

4251PC PSP ALPOLIC® FR ALUMINIUM COMPOSITE PANEL

1. GENERAL

If you have pre-customised this work section using the "questions and answers" provided as part of the downloading process, it may be necessary to amend some clauses to suit the final project-specific version.

The section must still be checked and customised to suit the project being specified, by removing any other irrelevant details and adding project-specific details and selections.

This section relates to the design, fabrication, supply and installation of **PSP Limited** Alpolic®/fr aluminium composite panels to building envelopes including walls, parapets, fascia, soffits and signage.

Modify or extend the above description to suit the project being specified.

Aluminium composite panels can also be glazed into a window or screen frame in a similar manner to a glass panel. In such a case, either modify this section accordingly, or add relevant clauses to the selected window or curtain wall section.

1.1 RELATED WORK

~

Include cross references only to other work sections where they include directly related work.

Documents

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC C AS2/AS6	Protection from fire
NZBC E2/VM1	External moisture
AS/NZS 1170.2	Structural design actions - Wind actions
NZS 1170.5	Structural design actions - Earthquake actions - New Zealand
NZS 3604	Timber-framed buildings
AS/NZS 4284	Testing of building facades
NFPA 285	Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components
ISO 9705	Fire tests - Full-scale room test for surface products

Delete from the DOCUMENTS clause any document not cited. List any additional cited documents.

The following are related documents and if referred to in the work section need to be added to the list of DOCUMENTS.

NZBC E2/AS1	External moisture
AS 3715	Metal finishing - Thermoset powder coatings for architectural applications
ASTM E119	Standard Test Methods for Fire Tests of Building Construction and Materials
BRANZ BU 349	Finishes for aluminium
BRANZ BU 369	Fitting tolerances
BRANZ BU 519	Fasteners selection
BRANZ BU 531	Designing for thermal and moisture movement
<i>Window Association of New Zealand: Specification for powder organic coatings on architectural aluminium products</i>	

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer's and supplier's documents relating to this part of the work:

Technical Manual PSP Design Solutions PSP ALPOLIC®/fr Cladding System V: 17/08
Alpolic®/fr Overview Flyer
Alpolic®/fr Technical Overview
Outline of Alpolic/fr
CodeMark™ CMA-CM40075-I01-R01, PSP Limited Alpolic/fr ACM Panel Cladding System

List documents relating to this part of the work, i.e. technical product/system specifications, test reports, appraisals, certification, etc. Normally they will be referred to in the text by the abbreviated title.

Manufacturer/supplier contact details

Company: PSP Limited
Web: www.alpolicfr.co.nz
Email: info@psp.co.nz
Telephone: 0800 786 883
Facsimile: 09 415 2809

It is important to ensure that all personnel on site have access to accurate, up to date technical information on the many products, materials and equipment used on a project. In most cases individual products are not used in isolation, but form part of a building process. Also a particular manufacturer's and/or supplier's requirements for handling, storage, preparation, installation, finishing and protection of their product can vary from what might be considered the norm. Access to technical information can help overcome this potential problem.

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

~ years Manufacturer warranty
15 year manufacturer warranty within 1 km of the ocean
20 year manufacturer warranty further than 1 km from the ocean
15 years **PSP Alpoli[®]/fr ACM panel cladding system**
PSP Limited provide a separate supplier warranty

- Provide this warranty on the manufacturer's and supplier's standard form.
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

Modify or expand the clause to suit project or manufacturer/supplier requirements, options include:

- *Change the standard form to be used (check with the manufacturer/supplier, use the general section 1237WA WARRANTY AGREEMENT if required)*
- *Commence the warranty from the date of purchase (check with the manufacturer/supplier)*

1.5 WARRANTY - INSTALLER/APPLICATOR

Provide an installer/applicator warranty:

5 years For installation of PSP Limited Alpoli[®]/fr cladding system

- Provide this warranty on the installer/applicator standard form.
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

Modify or expand the clause to suit project or installer/applicator requirements, options include:

- *Change the standard form to be used (check with the installer/applicator, use the general section 1237WA WARRANTY AGREEMENT if required)*
- *Commence the warranty from the date of installation (check with the installer/applicator)*

Requirements

1.6 QUALIFICATIONS

Installers to be trained, certified and approved by PSP Limited. If requested provide evidence of qualification / experience prior to commencing work.

1.7 NO SUBSTITUTIONS

Substitutions are not permitted to any of the specified systems, components and associated products listed in this section.

1.8 COMPLIANCE -ALPOLIC[®]/FR CLADDING SYSTEM

Alpoli[®]/fr meets the requirements of the CodeMark certificate [CodeMark CMA-CM40075-I01-R01](#) when used within the conditions and limitations of its Certificate of Conformity. Achieves compliance with NZBC as follows:

- [NZBC B1.3.1](#), [B1.3.2](#)
- [NZBC B2.3.1\(b\)](#)
- [NZBC C3.4\(a\)](#), [C3.5](#)
- [NZBC E2.3.2](#), [E2.3.3](#), [E2.3.5](#)
- [NZBC F2.3.1](#)

The certificate provides third parties with compliance to NZBC Clauses and standards specified within the certificate subject to conditions and limitations.

Significant acceleration of corrosion can occur due to industrial contamination, corrosive atmospheres and contamination from agricultural chemicals and fertilisers. Specific Engineering Design is required under these microclimatic conditions.

1.9 SAMPLES

Refer to the general section 1270 CONSTRUCTION for details of how samples will be reviewed.

Provide the following samples for review by the Contract Administrator:

Submit for assessment samples of all materials before beginning fabrication: 300mm x 450mm for sheets and 300mm long for aluminium extrusions. Provide one sample for each material/finish visible in the finished work. In addition provide a sample of a completed joint.

The general section 1270 CONSTRUCTION describes how samples are to be addressed. Use this clause to describe specific requirements for samples and prototypes.

1.10 SHOP DRAWINGS

Refer to the general section 1235 SHOP DRAWINGS for the requirements for submission and review and the provision of final shop drawings.

Provide shop drawings to show the general arrangement including, but not be limited to:

- design calculations
- fully dimensioned elevations of all elements (minimum scale 1:50)
- complete details of construction, connections and all support systems (scale 1:10)
- dimensions of all typical elements and of any special sizes and shapes
- provision for the exclusion and/or drainage of moisture
- jointing details and method of fixing between individual elements and between this installation and adjacent work, including adjustment
- adjustment of fixings to ensure accurate alignment of composite cladding
- sealant types and full size sections of all sealants and backing rods
- provision for thermal movement
- provision for seismic movement and movement under wind loads
- sequence of installation
- co-ordination requirements with other work
- a full schedule of materials, finishes, componentry, hardware, fixings and fittings.

If requested provide the following additional information:

~

Submit shop drawings for review to the Contract Administrator.

- ~ working days (at least) before fabrication is planned to commence, provide shop drawings for review.
- Complete shop drawing review before commencing fabrication.

The general section 1235 SHOP DRAWINGS (or 1234 DOCUMENTATION if not available) describes the process of submission and review of shop drawings. Use this clause to describe the specific requirements of what the required shop drawings are to include.

1.11 INFORMATION FOR OPERATION AND MAINTENANCE

Refer to the general section 1239 OPERATION & MAINTENANCE for provision of the following general operation and maintenance information as electronic PDF format documents:

- Provide relevant PSP Limited Alpolic®/fr aluminium composite panel maintenance requirements

Use this clause to list requirements of information that is required but which does not warrant a separate specialist operation and maintenance manual. Amend the clause if hard copy documents are required.

Provide this information prior to practical completion.

The general section 1239 OPERATION & MAINTENANCE describes the process of submission and review of operation and maintenance information. Use this clause to describe the specific requirements, the required information and what it is to cover.

- 1.12 CHECK-LISTS
Complete and provide copies of all PSP Limited check-lists including pre-cladding check-list, pre-sealant check-list and final check-list.
PSP Design Solutions Technical Manual contains check-lists.

Compliance information

- 1.13 INFORMATION REQUIRED FOR CODE COMPLIANCE
Provide the following compliance documentation: -
- Applicators approval certificate from the manufacturer / supplier
- Manufacturer's and supplier's warranty
- Installer's / applicator's warranty
- Producer Statement - Construction from the applicator / installer
- Producer Statement - Construction Review from an acceptable suitably qualified person
- Other information required by the BCA in the Building Consent Approval documents.
List the Producer Statements - Construction (PS3) required from installers that are required as a condition of carrying out this work.
List also Producer Statements - Construction Review (PS4) required from consultants to be engaged by the Contractor.
Producer Statement - Design (PS1), may be required where certain design work is undertaken by the Contractor or manufacturer / importer / distributor.

Performance - design

- 1.14 DESIGN REQUIREMENTS
Refer to SELECTIONS for requirements.
On larger projects you will need to set out the requirements for the design of any supporting systems and the structural integrity of the panels themselves. Note that in such a case it would be necessary to set out the required design parameters (acceptable deflection, site wind loadings and the like) and the proposed system for approving the submitted design.

Performance - Wind (design by contractor)

The next two mutually exclusive clauses are setting a standard of performance for design by the contractor to meet. Specifiers should therefore consider adding some means of confirming (say by testing or certification) that the performance criteria will be or have been met. Delete the clause which does not apply.
Ensure correct information is supplied in 1220 PROJECT.

- 1.15 DESIGN PARAMETERS - NON SPECIFIC DESIGN
Design the installation to the wind zone parameters of [NZS 3604](#), table 5.4.
Refer to general section 1220 PROJECT for details.
The PSP Design Solutions Technical Manual includes buildings subject to maximum wind pressures for weather-tightness design of 2.5kPa Ultimate Limit State (ULS).
Delete the clause if using DESIGN PARAMETERS - SPECIFIC DESIGN.

- 1.16 DESIGN PARAMETERS - SPECIFIC DESIGN
Design the installation to the wind pressure parameters of [AS/NZS 1170.2](#).
Refer to general section 1220 PROJECT for details.
Obtain information from the project structural engineer.
Delete the clause if using DESIGN PARAMETERS - NON SPECIFIC DESIGN.

Performance - fire

- 1.17 EXTERIOR SURFACE FINISHES - HEAT RELEASE REQUIREMENTS
Alpolic®/fr tested to NFPA 285 and complies with [NZBC C/AS2-AS6](#), 5.8.2(b).
Note; The requirements of NZBC C/AS2-AS6, 5.8.1 do not apply as testing of entire wall assembly is tested to NZBC C/AS2-AS6, 5.8.2(b).
- 1.18 INTERIOR SURFACE FINISHES - FIRE GROUP NUMBERS
Alpolic®/fr achieves the Group Number Classification of 1-S to [NZBC C/AS2-C/AS6](#), table 4.1, determined in accordance with [NZBC C/VM2](#) Appendix A, following testing to ISO 9705.
Alpolic®/fr aluminium composite panels can be used internally, Modify or extend this section to suit internal applications. Delete this clause if not required.

Performance - general

- 1.19 **FIXINGS, EARTHQUAKE**
Use fixings and methods capable of sustaining the loads appropriate to the area as required by [NZS 1170.5](#).
This clause might only apply where the method of fixing the panels is required, by design or regulation, to comply with the earthquake requirements of NZS 1170.5.
- 1.20 **LABORATORY TESTING**
All construction details represented on Shop Drawings must be based on laboratory testing results. Where such testing information is not available conduct laboratory testing of a prototype of the building facade to [AS/NZS 4284](#) and to [NZBC E2/VM1](#).
Where performance testing of a prototype is justified, it will be necessary to provide details of the prototype required, set out details of the design and testing procedure to be followed and confirm the range of test results required. Refer to 4211 PROPRIETARY CURTAIN WALLING for examples of the range of information necessary for designing, preparing and testing a prototype.
- 1.21 **FABRICATION**
Factory fabricate all cladding panels and assemble to PSP Technical manual details and approved shop drawings.
Modify this clause where shop drawings have not been called for.
- 1.22 **WEATHER-TIGHT PERFORMANCE**
Accept responsibility for the weather-tight performance of the completed cladding system, including all penetrations.

2. **PRODUCTS**

Materials

- 2.1 **WALL UNDERLAY**
For flexible wall underlays, rigid wall underlays and rigid air barriers refer to the appropriate separate section(s).
Refer to PSP Design Solutions Technical Manual for requirements relating to the selection and use of flexible wall underlays, rigid wall underlays and rigid air barriers for use with Alpolic[®]/fr aluminium composite panels
- 2.2 **PSP LIMITED ALPOLIC[®]/FR ALUMINIUM COMPOSITE PANEL**
Alpolic[®]/fr tested to NFPA 285, composed of two 0.5mm thick coil-coated aluminium sheets fusion bonded to both sides of a fire resistant mineral core. Sheet front is coated with LUMIFLON[®] FEVE Polymer (CFTE) paint and the sheet back has a service coating.

Components

Modify the following component clauses to more accurately describe the project design.

- 2.3 **JOINT SEALANT**
Refer to SELECTIONS.
- 2.4 **FIXING SCREWS**
Installer to allow for stainless steel screws as required.
Modify to nominate type 304 or 316 stainless steel to suit project requirements.
- 2.5 **BOND BREAKER TAPE**
Installer to allow for bond breaker tape as required.
- 2.6 **ALUMINIUM ANGLE FIXING BRACKETS**
Installer to allow for aluminium angle fixing brackets as required.
- 2.7 **PEF BACKING RODS**
Installer to allow for PEF backing rods as required.
- 2.8 **PLASTIC PACKERS/SHIMS**
Installer to allow for plastic packers/shims as required.

- 2.9 BACKING PLATE
Installer to allow for backing plates as required.
Tight fit backing plate installed behind panels where required for pipe penetrations.

Finishes

- 2.10 LUMIFLON® FEVE POLYMER COATING
Factory applied LUMIFLON® FEVE Polymer (CFTE) paint.
Note: Sheet back aluminium finished with a protective primer surface coating.

3. EXECUTION

Conditions

- 3.1 PRE-INSTALLATION REQUIREMENTS
Check work previously carried out and confirm it is of the required standard for this part of the work.
- 3.2 COMPATIBILITY
Check all materials, components and accessories are compatible on the electrochemical scale of metals, so that no excessive or detrimental sacrificial corrosion will occur.
- 3.3 INSTALLATION
All work to be carried out by competent and experienced installers (who are currently approved by PSP Limited) in accordance with PSP Limited requirements and the approved shop drawings.
Modify this clause where shop drawings have not been called for.
- 3.4 TOLERANCES
To PSP Limited permitted tolerances.
- 3.5 TOUCH-UP
In situ touch-up of factory applied finishes is not permitted unless a trial repair is subsequently approved in writing.
- 3.6 HANDLE AND STORE
Handle and store pre-finished panels and materials so that no damage will be done to the form, material, or finish. Prevent pre-finished surfaces from rubbing together. Prevent contact with mud, plaster and cement, or with dissimilar metals.
- 3.7 DAMAGED MATERIALS OR COMPONENTS
Do not install any materials or components that are defective in any way, including warped, bowed, dented and broken.
- 3.8 DO NOT USE
Do not use adhesive tape, film, papers, or sprayed protective coatings, or masking tape, which might become bonded after exposure to sun or weather. Remove any temporary protection after installation. Remove any protective coating residues immediately.

Assembly

- 3.9 FABRICATION
Do not start fabrication until the shop drawings and material samples have been reviewed and approved. Fabricate aluminium composite panels and elements in the workshop wherever possible, ready for assembly and erection on the building site.
Modify this clause where shop drawings have not been called for.

Substrate preparation

- 3.10 SUBSTRATES
Check substrate for alignment, before commencing cladding installation. Notify the Contract Administrator in writing of any unacceptable conditions.
Preparation of the substrate is the responsibility of the Main Contractor.

Installation - general

3.11 PENETRATIONS

Confirm that exterior wall openings have been prepared ready for the installation of all window and door frames and other penetrations through the cladding including installation of flashings (those required to be installed prior to installation of penetrating elements).

3.12 INSTALL PANELS

Install aluminium composite panels in accordance with PSP Limited requirements and the stated design parameters, reviewed and approved shop drawings and approved samples. Co-ordinate with related work. Consult and coordinate as necessary with installers of adjoining work, including window and door installations.

Modify this clause where shop drawings or samples have not been called for.

3.13 DO NOT ALTER

No cutting, trimming, welding or brazing of component parts during erection in any manner that would damage the finish, decrease the strength or result in visual imperfection or failure in performance to be executed during erection. Return any component parts that require alteration to the factory for correction or replacement with new parts.

3.14 ANCHORAGE

Ensure anchorage of the cladding structure to the building structure is done to PSP Limited approved methods and requirements.

3.15 INSTALL PANEL JOINTS

Install panel joints in accordance with PSP Limited Alpolic[®]/fr requirements, reviewed and approved shop drawings and approved samples.

Modify this clause where shop drawings or samples have not been called for.

3.16 APPLY SEALANTS

Clean joints with solvent, mask adjoining surfaces, install backing rod or breaker tape and install sealant in accordance with the approved shop drawings, approved samples, sealant profiles and sealant manufacturer's instructions.

Modify this clause where shop drawings or samples have not been called for.

3.17 COMPLETE

Ensure the work is complete with all flashings, finishing and trim properly installed so the cladding system is completely weathertight.

Completion

3.18 ROUTINE CLEANING

Carry out routine trade cleaning of this part of the work including periodic removal all debris, unused and temporary materials and elements from the site.

Clean panel surfaces in accordance with PSP Limited requirements. Do not use abrasive or alkaline cleaning products.

3.19 DEFECTIVE OR DAMAGED WORK

Replace damaged or marked elements where repair is not possible or will not be acceptable. Leave work to the standard required for following procedures.

Use this standard generic clause and add additional specific requirements.

3.20 PROTECTION

Protect all surfaces and finishes for damage as long as practicable, including the retention of all or any protective coatings provided by the panel manufacturer. Remove protective coatings, using only the methods required by the panel manufacturer.

3.21 ON COMPLETION
Trade clean all panel surfaces to remove all marks, dust and dirt to enable a visual inspection of all surfaces at completion of the installation and again at contract completion.
On some projects, additional protection/cleaning may be needed. Where panels are installed well before the end of the project, regular inspections may be needed to ensure that markings do not remain on the surface too long.

4. SELECTIONS

For further details on selections go to www.alpolicfr.co.nz
Substitutions are not permitted to the following, unless stated otherwise.
If substitutions are permitted modify the statement above, ensure the NO SUBSTITUTIONS clause from GENERAL is treated the same.

Select the options to suit the project and delete options not specified.

4.1 DESIGN REQUIREMENTS

~
On larger projects you will need to set out the requirements for the design of any supporting systems and the structural integrity of the panels themselves. Note that in such a case it would be necessary to set out the required design parameters (acceptable deflection, site wind loadings and the like) and the proposed system for approving the submitted design.

4.2 FIXINGS, WIND

	Element
SLS (Serviceability limit state):	~
ULS (Ultimate limit state):	~

Modify and extend the above description to suit the project being specified.

Materials

4.3 PSP LIMITED ALPOLIC®/FR ALUMINIUM COMPOSITE PANELS

Location: ~
Supplier: PSP Limited
Brand: PSP ALPOLIC®/fr
Panel size: ~
Panel thickness: ~
Colour: ~
Fixing type: ~
Panel joint: ~
Options:
Panel size: Refer to PSP Limited for panel size options, size options dependant on colour selection.

Panel thickness: 4mm for all panels other than 3mm thickness for Alpolic/fr - RF (Mirror)

Colour: Refer to PSP Limited for panel colour options.

Fixing Type Confirm type of stainless screw with PSP Limited

Components

4.4 JOINT SEALANT

Brand: ~
Colour: ~
*Brand: Sikaflex AT Facade
Holdfast Fix All MS Polymer*