



# Section C Properties

Logicwall® Properties, Concrete Core Fill, Steel Studs, Panel Facing Sheet, Adhesive, Materials Handling, Storage and Safety.



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# C1. Properties

Disclaimer: This section of the AFS Logicwall® Design Guide is intended only by AFS to represent good building practice when core filling AFS Logicwall®. This section is not intended in any way by AFS to represent all relevant information required on a project in relation to concrete core filling techniques. It remains the responsibility of those using AFS Logicwall®, including but not limited to builders, designers, consultants and engineers, to ensure that the appropriate concrete mix is procured and used and is suitably compacted and installed for use on a project. All diagrams, plans and illustrations used in this section including any reinforcement shown are included for indicative and diagrammatic purposes only.

## Concrete Core Fill

The concrete supplier is responsible to provide a mix design that is suitable for filling AFS Logicwall®. The concrete core fill mix must be designed with enhanced flow characteristics. Such concrete is available from Hanson Concrete and other concrete suppliers.

The installer is responsible for achieving a dense homogeneous mass of concrete in each pour whilst avoiding blowouts. For details, refer to Core filling of walls in the installation guide (Section K) of this manual.

## Steel Studs

The AFS Logicwall® studs which comprise the frame inside the panel are roll formed from Galvabond G2 0.55BMTZ275 coil steel. This is a hot-dipped zinc-coated commercial forming steel with a spangled surface and conforms to AS1365 and AS1397.

A material specification sheet is available upon request. The AFS Logicwall® steel studs are a patented designed stud with large flared hole penetrations at 200mm centres to facilitate concrete flow and self compaction.

## Steel Stud Properties

TABLE C1: Gross Stud Properties (without hole punch)

Type	BMT (mm)	$t_w$ (mm)	Astud (mm <sup>2</sup> )	$I_{xx}$ (mm <sup>4</sup> ×10 <sup>3</sup> )	rx (mm)
LW120	0.55	108	102.9	180.0	41.96
LW150	0.55	138	117.6	309.9	51.34
LW162	0.55	150	125.3	391.8	55.92
LW200	0.55	188	146.2	678.2	68.11
LW200D	0.55	188	146.2	678.2	68.11
LW262D	0.55	250	180.3	1,378.8	87.45

TABLE C2: Net Stud Properties (with hole punch)

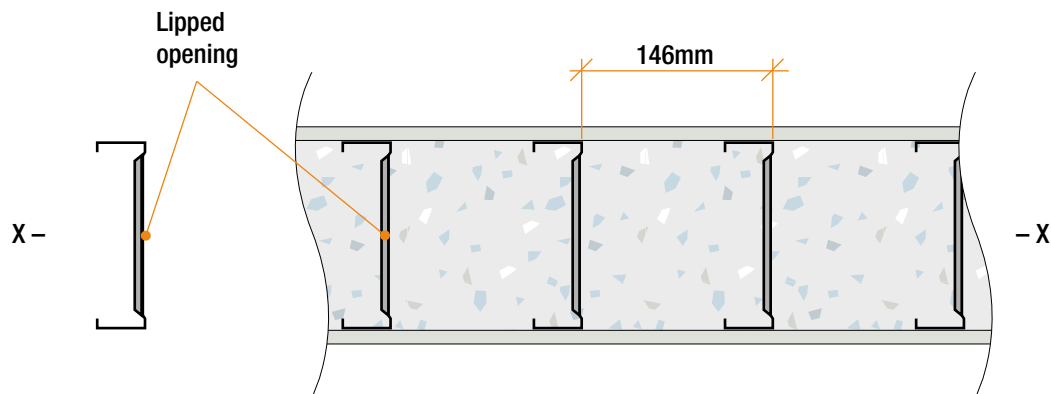
Type	Stud Spacing (mm)	$t_w$ (mm)	$t_{total}$ (mm)	$D_{punch}$ (mm)	A.stud (net) (mm <sup>2</sup> )	$I_{xx}$ (mm <sup>4</sup> ×10 <sup>3</sup> )	$A_c\%$ (mm)	$f_{stud}$ (MPa)	$A_{fl}$ (mm <sup>2</sup> /m)	Overall Wall Factors	
										$\mu$	$K_{co}$
LW120	146	108	120	70	63.69	164.2	47.1%	300	502	0.741	0.235
LW150	146	136	148	100	68.09	276.5	52.3%	300	502	0.756	0.260
LW162	146	150	162	100	75.79	358.4	47.2%	300	502	0.742	0.236
LW200	146	188	200	134	77.99	602.9	50%	300	502	0.75	0.25
LW200D	146	188	200	134	77.99	602.9	50%	300	502	0.75	0.25
LW262D	146	250	262	211	115.39	1303.5	49.5%	300	502	0.75	0.25

TABLE C3: Studs

Studs	MPa
$f_{sy}$	300
$f_u$	340

## Steel Stud Spacing

Fig C1: Steel Stud Plan



Steel Stud Spacing (continued)

Fig C2: 108 Stud LW120

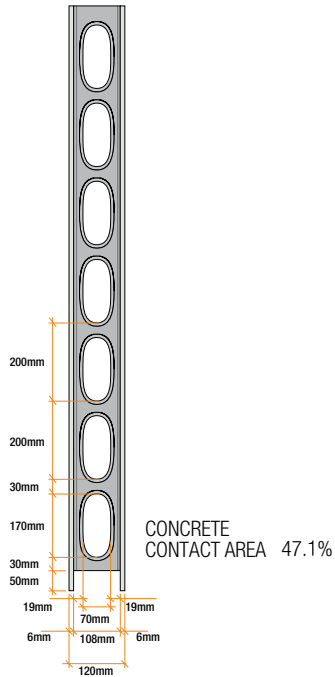


Fig C3: 136 Stud LW150

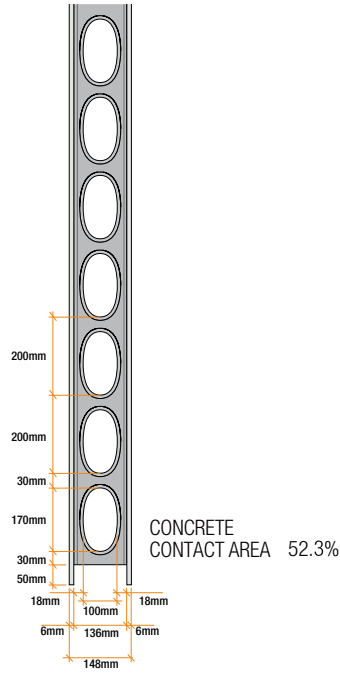


Fig C4: 150 Stud LW162

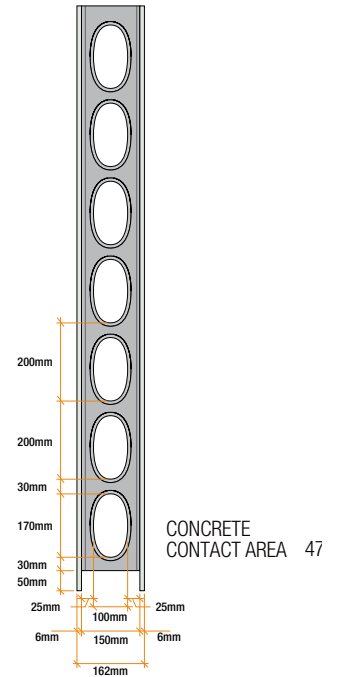


Fig C5: 188 Stud LW200

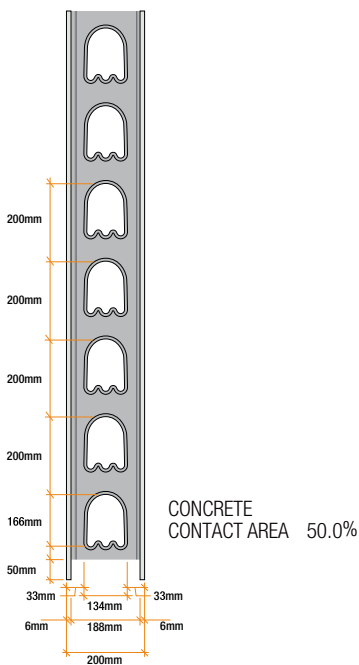


Fig C6: 188D Stud LW200D

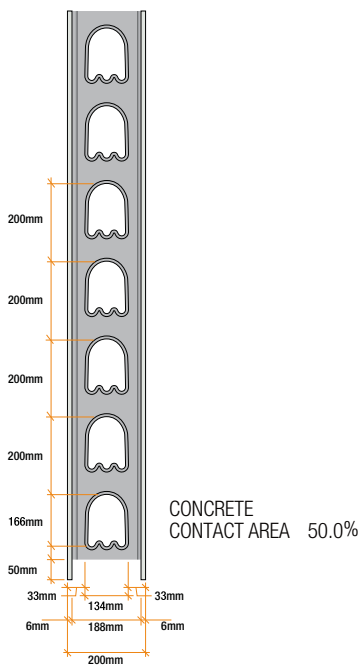
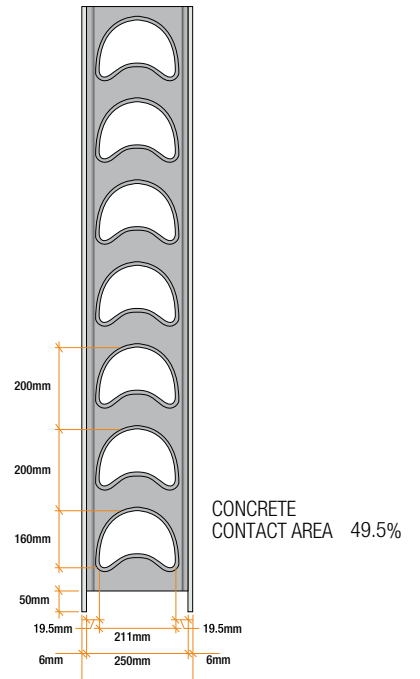


Fig C7: 250D Stud LW262D



## Panel Facing Sheet

AFS Logicwall® is faced with 6mm recessed edge, fibre cement sheeting which is bonded and pressed to the galvanized stud frame. The sheeting is an autoclaved, cellulose fibre reinforced cement sheet which is resistant to permanent water damage and will not rot. The sheets have a recess at both long

edges for specified jointing methods. The fibre cement sheet becomes the wall face and provides a suitable substrate for applied finishes and conforms to AS2908.2 – Cellulose Cement Products Part 2 Flat Sheets.

## Adhesive

The fibre cement sheets are bonded to the steel stud frame using AFS Logicwall® adhesive. This is a proprietary formula specially designed to withstand the

compaction of concrete at infill stage without the need of mechanical fixing methods

## Materials Handling, Storage and Safety

### Handling and Storage

AFS Logicwall® panels should be stacked flat, off the ground on a level platform or on support members which extend the full width of the panels and are spaced at a maximum 800mm centres. Pallets of panels must be craned onto the working deck as close as possible to the erection location.

### Panel Lifter

Although panels can be placed by hand for panels over 3.3m in height, AFS recommends the use of lifting of lifting bar as shown in drawing P2445 S-01/Rev 01 – Logicwall® lifting bar details, prepared and certified by myd consulting engineers. Refers to Certification section L for afs lifting bar certification.

### Pallet Lifter

AFS recommend the use of an approved and certified pallet lifter for the unloading of panels and packs on site. Pallet lifter safety guide handbook available upon request. Care must be taken to avoid damage to the panel edges, ends and surfaces. To ensure optimum performance, store panels under cover and keep dry prior to erecting. If the panels become wet, allow to dry before erecting and core filling.

Fig C8: Lifter



## Safety

Breathing in the dust liberated when cutting or grinding the fibre cement sheet on AFS Logicwall® panels is hazardous. It is the builder's responsibility to ensure that safe work practices are adopted. These include the following:

- Minimise dust by using hand methods to cut fibre cement sheets, i.e. tungsten-tipped score and snap knife; hand guillotine or hand saw. If using power tools ensure the work area is well ventilated, use dust extraction systems fitted to power tools and wear approved dust mask and safety glasses.
- Ensure containment of dust during clean-up and disposal.
- The Personal Protective Equipment required may vary from site to site and from time to time, and it is the responsibility of every individual to ensure that they use the appropriate equipment to safeguard themselves and those around them.

The basic toolkit should include, but not necessarily limited to:

- A- Dust masks
- B - Safety gloves
- C - Hearing protection
- D - Barrier cream / lotion
- E - Eye protection

## Material Safety Data Sheets

MSDS sheets for the following components are available on request:

- FC Sheet
- AFS Adhesive
- Steel Stud

**Fig C9: Personal Protective Equipment**

