

# 5 ACOUSTIC WALL OPTIONS

There are three main acoustic wall options available dependent on specific requirements with each offering its own unique benefits [see TABLE 2]:

1. Double Steel SRP™ Stud Walls offer premium acoustic performance
2. SRP™ Whisperwall™ offers superior performance and
3. Staggered Steel SRP™ Stud Walls provide effective resistance to sound transmission and acoustic impact.

## 5.1 DOUBLE STEEL SRP™ STUD FRAME WALL TWO WAY FRR, ACOUSTIC AND INTER-TENANCY WALLS

[FIGURE 8]

Double SRP™ Stud walls are generally used where two way FRR [Fire Resistance Rating] or superior acoustic performance is required. This is mainly in inter-tenancy walls and corridors.

Install the walls as two separate parallel frames with a specified gap between them, using the relevant GIB® documentation in order to achieve the required STC and FRR rating. Refer to GIB® Noise Control Systems March 2006 and GIB® Fire Rated Systems October 2012 for more information. For building the two frames, use 63.5mm 0.55BMT SRP™ Studs together with 63.5mm 0.55BMT 30mm leg SRP™ Tracks as completely separate structures with no connection between them, especially if they are used for acoustic purposes.

The recommended maximum wall height is 2700mm. **NOTE: For other size SRP™ Studs, SRP™ Tracks or for taller partitions, specific engineering design verification of the performance is required.**

Leave a 15mm expansion gap between the top of the SRP™ Studs and the underside of the head SRP™ Tracks.

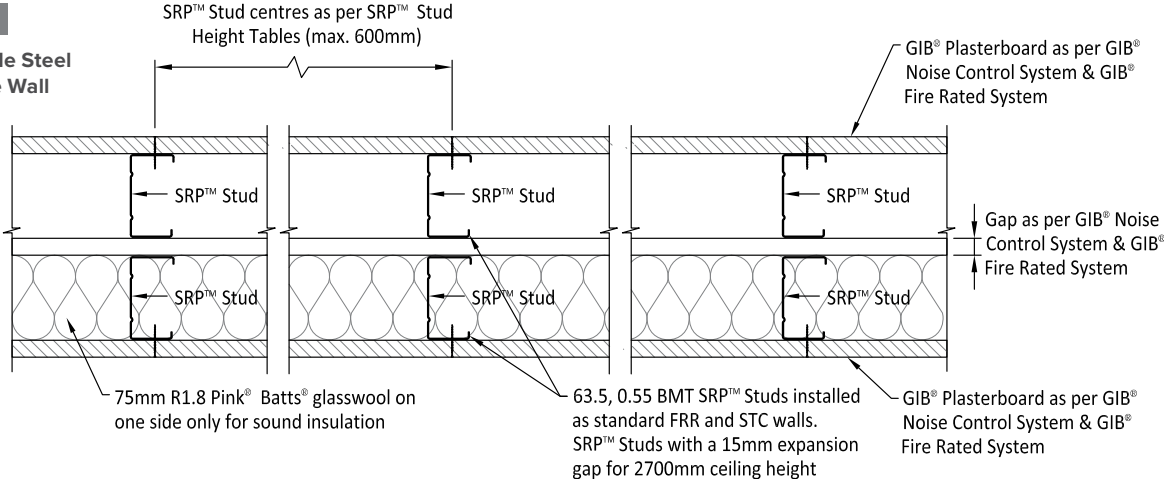
Installation of the two separate parallel frames is exactly as per single walls installation, with one exception being that the internal side of both parallel SRP™ Stud wall frames are not lined. In both walls' external surfaces, ensure there is no fastening of the SRP™ Studs or the lining onto the top head SRP™ Track. Use SRP™ Continuous Nog Track for the wall structures to provide extra stability and rigidity of the walls if required.

For sound control infill, use 75mm thick R1.8 Pink® Batts® glasswool insulation as a minimum, between the SRP™ Studs on one side of the double frame.

For plasterboard lining, fastening, acoustic sealant and jointing [stopping] details refer to GIB® Noise Control Systems March 2006, GIB® Fire Rated Systems October 2012.

FIGURE 8

SRP™ Double Steel Stud Frame Wall



## 5.2 SRP™ WHISPERWALL™ INFORMATION AND SPECIFICATIONS

The SRP™ Whisperwall™ Stud wall [FIGURE 9] has been developed and manufactured to provide superior acoustic properties with additional fire rated properties in interior wall construction. It provides significant advantage over staggered SRP™ Stud walls [FIGURE 10] in installation and is test verified for superior acoustic results. For more information refer to the **SRP™ WHISPERWALL™ SECTION** and the relevant detail in each section of this Product Catalogue, as applicable.

SRP™ Whisperwall™ is configured in 92mm x 42mm from 0.55mm BMT GALVSTEEL® coil manufactured by New Zealand Steel, whenever possible. SRP™ Whisperwall™ Stud is backed by a 50 year Durability Statement to demonstrate compliance with NZBC Clause B2-Durability, when used and maintained as described in the current New Zealand Steel Durability Statement.

In laboratory testing the SRP™ Whisperwall™ Stud Wall achieved an STC 52, STC 58 and STC 62 rating. Refer to **TABLE 8** for relevant GIB Noiseline® configurations.

To enable easy installation, SRP™ Whisperwall™ Studs are equipped with a generously knurled face providing a secure surface for attaching high density wall board products [see **FIGURE 1** and **FIGURE 2**].

To achieve the tested STC values for SRP™ Whisperwall™, install Pink® Batts® Silencer glasswool acoustic insulation R1.8 [75mm]\* between the SRP™ Whisperwall™ Studs. Cut the width of the Pink® Batts® to suit SRP™ Whisperwall™ Stud centres and ensure the insulation is expanded to fill the cavity.

No SRP™ Continuous Nog Tracks or spliced SRP™ Studs are to be used in SRP™ Whisperwall™ Stud Walls, as doing so will compromise the tested STC values.

For plasterboard lining, fastening, acoustic sealant and/or jointing [stopping] details refer to GIB® Noise Control Systems March 2006, GIB® Fire Rated Systems October 2012 and this SRP™ Design Handbook.

\*SRP™ Whisperwall™ has been tested using Pink® Batts® Silencer glasswool acoustic insulation R1.8 [75mm], other acoustic insulation with properties equal or better may also be used once verified by an acoustic engineer.

TABLE 8

SRP™ WHISPERWALL™ SOUND TRANSMISSION CLASS [STC] AND FIRE RESISTANCE RATINGS [FRR]			
STC*	Rw [dB]	FRR**	Material used
Sound Transmission Class	Weighted Sound Reduction Index	Fire Resistance Rating	GIB Noiseline® Wall Lining – see specification below 75mm Pink® Batts® Silencer GIB® Soundseal for joint filler and perimeter sealant
STC 52	Rw 51	-/60/60	One layer of 13mm GIB Noiseline® on both sides
STC 58	Rw 57	-/60/60	One outer layer of 10mm GIB Noiseline® on one side only One inner layer of 13mm GIB Noiseline® on both sides
STC 62	Rw 61	-/60/60	One outer layer of 10mm GIB Noiseline® and One inner layer of 13mm GIB Noiseline® on both sides

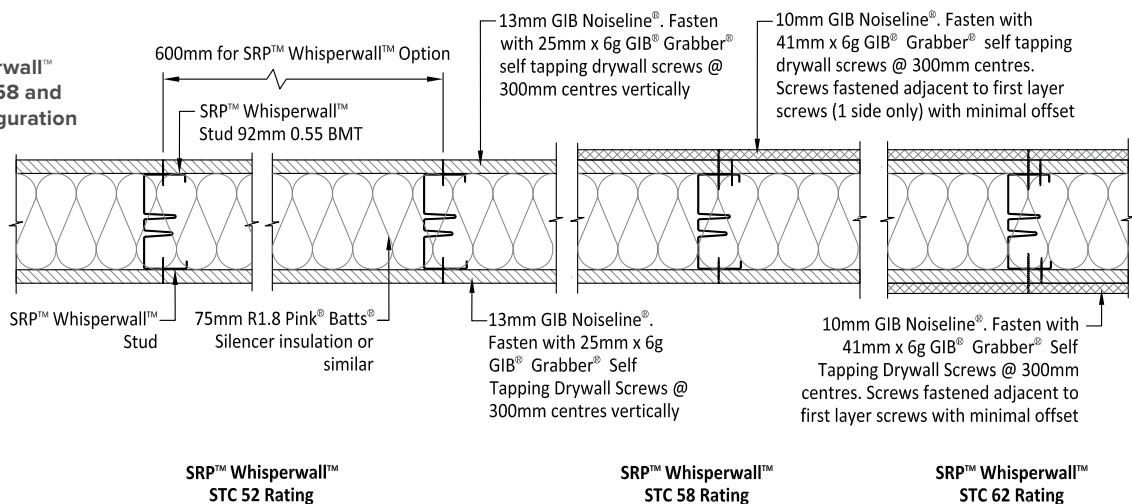
NOTES: Values obtained by Laboratory Measurement of Airborne Sound insulation of building elements carried out by an Independent Laboratory: Acoustic Testing Services of Auckland UniServices Ltd. **Test Report T1406** dated 21st March 2014 using the specified materials and installed in accordance with:

\* GIB® Noise Control Systems March 2006 and relevant SRP™ Design Handbook and

\*\* GIB® Fire Rated Systems Oct 2012. Also see Winstone Wallboards confirmation letter dated 11th June 2014 in the **COMPLIANCE SECTION** of SRP™ Design Handbook.

FIGURE 9

SRP™ Whisperwall™  
STC 52, STC 58 and  
STC 62 Configuration



## 5.3 STAGGERED STEEL SRP™ STUD FRAME WALL

### TWO WAY FRR, ACOUSTIC AND INTER-TENANCY WALLS [FIGURE 10]

Walls using the SRP™ Staggered Stud System are commonly used to provide effective resistance to sound transmission and acoustic impact. These walls are constructed with the SRP™ Studs being alternately positioned to each leg of a wider SRP™ Track, where only every second SRP™ Stud is positioned on the same side of the SRP™ Track leg providing support for the plasterboard.

Most commonly, SRP™ Staggered Walls are installed using SRP™ 92mm 0.55BMT 30mm leg SRP™ Tracks with SRP™ 63.5 0.55BMT SRP™ Studs staggered at 300mm centre [see FIGURE 10].

The recommended maximum wall height is 2700mm. Leave a 15mm expansion gap between the top of the SRP™ Studs and the underside of the head SRP™ Tracks.

For other SRP™ Stud and SRP™ Track size configurations or for taller partitions, use the SRP™ Stud Height Tables [see TABLES 6.1 – 6.5] and please note that in these cases specific engineering design verification of the performance is required.

SRP™ Studs are held in position by both a SRP™ N Clip [as an installation aid] and a packer or by using a packer only,

positioned at the top and bottom of the SRP™ Stud. If using the SRP™ N Clip method, place the SRP™ N Clips on the top and bottom of the SRP™ Studs, tilt insert the SRP™ Studs in-between the SRP™ Tracks then slide the SRP™ Studs with the SRP™ N Clips to vertical position at required centres, before installing the packers. If using the packer method, pack the SRP™ Studs at the required position and centres [see FIGURE 11].

Installation of the staggered wall frame is exactly as per single wall installation, with the difference being the staggered position of the SRP™ Studs described above and that the internal side of the staggered SRP™ Studs does not get lined. Ensure there is no fastening of the SRP™ Studs or the lining into the bottom or the top head SRP™ Track. No SRP™ Continuous Nog Track is to be used in staggered walls.

For sound control infill, use 75mm thick R1.8 Pink® Batts® glasswool insulation between the SRP™ Studs. Completely fill the cavity space with the insulation.

For plasterboard lining, fastening, acoustic sealant and jointing [stopping] details refer to GIB® Noise Control Systems March 2006, GIB® Fire Rated Systems October 2012 and GIB® Site Guide.

FIGURE 10

#### SRP™ Staggered Steel Stud Frame Wall

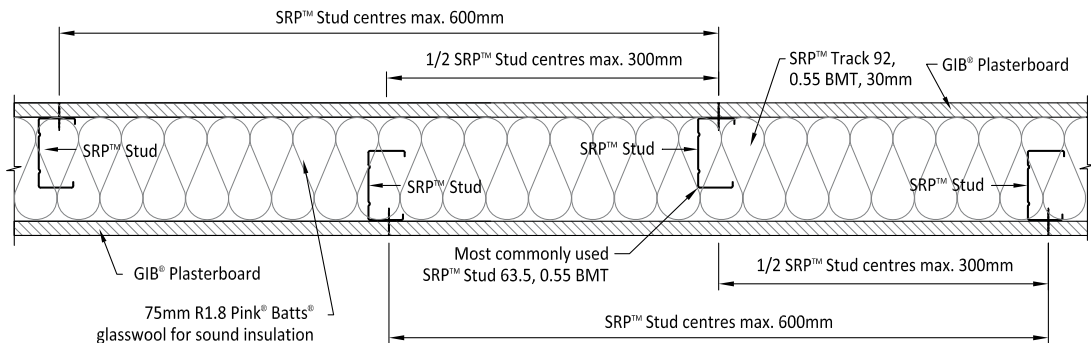
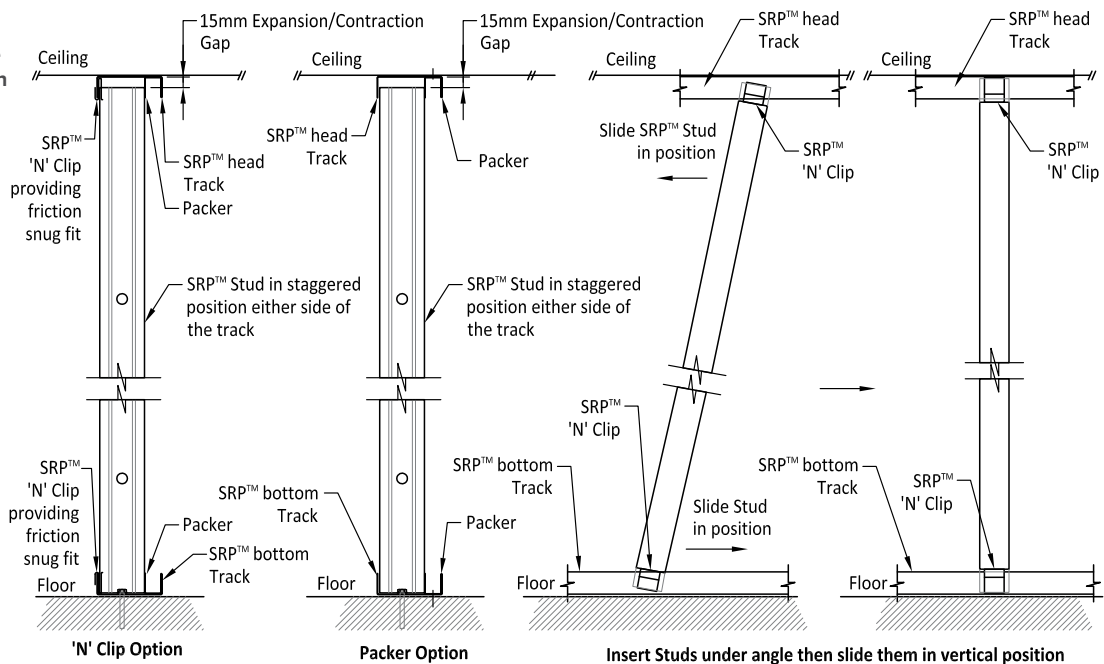


FIGURE 11

#### SRP™ Staggered Steel Stud Frame Wall – Installation Details



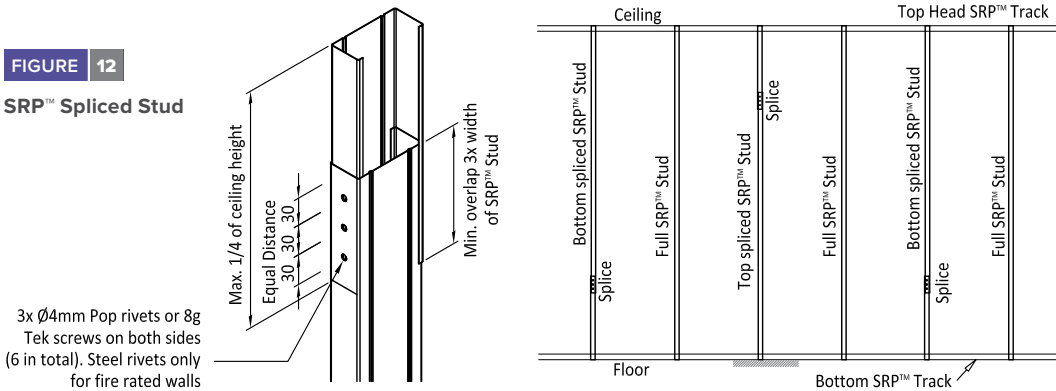
## 5.4 SPLICED SRP™ STUDS

The standard SRP™ Stud length may be extended by splicing if required, where the minimum overlap is 3x the depth of the SRP™ Stud [e.g. 75mm SRP™ Stud – 225mm]. The maximum length of the extension piece [splice] is 1/4 of the ceiling height. Attach the splice to the SRP™ Stud by boxing it with the required overlap using 3 x 4mm

diameter steel pop rivets or 8g Tek screws on each side of the SRP™ Stud [6 in total], as per **FIGURE 12**. Splices must alternate as follows: top spliced SRP™ Stud, full SRP™ Stud, bottom spliced SRP™ Stud, full SRP™ Stud, top spliced SRP™ Stud and so on. For fire rated walls, spliced SRP™ Studs with steel rivets only, may be used [see **FIGURE 12**].

**FIGURE 12**

**SRP™ Spliced Stud**



## 5.5 EXISTING AND SITE DRILLED SRP™ STUD SERVICE HOLES

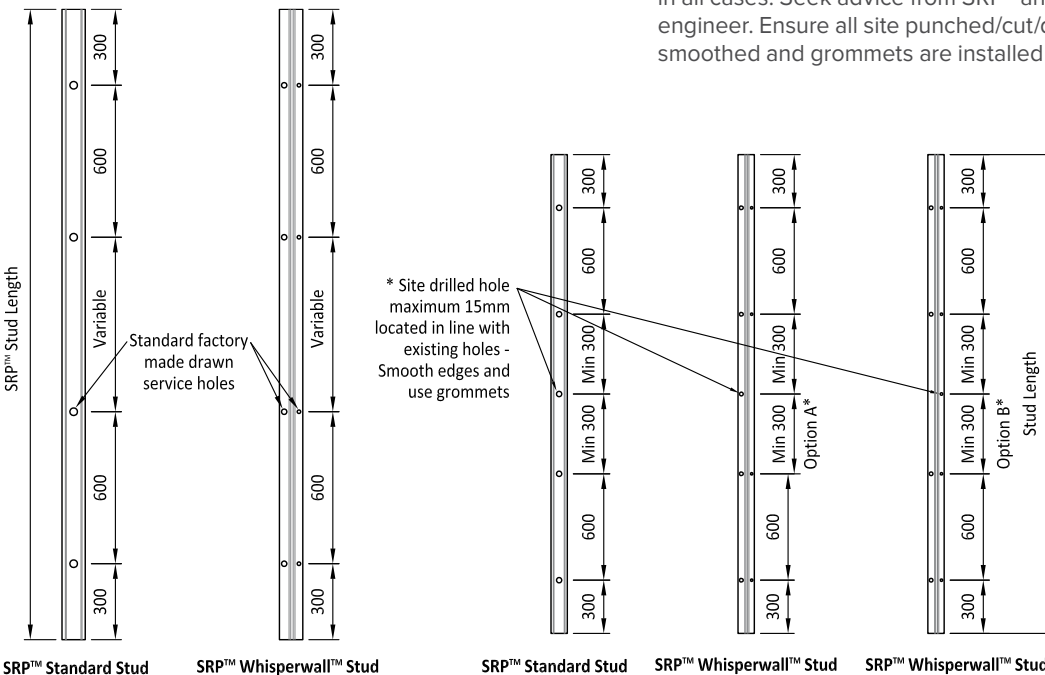
SRP™ Whisperwall™ Studs come with 4 twin drawn service holes [8 in total per SRP™ Stud], while Standard SRP™ Studs have 4 single [4 in total per SRP™ Stud] drawn service holes with rounded edges at 300mm and 900mm distance measured from both ends, as shown in **FIGURE 13**.

Extra service holes, if required, can be created in all SRP™ Studs on site, by punching, cutting or drilling them using

a hole saw or similar. Holes to be a maximum of 15mm diameter located in line with existing holes and positioned adjacent to a SRP™ Continuous Nog Track in conventional SRP™ Stud whenever possible. Maximum of two additional holes per SRP™ Stud are allowed. All holes [site punched/cut/drilled and/or existing] must be a minimum of 300mm centres apart in all cases, as shown in **FIGURE 13**; [i.e. no holes to be drilled for SRP™ Whisperwall™ in both sides of the web at the same location and for all SRP™ Studs within 300mm of each other]. Holes greater than 15mm diameter or closer than 300mm centres require structural assessment in all cases. Seek advice from SRP™ and/or a structural engineer. Ensure all site punched/cut/drilled hole edges are smoothed and grommets are installed for edge protection.

**FIGURE 13**

**SRP™ Studs - Standard Drawn and Site Drilled Service Holes**



## 5.6 SRP™ NOGS

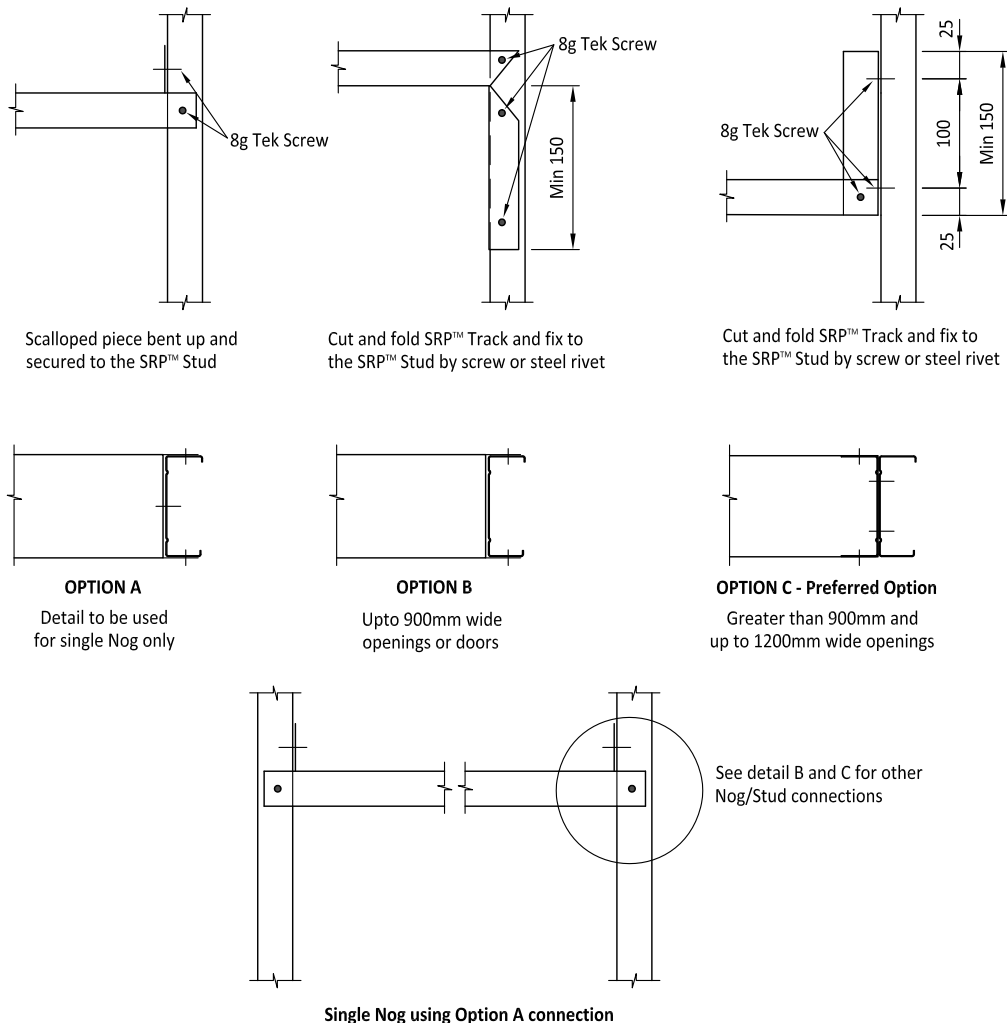
Single and/or SRP™ Continuous Nog Track is commonly used to stop SRP™ Stud twisting during service and to provide additional support to the wall from SRP™ Studs during and after the plasterboard installation. It also ties the wall together enabling the wall to behave more as a unit, rather than individual SRP™ Studs.

- » SRP™ Continuous Steel Nog Track [FIGURE 1 and FIGURE 17] is designed to be used mainly for taller or single side lined walls to provide additional mid-height rigidity and more strength for greater wind load, while
- » Single SRP™ Nogs constructed using Steel SRP™ Stud and SRP™ Track profiles notch fitted between SRP™ Studs [FIGURE 14], or made out of untreated [UT] timber or plywood [FIGURE 15] are generally used for light specific localized load. This type of SRP™ Nog is also used to provide support for plumbing and electrical services, or where sheet edges require more fastening points and/or for additional rigidity.

For heavier load applications as such as TVs, bookshelves, cantilevered benches, basins, toilets etc. either customised single SRP™ Nog or a SRP™ Continuous Nog Track tying SRP™ Studs together will be required. Please consult with SRP™ and/or a structural engineer regarding specific design and the position, centres and type of SRP™ Nogs used.

FIGURE 14

### SRP™ Single Steel Nog Track Details



## 5.7 SRP™ CONTINUOUS NOG TRACK [TABLE 9]

To determine the number and position of SRP™ Continuous Nog Track use the SRP™ Nog Track table, [TABLE 9]. SRP™ Continuous Nog Track is stocked in 0.75BMT or 1.15BMT steel, with 30mm legs and the appropriate cut-out size for all standard SRP™ Stud sizes, at standard 300, 400, 450 and 600mm centres [see FIGURE 1 and FIGURE 17]. SRP™ Continuous Nog Track is available in 3m standard stock lengths. SRP™ Continuous Nog Track with alternate SRP™ Stud centre cut-outs is also available on request.

Using SRP™ Continuous Nog Track at SRP™ Stud mid-height will enhance the serviceability deflection of the wall. From structural design aspects, no SRP™ Continuous Nog Track is required for walls up to 4m height, and for walls up to 8m height a single SRP™ Continuous Nog Track is required at mid stud height. For walls greater than 8m, specific engineering design is required [see TABLE 9].

In consideration of the design deflection aspect, SRP™ wall products are designed for L/200 deflection limit, which is up to 20mm for a 4m wall and up to 40mm for an 8m wall. Reduction of this deflection can be achieved by installing SRP™ Continuous Nog Track at mid stud height for walls of maximum 4m high, and maximum 2m centres for taller walls equally spaced over the height of the SRP™ Studs, as noted in TABLE 9. In addition, use SRP™ Continuous Nog Track with the top deflection SRP™ Track as indicated in this document [see FIGURE 16].

If using SRP™ Continuous Nog Track, place the correct amount of SRP™ Nog Track over the bottom SRP™ Track, with flanges facing down and all SRP™ Stud hole cut-outs aligned at the required position. Then slide the SRP™ Studs through all the SRP™ Nog Track holes at each position before, by a rotating movement, clicking them in position between the top and the bottom SRP™ Tracks as described earlier. SRP™ Continuous Nog Track, as and where required, is to be positioned equally spaced over the height of the SRP™ Stud, or as specified [see TABLE 9 for more information]. Once all SRP™ Studs are installed,

lift and secure all SRP™ Nog Tracks in position using 4mm pop rivet or 8g wafer head Tek screws to both flanges of the SRP™ Steel Stud.

SRP™ Continuous Nog Track is to be joined centrally between SRP™ Studs using an appropriate length of standard 0.75mm BMT [minimum] SRP™ Track. Minimum length of the connecting SRP™ Nog Track is to be stud centres spacing minus 40mm. Each overlap is to be secured using two 10g Tek screws in the web and two plus two into each leg of the SRP™ Track [6 screws in total for each overlap side] in accordance with the details provided in FIGURE 17. The entire SRP™ Continuous Nog Track connection is to be in-between two adjoining SRP™ Studs and no SRP™ Stud or other cut-outs are allowed through any part of the connection.

For unlined, partially lined or one side only lined SRP™ Studs with a SRP™ Deflection Head Track, use an additional SRP™ Continuous Nog Track installed facing downwards with the top of the SRP™ Continuous Nog Track being positioned 100mm below the SRP™ Deflection Head Track, as per FIGURE 16.

TABLE 9

SRP™ CONTINUOUS NOG TRACKS		
Wall Height [m]	Structural Design Requirements	Tighter Deflection Considerations
0 - 4	No Nogs are required	1 Nog at mid height
4 - 6	1 Nog at Stud mid height	2 Nogs at maximum 2m centres equally spaced over the height of the Studs
6 - 8	1 Nog at Stud mid height	3 Nogs at maximum 2m centres equally spaced over the height of the Studs
> 8	Specific engineering design	Specific engineering design

## 5.8 SINGLE TIMBER NOGS

Timber nogs using untreated timber for mounting taps and other features such as kitchen/bathroom accessories are best positioned using two SRP™ Nog brackets. Place the untreated timber nogs between the nog brackets and fix securely. Ensure dissimilar metals are isolated and pipes are grommetted through the studs. See FIGURE 15 for timer nog details.

**NOTE: Only untreated timber Nogs shall be used in direct contact with any galvanized SRP™ products. If it is unavoidable to use treated timber a separation barrier between the galvanized SRP™ product and the treated timber shall be used.**

Single SRP™ Nogs constructed from ex SRP™ Tracks can also be used [see FIGURE 14, option A, B and C for details].

FIGURE 15 SRP™ Single Timber Nog Track Details

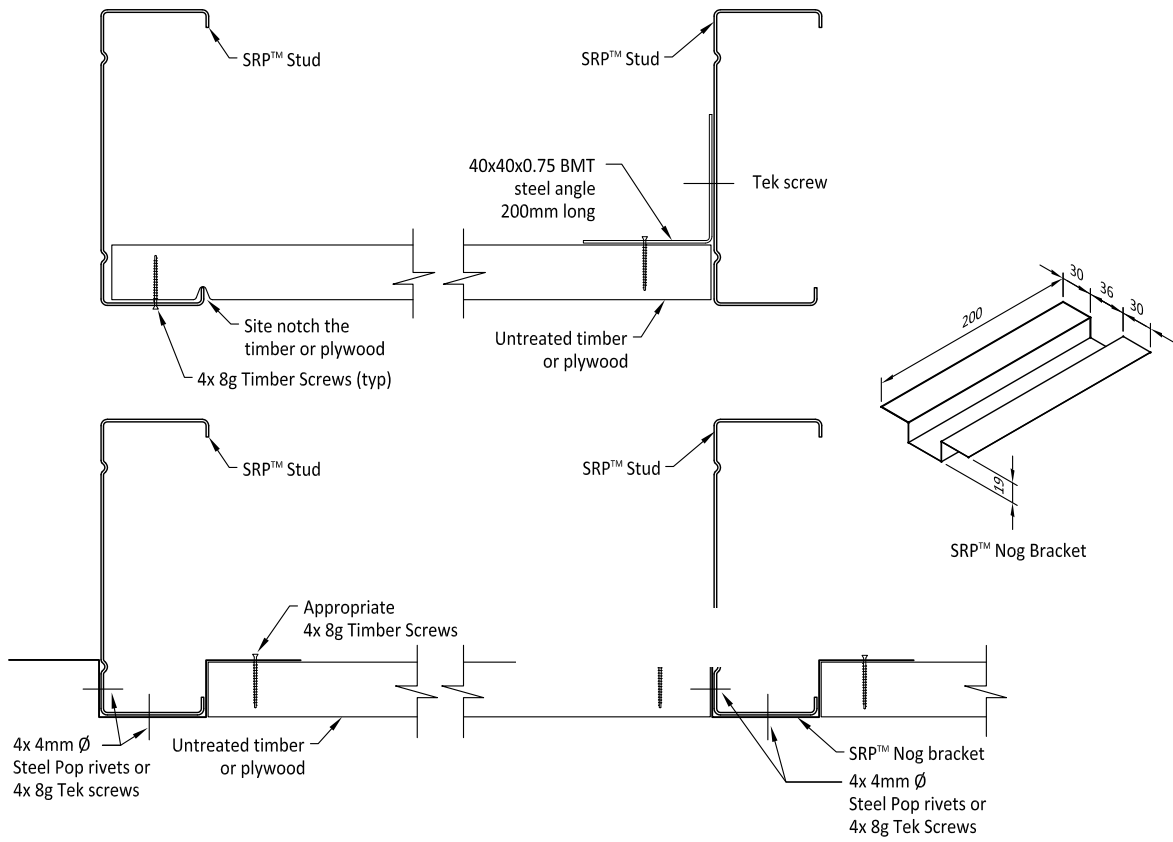


FIGURE 16 SRP™ Continuous Nog Track – Deflection Track

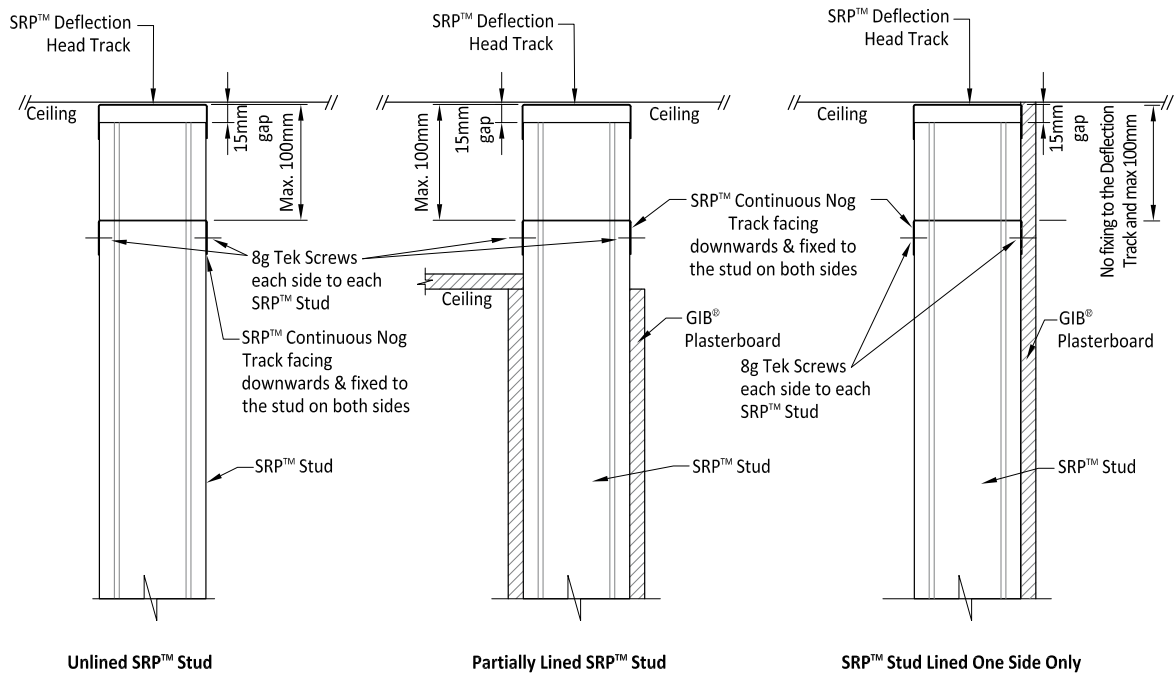
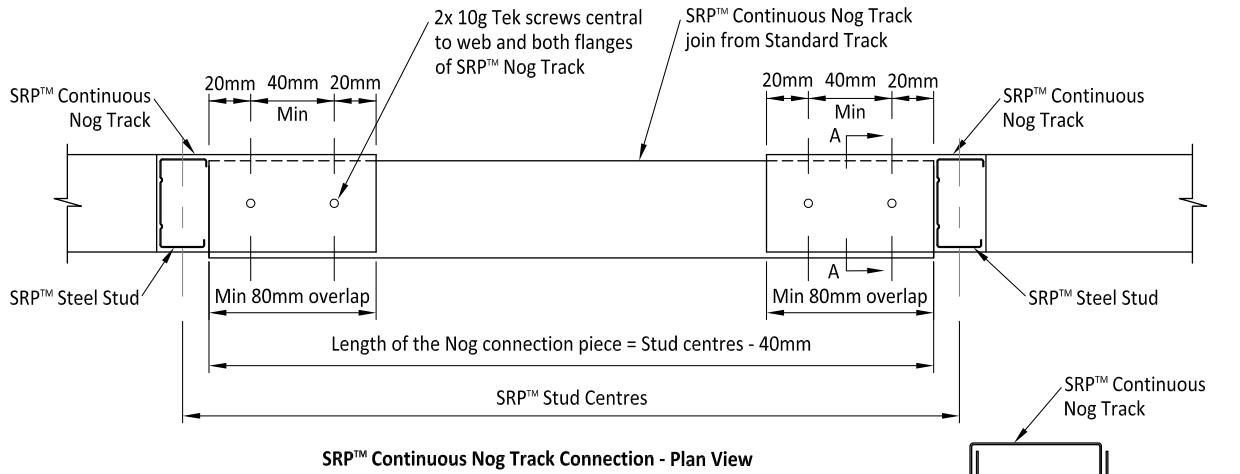
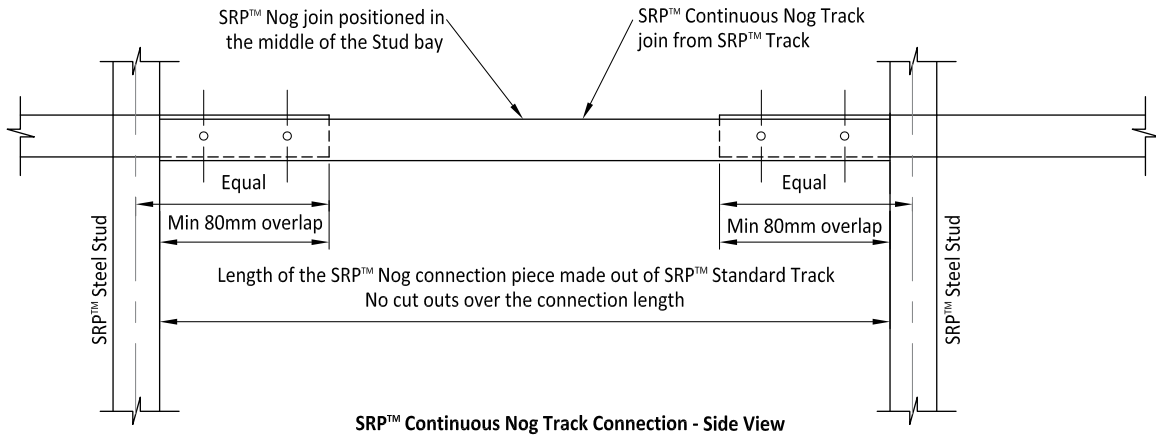
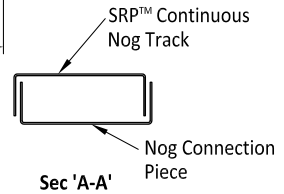


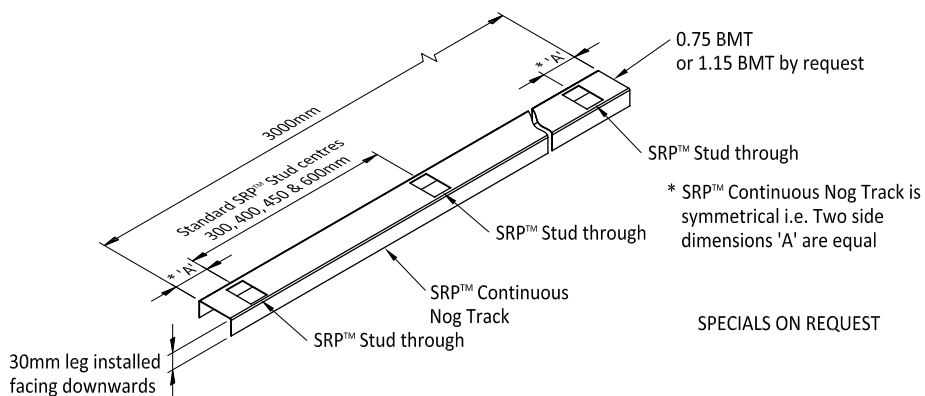
FIGURE 17 SRP™ Continuous Nog Track



SRP™ Continuous Nog Track Connection - Plan View



SRP™ Continuous Nog Track Connection - Side View





# 5.9 CORNERS, INTERSECTIONS AND WALL ENDS – TERMINATIONS

Corners, partition intersections and wall end structural stability is achieved by using additional SRP™ Stud in either two or three SRP™ Stud connection in a set

arrangement. See **FIGURE 18** for Standard SRP™ Stud wall details and **FIGURE 19** for SRP™ Whisperwall™ Stud wall details.

**FIGURE 18 PART 1 | Standard SRP™ Stud Connections – Corners and Intersections**

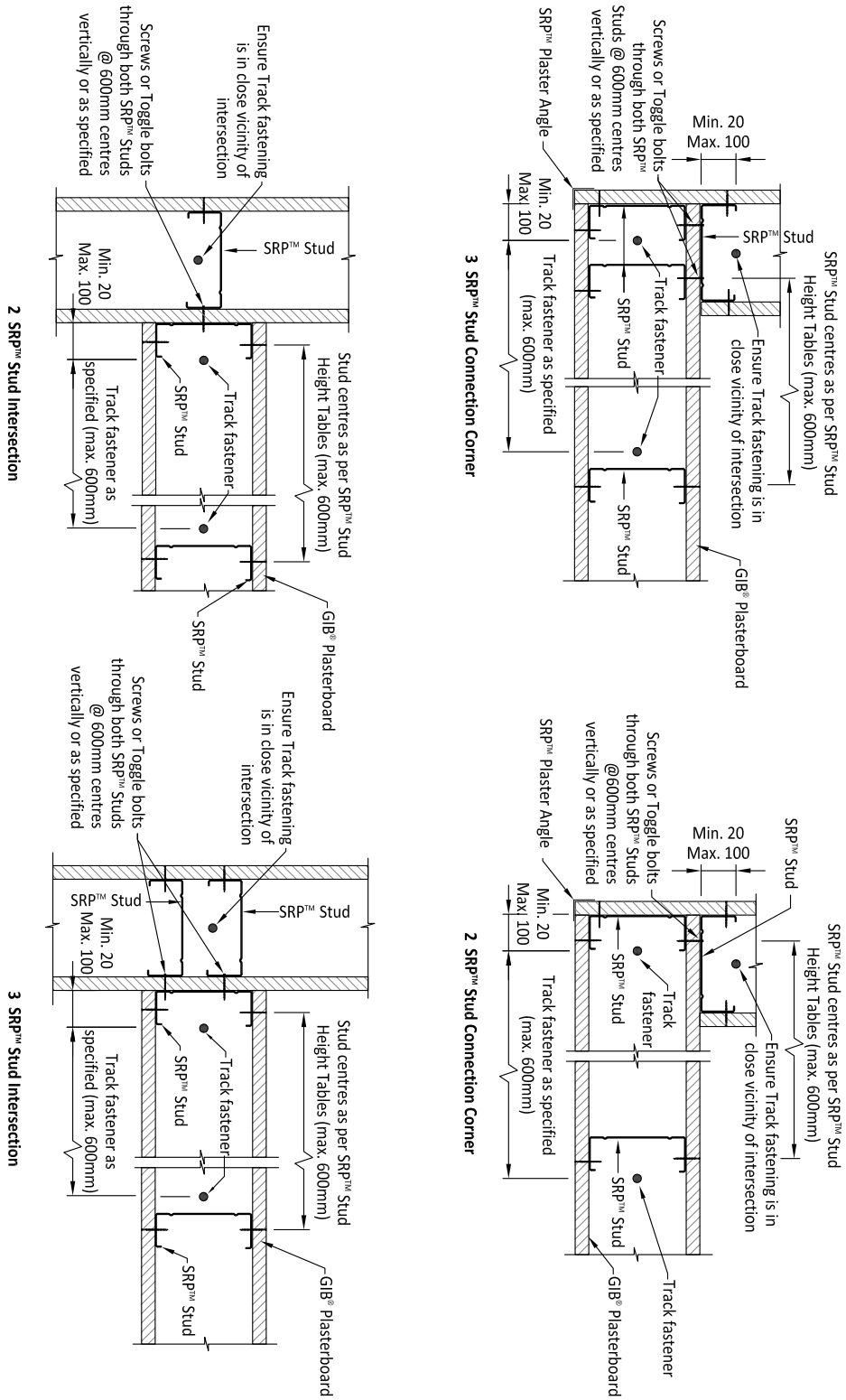


FIGURE 18 PART 2 | Standard SRP™ Stud Connections – Wall Ends and Open Ends

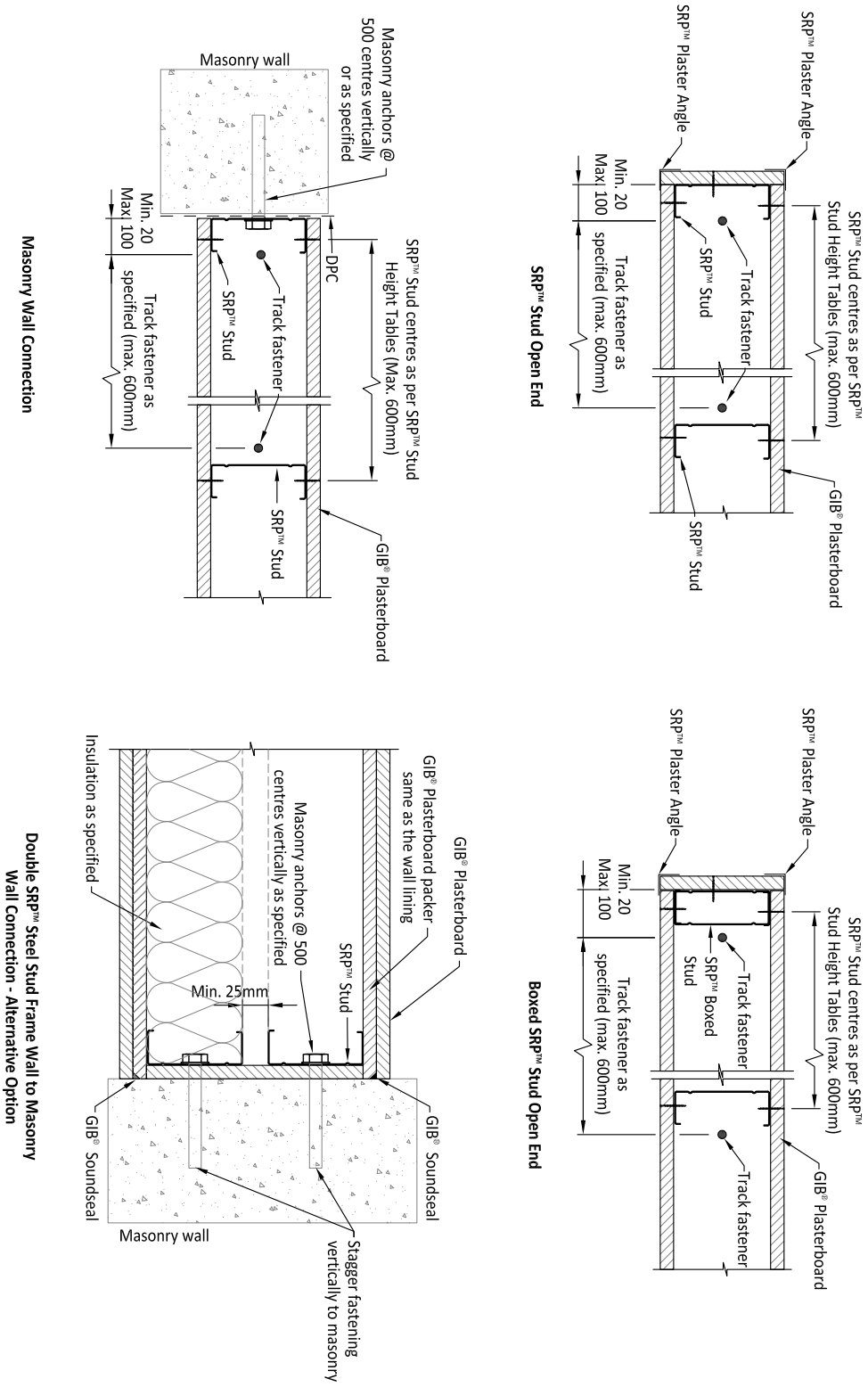


FIGURE 19 PART 1 | Standard SRP™ Whisperwall™ Stud Connections – Corners and Intersections

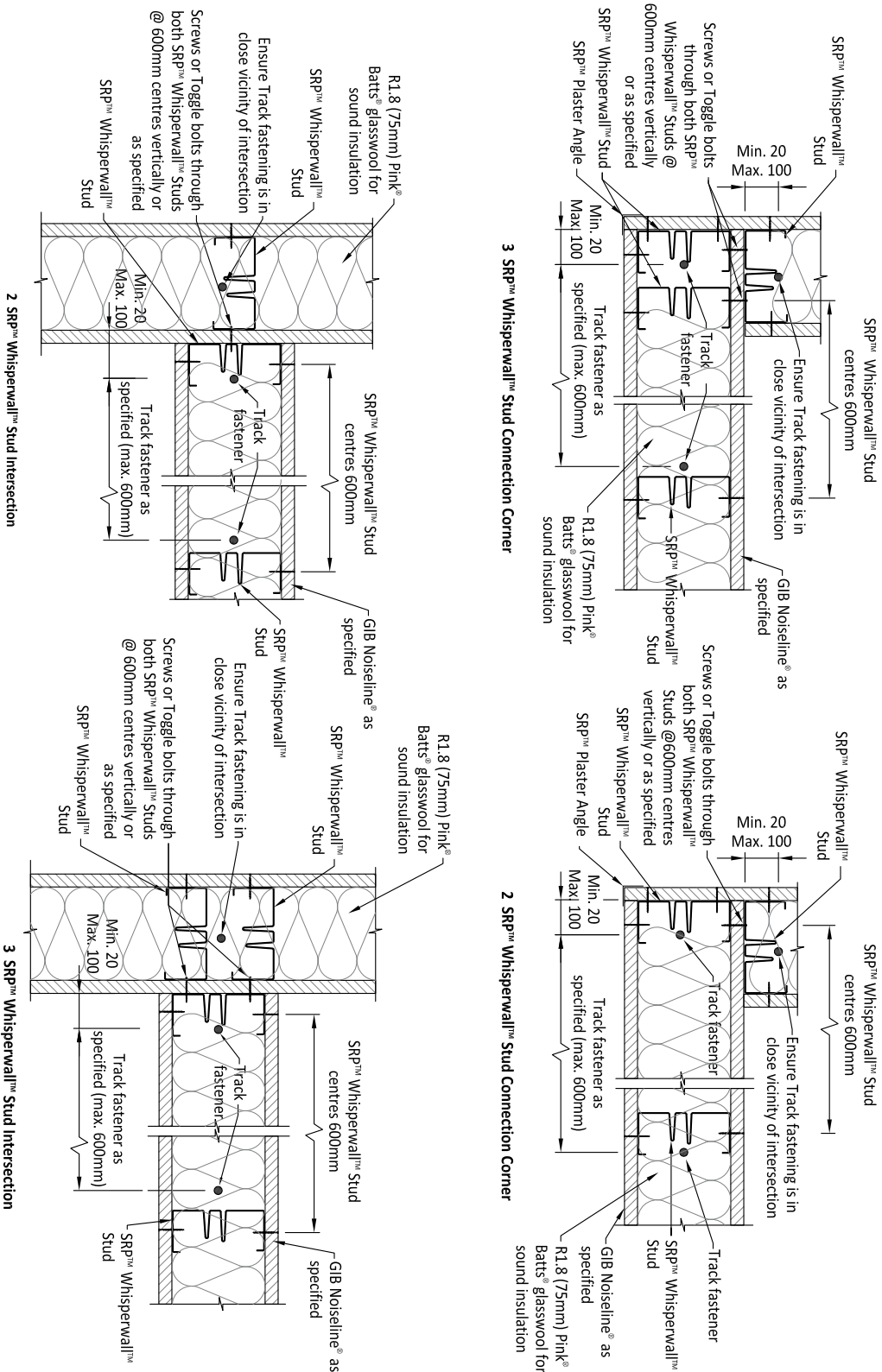


FIGURE 19 PART 2 | Standard SRP™ Whisperwall™ Stud Connections – Wall Ends and Open Ends

