



ARIDON[®] SMART WALL

THE SUPER-INSULATED RIGID AIR BARRIER SYSTEM

SPECIFIER AND BUILDER GUIDE 2017



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PRODUCT DESCRIPTION

1.1 GENERAL

The ARIDON® SMART WALL system is a revolutionary, all-in-one, Super Insulated Rigid Air Barrier System that interlocks together on the outside of the building frame, replacing building wrap/rigid air barrier, insulation and cavity battens.

ARIDON® SMART WALL continuous insulation eliminates thermal bridging, provides superior weather protection to the building and delivers significantly higher constructed R values (often 40% better) than traditional cavity insulation systems, regardless of wall framing layout.

The product is available with a flat face in 2 thicknesses:

- 60mm (R1.76 for thermal performance generally around 25% better than R2.8 traditional cavity insulation depending on framing ratio)
- 80mm (R2.22 for thermal performance similar to R4 cavity insulation depending on framing ratios)

These panels are generally suitable for use with standard E2 Compliant claddings (when used with structural battens), veneer claddings and proprietary cladding systems.

Continuous insulation is a best practice building concept used throughout Germany, Canada and the USA, as its energy efficiency and sustainability benefits are renowned for surpassing traditional cavity based insulation methods. ARIDON® SMART WALL has combined these best practice systems with gold standard weatherproofing techniques to provide New Zealanders with a superior insulated weatherproofing system.

The ARIDON® SMART WALL continuous insulation system is an alternative building solution to traditional building wrap, cavity battens and insulation and is compliant with the New Zealand Building Code performance requirements for E2 External Moisture & H1 Energy Efficiency in addition to the relevant clauses of B1 Structure, B2 Durability and F2 Hazardous Building Materials.

The ARIDON® SMART WALL system is BRANZ Appraised for use as a Rigid Air Barrier / Underlay system in all New Zealand wind zones up to and including SED wind zones in accordance with this guide). It can also be used as a temporary weatherproofing system (maximum 60 days unclad) allowing internal linings, plumbing and wiring to continue prior to exterior claddings being installed. The system is BRANZ appraised under H1 Energy Efficiency to provide insulation to the building with a minimum construction R value of 2.1 (for the

60mm panel with minimum framing ratio, uninsulated cladding and no other insulation) for the life of the building, leaving wall cavities free for wiring and plumbing.

ARIDON® SMART WALL easily exceeds NZBC insulation requirements without any additional insulation in the framing cavity. Cavity insulation, however, may be added to the wall cavity in some regions where this is supported by site specific Dynamic hygrothermal modelling using WUFI (or similar software) or where a smart vapour layer is included on the inside face of the wall framing.



Figure 1:
Typical ARIDON®
SMART WALL Panel

1.2 ARIDON® SMART WALL ADVANTAGES

The ARIDON® SMART WALL continuous insulation system is the only 'all-in one' system in Australasia that can provide the energy efficiency and moisture protection benefits New Zealand buildings should aspire to:

- 🏠 **Maximise Energy Efficiency** - 60mm ARIDON® SMART WALL continuous insulation provides superior thermal performance compared to any cavity insulation suitable for 90mm framing (including R2.8 cavity insulation) - as it wraps the frame in a rigid, weather tight thermal blanket. The 80mm ARIDON® SMART WALL system (combined with 90mm framing) provides comparable insulating performance to that of 140mm framing and R4 cavity insulation.
- 🏠 **Weatherproof your build** - This interlocking, self-sealing panel system boasts compressible seals and a capillary water chase within the joints, reducing your reliance on tapes and sealants. Once installed, the continuous sheathing provides moisture protection both during and after construction.

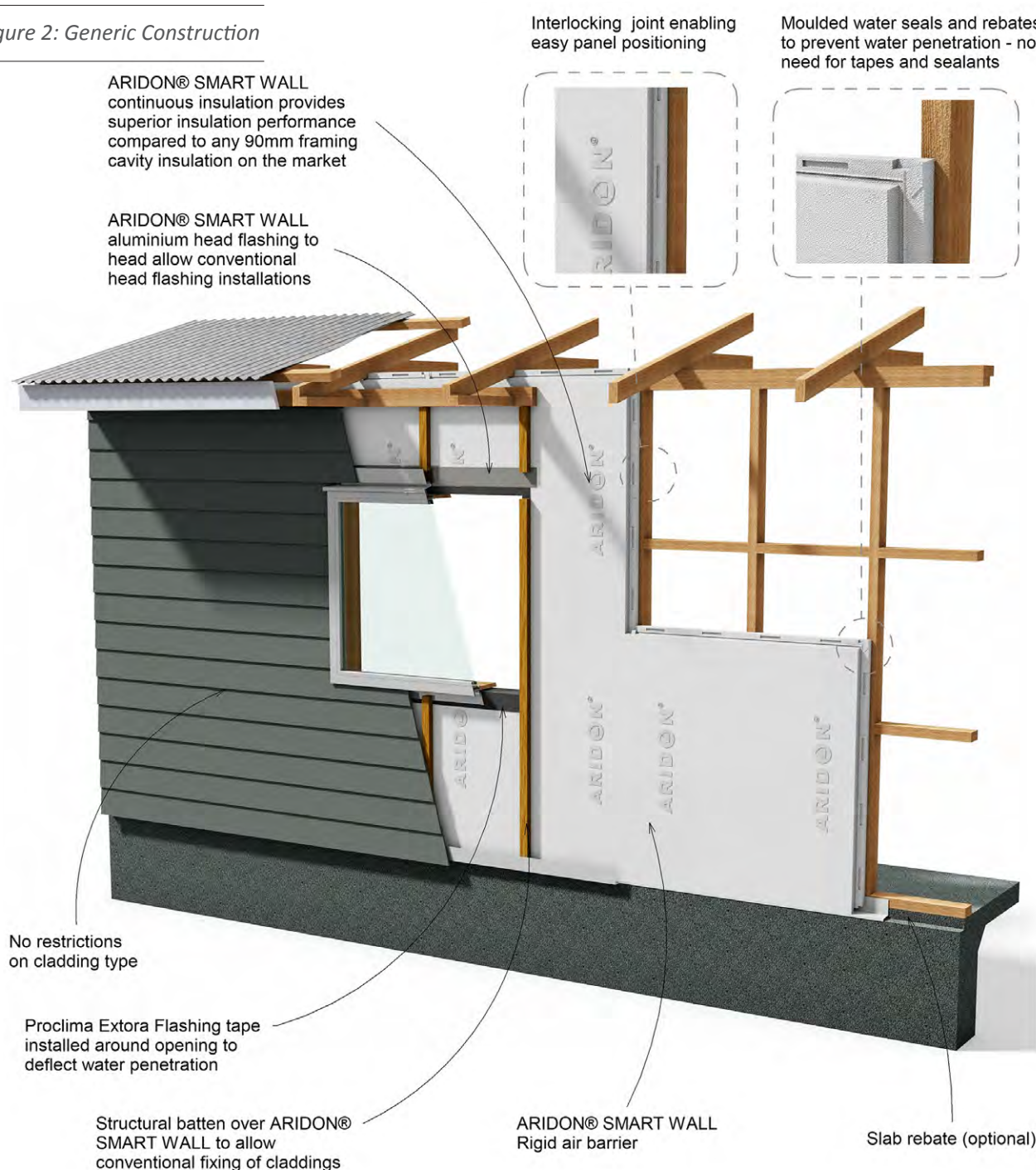
- 🏠 **Decrease your build time** - Temporary 60 day weather-tight building envelope. Clad a typical house with ARIDON® SMART WALL in 2-4 days, so you can start the interior fit out, with no hold-ups while the cladding is installed. This can save 2-4* weeks on the total house build time by allowing interior trades to commence work sooner.
- 🏠 **Provide a Healthier Environment** - As the ARIDON® SMART WALL panels lock together to provide a seamless insulating air barrier they reduce undesirable air flow and moderate internal temperature fluctuations – a key trigger of respiratory illness, such as Asthma.

- 🏠 **The more Sustainable building alternative** - Made of extra high density EPS moulded in New Zealand, Aridon boasts a very low carbon mile footprint. EPS rigid insulation is the only rigid insulation product recyclable in New Zealand.

**Time savings are indicative only and are based on builders utilising the benefits of early close in. Actual time savings will depend on scheduling of trades, weather conditions at time of construction and other factors outside of Aridon Ltd control.*

ARIDON® SMART WALL: THE ALL-IN-ONE INSULATED WEATHER PROTECTION SYSTEM

Figure 2: Generic Construction

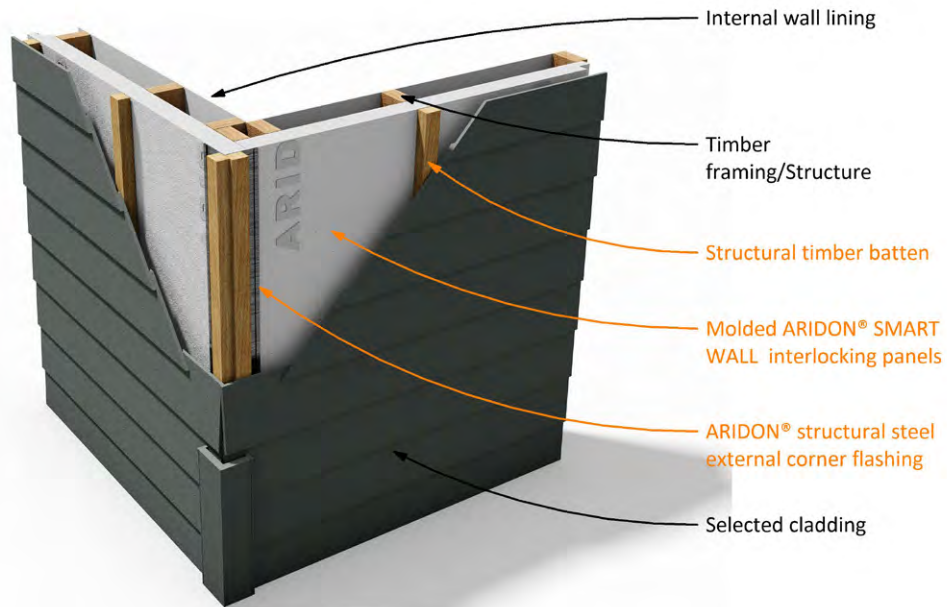


1.3 APPLICATIONS

The ARIDON® SMART WALL system has been appraised by BRANZ as a rigid wall underlay and rigid air barrier system, which incorporates in-built internal and exterior moisture protection and high performance wall insulation. It offers a temporary weatherproofing system for up to 60 days prior to cladding being installed. This document outlines the use of the ARIDON® SMART WALL Insulated Weather Protection system within the scope limitations of E2/

AS1, Paragraph 1.1, and situated in NZS 3604 Wind Zones up to and including Extra High and for use in SED Wind Zones up to 4.9kPa Ultimate Wind Pressure. The ARIDON® SMART WALL Panels may be used in conjunction with NZS 3604 timber framing and/or light gauge steel framing to specific engineering design and/or concrete or solid timber construction to specific engineering design.

ARIDON® SMART WALL EXTERNAL CORNER



TRADITIONAL E2 EXTERNAL CORNER

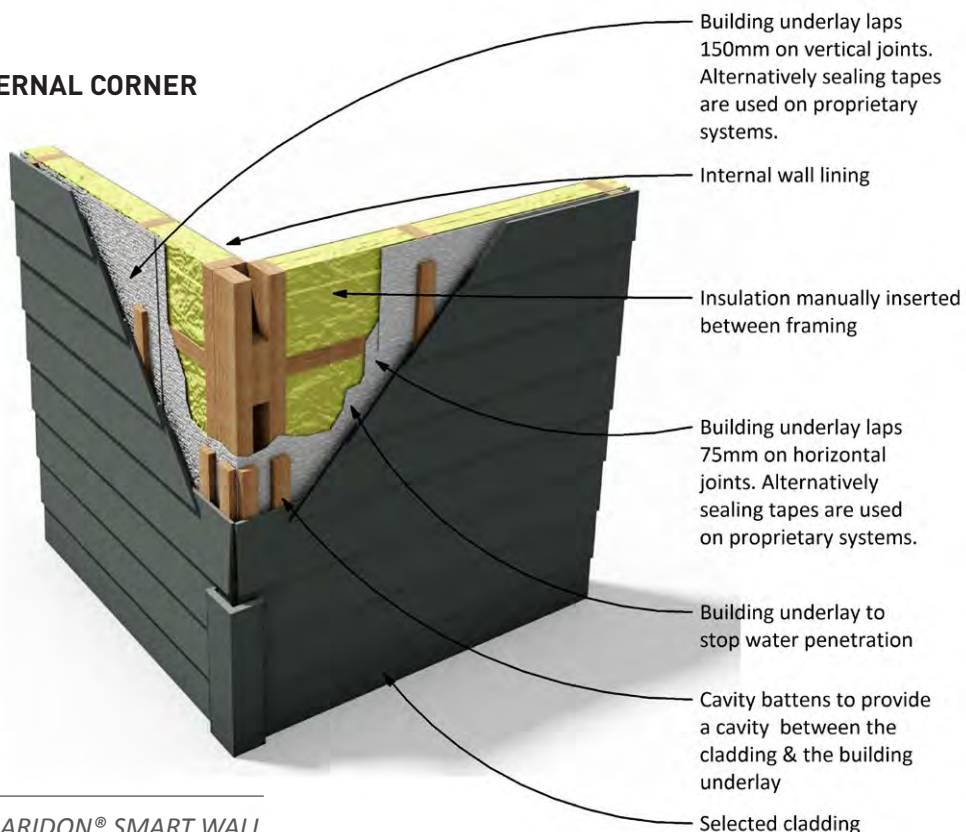


Figure 3: Comparison of ARIDON® SMART WALL vs Traditional Construction at External Corner

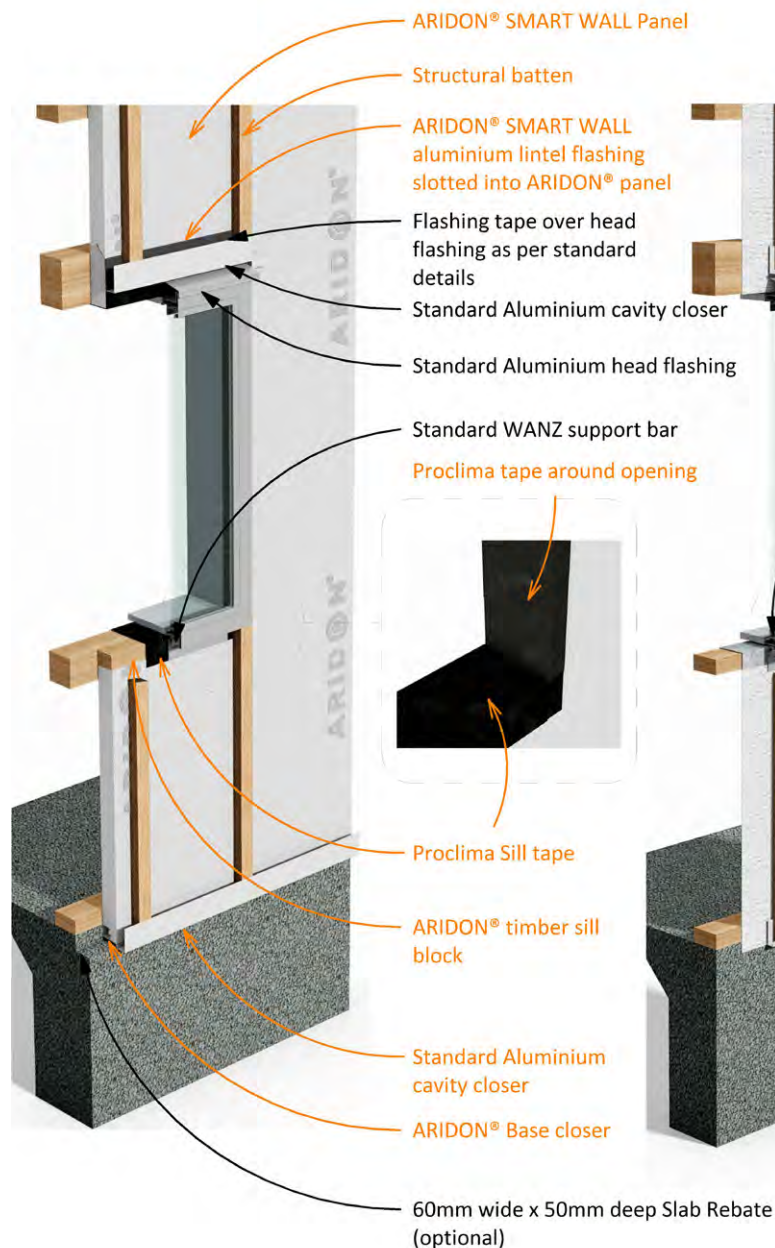
1.4 HOW DOES ARIDON® SMART WALL DIFFER TO TRADITIONAL SYSTEMS

Because ARIDON® SMART WALL wraps around the outside of the structural frame, thermal bridging is effectively eliminated. Traditional cold areas of the wall at corners, internal wall junctions and openings are clad in a thermal layer of ARIDON®. In addition, because the ARIDON® SMART WALL panels replace the building wrap/rigid air barrier layers + insulation, there are far fewer things to worry about and less materials to warranty.

1.5 ARIDON® SMART WALL COMPONENTS

The key components that differ between a traditional building and an ARIDON® SMART WALL building are demonstrated below – please note when designing the ARIDON® SMART WALL system that this guide is focussed on E2 compliant claddings and joinery. Most claddings and window joinery types can be accommodated with the ARIDON® SMART WALL system and Aridon Ltd should be contacted where combinations of materials are being used not specifically shown.

ARIDON® SMART WALL Window



Typical E2 Window

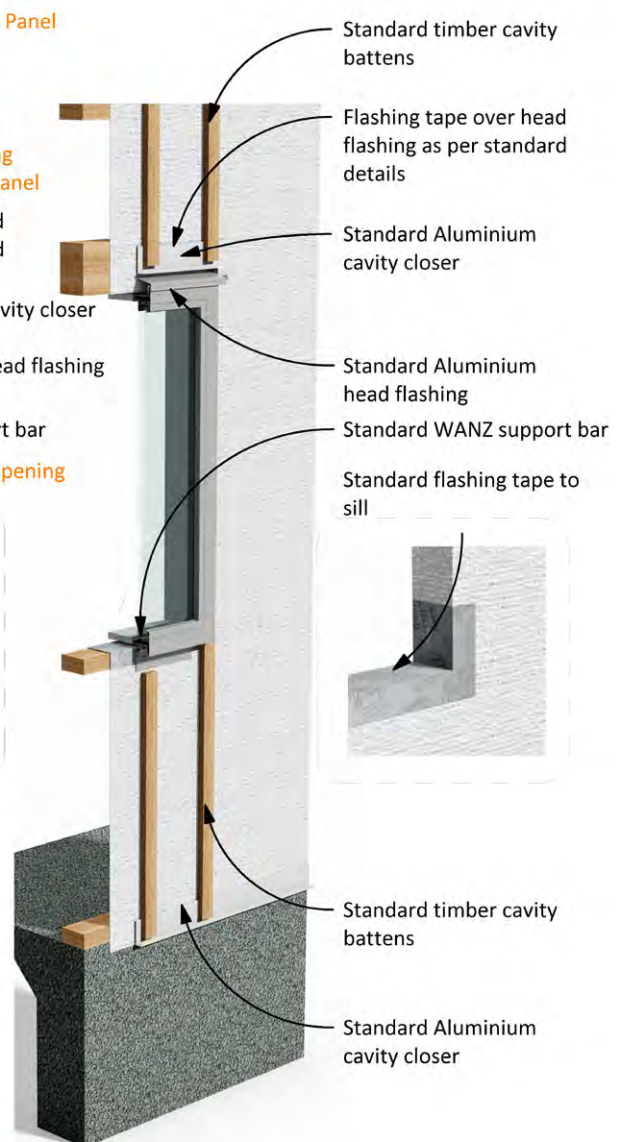











Figure 4: Comparison of ARIDON® SMART WALL vs Traditional Construction at openings

Table 1 - ARIDON SMART WALL Key Components

	DESCRIPTION	MATERIALS	PURPOSE
	ARIDON SMART WALL PANEL 60mm Flat - 1240mm x 1470mm x 60mm thick 80mm Flat - 1240mm x 1470mm x 80mm thick	ARIDON EPS	Insulated Rigid Air Barrier on exterior of wall
	ARIDON SMART WALL Structural Corner Flashing 90x90x0.55mm - for use with 60mm thick SMART WALL 110x110x0.55mm - for use with 80mm thick SMART WALL	COLORSTEEL MAXX or Stainless Steel	Used at External corners for fixing of claddings and structural battens
	ARIDON SMART WALL Base Closer (Available to suit 60mm and 80mm SMART WALL Systems)	Brushed Aluminium (powder coating available on request)	Vermin proofing of underside of SMART WALL SYSTEM (Not required with Masonry veneer)
	Cavity Closer (available to suit required drainage cavity width)	Brushed Aluminium (powder coating available on request)	Vermin proofing of underside of SMART WALL SYSTEM (Not required with Masonry veneer)
	ARIDON SMART WALL Zed FLASHING (Available to suit 60mm and 80mm SMART WALL Systems)	Brushed Aluminium (powder coating available on request)	Interstorey joints, horizontal butt joints between SMART WALL panels
	ARIDON SMART WALL LINTEL FLASHING (Available to suit 60mm and 80mm SMART WALL Systems)	Brushed Aluminium (powder coating available on request)	Located above openings to enable excellent substrate for taping of head flashings
	ARIDON SMART WALL OFF STUD JOINTER	Galvanised	Inserted into moulded vertical joints when joining panels off-stud to enable screw fixing of the SMART WALL panels vertically down the joint
	35mm x 45mm Structural Timber Battens	H3.1 Typically (H3.2 available on request)	Fixed vertically over studs at 400mm or 600mm ctrs to enable nail or screw fixings of claddings to these structural battens (cladding fixings do not need to extend back to the frame). These battens also hold the ARIDON SMART WALL panels in place
	60mm x 45mm Structural Timber Battens (60mm dimension may vary but minimum 45mm for installation over concrete/timber structures and 60mm minimum for installation over light steel framing. Generally supplied as part of proprietary cladding systems where horizontal battens are needed)	H3.1 Typically (H3.2 available on request)	Fixed horizontally to studs at spacings as specified by the cladding supplier to enable nail or screw fixings of claddings to these structural battens (cladding fixings do not need to extend back to the frame)

ARIDON® can also provide customised structural batten solutions from timber or steel to suit specific project needs where required. Please contact the ARIDON® team to discuss.

SPECIFYING ARIDON® SMART WALL

2.1 DESIGN CONSIDERATIONS

The ARIDON® SMART WALL Insulated Rigid Air Barrier System has been developed to enable designers to easily specify the system, with detailing similar to E2 of the New Zealand Building Code. Some important considerations for the specifier include:

- 🏠 ARIDON® SMART WALL replaces the building wrap/ Rigid Air Barrier and insulation in a standard wall.
- 🏠 ARIDON® SMART WALL is available with a flat face in 2 thicknesses.
 - 60mm (R1.76 for thermal performance generally around 25% better than R2.8 traditional cavity insulation depending on framing ratio)
 - 80mm (R2.22 for thermal performance similar to R4 cavity insulation depending on framing ratios)
- 🏠 ARIDON® SMART WALL can be specified with a number of cavity options as follows:
 - 35mm vertical structural battens forming a 35mm drained cavity
 - Wet Cavity (e.g. Brick/Masonry veneer)
 - Proprietary cladding system with cavity e.g. vertical Cedar, Aluminium, Weatherboard.
- 🏠 ARIDON® SMART WALL replaces the thermal break in steel framed construction.
- 🏠 Where proprietary battens are required for a proprietary cladding these should be screw fixed over the ARIDON® SMART WALL panels to the framing to allow the proprietary cladding details to be used. Aridon Ltd should be consulted for any cladding details not provided on the Aridon website. Where horizontal timber battens are used these should be a minimum of 45mm thickness to enable claddings to be nail fixed to those battens. Where vertical metal claddings are used and require a cavity, Cavibat or similar battens may be used in conjunction with cladding screw fixings back to the framing. Please contact Aridon Ltd for required screw types and sizes.
- 🏠 Preferred framing set out is indicated within this overview. However Aridon panels can be joined off stud using the Aridon off stud jointer system.
- 🏠 Due to the increased thickness of the wall, locations of openings should be checked for clearance from the return wall cladding lines at internal corners having regard for the combined thickness of the Aridon/cavity/cladding layers.
- 🏠 The thickness of the wall can either be disguised at the base by providing a foundation rebate or exposed as an overhang (where lightweight claddings are used).
- 🏠 Windows and doors should be located with flanges overlapping claddings as per NZBC E2 details and extended jamb liners or alternatively rebate windows with specific architectural details in accordance with cladding requirements.
- 🏠 Cavity insulation is not required in order to exceed minimum New Zealand Building Code requirements for walls, with either 60mm or 80mm ARIDON® SMART WALL, as the ARIDON® SMART WALL base system alone well exceeds the Building Code. Additional insulation can, however, be used in cavities to super-insulate if desired (Constructed R values surpassing R4.5, can be achieved). Where additional cavity insulation is specified this must either be supported by site specific Dynamic hygrothermal modelling using WUFI (or similar software) or by specifying a smart vapour retarding layer on the inside face of the wall framing to limit water vapour movement into the framing cavity.
- 🏠 Standard window/door head flashings and WNZ bars are compatible with the ARIDON® SMART WALL System.
- 🏠 Refer to the www.aridon.co.nz for an up to date list of suitable claddings that can be used with the ARIDON® SMART WALL System.

2.2 COMPLIANCE WITH THE NEW ZEALAND BUILDING CODE

The ARIDON® SMART WALL Super Insulated Rigid Air Barrier System is an Alternative Solution in relation to the NZ Building Code. BRANZ has appraised its use as specified in the scope of this document in relation to the performance requirements of the following clauses of the New Zealand Building Code:

B1 STRUCTURE

ARIDON® SMART WALL is suitable for use as a rigid air barrier and temporary weatherproofing system (maximum 60 days unclad) in all New Zealand wind zones up to and including EH (Extra High). Aridon can also be used in SED (Specific Engineering Design zones) up to ULS 4.9kPa in accordance with Table 3 below.

B2 DURABILITY

ARIDON® SMART WALL will continue to satisfy the requirements of the NZBC for not less than 50 years in all situations where materials are hidden within cladding cavities provided the claddings and other external envelope materials are adequately maintained. The ARIDON® SMART WALL accessories exposed and or/visible to the exterior will continue to satisfy the requirements of the NZBC for not less than 15 years.

E2 WEATHERTIGHTNESS

ARIDON® SMART WALL is suitable for use as a rigid air barrier in conjunction with the cladding materials listed in this guide in wind zones up to and including SED wind zones with a maximum ULS wind load of 4.9kPa without the need for building wrap or additional sealants.

ARIDON® SMART WALL is suitable for use as a temporary weatherproofing system for up to 60 days and with maximum ULS wind load of 4.1kPa allowing internal linings, plumbing and wiring to continue prior to exterior claddings being installed. The ARIDON® SMART WALL Super Insulated Rigid Air Barrier System must be completed in its entirety along with the roof, soffit linings, windows and doors (including head flashings and air seals) and sealing of all penetrations, prior to installation of internal linings.

Cladding systems should be independently verified as compliant with the respective NZBC requirements. Details for cladding installation should generally follow the generic ARIDON® SMART WALL details provided at www.aridon.co.nz and within this document. Specific cladding details not indicated on the ARIDON® SMART WALL drawings should be in accordance with the cladding supplier details. Refer to www.aridon.co.nz for a complete list of claddings compatible with the ARIDON® SMART WALL System. Aridon Ltd should be contacted prior to specification of any cladding

not specifically listed to ensure compatibility and to advise on detailing. Where any discrepancies may exist between a cladding supplier details and the ARIDON® SMART WALL generic details, these should be communicated to Aridon Ltd for resolution during the design phase of the project and prior to installation.

E3 INTERNAL MOISTURE

The ARIDON® SMART WALL system protects the wall construction from the risk of internal moisture related problems such as condensation, fungal growth and accumulation of contaminants between the SMART WALL layer and the internal linings. It forms a means of compliance for the functional and performance requirements of Clause E3 of the NZBC by providing thermal resistance around the exterior of the wall frame and acting as a vapour throttle to limit the amount of water vapour entering the wall framing cavity in typical construction. Extensive WUFI modelling is available for sites throughout NZ demonstrating that use of ARIDON® SMART WALL eliminates the risk of internal moisture related problems and provides far superior performance to traditional cavity insulation and highly vapour permeable wall constructions.

G4 VENTILATION

The ARIDON® SMART WALL system does not have any implications on the Ventilation requirements of the NZBC. Clause G4 provisions should be followed in the same way as for traditional construction when the ARIDON® SMART WALL system is used.

H1 ENERGY EFFICIENCY

ARIDON® SMART WALL panels provide sufficient insulation to the wall to easily exceed building code minimum requirements without insulation being required in the framing cavities. This leaves wall cavities free for wiring and plumbing. Insulation should not be installed except strictly in accordance with this guide. ARIDON® SMART WALL panels have a material R values of – as follows - 60mm panels – R1.76 and 80mm panels – R2.22. Construction R values can be calculated by adding the ARIDON® SMART WALL R value to the R values of the other materials without reductions for framing ratios. Since ARIDON® SMART WALL is placed on the warm side of the cladding cavity; the full material R value may be used in calculations and does not need to be reduced by a cavity factor. Actual Construction R values will depend on the actual wall construction and cladding material used, with a minimum constructed R value of R2.2 achieved with 60mm SMARTWALL PANELS, minimum framing ratio and uninsulated claddings. Note that this well exceeds the Construction R value achieved by R2.8 cavity insulation.

Note: The Construction R Value of a wall is the Total R value of all its components and is a measure of the actual energy efficiency of the wall – not the material R value of insulation itself. I.e., If a cavity insulation material is classified as e.g., R2.4, this is not directly reflective of the actual construction R value of the wall.

Additional EPS insulation, including ARIDON® SMART WALL waste off-cuts, may be installed in wall cavities and will increase the Construction R Value of these walls. There is no requirement for site specific hygrothermal modelling or Smart vapour retarding layers when EPS cavity insulation is used. Where additional EPS insulation is inserted into the wall cavity, and could come in contact with wiring – those wires should be Non-Migratory TPS type or completely ducted so that wiring is not in contact with the EPS.

Alternatively wiring can be run down the internal walls without the need for wire protection. Cavity EPS materials (when used) should be snugly cut to fit the framing and glue fixed to the Aridon panels with no gaps between the 2 insulation layers.

Note: If you choose to increase the level of insulation within the walls using insulation other than EPS in conjunction with the ARIDON® SMART WALL system, care must be taken to avoid systemic condensation issues that can arise when insulating materials with varying thermal and vapour permeability characteristics are combined. Therefore non-EPS cavity insulation should only be used where this is supported by site specific Dynamic hygrothermal modelling using WUFI (or similar software) or where a smart vapour layer is included on the inside face of the wall framing.

2.3 SITE REQUIREMENTS

GENERAL

Building sites shall be generally in accordance with NZS 3604. Construction of foundations shall be in accordance with NZS3604 or as designed by a Chartered Professional Engineer. The site exposure zone and wind zone shall be determined for the project by a suitably qualified professional and advised to Aridon Limited at time of order of materials.

DURABILITY

The ARIDON® SMART WALL System is suitable for all Exposure zones however fasteners for structural battens, structural flashings and claddings should all be in accordance with the New Zealand Building Code Requirements as outlined in Table 2 below:

Table 2 - Material Requirements for Materials

COMPONENTS	EXPOSURE ZONE (as per NZS 3604)	
	B/C	D/E
SMART WALL Base closer, cavity closer, lintel flashing and other non-structural metal flashings	Aluminium	Aluminium
SMART WALL Structural External Corner Flashing	Colorsteel MAXX	Stainless Steel
FIXINGS		
ARIDON SMART WALL Panel Fixings (1)	Class 3 Galvanised	Class 3 Galvanised
SMART WALL Structural Batten Fixings	Class 4 Galvanised (2)	Stainless Steel
SMART WALL Structural External Corner Flashing Fixings	Class 4 Galvanised	Stainless Steel

Notes:

- (1) SMART WALL PANEL fixings not required when vertical structural battens are installed at 600mm maximum ctrs
- (2) Where H3.2 structural battens are used, fixings should be Stainless Steel

MAXIMUM DESIGN WINDLOADS

The ARIDON® SMART WALL system is suitable for wind loads up to 4.9kPa in accordance with Table 3 below:

Table 3: Maximum Design Wind Load

	In use with suitable wall cladding				Un-Clad Temporary Use (1)			
	STUD SPACING				STUD SPACING			
	400mm		600mm		400mm		600mm	
Maximum Wind Pressure	SLS	ULS	SLS	ULS	SLS	ULS	SLS	ULS
ARIDON SMART WALL (60mm or 80mm thick panels)	3.3kPa	4.9kPa	1.75kPa	3.29kPa	2.75kPa	4.14kPa	1.85kPa	2.76kPa
Maximum Aridon Panel Fixing Spacings without vertical structural battens (2)	300mm		300mm		300mm		300mm	
Maximum Fixing Spacings for Vertical Structural Battens (3)	300mm		450mm		300mm		450mm	
Maximum Batten Spacings for Proprietary Horizontal Structural Timber Battens (4)(5)(6)	600mm max (refer notes)		600mm max (refer notes)		600mm max (refer notes)		600mm max (refer notes)	

Notes:

- (1) Maximum exposure limited to 60 days
- (2) Aridon screw fixings with nylon washers
- (3) Minimum 35mm thick x 45mm wide timber battens
- (4) Actual proprietary batten spacings to be in accordance with cladding supplier and proprietary batten supplier requirements up to a maximum spacing of 600mm.
- (5) This table to be read in conjunction with ARIDON SMART WALL CAD details, battens are screw fixed to studs at 400mm or 600mm centres as specified for the stud spacing
- (6) Medium or heavy weight claddings used in conjunction with horizontal structural battens shall be subject to specific design and verified by Aridon Ltd.

All buildings outside the scope of NZBC Acceptable Solution E2/AS1 incorporating the ARIDON® SMART WALL system must be subject to specific engineering and weather tightness design as with any building product. Building designers should contact Aridon Ltd for specific design information and advice for those buildings as required.

2.4 DESIGN RESPONSIBILITY

The generic details provided by Aridon Ltd offer solutions to most common scenarios of claddings. It remains the designer's responsibility, however, to confirm that all junctions between various materials are appropriately detailed in accordance with the NZBC. The designer should also ensure that all cladding supplier's details are complied with. Where additional details are required specifically relating to ARIDON® SMART WALL product use on a project, Aridon Ltd can provide additional details and/or guidance as required. Please visit www.aridon.co.nz for contact details.

In all cases the designer should ensure that the latest ARIDON® SMART WALL details are used. If in doubt please visit www.aridon.co.nz to check and download the latest versions.

FRAMING WITH ARIDON® SMART WALL

3.1 GENERAL

Timber framing shall be designed in accordance with NZS 3604 for the appropriate wind zone or to specific engineering design. Steel framing and concrete shall be to specific engineering design. Concrete Masonry shall be in accordance with NZS4229 or to specific design.

3.2 MATERIALS

Timber – Timber framing shall be in accordance with NZS 3604 with a minimum stud width of 45mm

Steel – Steel framing shall be minimum Grade G550MPa Z275 galvanised steel of 0.75mm thick to AS1397. Minimum stud width should be 32mm.

Concrete – Minimum 17.5mPa for insitu concrete and standard proprietary masonry blocks for masonry construction

Figure 5: Timber Framing Layout Requirements

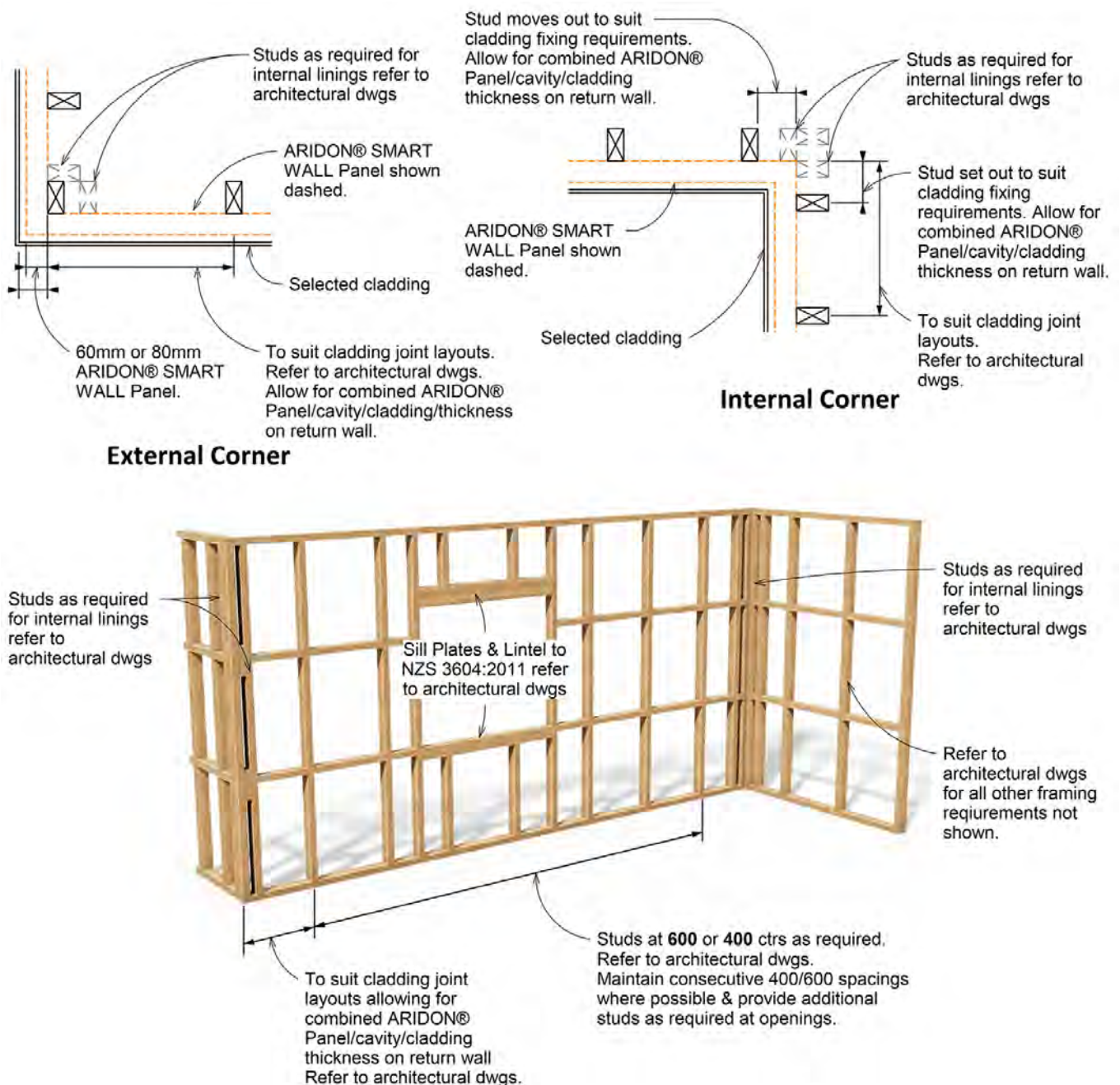
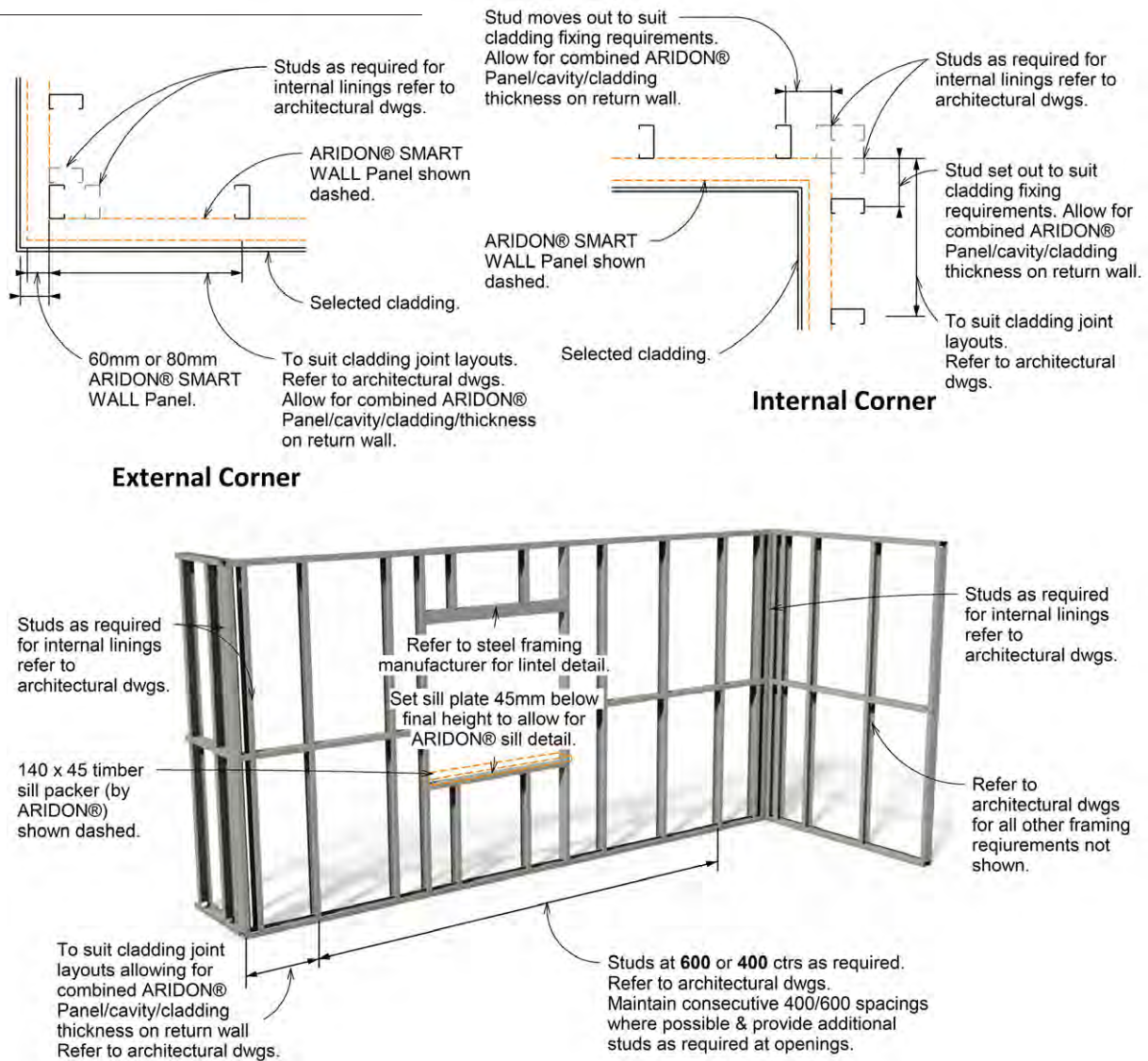


Figure 6: Steel Framing Layout Requirements



3.3 CONSTRUCTION

Both timber and steel framing should, wherever possible, be constructed with consistent 600mm or 400mm stud spacing's commencing at the left end of the wall (viewed) from outside) and continuing under (and above) windows and doors.

Where additional trimmer studs are required (e.g. For windows and doors), these should be placed in addition to the typical framing as above. This framing set out is generally the responsibility of the framing detailer. Framing should be set out to ensure adequate fixing is available at internal and external corners for claddings having regard for the 60mm or 80mm additional thickness of the ARIDON® SMART WALL product compared to traditional cavity systems.

The proximity of openings to internal corners should be checked by the designer having regard for the combined thickness of the ARIDON® SMART WALL and claddings on the return wall. The ARIDON® SMART WALL installer may request additional framing

be installed by the builder where adequate framing has not already been provided. The wall frame manufacturer should be advised of these requirements so that the frame can be appropriately constructed.

Note that ARIDON® SMART WALL joints can be located off stud if required. In these cases, an ARIDON® Off-stud joiner will be used by the SMART WALL installer.

3.4 TOLERANCES

Timber framing tolerances should be in accordance with Table 2.1 of NZS 3604. Steel framing tolerances shall be as specified for timber framing in Table 2.1 of NZS3604.

Due to difficulties straightening wall frames once exterior sheathings and cladding are installed, the builder should ensure the above tolerances (or more stringent requirements as may be required for the specific project) are met prior to ARIDON® SMART WALL panels being installed.

INSTALLING ARIDON® SMART WALL

4.1 GENERAL

To ensure quality and consistency of installation, the ARIDON® SMART WALL system is installed by a select group of specially trained and qualified in-house or approved installer's, located across the country. Our installation teams are experts in the installation of quality building envelopes, so we can confidently stand behind our system. We remove the multiple sub-trade headaches and ensure one of the greatest 'risk' areas of the build is completed by specialists.

4.2 APPROVED INSTALLER REQUIREMENTS

Our installers are trained by Aridon Ltd in the correct use and installation of our products and are subject to annual review and quarterly checks. All approved Installers must also be a suitably qualified Licensed Building Practitioner.



OTHER TRADES ARIDON® SMART WALL

5.1 GENERAL

The ARIDON® SMART WALL system creates a structural wall cavity free of insulation, which means the whole wall cavity is effectively a services duct. This greatly assists builders, plumbers and electricians alike since insulation does not need to be pushed in and around services. The following precautions should, however, be taken:

- All trades should take care to ensure that no chemical that may be reactive with EPS come in contact with the ARIDON® SMART WALL panels. This includes oil based paints, sealants and adhesive tapes.
- Do not use heat guns, gas torches welding or other equipment in close proximity to the SMART WALL system without appropriate heat protection.

5.2 ELECTRICIANS

- Run all wiring centrally in the framing cavity
- Avoid contact between all wiring and EPS unless non-migratory TPS type wiring is specified or wiring is run down internal walls. Where wiring may contact the EPS – for example behind switch boxes etc., provide a separation by sticking a 150mm x 150mm square (or larger as may be required) of acrylic adhesive construction tape patch or building wrap fixed to the Aridon panel with neutral cure adhesive to the inside face of the ARIDON® SMART WALL panel. Note: It is not necessary to provide separation between ARIDON® SMART WALL panels and wiring which is in straight runs, centrally placed in the cavity and not in contact with the EPS.
- Provide rigid PVC ducts where wiring penetrates the ARIDON® SMART WALL envelope (e.g. for exterior lights) - Refer 'Electrical Duct' diagram.
- Use hole saws to accurately cut ARIDON® SMART WALL panels for penetrations to the outside.

5.3 PLUMBERS

- Run all plumbing centrally in the framing cavity wherever possible
- Provide heat protection to the ARIDON® SMART WALL when welding or otherwise heating pipes during construction
- Use hole saws to accurately cut ARIDON® SMART WALL panels for penetrations to the outside.
- Refer to ARIDON® SMART WALL standard details for penetrations and typical details

5.4 ROOFERS

- Refer to ARIDON® SMART WALL standard details and the architectural drawings for details of aprons, flashings etc. in relation to the ARIDON® SMART WALL system. Generally flashings follow the general principles of E2 however allowance must be made for the thickness of the SMART WALL system specified.

Figure 7: Typical Wiring Installation through the ARIDON® SMART WALL system



FIXING CLADDINGS OVER ARIDON® SMART WALL

6.1 GENERAL

The ARIDON® SMART WALL system has been designed to facilitate the installation of a wide range of claddings with details generally following similar principles to E2.

The notes provided below should be read in conjunction with other parts of this specification, the CAD details provided on the ARIDON® SMART WALL website and also literature provided by the specific cladding supplier. Layouts of cladding sheets / boards should be in accordance with the cladding manufacturer's details. Where structural battens are being installed by the ARIDON® installer, the cladding installer should discuss battens locations prior to their installation to ensure they are appropriately located.

All additional battens fixed to the panel, should either be oriented vertically or at a 5 degree minimum fall.

Note - In all cases, claddings should must be compliant with the performance requirements of E2 and suitable for the particular project.

An extensive range of CAD details is available on our website for download to assist with specification: www.aridon.co.nz These offer solutions to most common scenarios of claddings and the a current list of suitable claddings can also be found on our website.

Aridon Ltd is continually working with cladding suppliers to develop solutions to allow ARIDON® SMART WALL panels to be used with your preferred cladding. If the proposed cladding is not currently listed as a suitable cladding, please contact the ARIDON® SMART WALL team to discuss your needs.

Note: - External claddings need to be installed over ARIDON® SMART WALL within 60 days of installation.

6.2 RESPONSIBILITY

Whilst Aridon Ltd strives to keep its details up to date with the latest developments in cladding supplier's information, it remains the designer's responsibility to confirm that all of the cladding supplier's details are complied with. Where additional details are required specifically relating to ARIDON® SMART WALL product use on a project, Aridon Ltd will provide additional details and/or guidance as required.

In all cases the designer should ensure that the latest ARIDON® SMART WALL details are used. If in doubt please visit www.aridon.co.nz to check and download the latest.

Cladding installers should take the normal care to ensure that the project details provided are practical for the project and raise any concerns with the project designer or Aridon Ltd.

MAINTENANCE OF ARIDON® SMART WALL AS A TEMPORARY CLADDING

7 MAINTENANCE

ARIDON® SMART WALL is suitable for use as a temporary weatherproofing system for up to 60 days allowing internal linings, plumbing and wiring to continue prior to exterior claddings being installed. The ARIDON® SMART WALL weatherproofing system must be completed in its entirety along with the roof, soffit linings, windows and doors (including head flashings and air seals) and sealing of all penetrations prior to installing of internal linings.

No maintenance of the ARIDON® SMART WALL panels is required over the 60 day temporary weatherproofing period. A fine yellow powder may develop on the outside skin of the ARIDON® SMART WALL panels (if exposed to prolonged sunlight) which does not affect the insulating or weatherproofing properties of the system. This powder does not need to be removed prior to cladding installation.

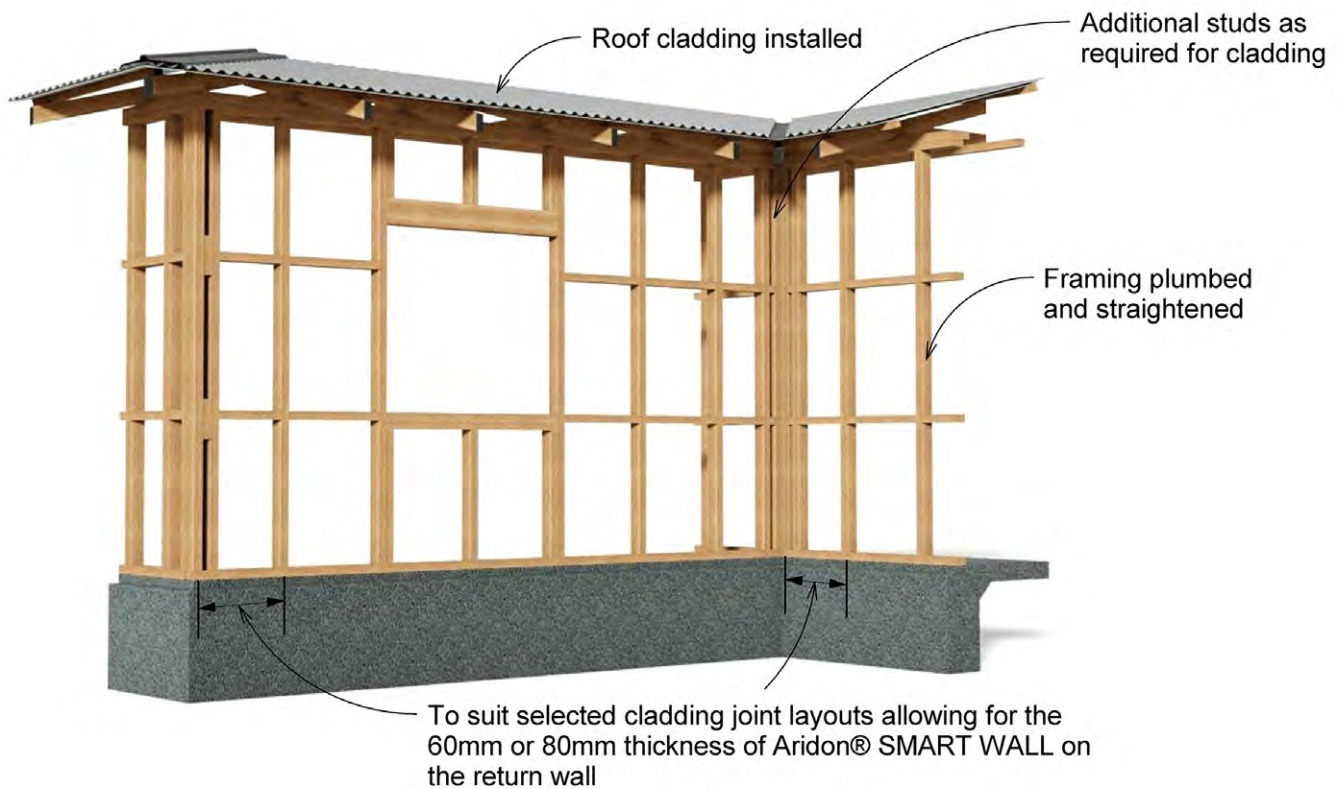
ARIDON® SMART WALL panels should not be sand or water-blasted under any circumstances as this may damage the panels.



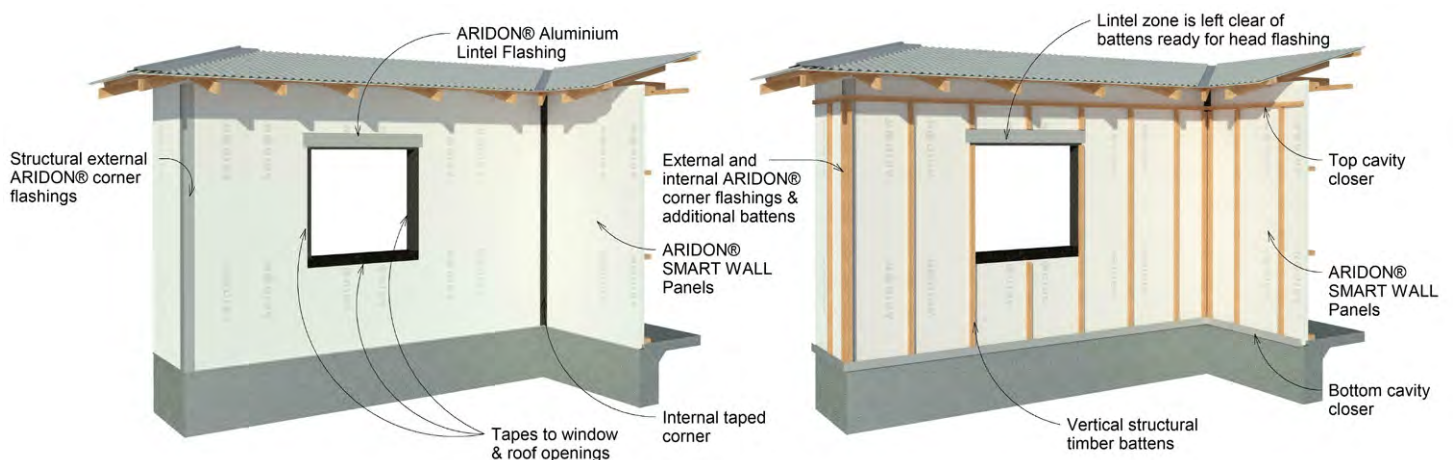


APPENDIX A: ARIDON® SMART WALL STEP BY STEP GUIDE

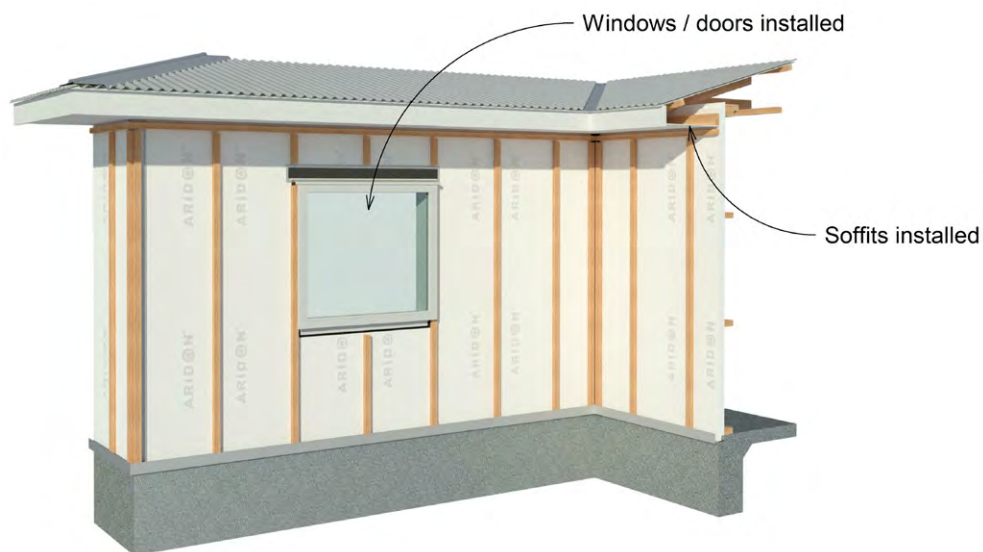
PHASE 1: FRAMING AND ROOF CONSTRUCTED (COMPLETED BY BUILDER)



PHASE 2: ARIDON® SMART WALL (COMPLETED BY ARIDON)



PHASE 3: WINDOWS/DOORS, BATTENS ABOVE OPENINGS, PROPRIETARY BATTENS (IF REQUIRED) AND SOFFITS INSTALLED (COMPLETED BY BUILDER)



PHASE 4: INTERNAL FITOUT & EXTERNAL CLADDING (COMPLETED BY BUILDER)









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