BRANZ Appraised
Appraisal No. 900 [2020]

CS CAVITY SLIDERS

Appraisal No. 900 (2020)

This Appraisal replaces BRANZ Appraisal No. 900 (2015)

Amended 09 December 2021

BRANZ Appraisals

Technical Assessments of products for building and construction.

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Product

1.1 CS Cavity Sliders are cavity sliding door units for internal use. A range of unit options exist for speciality applications.

Scope

2.1 CS Cavity Sliders have been appraised for use as sliding doors in internal locations. CS BraceWall provides wall bracing in buildings within the scope of NZ 3604.

2.2 The systems covered by the Appraisal are given in Table 1.

Building Regulations

New Zealand Building Code (NZBC)

3.1 **In the opinion of BRANZ, CS Cavity Sliders, if designed, used, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet the following provisions of the NZBC:**

Clause B1 STRUCTURE: Performance B1.3.1, B1.3.2 and B1.3.4. CS Cavity Sliders meet the requirements for loads arising from self-weight, earthquake, wind and impact [i.e. B1.3.3 (a), (f), (h) and (j)]. See Paragraphs 8.1–8.3.

Clause B2 DURABILTY: Performance B2.3.1 (a) not less than 50 years, (b) 15 years and (c) 5 years. CS Cavity Sliders meet these requirements. See Paragraphs 9.1–9.3.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. CS Cavity Sliders meet this requirement.

Technical Specification

4.1 CS Cavity Sliders are units for sliding doors suitable for installation into timber, steel, concrete or masonry construction where a fire resistance rating is not required. The different CS Cavity Sliders covered by this Appraisal are given in Table 1, below. *[Note: The use of CS Cavity Sliders in exterior locations is not covered by this Appraisal.]*

Table 1: CS Cavity Slider Units

CS Cavity Slider	Description
CS AluSealed	Units with aluminium jambs
CS BraceWall	Units incorporating a bracing rated panel
CS EasyOpen	Units for toilets for people with disabilities
CS FramelessGlass	Units incorporating frameless, glass door panels
CS MidWay	Medium sized units with timber jambs
CS OvertakingDoors	Units incorporating 2, 3, 4 or 5 doors sliding out from one pocket
CS RakingHead	Self-closing units
CS SlimSlider	Units with 70 mm cavity pockets
CS SofStop	Soft closing units
CS SoundStop	Sound insulating units
CS SpaceMaker	Standard residential cavity pockets
CS SquareFormed	Units with square stop (flush) jambs
CS TimberFormed	Units with oversized cavity pockets
CS Ultimate	Units with cavities for 140 mm stud walls

4.2 Table 2 gives the maximum door heights, widths, thicknesses and weights for the different CS Cavity Sliders.

Table 2: CS Cavity Slider Dimensions

CS Cavity Slider	Max Door Height (mm)	Max Door Width (mm)	Max Door Thickness (mm)	Max Door Weight (kg)
CS AluSealed	3,000	4,500	38	240
CS BraceWall	2,982	3,213	38	240
CS EasyOpen	3,000	4,500	38	240
CS FramelessGlass	3,000	2,800	12	240
CS MidWay	2,400	1,100	38	90
CS MirrorLite door panel	2,400	1,200	38	240
CS New Yorker door panel	3,000	3,000	38	240
CS OvertakingDoors x 2	3,000	3,500	38	240
CS OvertakingDoors x 3	3,000	2,500	38	240
CS OvertakingDoors x 4	3,000	2,000	38	240
CS OvertakingDoors x 5	3,000	1,700	38	240
CS RakingHead	3,000	1,200	38	50
CS SlimSlider	2,100	910	38	90
CS SofStop	3,000	1,200	38	100
CS SoundStop	2,400	1,200	40	240
CS SpaceMaker	2,100	1,000	38	90
CS SquareFormed	3,000	4,500	38	240
CS TimberFormed	3,000	4,500	38	240
CS Ultimate	3,000	4,500	88	240

4.3 CS Cavity Sliders are supplied with timber jambs that are either grooved for wall linings, or are conventional for architraves. CS Cavity Sliders are also available with aluminium, grooved jambs with various surface finish options.

4.4 All CS Cavity Sliders provide for doors which slide into an aluminium-framed cavity wall element. Each door is hung off carriages which have two or four wheels fitted with nylon over moulded ball bearings, or solid acetal wheels depending on application. A pivoting hanger mechanism ensures that both wheels always run in the track.

4.5 CS BraceWall has a layer of 18 mm plywood fixed on one side of the aluminium framing members to provide bracing.

4.6 The bottom plate, as well as the top plate which also forms the carriage track, are one-piece aluminium extrusions. Extruded aluminium studs are used for the vertical framing members.

4.7 Kiln-dried, dressed radiata pine timber nogs and blocking allow for nail or screw fixing of sheet wall linings.

4.8 CS Cavity Sliders are available for single or double sliding doors in a range of standard sizes. Units with dimensions outside the standard range can be supplied on request.

4.9 CS SoundStop is supplied with a sound-insulated door, manufactured for CS For Doors that can achieve a level of sound insulation. CS SoundStop is always supplied with doors fitted. Other units may be supplied with doors fitted on request.

4.10 CS MirrorLite, CS New Yorker and CS SoundStop door leaves are the only door leaves covered by this Appraisal. All other door leaves may be of any type of manufacture provided they have a durability of at least 5 years, are within the required dimensional and weight limits, are capable of being top hung and having a groove in the bottom if a tee guide is used.

Handling and Storage

5.1 CS Cavity Sliders are supplied with transportation plates to prevent distortion of the frames during delivery and handling. Units for other than local deliveries are packed in cardboard. Handling, as with any joinery product, must be with due care to avoid damage.

5.2 On-site, units must be stored upright supported across their width (e.g. against a wall) to prevent distortion of the frame and in a dry and clean area protected from dust and direct sunlight.

Technical Literature

6.1 Refer to the Appraisal listing on the BRANZ website for details of the current Technical Literature for CS Cavity Sliders. The Technical Literature must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained within the scope of this Appraisal and the Technical Literature must be followed.

Design Information

General

7.1 CS Cavity Sliders can be supplied with timber jambs or pre-finished aluminium jambs in a variety of colours.

7.2 CS Cavity Sliders must not be installed in high moisture areas such as saunas or steam rooms.

7.3 Single and bi-parting CS Cavity Sliders, with doors 38 mm thick, are designed to fit standard stud walls (nominally 90 mm timber framing). CS Cavity Sliders can also be specified for various other stud options as per the requirement or product type selection. These include 120, 140, 190, 240 and 290 mm timber-framed walls.

7.4 An intermediate stud is included in the framing for stability in all units for doors wider than 910 mm. This excludes CS SlimSlider, CS SpaceMaker and CS MidWay.

Structure

8.1 Where vertical loads are imposed from above, CS Cavity Sliders require supporting members which span the width of the opening in the framing.

8.2 CS Cavity Sliders are capable of withstanding wind loadings up to 0.6 kPa, and likely soft and hard body impact loadings associated with residential and light commercial buildings.

8.3 All 90 mm CS Cavity Sliders sliding units are capable of supporting tiles up to a total lining mass of 50 kg/m², given the following conditions are met:

- A full 17 mm plywood panel is incorporated into the cavity on the side to which tiling will be applied; and,
- The CS Cavity Slider unit is installed in accordance with the installation instructions; and,
- A 9 mm fibre cement tile backing board is used as a wall lining, and is installed in accordance with the board manufacturer's instructions; and,
- Tiles are installed in accordance with the tile manufacturer's instructions; and,
- The maximum thickness of the lining, including the fibre cement sheet, the tiles and the tile adhesive, does not exceed 30 mm.

Bracing

8.4 CS BraceWall is for areas where wall bracing is needed in conjunction with a cavity sliding unit. CS BraceWall will provide the bracing ratings given in Table 3. These are given adjusted for element height and the maximum limits of NZS 3604.

Table 3: CS BraceWall Bracing Ratings

Wall Length (m)	Floor Type	Bracing Ratings for Heights Given (BU/m)					
		2.4 m		2.7 m		3 m	
		EQ	Wind	EQ	Wind	EQ	Wind
0.71–0.909	Timber	120	120	107	107	96	96
	Concrete	144	149	128	132	115	119
0.91–1.584	Timber	120	120	107	107	96	96
	Concrete	150	150	133	133	120	120
1.585–3.213	Timber	120	120	107	107	96	96
	Concrete	150	150	133	133	120	120

Durability

9.1 The carriages, rollers and door leaves for the CS Cavity Sliders covered by this Appraisal will meet the durability performance requirements of 5 years with normal maintenance.

9.2 The CS Cavity Sliders covered by this Appraisal, being part of non-structural internal partitions, except CS BraceWall, will meet the 15 year minimum requirement when correctly installed.

9.3 CS BraceWall, when kept dry, will meet the requirements of 50 years, when fixed directly to timber or concrete. CS BraceWall can be used in wet areas such as bathrooms and laundries, but only if the ventilation meets the requirements of NZBC Acceptable Solution E3/AS1, Paragraph 1.2.

Maintenance

10.1 CS For Doors recommends maintenance for longevity of the carriages and running surfaces. Regular inspection and cleaning, by compressed air only, is recommended of the aluminium track running surface. On high use doors, replacement of the rollers may be necessary to achieve optimal noise and running performance after a period of between three to five years.

10.2 The effective life of the seals used with CS SoundStop will depend on the frequency of use of the door. Normal maintenance will include replacing seals when they wear or lose effectiveness.

Prevention of Fire Occurring

11.1 Separation or protection must be provided to CS Cavity Sliders from heat sources such as fireplaces, heating appliances, flues and chimneys. Part 7 of NZBC Verification Method C/VM1 and Acceptable Solution C/AS1, and NZBC Acceptable Solution C/AS2 provide methods for separation and protection of combustible materials from heat sources.

Fire Affecting Areas Beyond The Fire Source

12.1 CS Cavity Sliders are not suitable for use with fire doors or smoke control doors.

12.2 There are no surface finish requirements for doorsets. However, this exclusion may not apply to larger areas of openable wall partitions and this may affect the use of CS OvertakingDoors. This must be considered at the design stage. The Group Number for any door panel will depend on the material and finishing of the panel. This is outside the scope of this Appraisal.

Movement to a Place of Safety

13.1 All CS Cavity Sliders covered by this Appraisal are suitable for use in single detached dwellings (Risk Group SH).

13.2 In all other purpose groups, the suitability of the use of CS Cavity Sliders must be determined on a case by case basis, subject to specific fire design. This is outside the scope of this Appraisal.

13.3 CS Cavity Sliders covered by this Appraisal may, in accordance with NZBC Acceptable Solution C/AS2, Paragraph 3.15.1 a), be used on escape routes where the number of occupants using the door does not exceed 20.

Access Routes

14.1 CS EasyOpen can be manufactured to meet the requirements of NZBC Clause D1.3.4 f). CS EasyOpen complies with NZBC Acceptable Solution D1/AS1, Paragraph 7.0.5 and the minimum clear opening and door handle requirements of NZS 4121. The unit has a minimum clear opening width of 760 mm, the door handle is fitted by CS For Doors at a height between 900 mm and 1,200 mm above the floor, and is lever action with the end turned towards the door.

Sound Transmission

15.1 In applications where a level of sound insulation between rooms and a sound transmission class (STC) is required, CS SoundStop comprising an acoustic door and seals can be used. This has not been assessed and is outside the scope of the Appraisal.

Installation

16.1 CS Cavity Sliders must be installed in accordance with the manufacturer's installation instructions.

16.2 The required opening size in which a unit is to be fitted (trim size), allows for clearance all around to fit the unit in place, which must be packed after plumbing the assembly. Fixing of the aluminium framing members to the surrounding structure is through pre-drilled holes using the number, type and size of fasteners required by the manufacturer.

16.3 Care must be taken when installing the frame. The top and bottom plates must be correctly aligned so that the door will slide smoothly. The doors are installed by fixing mounting plates and carriages to the top which are then fitted onto the track.

16.4 The cavity wall must not be lined until the door is fitted and slides smoothly. When lining the cavity wall, care must be taken not to use a fastener length which will penetrate through the nogging and subsequently damage the door surface. Adhesive fixing rather than nailing fixing of wall linings is recommended.

CS BraceWall

16.5 When installing CS BraceWall, **all supplied bottom plate fixings must be used**, not just the two main screw bolts.

16.6 Post-fixed hold down anchors used with CS BraceWall installations must have a characteristic strength of 18 kN for concrete floors and 14.4 kN for timber floors.

16.7 When installing CS BraceWall, careful positioning of the hold down anchors is essential. It is necessary to partially pre-install the hold down anchors with the washer block already in place. This is to align the fixing bolts and washers accurately so that the cavity pocket is correct for the door running. CS BraceWall can then be slid into position, ensuring that the washer blocks are properly seated into the aluminium extrusions at the bottom of the panel. The hold down fasteners may then be tightened up.

16.8 Where the CS BraceWall door is not full height, an infill panel, constructed in accordance with the Technical Literature, must be installed above the door.

CS SoundStop

16.9 CS SoundStop requires additional care to ensure tight perimeter and threshold seals to achieve the specified STC ratings.

Basis of Appraisal

The following is a summary of the technical investigations carried out.

Tests

17.1 Bracing tests were carried out by BRANZ in accordance with BRANZ Technical Paper P21 to determine the performance of CS BraceWall when the building is subjected to lateral wind or earthquake loading.

Other Investigations

18.1 A durability opinion has been provided by BRANZ technical experts.

18.2 The use of CS Cavity Sliders in New Zealand for over 34 years has been noted.

18.3 Site inspections of CS Cavity Sliders have been carried out by BRANZ to assess practicability of installation and to establish reliability of use.

Quality

19.1 The manufacture of CS Cavity Sliders by CS For Doors has been examined by BRANZ and found to be satisfactory.

19.2 Quality of materials, components and accessories supplied by CS For Doors is the responsibility of CS For Doors.

19.3 The quality of installation on-site of components and accessories supplied by CS For Doors is the responsibility of the installer.

Sources of Information

- BRANZ Technical Paper P21 (2010) A wall bracing test and evaluation procedure.
- NZS 3604:2011 Timber-framed buildings.
- NZS 4121:2001 Design for access and mobility – Buildings and associated facilities.
- Ministry of Business, Innovation and Employment Record of amendments - Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.

Amendments

Amendment No. 1, dated 09 December 2021

This Appraisal has been amended to incorporate tile lining of CS Cavity Sliders.

BRANZ

In the opinion of BRANZ, CS Cavity Sliders are fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided they are used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to CS For Doors, and is valid until further notice, subject to the Conditions of Appraisal.

Conditions of Appraisal

1. This Appraisal:
   a) relates only to the product as described herein;
   b) must be read, considered and used in full together with the Technical Literature;
   c) does not address any Legislation, Regulations, Codes or Standards, not specifically named herein;
   d) is copyright of BRANZ.
2. CS For Doors:
   a) continues to have the product reviewed by BRANZ;
   b) shall notify BRANZ of any changes in product specification or quality assurance measures prior to the product being marketed;
   c) abides by the BRANZ Appraisals Services Terms and Conditions;
   d) warrants that the product and the manufacturing process for the product are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ pursuant to BRANZ's Appraisal of the product.
3. BRANZ makes no representation or warranty as to:
   a) the nature of individual examples of, batches of, or individual installations of the product, including methods and workmanship;
   b) the presence or absence of any patent or similar rights subsisting in the product or any other product;
   c) any guarantee or warranty offered by CS For Doors.
4. Any reference in this Appraisal to any other publication shall be read as a reference to the version of the publication specified in this Appraisal.
5. BRANZ provides no certification, guarantee, indemnity or warranty, to CS For Doors or any third party.

For BRANZ

Chelydra Percy
Chief Executive

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17 December 2020