w$+$C_{tr}$) | | $R_w$ ($R_w$+$C_{tr}$) | $R_w$ ($R_w$+$C_{tr}$) | |
| **OWS60.2A** | 1x13 mm SHEETROCK ONE | 1x16 mm MULTISTOP ONE | KI 50G14 | 42(35) | 38(34) | R1.84 / R1.99 | 43(36) | 39(35) | R1.91 / R2.06 |
| | | | KI 90G24 | - | - | - | 45(37) | 41(36) | R2.91 / R3.12 |
| | | | KI 90G32 | - | - | - | 45(37) | 41(36) | R3.11 / R3.31 |
| **OWS60.2B** | 1x13 mm WETSTOP | 1x16 mm MULTISTOP ONE | KI 50G14 | 42(35) | 38(34) | R1.84 / R1.99 | 43(36) | 39(35) | R1.91 / R2.06 |
| | | | KI 90G24 | - | - | - | 45(37) | 41(36) | R2.91 / R3.12 |
| | | | KI 90G32 | - | - | - | 45(37) | 41(36) | R3.11 / R3.31 |

* KI 50G14 - 50 mm glasswool insulation 14 kg/m³ density
KI 90G24 - 90 mm glasswool insulation 24 kg/m³ density
KI 90G32 - 90 mm glasswool insulation 32 kg/m³ density
** The system values $R_{ti(SUM)}$ and $R_{ti(WIN)}$ provided have been calculated based on a thermal path through the wall cavity and does not allow for any thermal bridging. The NCC requires thermal bridging to be accounted for to determine the Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$. Refer to an ESD consultant to determine Total R-Value, tailored to your project's framing design and cladding system.
+ Must include specified minimum KI 50G11 inside cavity to achieve FRL
† Refer Engineer for maximum heights for load bearing walls with ACR 20%

For the full range of Knauf systems refer to **knauf.com/en-AU/knauf-gypsum/services/tools/eselector**
Blue text indicates systems and products suitable for wet areas.

# OUTRWALL® COMMERCIAL

## OWT30.2

**FIRE RESISTANCE LEVEL**
LB **30/30/30**
**FROM BOTH SIDES**

**FRL Basis:** FC16195

**ACOUSTIC RATINGS** RT&A TK778-14F01
**THERMAL BASIS:** JMF REPORT 274G

Based on studs @ 450 mm ctrs

| SYSTEM | INTERNAL LINING | EXTERNAL LINING | WALL WIDTH mm | NOM 96 + CLADDING | | NOM 116 + CLADDING | |
|---|---|---|---|---|---|---|---|
| | | | STUD SIZE mm | 70 | | 90 | |
| | | | INSULATION* | $R_w$ ($R_w$+$C_{tr}$) | $R_{ti(SUM)}$/$R_{tiWIN)}$** | $R_w$ ($R_w$+$C_{tr}$) | $R_{ti(SUM)}$/$R_{ti(WIN)}$** |
| **OWT30.2A** | 1x13 mm FIRESTOP | 1x13 mm MULTISTOP ONE | KI 50G14 | 40(31) | R1.79 / R1.94 | 40(32) | R1.86 / R2.01 |
| | | | KI 90G24 | - | - | 42(33) | R2.86 / R3.07 |
| | | | KI 90G32 | - | - | 42(33) | R3.06 / R3.27 |

* KI 50G14 - 50 mm glasswool insulation 14 kg/m³ density
KI 90G24 - 90 mm glasswool insulation 24 kg/m³ density
KI 90G32 - 90 mm glasswool insulation 32 kg/m³ density
** The system values $R_{ti(SUM)}$ and $R_{ti(WIN)}$ provided have been calculated based on a thermal path through the wall cavity and does not allow for any thermal bridging. The NCC requires thermal bridging to be accounted for to determine the Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$. Refer to an ESD consultant to determine Total R-Value, tailored to your project's framing design and cladding system.

### SYSTEM DESCRIPTION

**Internal Lining:**
1x13 mm fire resistant pbd
**Framing:** Timber Studs
**Insulation:** Refer to table
**External Lining:**
1x13 mm MultiStop ONE
**External Cladding:**
Lightweight External Cladding on battens over Building membrane to NCC requirements.

## OWT60.3

**FIRE RESISTANCE LEVEL**
LB **60/60/60**
CF **23†**
**FROM BOTH SIDES**

**FRL Basis:** FC16195

**ACOUSTIC RATINGS** RT&A TK778-14F01
**THERMAL BASIS:** JMF REPORT 274G

Based on studs @ 450 mm ctrs

| SYSTEM | INTERNAL LINING | EXTERNAL LINING | WALL WIDTH mm | NOM 102 + CLADDING | | NOM 122 + CLADDING | |
|---|---|---|---|---|---|---|---|
| | | | STUD SIZE mm | 70 | | 90 | |
| | | | INSULATION* | $R_w$ ($R_w$+$C_{tr}$) | $R_{ti(SUM)}$/$R_{tiWIN)}$** | $R_w$ ($R_w$+$C_{tr}$) | $R_{ti(SUM)}$/$R_{ti(WIN)}$** |
| **OWT60.3A** | 1x16 mm FIRESTOP | 1x16 mm MULTISTOP ONE | KI 50G14 | 41(33) | R1.86 / R2.01 | 41(34) | R1.93 / R2.08 |
| | | | KI 90G24 | - | - | 43(35) | R2.93 / R3.14 |
| | | | KI 90G32 | - | - | 43(35) | R3.13 / R3.34 |

* KI 50G14 - 50 mm glasswool insulation 14 kg/m³ density
KI 90G24 - 90 mm glasswool insulation 24 kg/m³ density
KI 90G32 - 90 mm glasswool insulation 32 kg/m³ density
** The system values $R_{ti(SUM)}$ and $R_{ti(WIN)}$ provided have been calculated based on a thermal path through the wall cavity and does not allow for any thermal bridging. The NCC requires thermal bridging to be accounted for to determine the Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$. Refer to an ESD consultant to determine Total R-Value, tailored to your project's framing design and cladding system.
† Refer to Charfactor design tables for maximum vertical loads on load bearing fire rated walls

### SYSTEM DESCRIPTION

**Internal Lining:**
1x16 mm fire resistant lining
**Framing:** Timber Studs
**Insulation:** Refer to table
**External Lining:**
1x16 mm MultiStop ONE
**External Cladding:**
Lightweight External Cladding on battens over Building membrane to NCC requirements.

For the full range of Knauf systems refer to **knauf.com/en-AU/knauf-gypsum/services/tools/eselector**
Blue text indicates systems and products suitable for wet areas.

# OUTRWALL® COMMERCIAL

## OWT90.1

**FIRE RESISTANCE LEVEL**
LB **90/90/90+**
CF **11†**
FROM OUTSIDE ONLY

**FRL Basis:** FC16195

**ACOUSTIC RATINGS** RT&A TK778-14F01
**THERMAL BASIS:** JMF REPORT 274G
Based on studs @ 450 mm ctrs

| SYSTEM | INTERNAL LINING | EXTERNAL LINING | WALL WIDTH mm | NOM 106 + CLADDING | | NOM 126 + CLADDING | |
|---|---|---|---|---|---|---|---|
| | | | STUD SIZE mm | 70 | | 90 | |
| | | | INSULATION* | $R_w$ ($R_w$+$C_{tr}$) | $R_{ti(SUM)}$/$R_{tiWIN)}$** | $R_w$ ($R_w$+$C_{tr}$) | $R_{ti(SUM)}$/$R_{ti(WIN)}$** |
| OWT90.1A | 1x10 mm SHEETROCK ONE | 2x13 mm MULTISTOP ONE | KI 50G14 | 41(33) | R1.89 / R2.02 | 41(34) | R1.96 / R2.09 |
| | | | KI 90G24 | - | - | 43(35) | R2.96 / R3.15 |
| | | | KI 90G32 | - | - | 43(35) | R3.17 / R3.34 |
| OWT90.1C | 1x10 mm SHEETROCK PLUS | 2x13 mm MULTISTOP ONE | KI 50G14 | 43(34) | R1.89 / R2.02 | 43(35) | R1.96 / R2.09 |
| | | | KI 90G24 | - | - | 45(36) | R2.96 / R3.15 |
| | | | KI 90G32 | - | - | 45(36) | R3.17 / R3.34 |

* KI 50G14 - 50 mm glasswool insulation 14 kg/m³ density
KI 90G24 - 90 mm glasswool insulation 24 kg/m³ density
KI 90G32 - 90 mm glasswool insulation 32 kg/m³ density
** The system values $R_{ti(SUM)}$ and $R_{ti(WIN)}$ provided have been calculated based on a thermal path through the wall cavity and does not allow for any thermal bridging. The NCC requires thermal bridging to be accounted for to determine the Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$. Refer to an ESD consultant to determine Total R-Value, tailored to your project's framing design and cladding system.
\+ Must include specified minimum KI 50G11 inside cavity to achieve FRL
† Refer to Charfactor design tables for maximum vertical loads on load bearing fire rated walls

### SYSTEM DESCRIPTION

**Internal Lining:**
1x10 mm non-fire resistant pbd
**Framing:** Timber Studs
**Insulation:** Refer to table
**External Lining:**
2x13 mm MultiStop ONE
**External Cladding:**
Lightweight External Cladding on battens over Building membrane to NCC requirements.

## OWT90.2

**FIRE RESISTANCE LEVEL**
LB **90/90/90**
FROM OUTSIDE ONLY

**FRL Basis:** FC16195

**ACOUSTIC RATINGS** RT&A TK778-14F01
**THERMAL BASIS:** JMF REPORT 274G
Based on studs @ 450 mm ctrs

| SYSTEM | INTERNAL LINING | EXTERNAL LINING | WALL WIDTH mm | NOM 112 + CLADDING | | NOM 132 + CLADDING | |
|---|---|---|---|---|---|---|---|
| | | | STUD SIZE mm | 70 | | 90 | |
| | | | INSULATION* | $R_w$ ($R_w$+$C_{tr}$) | $R_{ti(SUM)}$/$R_{ti(WIN)}$** | $R_w$ ($R_w$+$C_{tr}$) | $R_{ti(SUM)}$/$R_{ti(WIN)}$** |
| OWT90.2A | 1x10 mm SHEETROCK ONE | 2x16 mm MULTISTOP ONE | KI 50G14 | 41(33) | R1.91 / R2.06 | 41(34) | R1.98 / R2.13 |
| | | | KI 90G24 | - | - | 43(35) | R2.98 / R3.19 |
| | | | KI 90G32 | - | - | 43(35) | R3.19 / R3.38 |
| OWT90.2C | 1x10 mm SHEETROCK PLUS | 2x16 mm MULTISTOP ONE | KI 50G14 | 43(33) | R1.91 / R2.06 | 43(34) | R1.98 / R2.13 |
| | | | KI 90G24 | - | - | 45(35) | R2.98 / R3.19 |
| | | | KI 90G32 | - | - | 45(35) | R3.19 / R3.38 |

* KI 50G14 - 50 mm glasswool insulation 14 kg/m³ density
KI 90G24 - 90 mm glasswool insulation 24 kg/m³ density
KI 90G32 - 90 mm glasswool insulation 32 kg/m³ density
** The system values $R_{ti(SUM)}$ and $R_{ti(WIN)}$ provided have been calculated based on a thermal path through the wall cavity and does not allow for any thermal bridging. The NCC requires thermal bridging to be accounted for to determine the Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$. Refer to an ESD consultant to determine Total R-Value, tailored to your project's framing design and cladding system.

### SYSTEM DESCRIPTION

**Internal Lining:**
1x10 mm non-fire resistant lining
**Framing:** Timber Studs
**Insulation:** Refer to table
**External Lining:**
2x16 mm MultiStop ONE
**External Cladding:**
Lightweight External Cladding on battens over Building membrane to NCC requirements.

For the full range of Knauf systems refer to **knauf.com/en-AU/knauf-gypsum/services/tools/eselector**
Blue text indicates systems and products suitable for wet areas.

# OUTRWALL® COMMERCIAL

## OWT90.3

**FIRE RESISTANCE LEVEL**
LB **90/90/90**
FROM OUTSIDE
LB **60/60/60**
CF **23**†
FROM INSIDE

**FRL Basis:** FC16195

**ACOUSTIC RATINGS** RT&A TK778-14F01
**THERMAL BASIS:** JMF REPORT 274G
Based on studs @ 450 mm ctrs

| SYSTEM | INTERNAL LINING | EXTERNAL LINING | WALL WIDTH mm | NOM 118 + CLADDING | | NOM 138 + CLADDING | |
|---|---|---|---|---|---|---|---|
| | | | STUD SIZE mm | 70 | | 90 | |
| | | | INSULATION* | $R_w$ ($R_w$+$C_{tr}$) | $R_{ti(SUM)}$/$R_{ti(WIN)}$** | $R_w$ ($R_w$+$C_{tr}$) | $R_{ti(SUM)}$/$R_{ti(WIN)}$** |
| **OWT90.3A** | 1x16 mm FIRESTOP | 2x16 mm MULTISTOP ONE | KI 50G14 | 44(36) | R1.95 / R2.10 | 44(37) | R2.02 / R2.17 |
| | | | KI 90G24 | - | - | 46(38) | R3.02 / R3.23 |
| | | | KI 90G32 | - | - | 46(38) | R3.22 / R3.42 |

* KI 50G14 - 50 mm glasswool insulation 14 kg/m³ density
KI 90G24 - 90 mm glasswool insulation 24 kg/m³ density
KI 90G32 - 90 mm glasswool insulation 32 kg/m³ density
** The system values $R_{ti(SUM)}$ and $R_{ti(WIN)}$ provided have been calculated based on a thermal path through the wall cavity and does not allow for any thermal bridging. The NCC requires thermal bridging to be accounted for to determine the Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$. Refer to an ESD consultant to determine Total R-Value, tailored to your project's framing design and cladding system.
† Refer to Charfactor design tables for maximum vertical loads on load bearing fire rated walls

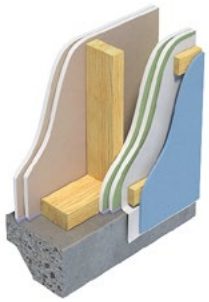
### SYSTEM DESCRIPTION

**Internal Lining:**
1x16 mm fire resistant pbd
**Framing:** Timber Studs
**Insulation:** Refer to table
**Internal Lining:**
2x16 mm MultiStop ONE
**External Cladding:**
Lightweight External Cladding on battens over Building membrane to NCC requirements.

## OWT90.4

**FIRE RESISTANCE LEVEL**
LB **90/90/90**
CF **11**†
FROM BOTH SIDES

**FRL Basis:** FC16195



**ACOUSTIC RATINGS** RT&A TK778-14F01
**THERMAL BASIS:** JMF REPORT 274G
Based on studs @ 450 mm ctrs

| SYSTEM | INTERNAL LINING | EXTERNAL LINING | WALL WIDTH mm | NOM 122 + CLADDING | | NOM 142 + CLADDING | |
|---|---|---|---|---|---|---|---|
| | | | STUD SIZE mm | 70 | | 90 | |
| | | | INSULATION* | $R_w$ ($R_w$+$C_{tr}$) | $R_{ti(SUM)}$/$R_{ti(WIN)}$** | $R_w$ ($R_w$+$C_{tr}$) | $R_{ti(SUM)}$/$R_{ti(WIN)}$** |
| **OWT90.4A** | 2x13 mm FIRESTOP | 2x13 mm MULTISTOP ONE | KI 50G14 | 46(36) | R1.91 / R2.06 | 46(37) | R1.98 / R2.13 |
| | | | KI 90G24 | - | - | 48(38) | R2.98 / R3.19 |
| | | | KI 90G32 | - | - | 48(38) | R3.18 / R3.39 |

* KI 50G14 - 50 mm glasswool insulation 14 kg/m³ density
KI 90G24 - 90 mm glasswool insulation 24 kg/m³ density
KI 90G32 - 90 mm glasswool insulation 32 kg/m³ density
** The system values $R_{ti(SUM)}$ and $R_{ti(WIN)}$ provided have been calculated based on a thermal path through the wall cavity and does not allow for any thermal bridging. The NCC requires thermal bridging to be accounted for to determine the Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$. Refer to an ESD consultant to determine Total R-Value, tailored to your project's framing design and cladding system.
† Refer to Charfactor design tables for maximum vertical loads on load bearing fire rated walls

### SYSTEM DESCRIPTION

**Internal Lining:**
2x13 mm fire resistant pbd
**Framing:** Timber Studs
**Insulation:** Refer to table
**External Lining:**
2x13 mm MultiStop ONE
**External Cladding:**
Lightweight External Cladding on battens over Building membrane to NCC requirements.

For the full range of Knauf systems refer to **knauf.com/en-AU/knauf-gypsum/services/tools/eselector**
Blue text indicates systems and products suitable for wet areas.

# OUTRWALL® COMMERCIAL



## OWT120.1

**FIRE RESISTANCE LEVEL**
LB **120/120/120**
CF **21†**
FROM BOTH SIDES

**FRL Basis:** FC16195

**ACOUSTIC RATINGS** RT&A TK778-14F01
**THERMAL BASIS:** JMF REPORT 274G
Based on studs @ 450 mm ctrs

| SYSTEM | INTERNAL LINING | EXTERNAL LINING | WALL WIDTH mm | NOM 134 + CLADDING | | NOM 154 + CLADDING | |
|---|---|---|---|---|---|---|---|
| | | | STUD SIZE mm | 70 | | 90 | |
| | | | INSULATION* | $R_w$ ($R_w$+$C_{tr}$) | $R_{ti(SUM)}$/$R_{ti(WIN)}$** | $R_w$ ($R_w$+$C_{tr}$) | $R_{ti(SUM)}$/$R_{ti(WIN)}$** |
| OWT120.1A | 2x16 mm FIRESTOP | 2x16 mm MULTISTOP ONE | KI 50G14 | 47(38) | R2.03 / R2.18 | 47(39) | R2.10 / R2.25 |
| | | | KI 90G24 | - | - | 49(40) | R3.10 / R3.31 |
| | | | KI 90G32 | - | - | 49(40) | R3.30 / R3.51 |

* KI 50G14 - 50 mm glasswool insulation 14 kg/m³ density
KI 90G24 - 90 mm glasswool insulation 24 kg/m³ density
KI 90G32 - 90 mm glasswool insulation 32 kg/m³ density
** The system values $R_{ti(SUM)}$ and $R_{ti(WIN)}$ provided have been calculated based on a thermal path through the wall cavity and does not allow for any thermal bridging. The NCC requires thermal bridging to be accounted for to determine the Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$. Refer to an ESD consultant to determine Total R-Value, tailored to your project's framing design and cladding system.
† Refer to Charfactor design tables for maximum vertical loads on load bearing fire rated walls

### SYSTEM DESCRIPTION

**Internal Lining:**
2x16 mm fire resistant pbd
**Framing:** Timber Studs
**Insulation:** Refer to table
**External Lining:**
2x16 mm MultiStop ONE
**External Cladding:**
Lightweight External Cladding on battens over Building membrane to NCC requirements.

## OWT120.3

**FIRE RESISTANCE LEVEL**
LB **120/120/120**
FROM BOTH SIDES

**FRL Basis:** FC16195

**ACOUSTIC RATINGS** RT&A TK778-14F01
**THERMAL BASIS:** JMF REPORT 274G
Based on studs @ 450 mm ctrs

| SYSTEM | INTERNAL LINING | EXTERNAL LINING | WALL WIDTH mm | NOM 166 + CLADDING | | NOM 186 + CLADDING | |
|---|---|---|---|---|---|---|---|
| | | | STUD SIZE mm | 70 | | 90 | |
| | | | INSULATION* | $R_w$ ($R_w$+$C_{tr}$) | $R_{ti(SUM)}$/$R_{ti(WIN)}$** | $R_w$ ($R_w$+$C_{tr}$) | $R_{ti(SUM)}$/$R_{ti(WIN)}$** |
| OWT120.3A | 3x16 mm FIRESTOP | 3x16 mm MULTISTOP ONE | KI 50G14 | 50(40) | R2.09 / R2.24 | 50(41) | R2.16 / R2.31 |
| | | | KI 90G24 | - | - | 52(42) | R3.16 / R3.37 |
| | | | KI 90G32 | - | - | 52(42) | R3.36 / R3.57 |

* KI 50G14 - 50 mm glasswool insulation 14 kg/m³ density
KI 90G24 - 90 mm glasswool insulation 24 kg/m³ density
KI 90G32 - 90 mm glasswool insulation 32 kg/m³ density
** The system values $R_{ti(SUM)}$ and $R_{ti(WIN)}$ provided have been calculated based on a thermal path through the wall cavity and does not allow for any thermal bridging. The NCC requires thermal bridging to be accounted for to determine the Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$. Refer to an ESD consultant to determine Total R-Value, tailored to your project's framing design and cladding system.

### SYSTEM DESCRIPTION

**Internal Lining:**
3x16 mm fire resistant pbd
**Framing:** Timber Studs
**Insulation:** Refer to table
**External Lining:**
3x16 mm MultiStop ONE
**External Cladding:**
Lightweight External Cladding on battens over Building membrane to NCC requirements.

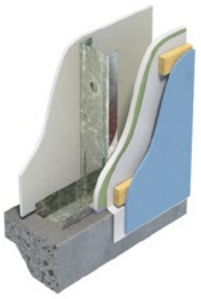
For the full range of Knauf systems refer to **knauf.com/en-AU/knauf-gypsum/services/tools/eselector**
Blue text indicates systems and products suitable for wet areas.

# OUTRWALL® COMMERCIAL

## OWS60.1

**FIRE RESISTANCE LEVEL**
NLB -/60/60+
LB 60/60/60+ ACR 20%
FROM OUTSIDE ONLY

**FRL Basis:** FC16195



**ACOUSTIC RATINGS** RT&A TK778-14F01
**THERMAL BASIS:** JMF REPORT I274H
Based on studs @ 450 mm ctrs

| SYSTEM | INTERNAL LINING | EXTERNAL LINING | WALL WIDTH mm | NOM 102 + CLADDING | | | NOM 118 + CLADDING | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | STUD SIZE mm | 76 | | | 92 | | |
| | | | | 0.75 BMT | 1.15 BMT | $R_{ti(SUM)}$/ $R_{ti(WIN)}$** | 0.75 BMT | 1.15 BMT | $R_{ti(SUM)}$/ $R_{ti(WIN)}$** |
| | | | INSULATION* | $R_w$ ($R_w$+$C_{tr}$) | $R_w$ ($R_w$+$C_{tr}$) | | $R_w$ ($R_w$+$C_{tr}$) | $R_w$ ($R_w$+$C_{tr}$) | |
| **OWS60.1N** | 1x10 mm SHEETROCK ONE | 1x16 mm MULTISTOP ONE (+ JH CLADDING) | KI 50G14 | 43(35) | 39(34) | R1.83 / R1.98 | 44(36) | 40(35) | R1.90 / R2.05 |
| | | | KI 90G24 | - | - | - | 46(37) | 42(36) | R2.90 / R3.11 |
| | | | KI 90G32 | - | - | - | 47(37) | 43(36) | R3.10 / R3.30 |
| **OWS60.1O** | 1x10 mm SHEETROCKPLUS | 1x16 mm MULTISTOP ONE (+ JH CLADDING) | KI 50G14 | 45(37) | 41(36) | R1.83 / R1.98 | 46(38) | 42(37) | R1.90 / R2.05 |
| | | | KI 90G24 | - | - | - | 48(39) | 44(38) | R2.90 / R3.11 |
| | | | KI 90G32 | - | - | - | 48(39) | 44(38) | R3.10 / R3.30 |

* KI 50G14 - 50 mm glasswool insulation 14 kg/m³ density
KI 90G24 - 90 mm glasswool insulation 24 kg/m³ density
KI 90G32 - 90 mm glasswool insulation 32 kg/m³ density
** The system values $R_{ti(SUM)}$ and $R_{ti(WIN)}$ provided have been calculated based on a thermal path through the wall cavity and does not allow for any thermal bridging. The NCC requires thermal bridging to be accounted for to determine the Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$. Refer to an ESD consultant to determine Total R-Value, tailored to your project's framing design and cladding system.
+ Must include specified minimum KI 50G11 inside cavity to achieve FRL
† Refer Rondo/Engineer for maximum heights for load bearing walls with ACR 20%

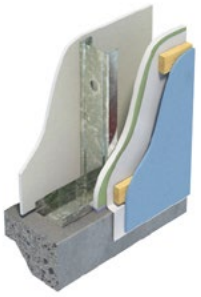
### SYSTEM DESCRIPTION

**Internal Lining:**
1x10 mm non-fire resistant lining
**Framing:** Rondo lipped steel studs
**Insulation:** Refer to table
**External Lining:**
1x16 mm MultiStop ONE
**External Cladding:**
James Hardie fibre cement cladding (min 10 kg/m²) on 35 mm top hats over Building membrane to NCC requirements.

## OWS60.2

**FIRE RESISTANCE LEVEL**
NLB -/60/60+
LB 60/60/60+ ACR 20%
FROM OUTSIDE ONLY

**FRL Basis:** FC16195



**ACOUSTIC RATINGS** RT&A TK778-14F01
**THERMAL BASIS:** JMF REPORT I274H
Based on studs @ 450 mm ctrs

| SYSTEM | INTERNAL LINING | EXTERNAL LINING | WALL WIDTH mm | NOM 105 + CLADDING | | | NOM 121 + CLADDING | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | STUD SIZE mm | 76 | | | 92 | | |
| | | | | 0.75 BMT | 1.15 BMT | $R_{ti(SUM)}$/ $R_{ti(WIN)}$** | 0.75 BMT | 1.15 BMT | $R_{ti(SUM)}$/ $R_{ti(WIN)}$** |
| | | | INSULATION* | $R_w$ ($R_w$+$C_{tr}$) | $R_w$ ($R_w$+$C_{tr}$) | | $R_w$ ($R_w$+$C_{tr}$) | $R_w$ ($R_w$+$C_{tr}$) | |
| **OWS60.2C** | 1x13 mm SHEETROCK ONE | 1x16 mm MULTISTOP ONE | KI 50G14 | 42(35) | 38(34) | R1.84 / R1.99 | 43(36) | 39(35) | R1.91 / R2.06 |
| | | | KI 90G24 | - | - | - | 45(37) | 41(36) | R2.91 / R3.12 |
| | | | KI 90G32 | - | - | - | 45(37) | 41(36) | R3.11 / R3.31 |
| **OWS60.2D** | 1x13 mm WETSTOP | 1x16 mm MULTISTOP ONE | KI 50G14 | 42(35) | 38(34) | R1.84 / R1.99 | 43(36) | 39(35) | R1.91 / R2.06 |
| | | | KI 90G24 | - | - | - | 45(37) | 41(36) | R2.91 / R3.12 |
| | | | KI 90G32 | - | - | - | 45(37) | 41(36) | R3.11 / R3.31 |

* KI 50G14 - 50 mm glasswool insulation 14 kg/m³ density
KI 90G24 - 90 mm glasswool insulation 24 kg/m³ density
KI 90G32 - 90 mm glasswool insulation 32 kg/m³ density
** The system values $R_{ti(SUM)}$ and $R_{ti(WIN)}$ provided have been calculated based on a thermal path through the wall cavity and does not allow for any thermal bridging. The NCC requires thermal bridging to be accounted for to determine the Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$. Refer to an ESD consultant to determine Total R-Value, tailored to your project's framing design and cladding system.
+ Must include specified minimum KI 50G11 inside cavity to achieve FRL
† Refer Rondo/Engineer for maximum heights for load bearing walls with ACR 20%

### SYSTEM DESCRIPTION

**Internal Lining:**
1x13 mm non-fire resistant lining
**Framing:** Rondo lipped steel studs
**Insulation:** Refer to table
**External Lining:**
1x16 mm MultiStop ONE
**External Cladding:**
Lightweight External Cladding on battens over Building membrane and thermal break to NCC requirements.

For the full range of Knauf systems refer to **knauf.com/en-AU/knauf-gypsum/services/tools/eselector**
Blue text indicates systems and products suitable for wet areas.

# OUTRWALL® COMMERCIAL



## OWS60.3

**FIRE RESISTANCE LEVEL**
NLB **-/60/60+**
LB **30/30/30**
FROM BOTH SIDES

**FRL Basis:** FC16195

**ACOUSTIC RATINGS** RT&A TK778-14F01
**THERMAL BASIS:** JMF REPORT I274H
Based on studs @ 450 mm ctrs

| SYSTEM | INTERNAL LINING | EXTERNAL LINING | WALL WIDTH mm | NOM 102 + CLADDING | | | NOM 118 + CLADDING | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | STUD SIZE mm | 76 | | | 92 | | |
| | | | | 0.75 BMT | 1.15 BMT | $R_{ti(SUM)}$/ $R_{ti(WIN)}$** | 0.75 BMT | 1.15 BMT | $R_{ti(SUM)}$/ $R_{ti(WIN)}$** |
| | | | INSULATION* | $R_w$ ($R_w$+$C_{tr}$) | $R_w$ ($R_w$+$C_{tr}$) | | $R_w$ ($R_w$+$C_{tr}$) | $R_w$ ($R_w$+$C_{tr}$) | |
| **OWS60.3A** | 1x13 mm FIRESTOP | 1x13 mm MULTISTOP ONE | KI 50G14 | 43(35) | 39(34) | R1.79 / R1.94 | 44(36) | 40(35) | R1.86 / R2.01 |
| | | | KI 90G24 | - | - | - | 46(37) | 42(36) | R2.86 / R3.07 |
| | | | KI 90G32 | - | - | - | 46(37) | 42(36) | R3.06 / R3.27 |

* KI 50G14 - 50 mm glasswool insulation 14 kg/m³ density
KI 90G24 - 90 mm glasswool insulation 24 kg/m³ density
KI 90G32 - 90 mm glasswool insulation 32 kg/m³ density
** The system values $R_{ti(SUM)}$ and $R_{ti(WIN)}$ provided have been calculated based on a thermal path through the wall cavity and does not allow for any thermal bridging. The NCC requires thermal bridging to be accounted for to determine the Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$. Refer to an ESD consultant to determine Total R-Value, tailored to your project's framing design and cladding system.
+ Must include specified minimum KI 50G11 inside cavity to achieve FRL

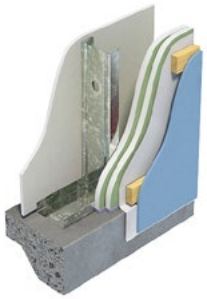
### SYSTEM DESCRIPTION

**Internal Lining:**
1x13 mm fire rated lining
**Framing:** Rondo lipped steel studs
**Insulation:** Refer to table
**External Lining:**
1x13 mm MultiStop ONE
**External Cladding:**
Lightweight External Cladding on battens over Building membrane and thermal break to NCC requirements.

## OWS90.1

**FIRE RESISTANCE LEVEL**
NLB **-/90/90**
LB **90/90/90**
FROM OUTSIDE ONLY

**FRL Basis:** FC16195



**ACOUSTIC RATINGS** RT&A TK778-14F01
**THERMAL BASIS:** JMF REPORT I274H
Based on studs @ 450 mm ctrs

| SYSTEM | INTERNAL LINING | EXTERNAL LINING | WALL WIDTH mm | NOM 112 + CLADDING | | | NOM 128 + CLADDING | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | STUD SIZE mm | 76 | | | 92 | | |
| | | | | 0.75 BMT | 1.15 BMT | $R_{ti(SUM)}$/ $R_{ti(WIN)}$** | 0.75 BMT | 1.15 BMT | $R_{ti(SUM)}$/ $R_{ti(WIN)}$** |
| | | | INSULATION* | $R_w$ ($R_w$+$C_{tr}$) | $R_w$ ($R_w$+$C_{tr}$) | | $R_w$ ($R_w$+$C_{tr}$) | $R_w$ ($R_w$+$C_{tr}$) | |
| **OWS90.1A** | 1x10 mm SHEETROCK ONE | 2x13 mm MULTISTOP ONE | KI 50G14 | 43(34) | 39(33) | R1.89 / R2.02 | 44(35) | 40(34) | R1.96 / R2.09 |
| | | | KI 90G24 | - | - | - | 46(36) | 42(35) | R2.96 / R3.15 |
| | | | KI 90G32 | - | - | - | 46(36) | 42(35) | R3.17 / R3.34 |
| **OWS90.1C** | 1x10 mm SHEETROCK PLUS | 2x13 mm MULTISTOP ONE | KI 50G14 | 45(36) | 41(35) | R1.89 / R2.02 | 46(37) | 42(36) | R1.96 / R2.09 |
| | | | KI 90G24 | - | - | - | 48(38) | 44(37) | R2.96 / R3.15 |
| | | | KI 90G32 | - | - | - | 48(38) | 44(37) | R3.17 / R3.34 |

* KI 50G14 - 50 mm glasswool insulation 14 kg/m³ density
KI 90G24 - 90 mm glasswool insulation 24 kg/m³ density
KI 90G32 - 90 mm glasswool insulation 32 kg/m³ density
** The system values $R_{ti(SUM)}$ and $R_{ti(WIN)}$ provided have been calculated based on a thermal path through the wall cavity and does not allow for any thermal bridging. The NCC requires thermal bridging to be accounted for to determine the Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$. Refer to an ESD consultant to determine Total R-Value, tailored to your project's framing design and cladding system.

### SYSTEM DESCRIPTION

**Internal Lining:**
1x10 mm non-fire resistant lining
**Framing:** Rondo lipped steel studs
**Insulation:** Refer to table
**External Lining:**
2x13 mm MultiStop ONE
**External Cladding:**
Lightweight External Cladding on battens over Building membrane and thermal break to NCC requirements.

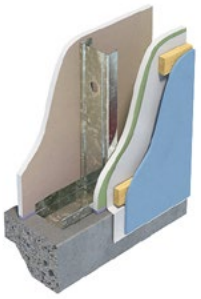
For the full range of Knauf systems refer to **knauf.com/en-AU/knauf-gypsum/services/tools/eselector**
Blue text indicates systems and products suitable for wet areas.

# OUTRWALL® COMMERCIAL

## OWS90.2

**FIRE RESISTANCE LEVEL**
NLB **-/90/90+**
LB **60/60/60** ACR 20%
FROM BOTH SIDES

**FRL Basis:** FC16195



**ACOUSTIC RATINGS** RT&A TK778-14F01
**THERMAL BASIS:** JMF REPORT I274H
Based on studs @ 450 mm ctrs

| SYSTEM | INTERNAL LINING | EXTERNAL LINING | WALL WIDTH mm | NOM 108 + CLADDING | | | NOM 124 + CLADDING | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | STUD SIZE mm | 76 | | | 92 | | |
| | | | | 0.75 BMT | 1.15 BMT | $R_{ti(SUM)}$/ $R_{ti(WIN)}$** | 0.75 BMT | 1.15 BMT | $R_{ti(SUM)}$/ $R_{ti(WIN)}$** |
| | | | INSULATION* | $R_w$ ($R_w$+$C_{tr}$) | $R_w$ ($R_w$+$C_{tr}$) | | $R_w$ ($R_w$+$C_{tr}$) | $R_w$ ($R_w$+$C_{tr}$) | |
| **OWS90.2A** | 1x16 mm FIRESTOP | 1x16 mm MULTISTOP ONE | KI 50G14 | 44(36) | 40(35) | R1.86 / R2.01 | 45(37) | 41(36) | R1.93 / R2.08 |
| | | | KI 90G24 | - | - | - | 47(38) | 43(37) | R2.93 / R3.14 |
| | | | KI 90G32 | - | - | - | 47(38) | 43(37) | R3.13 / R3.34 |

* KI 50G14 - 50 mm glasswool insulation 14 kg/m³ density
KI 90G24 - 90 mm glasswool insulation 24 kg/m³ density
KI 90G32 - 90 mm glasswool insulation 32 kg/m³ density
** The system values $R_{ti(SUM)}$ and $R_{ti(WIN)}$ provided have been calculated based on a thermal path through the wall cavity and does not allow for any thermal bridging. The NCC requires thermal bridging to be accounted for to determine the Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$. Refer to an ESD consultant to determine Total R-Value, tailored to your project's framing design and cladding system.
+ Must include specified minimum KI 50G11 inside cavity to achieve FRL
† Refer Rondo/Engineer for maximum heights for load bearing walls with ACR 20%

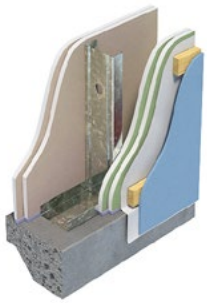
### SYSTEM DESCRIPTION

**Internal Lining:**
1x16 mm fire rated lining
**Framing:** Rondo lipped steel studs
**Insulation:** Refer to table
**External Lining:**
1x16 mm MultiStop ONE
**External Cladding:**
Lightweight External Cladding on battens over Building membrane and thermal break to NCC requirements.

## OWS120.3

**FIRE RESISTANCE LEVEL**
NLB **-/120/120**
LB **90/90/90**
FROM BOTH SIDES

**FRL Basis:** FC16195



**ACOUSTIC RATINGS** RT&A TK778-14F01
**THERMAL BASIS:** JMF REPORT I274H
Based on studs @ 450 mm ctrs

| SYSTEM | INTERNAL LINING | EXTERNAL LINING | WALL WIDTH mm | NOM 128 + CLADDING | | | NOM 144 + CLADDING | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | STUD SIZE mm | 76 | | | 92 | | |
| | | | | 0.75 BMT | 1.15 BMT | $R_{ti(SUM)}$/ $R_{ti(WIN)}$** | 0.75 BMT | 1.15 BMT | $R_{ti(SUM)}$/ $R_{ti(WIN)}$** |
| | | | INSULATION* | $R_w$ ($R_w$+$C_{tr}$) | $R_w$ ($R_w$+$C_{tr}$) | | $R_w$ ($R_w$+$C_{tr}$) | $R_w$ ($R_w$+$C_{tr}$) | |
| **OWS120.3A** | 2x13 mm FIRESTOP | 2x13 mm MULTISTOP ONE | KI 50G14 | 50(41) | 46(40) | R1.91 / R2.06 | 51(42) | 47(41) | R1.98 / R2.13 |
| | | | KI 90G24 | - | - | - | 53(43) | 49(42) | R2.98 / R3.19 |
| | | | KI 90G32 | - | - | - | 53(43) | 49(42) | R3.18 / R3.39 |

* KI 50G14 - 50 mm glasswool insulation 14 kg/m3 density
KI 90G24 - 90 mm glasswool insulation 24 kg/m3 density
KI 90G32 - 90 mm glasswool insulation 32 kg/m3 density
** The system values $R_{ti(SUM)}$ and $R_{ti(WIN)}$ provided have been calculated based on a thermal path through the wall cavity and does not allow for any thermal bridging. The NCC requires thermal bridging to be accounted for to determine the Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$. Refer to an ESD consultant to determine Total R-Value, tailored to your project's framing design and cladding system.

### SYSTEM DESCRIPTION

**Internal Lining:**
2x13 mm fire resistant lining
**Framing:** Rondo lipped steel studs
**Insulation:** Refer to table
**External Lining:**
2x13 mm MultiStop ONE
**External Cladding:**
Lightweight External Cladding on battens over Building membrane and thermal break to NCC requirements.

For the full range of Knauf systems refer to **knauf.com/en-AU/knauf-gypsum/services/tools/eselector**
Blue text indicates systems and products suitable for wet areas.

# OUTRWALL® COMMERCIAL

## OWS120.4

**FIRE RESISTANCE LEVEL**
NLB **-/120/120**
LB **120/120/120** ACR 20%
FROM BOTH SIDES

**FRL Basis:** FC16195

### SYSTEM DESCRIPTION

**Internal Lining:**
2x16 mm fire resistant lining
**Framing:** Rondo lipped steel studs
**Insulation:** Refer to table
**External Lining:**
2x16 mm MultiStop ONE
**External Cladding:**
Lightweight External Cladding on battens over Building membrane and thermal break to NCC requirements.

**ACOUSTIC RATINGS** RT&A TK778-14F01
**THERMAL BASIS:** JMF REPORT I274H
Based on studs @ 450 mm ctrs

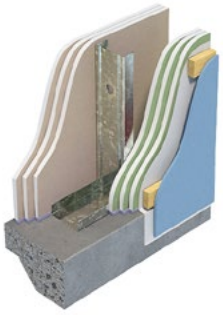
| SYSTEM | INTERNAL LINING | EXTERNAL LINING | WALL WIDTH mm | NOM 140 + CLADDING | | | NOM 156 + CLADDING | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | STUD SIZE mm | 76 | | | 92 | | |
| | | | | 0.75 BMT | 1.15 BMT | $R_{ti(SUM)}$/ $R_{ti(WIN)}$** | 0.75 BMT | 1.15 BMT | $R_{ti(SUM)}$/ $R_{ti(WIN)}$** |
| | | | INSULATION* | $R_w$ ($R_w$+$C_{tr}$) | $R_w$ ($R_w$+$C_{tr}$) | | $R_w$ ($R_w$+$C_{tr}$) | $R_w$ ($R_w$+$C_{tr}$) | |
| **OWS120.4A** | 2x16 mm FIRESTOP | 2x16 mm MULTISTOP ONE | KI 50G14 | 51(43) | 47(42) | R2.03 / R2.18 | 52(44) | 48(43) | R2.10 / R2.25 |
| | | | KI 90G24 | - | - | - | 54(45) | 50(44) | R3.10 / R3.31 |
| | | | KI 90G32 | - | - | - | 54(45) | 50(44) | R3.30 / R3.51 |

* KI 50G14 - 50 mm glasswool insulation 14 kg/m³ density
KI 90G24 - 90 mm glasswool insulation 24 kg/m³ density
KI 90G32 - 90 mm glasswool insulation 32 kg/m³ density
Refer Engineer for maximum heights for load bearing walls with ACR 20%
** The system values $R_{ti(SUM)}$ and $R_{ti(WIN)}$ provided have been calculated based on a thermal path through the wall cavity and does not allow for any thermal bridging. The NCC requires thermal bridging to be accounted for to determine the Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$. Refer to an ESD consultant to determine Total R-Value, tailored to your project's framing design and cladding system.

## OWS180.3

**FIRE RESISTANCE LEVEL**
NLB **-/180/180** †
LB **120/120/120**
FROM BOTH SIDES

**FRL Basis:** FC16195



### SYSTEM DESCRIPTION

**Internal Lining:**
3x16 mm fire resistant lining
**Framing:** Rondo lipped steel studs
**Insulation:** Refer to table
**External Lining:**
3x16 mm MultiStop ONE
**External Cladding:**
Lightweight External Cladding on battens over Building membrane and thermal break to NCC requirements.

**ACOUSTIC RATINGS** RT&A TK778-14F01
**THERMAL BASIS:** JMF REPORT I274H
Based on studs @ 450 mm ctrs

| SYSTEM | INTERNAL LINING | EXTERNAL LINING | WALL WIDTH mm | NOM 172 + CLADDING | | | NOM 188 + CLADDING | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | STUD SIZE mm | 76 | | | 92 | | |
| | | | | 0.75 BMT | 1.15 BMT | $R_{ti(SUM)}$/ $R_{ti(WIN)}$** | 0.75 BMT | 1.15 BMT | $R_{ti(SUM)}$/ $R_{ti(WIN)}$** |
| | | | INSULATION* | $R_w$ ($R_w$+$C_{tr}$) | $R_w$ ($R_w$+$C_{tr}$) | | $R_w$ ($R_w$+$C_{tr}$) | $R_w$ ($R_w$+$C_{tr}$) | |
| **OWS180.3A** | 3x16 mm FIRESTOP | 3x16 mm MULTISTOP ONE | KI 50G14 | 54(45) | 50(44) | R2.10 / R2.25 | 55(46) | 51(45) | R2.17 / R2.32 |
| | | | KI 90G24 | - | - | - | 57(47) | 53(46) | R3.17 / R3.38 |
| | | | KI 90G32 | - | - | - | 57(47) | 53(46) | R3.37 / R3.58 |

* KI 50G14 - 50 mm glasswool insulation 14 kg/m³ density
KI 90G24 - 90 mm glasswool insulation 24 kg/m³ density
KI 90G32 - 90 mm glasswool insulation 32 kg/m³ density
** The system values $R_{ti(SUM)}$ and $R_{ti(WIN)}$ provided have been calculated based on a thermal path through the wall cavity and does not allow for any thermal bridging. The NCC requires thermal bridging to be accounted for to determine the Total R-Value or $R_{t(SUM)}$, $R_{t(WIN)}$. Refer to an ESD consultant to determine Total R-Value, tailored to your project's framing design and cladding system.
† Refer Rondo and Knauf for maximum wall heights under structural and fire condition

# BRICK VENEER WALLS

## BVT

**FIRE RESISTANCE LEVEL**
(refer to table)

**FRL Basis:** FC16195

### SYSTEM DESCRIPTION

**Brick Veneer:**
110 clay brick, min 170 kg/m²
**Framing:** Timber
**Gap:** 50 mm
**Insulation:** Refer to table
**Internal Lining:**
Refer to table.

**ACOUSTIC RATINGS** BASIS: RT&A TE405-20S07, TK778-14S01

| SYSTEM | FIRE RESISTANCE LEVEL | | INTERNAL LINING | WALL WIDTH mm | 230 + LINING | 250 + LINING | TOTAL R-VALUE m²K/W |
|---|---|---|---|---|---|---|---|
| | FROM INSIDE | FROM OUTSIDE | | STUD SIZE mm | 70 | 90 | |
| | | | | INSULATION* | $R_W$ ($R_W$+$C_{tr}$) | $R_W$ ($R_W$+$C_{tr}$) | |
| **BVT.1A** | –/–/– | BRICK VENEER FRL | 1x10 mm SHEETROCK ONE | KI 90G24 | 59(49) | 59(50) | 3.3 |
| **BVT30.1A** | LB 30/30/30 | MIN 30/30/30 BRICK VENEER FRL | 1x13 mm FIRESTOP | KI 90G24 | 64(55) | 65(56) | 3.3 |
| **BVT60.1A** | LB 60/60/60 CF23† | MIN 60/60/60 BRICK VENEER FRL | 1x16 mm FIRESTOP | KI 90G24 | 66(56) | 67(58) | 3.3 |
| **BVT90.1A** | LB 90/90/90 CF11† | MIN 90/90/90 BRICK VENEER FRL | 2x13 mm FIRESTOP | KI 90G24 | 70(61) | 71(62) | 3.3 |
| **BVT120.1A** | LB 120/120/120 CF21† | MIN 120/120/120 BRICK VENEER FRL | 2x16 mm FIRESTOP | KI 90G24 | 71(62) | 72(63) | 3.3 |

* KI 90G24 – 90 mm glasswool insulation 24 kg/m³ density
† Refer to Charfactor design tables for maximum vertical loads on load bearing fire rated walls

## BVS

**FIRE RESISTANCE LEVEL**
(refer to table)

**FRL Basis:** FC16195

### SYSTEM DESCRIPTION

**Brick Veneer:**
110 clay brick, min 170 kg/m²
**Framing:** Steel stud
**Gap:** 50 mm
**Insulation:** Refer to table
**Internal Lining:**
Refer to table.

**ACOUSTIC RATINGS** BASIS: RT&A TE405-20S07, TK778-14S01 — Based on stud @ 450 mm ctrs

| SYSTEM | FIRE RESISTANCE LEVEL | | INTERNAL LINING | WALL WIDTH mm | 236 + LINING | 252 + LINING | TOTAL R-VALUE m²K/W |
|---|---|---|---|---|---|---|---|
| | FROM INSIDE | FROM OUTSIDE | | STUD SIZE mm | 76 | 92 | |
| | | | | INSULATION* | $R_W$ ($R_W$+$C_{tr}$) | $R_W$ ($R_W$+$C_{tr}$) | |
| **BVS.1A** | –/–/– | BRICK VENEER FRL | 1x10 mm SHEETROCK ONE | KI 90G24 | 59(49) | 59(50) | 3.3 |
| **BVS60.1A** | NLB -/60/60 LB 30/30/30 | MIN 60/60/60 BRICK VENEER FRL | 1x13 mm FIRESTOP | KI 90G24 | 64(55) | 65(56) | 3.3 |
| **BVS90.1A** | NLB –/90/90 LB 60/60/60 ACR 20% | MIN 90/90/90 BRICK VENEER FRL | 1x16 mm FIRESTOP | KI 90G24 | 66(56) | 67(58) | 3.3 |
| **BVS120.1A** | NLB -/120/120 LB 90/90/90 | MIN 90/90/90 BRICK VENEER FRL | 2x13 mm FIRESTOP | KI 90G24 | 70(61) | 71(62) | 3.3 |
| **BVS120.2A** | NLB -/120/120 LB 120/120/120 ACR 20% | MIN 120/120/120 BRICK VENEER FRL | 2x16 mm FIRESTOP | KI 90G24 | 71(62) | 72(63) | 3.3 |

* KI 90G24 – 90 mm glasswool insulation 24 kg/m³ density
Refer Engineer for maximum heights for load bearing walls with ACR 20%

**NOTE:**
Refer to Rondo Building Services for steel studs and thicknesses for external wall applications

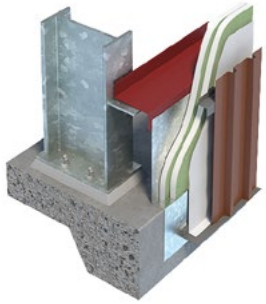
For the full range of Knauf systems refer to **knauf.com/en-AU/knauf-gypsum/services/tools/eselector**
Blue text indicates systems and products suitable for wet areas.

# FIRECLAD®

## FC

**FIRE RESISTANCE LEVEL**
(refer to table)

**FRL Basis:** FC16195, FC17308



### SYSTEM DESCRIPTION

**External Lining:**

– Steel cladding on battens
– Building membrane to NCC requirements
– Two or more layers of MULTISTOP ONE fixed to girts.

**ACOUSTIC RATINGS** BASIS: RT&A TE405-20S07

| SYSTEM | FRL | LINING | NOM WALL WIDTH mm | INSULATION | $R_w$ | R-VALUE m²K/W |
|---|---|---|---|---|---|---|
| **FC60.1A** | 60/60/60 from outside only | 2x16 mm MULTISTOP ONE | Adds 54 mm | NA | 36 | 0.5 |
| **FC90.1A** | 90/90/90 from outside only | 3x13 mm MULTISTOP ONE | Adds 61 mm | NA | 38 | 0.5 |
| **FC120.1A** | 120/120/120 from outside only | 3x16 mm MULTISTOP ONE | Adds 70 mm | NA | 39 | 0.5 |