BID FORMS &
CONTRACT DOCUMENTS

Strata Plan LMS 280 – Chateau Comox
1272 Comox Street
Vancouver, B.C.

BUILDING ENVELOPE
MAINTENANCE PROJECT – 2019

Prepared by:
SPRATT EMANUEL ENGINEERING LTD.
PROJECT No. S18-558

January 29, 2019

PART 1 – GENERAL

1.1 Invitation/Bid Call

.1 Offers signed under seal, executed, and dated will be received by the Consultant located at 2348 Yukon Street, Vancouver, B.C., V5Y 3T6 no later than **3:00 P.M., Friday, February 22, 2019.**

.2 Offers submitted after the above time may be returned to the bidder unopened.

.3 Offers will be opened privately immediately after the time for receipt of Bids.

.4 Amendments to the submitted offer will be permitted if received in writing prior to bid closing and if endorsed by the same party or parties who signed and sealed the offer.

1.2 Intent

.1 The intent of this bid call is to obtain an offer to perform work to complete the building envelope repairs and modifications to the balcony, exterior walls and associated work of at the building located at 1272 Comox Street, Vancouver, B.C. for a Stipulated Price with Unit Price contract, in accordance with the Contract Documents and the CCDC-2 - 2008.

.2 Perform the Work continuously, without interruption to the occupants until Final Completion.

.3 The commencement date shall be not more than ten (10) working days after written notification of Bid acceptance.

1.3 Contract Documents Identification

.1 The Contract Documents are identified as:

BUILDING ENVELOPE MAINTENANCE PROJECT - 2019
Strata Plan LMS 280 – Chateau Comox
1272 Comox Street, Vancouver, B.C.
Our File No. S18-558

.2 As prepared by the Consultant:

Spratt Emanuel Engineering Ltd.
2348 Yukon Street, Vancouver, B.C. V5Y 3T6

.3 All Contract Documents are listed in Article A-3 of the CCDC-2.

1.4 Contract/Bid Documents

.1 Definitions

.1 Contract Documents: Defined in CCDC-2 - 2008 Edition.

.2 Bid Documents: Contract Documents supplemented with Instructions to Bidders, and Bid Form.

.3 Bid, Offer, or Bidding: Act of submitting an offer under seal.

.4 Bid Price: Monetary sum identified by the Bid Form.

.2 Availability

.1 Bid Documents may be obtained at the office of the Consultant, located at 2348 Yukon Street, Vancouver, B.C.

.2 One set of Bid Documents can be obtained by bidders free of charge.

.3 Bid Documents are made available only for the purpose of obtaining offers for this project. Their use does not confer a license or grant for other purposes.

.3 Examination

.1 Upon receipt of the Bid Documents, verify that the documents are complete; notify the Consultant should the documents be incomplete.

.2 Immediately notify the Consultant upon finding discrepancies, errors or omissions in the Bid Documents.

.4 Queries/Addenda

.1 Direct all questions in writing to the Consultant: Spratt Emanuel Engineering Ltd., Attention: John Drinkwater, P.Eng. (Fax: 604-872-1274) (Email: see@telus.net).

.2 The reply will be in the form of an addendum, a copy of which will be forwarded to known bidders. All addenda become part of the Contract Documents. Include costs in the Bid Price.

.3 Verbal answers are ONLY binding when confirmed by written addenda.

.4 Clarifications requested by bidders must be in writing.

.5 Product/System Options

.1 No substitutions for specified materials will be permitted without prior written approval of the Consultant.

.2 Proposals for substitution may only be submitted after award of contract. Such request must include statements of respective costs of items originally specified and the proposed substitution. The proposed substitution must be equal or better than the originally specified product or system.

.3 Proposals will be considered by the Consultant if:

.1 Materials selected by the contractor from those specified are not available.

.2 Delivery date of materials selected from those materials specified would unduly delay completion of the contract.

.3 Alternative material to those specified, which is brought to the attention of and considered by Consultant as equivalent to the material specified, will result in a credit to the Owner.

.4 When proposing to furnish materials and/or equipment other than those specified, the contractor shall submit a written request for all substitutions to the Consultant. Such a request shall be accompanied with complete descriptive (manufacturer, brand name, catalogue number, etc.) and technical data for all items.

.5 In any case, where substitutions are permitted, the Contractor shall bear any extra cost of evaluating the equality of the materials and equipment to be installed, and additional costs for preparation of drawings, sketches and specifications by the Consultant or others.

.6 Should the proposed substitution be accepted either in part or in whole, the contractor assumes full responsibility and costs when the substitution affects other work on the project. Pay for design or drawing changes required as a result of substitution.

.7 Amounts of all credits arising from the approval of substitutions will be determined by the Consultant. The Contract Price will then be reduced accordingly.

1.5 Site Assessment

.1 Site Examination

.1 It is recommended that all contractors visit the project site and surrounding area before submitting a Bid.

.2 **There will be a site meeting at 10 A.M. on Wednesday, February 6, 2019 to familiarize bidders with the project.**

1.6 Qualifications

.1 Sub-contractors

.1 The Owner and Consultant reserve the right to reject a proposed sub-contractor for reasonable cause.

.2 Refer to CCDC-2 Article GC 3.8 of General Conditions.

1.7 Bid Submission

.1 Bid Ineligibility

.1 Bids that are unsigned, improperly signed or sealed, conditional, illegible, obscure, contain arithmetical errors, erasures, alterations, or irregularities of any kind, may, at the discretion of the Owner, be declared informal.

.2 Bids with Bid Forms and enclosures which are improperly prepared may, at the discretion of the Owner, be declared informal.

.3 Bids that fail to include insurance requirements may, at the discretion of the Owner, be declared informal.

.4 Bids are by invitation, only from selected pre-qualified bidders. Bids from unsolicited bidders will be returned.

.2 Submissions

.1 Bidders shall be solely responsible for the delivery of their Bids in the manner and time prescribed.

.2 Submit one copy of the executed offer on the Bid Forms provided, signed and corporate sealed together with the required security in a closed opaque envelope, clearly identified with the bidder's name, project name and Owner's name on the outside.

.3 Insert the closed and sealed Bid Form envelope and requested security deposit bid bond qualification forms in a larger opaque envelope and label this envelope as noted above.

1.8 Bid Enclosures/Requirements

.1 Insurance

.1 Provide a signed "Undertaking of Insurance" on the standard form provided by an insurance company, stating their intention to provide insurance to the bidder in accordance with the insurance requirements of the GC 11.1.

.2 Bonds

.1 A Performance Bond in the amount of 50% of the total bid price will be required for faithful performance of the contract by the successful tender.

.2 A Labour and Materials Bond in the amount of 50% of the total bid price. All Bonds must be maintained in force for a period of two (2) years after the date of substantial completion.

.3 The Contractor will include the cost of the Bonds as part of the total bid price and the successful bidder will make all necessary arrangements to obtain the Bonds.

.3 Consent of Surety

.1 Submit with the Bid Form a Consent of Surety, stating that the Surety is willing to supply the Performance and Labour and Materials Payment Bonds required.

.4 Permits

.1 Include the cost for all required Permits, with the exception of the Municipal Development and Building Permits in the bid price.

.5 Sales Tax

.1 All applicable taxes are to be provided for within the contract price, excluding the Goods and Services Tax (GST) which is to be listed separately on the Bid Form.

.6 Alternate Prices

.1 Alternate prices submitted by the Contractor shall include the cost variation to the bid price for the work described as the alternative. If proposing an alternate, the contractor shall include all manufacturers' literature, specifications or any other information necessary for completely describing the product or system. Critical to our evaluation will be that the alternate system must be equal or better than the specified product or system.

.7 Warranty

.1 The General Contractor will provide a two year labour and material warranty.

.2 Repair to work done under this Warranty will be performed at the contractor's cost

.8 Completion Date

.1 State in the Bid Form, the length of time, in weeks, required to complete the work. The completion date in the Agreement shall be this time, inclusive of all holidays, added to the commencement date. As may be required during the progress of the work, this date may be adjusted with change orders to reflect changes in the work, to an adjusted completion date.

.2 The Owner requires that the work of this contract be completed as quickly as possible and consideration will be given to time of completion when reviewing the submitted Bids.

.9 Addenda

.1 Indicate in the space provided in the Bid Form all addenda issued and received by the Contractor.

.2 The addenda form part of the Bid Documents. Failure to indicate the addenda received on the Bid Form may be cause for rejection without further review of the Bid.

.10 Fees for Changes in the Work

.1 Include in the Bid Form, the overhead and profit fees applicable for changes in the Work, whether additions to or deductions from the Work on which the Bid Price is based.

.2 Include in the Bid Form, the fees proposed for sub-contract work for changes (both additions and deductions) in the Work. The Contractor shall apply fees as noted, to the sub-contractor's gross (net plus fee) costs on additional work.

.11 Bid Signing

.1 The Bid Form shall be signed under seal by the bidder.

.2 Sole Proprietorship: Signature of sole proprietor in the presence of a witness who will also sign. Insert the words "Sole Proprietor" under the signature. Affix seal.

.3 Partnership: Signature of all partners in the presence of a witness who will also sign. Insert the word "Partner" under each signature. Affix seal to each signature.

.4 Limited Company: Signature of a duly authorized signing officer(s) in their normal signatures. Insert the officer's capacity in which the signing office acts, under each signature. Affix the corporate seal. If the bid is signed by officials other than the President and Secretary of the company, or the President-Secretary-Treasurer of the company, a copy of the By-Law resolution of the Board of Directors authorizing them to do so, must also be submitted with the bid in the bid envelope.

.5 Joint Venture: Each party of the joint venture shall execute the bid under their respective seals in a manner appropriate to such party as described above, similar to the requirements of a Partnership.

.12 Appendices to the Bid Form

.1 Appendix A – Price Breakdown: Include a price breakdown specifically requested by the Contract Documents. Offer Acceptance/Rejection

.2 Appendix B – List of Unit Prices: Include unit rates specifically requested.

1.9 <u>Offer Acceptance/Rejection</u>

.1 Duration of Offer

.1 Bids shall remain open to acceptance and shall be irrevocable for a period of sixty (60) days after the Bid closing date.

.2 Acceptance Offer

.1 The Owner reserves the right to accept or reject any or all offers.

.2 After acceptance by the Owner, the Consultant on behalf of the Owner, will issue to the successful bidder, a written Bid Acceptance

BID

PROJECT: Building Envelope Maintenance Project – 2019
Strata Plan LMS 280 – Chateau Comox
1272 Comox Street, Vancouver, B.C.

SUBMITTED TO: Mark W. Emanuel, P.Eng., Principal
c/o Spratt Emanuel Engineering Ltd.
2348 Yukon Street
Vancouver, B.C., V5Y 3T6

We, _____
(Company Name)
of _____
(Business Address)
_____

having examined the Bid Documents as listed in the Document Index, and Addenda, and having visited the Project Site, hereby offer to enter into a Contract to perform the Work required by the Bid Documents for the stipulated price of

_____ Dollars ($ _____)

in Canadian funds excluding the goods and services tax (GST), plus GST in the amount of

_____ Dollars ($ _____)

in Canadian funds for a total bid price including GST of

_____ Dollars ($ _____)

in Canadian funds which includes any specified cash and contingency allowances and the application taxes in force at this date except as may be otherwise provided in the Bid Documents.

Appendices to Bid:

The information on Subcontractors, Unit Prices, Alternate Prices and Separate Prices as called for in the Bid Documents is provided in the attached Appendices and forms an integral part of this bid.

Declarations:

We hereby declare that:

a) we agree to perform the Work in compliance with the required completion schedule stated in the Bid Documents, or if no schedule is stated, to attain Substantial Performance of the Work within _____ weeks from the commencement date;

b) no person, firm or corporation other than the undersigned has any interest in this Bid or in the proposed Contract for which this Bid is made;

c) this Bid is open to acceptance and is irrevocable for a period of sixty (60) days from the date of bid closing;

d) the Owner may reject any and all bids.

e) in completing this bid, the Contractor has reviewed and incorporated Addendums No. _____ into this contract.

Signatures:

Signed, sealed and submitted for and on behalf of:
Company: _____
(Name)

_____
(Address)

_____
(City, Province & Postal Code)

Signature: _____ Seal:

_____
(Please Print or Type)

Witness: _____

_____
(Please Print or Type)

Dated at _____ this _____ day of _____, 2019.

Where legal jurisdiction or Owner requirement calls for proof of authority to execute this Bid, proof of such authority in the form of a certified copy of a resolution naming the person or persons in question as authorized to sign this Bid for and on behalf of the Corporation or the Partnership should be attached.

APPENDIX "A" to BID

Price Breakdown: (Including profit and overhead)	Value
• Mobilization.	$_____
• Swing stage or scaffold to access all exterior wall areas.	$_____
• Clean all wall surfaces.	$_____
• Remove and replace exterior sealants.	$_____
• Supply and install new polyurethane membrane at horizontal concrete surfaces.	$_____
• Supply and install new Dow Corning AllGuard and 123 silicone seal at south elevation.	$_____
• Supply and install new exterior acrylic latex coating.	$_____
• Paint exterior metal surfaces.	$_____
• Other.	$_____
• Clean up and demobilization.	$_____
• **TOTAL BASE CONTRACT**	$_____

Note: The total of this price breakdown must equal your total stipulated price, excluding GST as shown on Page 1 of the Bid Form.

APPENDIX "B" to BID — LIST OF UNIT PRICES

The following are the Unit Prices for work, <u>including all tools, equipment, overhead and profit,</u> which may be used to adjust the Contract price as the scope of work increases or decreases as required by the Consultant. (Excluding GST)

Type of Labour	Hourly Rate
Hourly rate for labour supervision – Site Superintendent	$_____/hour
Hourly rate for labour – Skilled	$_____/hour
Hourly rate for labour – Unskilled	$_____/hour

Type of Maintenance	Rate
Routing and Sealing of Concrete Cracks	$_____/ft.
Removal and Replacement of Sealants	$_____/ft.
Install new 123 silicone tape and coat with silicone elastomeric coating	$_____/ft.
Concrete spall repair	$_____/sq.ft.

Mark-Up	Rate
Material mark-up rate for other extras issued on a cost-plus basis (items not described above).	15%

SPECIFICATIONS

Strata Plan LMS 280 – Chateau Comox
1272 Comox Street
Vancouver, B.C.

BUILDING ENVELOPE MAINTENANCE PROJECT – 2019

Prepared by:
SPRATT EMANUEL ENGINEERING LTD.
PROJECT No. S18-558

January 29, 2019

PART 1 – GENERAL

1.1 Summary of Work

.1 Section Includes

Title and description of work:

BUILDING ENVELOPE MAINTENANCE PROJECT – 2019

CHATEAU COMOX – 1272 COMOX STREET, VANCOUVER, B.C.

.1 Contract method: Stipulated Price

.2 Owner's occupancy: Fully Occupied

.2 Related Sections

.1 Section 00 21 00 – Instructions to Bidders

.2 Section 00 41 00 – Bid Form

.3 Section 00 41 10 – Appendices to Bid

.4 Section 00 73 00 – Supplementary Conditions

.5 Section 01 33 00 – Submittal Procedures

1.2 Environmental and Safety Requirements

.1 Comply with the current requirements of the WorkSafeBC regulations regarding all on-site practices.

.2 Comply with requirements of Workplace Hazardous Materials Information Systems (WHMIS) regarding use, handling, storage and disposal of hazardous materials.

1.3 Project Co-ordination

.1 Co-ordinate progress of the Work, progress schedules, submittals, use of site, temporary utilities, construction facilities and controls.

.2 Co-ordinate and supervise the work of all trades and sub-trades.

1.4 Extra Work

.1 No claim for extra work or material of any nature shall be submitted without the endorsement of the Consultant.

.2 If, during the course of the work, the contractor encounters circumstances that he feels affect the contract price, he must notify the Consultant immediately before proceeding with the work. Any and all extra work must be approved in writing.

1.5 Field Reviews

.1 Field reviews of the work will be conducted by Spratt Emanuel Engineering Ltd., and will be paid for independently by the Owner.

.2 The work reviewer shall act objectively, but shall be fully responsible to the Owner. Review and testing are specified as precautions against oversight or errors in the performance of the contract. These precautions do not in any way relieve the Contractor of his responsibility to perform the work in conformance with the contract documents.

.3 The Owner and the Consultant shall have unlimited access to all work at any time requested. If parts of the work are in preparation at locations other than the place of the work, access shall be given to such work whenever it is in progress.

.4 Give twenty-four (24) hours notice request of review if work is designated for review or approval by the Consultant prior to covering. Notify the Consultant every day work is occurring on the site. The Consultant must be allowed opportunity to review all work.

.5 If the Contractor covers or permits to be covered work that has been designated for special review or approvals before such is made, the contractor will be required to uncover the work, have the review satisfactorily completed, and make good all work.

.6 The Consultant may order any part of the work to be examined if such work is suspected to be not in accordance with the contract documents. The Contractor shall be responsible for the cost of examination, replacement and repair if the conditions are not in strict accordance with the contract documents.

.7 Remove defective work, whether the result of poor workmanship, use of defective products, or damaged and whether incorporated in the work or not, which has been identified by the Consultant as failing to conform to the contract documents. Replace or re-execute in accordance with the contract documents.

.8 Make good other Contractor's work damaged by such removals or replacements promptly.

.9 If, in the opinion of the Consultant, it is not expedient to correct work not performed in strict accordance with the contract documents, the Owner may deduct from the contract price the difference of the value between the work performed and that called for by the contract documents, the amount of which shall be determined by the Consultant.

1.6 Insurance

.1 The Contractor shall provide Liability Insurance in the joint names of the Owner, Contractor, and Consultant, providing Insurance against Public Liability for bodily injury with a limit of $5,000,000 for one person; $5,000,000 for one accident; and for damage to property or vehicles $5,000,000 for one accident.

.2 Provide the Owner with suitable proof of the Policy. The Owner reserves the right to examine the original Policy, which must conform to CCDC-2 – 2008, GC11.1, before agreeing to issue the contract.

.3 All work shall be done in accordance with the requirements of the specifications, and the Contractor shall hold the Owner harmless from any accident or damage arising from any neglect on his part or in this connection.

.4 Provide a letter of good standing from WorkSafeBC.

1.7 Project Meetings

.1 Schedule project progress meetings as required by the Consultant.

.2 Distribute written notice of each non-regularly scheduled meeting called by the Contractor four (4) days in advance of meeting date to Consultant and Owner's Representative.

.3 Provide physical space and make arrangements for meetings (Owners' Meeting Room at site is an acceptable alternate).

1.8 Submittals

.1 Submit to Consultant submittals listed for review. Submit with reasonable promptness and in an orderly sequence so as to not cause delay in the Work.

.2 Work affected by submittal shall not proceed until review is complete.

.3 Review submittals prior to submission to Consultant. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of the Work and Contract Documents.

.4 Verify field measurements and affected adjacent Work are coordinated.

1.9 Product Data

.1 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connection, explanatory notes and other information necessary for completion of Work.

.2 Submit two (2) copies of product data sheets or brochures as required by Section 01 33 00 – Submittal Procedures, where shop drawings will not be prepared due to standardized manufacture of product.

.3 Ensure only approved manufacturer's instructions are used to complete the work on site. Work completed without approved manufacturer or Consultants instructions shall be at the risk of the contractor.

.4 Samples

.1 Submit for review, samples as requested in respective specification section.

.2 Supply samples to the project site office and make available for review by Consultant.

1.10 Schedules

.1 Schedules (may be required at the discretion of the Consultant):

.1 Construction Progress Schedule.

.2 Schedules of Values of the Work.

.3 Submittal Schedule for Shop Drawings, Product Data and Samples.

.2 Format

.1 Prepare schedule in form of horizontal bar (Gantt) chart.

.2 Provide separate bar for each trade or operation.

.3 Provide horizontal time scale identifying first workday of each week.

.4 Format for listings: Chronological order of start of each item of work.

.3 Submission (may be required at the discretion of the Consultant)

.1 Submit initial schedules within ten (10) business days after award of Contract.

.2 Consultant will review schedule and return reviewed copy within five (5) business days after receipt.

.3 Resubmit finalized schedule within five (5) business days after return of reviewed copy.

.4 Working Schedules (may be required at the discretion of the Consultant)

.1 Submit revised working schedules to the Consultant and Owner on a regular and ongoing basis in order to notify the occupants of the approximate date(s) when Work may be undertaken within the occupied units or when exterior Work may significantly affect the interior of the unit.

.2 Immediately notify the Consultant if schedules or anticipated access dates are changed for any reason.

.3 Work on the exterior shall be between the hours of 8:00 a.m. and 5:30 p.m., Monday to Friday inclusive. Work on Saturdays shall be subject to the Contractor receiving prior approval from the Owner.

.4 The Contractor shall take whatever action is necessary, including without limitation, extra shift work, to ensure the completion of the work within the contract time at no additional cost to the Owner.

.5 Unit Access

.1 Co-ordinate unit access for required interior work with Owner prior to submitting notices or scheduling the work.

.2 Provide written notice directly to the occupant not less than two (2) days prior to commencing work. The notice is to be placed under the door of the unit and a copy faxed to the Consultant and the property manager. Notice of schedule must be posted on the building notice board and received by the property manager five (5) days prior to commencing work.

.3 The contact representative and telephone number for the property manager will be provided.

1.11 Quality Control

.1 Inspection

.1 Refer to GC 2.3.

.2 Owner and Consultant shall have access to the Work at all times.

.3 Give timely notice to the Consultant, requesting field review, special tests, inspections or approvals.

.4 If the Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, he shall uncover such Work, have inspections or tests satisfactorily completed and make good such Work at his own expense.

.5 All shop and field materials and workmanship shall be subject to review by the Consultant and his representatives at all times.

.6 Field reviews do not relieve the Contractor from obligations to provide materials and products and execute the Work in conformance with the contract documents.

.2 Workmanship

.1 Workmanship shall be best quality, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Consultant if required Work is such as to make it impractical to produce required results.

.2 All Work shall be performed by experienced workmen having regularly undertaken such work as stated in the relevant section of the specifications.

.3 The Owner reserves the right to require the dismissal from the site of workers deemed incompetent, careless, insubordinate, or otherwise objectionable.

.4 The Contractor shall maintain a person responsible for co-ordination and supervision on site at all times during the Work.

.5 Decisions as to the quality or fitness of workmanship in case of dispute rest solely with the Consultant, whose decision is final.

1.12 Construction Facilities and Temporary Controls

.1 Installation/ Removal

.1 Provide construction facilities and safety controls in order to execute the Work expeditiously.

.2 Remove from site all such work after use and make good all areas.

.2 Site Access

.1 Access to the area of work shall not be available through the interior of the building except as noted below. The contractor shall provide ladders as needed to access the work area. All equipment used for access must be securely stored at the end of each workday so as to prevent unauthorised access.

.2 Access to interior work at the front of the units shall be through the front doors. Access to interior work at the rear of the units shall be through the rear doors, as practical.

.3 Hoarding and Scaffolding

.1 Erect hoarding to protect public, workers, public and private property from injury or damage. Scaffold hoarding shall be 8 feet tall, non-climbable, and maintained with white paint.

.2 Erect security fencing as may be required to reasonably ensure the safety and security of the units during non-working hours.

.3 Erect hoarding as required to protect the building and the Work from the weather and maintain environmental conditions, including temperature, within the hoarding to allow for continuous work.

.4 Make all effort to reduce the impact of the hoarding on the occupants and to minimize the duration of the hoarding in any one location any longer than necessary to complete the Work.

.5 Where tarps are used, and block daylight to occupied units, the roof tarps shall be white in colour. Scaffolding below roof level tarps shall be enclosed in green mesh netting unless otherwise approved by the Consultant.

.6 Scaffolding must be fastened to the building with sufficient frequency to prevent collapse during all expected construction activity and 100 year wind loading.

.7 Scaffolding must be erected according to an engineer competent in these facilities and evidenced by a sealed letter.

.4 Protection

.1 All portions of the existing building and all existing plants, landscaping, sidewalks, water features, etc. shall be protected from either the weather, physical damage, or damage from material spillage. The Contractor will be responsible for replacement of damaged grass sod, trees and landscaping.

.2 Make good any damages that do occur at no cost to the Owner and to the satisfaction of the Consultant.

.3 At the end of each working day, lock up or remove all ladders, and ensure that any equipment left on site is secure against unauthorized interference or access.

.4 Dispose of rainwater off roofs and away from the buildings until roof drains with all scuppers, eavestroughs and downspouts are installed and connected properly.

.5 Provide and maintain temporary fire protection equipment during performance of work required by Insurance Companies having jurisdiction in governing Codes, regulations and By-laws.

.5 Parking

.1 Standard sized parking spaces may be available within the complex Visitor parking area for use by the Contractor, his employees, and other personnel required for execution of the Work, as approved by the Owner.

.2 Other parking must be at the arrangement of the contractor and the contractor is responsible for all costs thereof.

.6 Site Storage/Loading

.1 Confine the site storage to designated areas, as specified by the Owner. Do not unreasonably encumber premises with products.

.2 Do not load or permit to be loaded any part of the Work with a weight or force that will endanger the Work.

.3 The contractor is responsible for all "Temporary Construction Zone" Permits from the City of Vancouver for the duration of the project.

.7 Sanitary Facilities

.1 Provide sufficient sanitary facilities for workers in accordance with local health authorities and maintain in clean condition.

.8 Water Supply

.1 Owner will provide a continuous supply of potable water for construction use.

.2 Owner will pay for utility charge at prevailing rates.

.9 Temporary Power

.1 The Owner will provide and pay for temporary power required during construction for temporary lighting and operating of power tools, to maximum supply of 240 volts 100 amps. The Contractor will be responsible for the cost of providing temporary electrical power panels, wiring and installations required for the work.

.10 Equipment/Tool/Materials Storage

.1 Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.

.2 Locate materials not required to be stored in weatherproof sheds on site in manner to cause least interference with work activities.

.3 Note that there will be only limited space on site for storage of equipment and materials. Arrangements must be to the approval of the Owner.

.11 Project Cleanliness

.1 Maintain the Work in tidy condition, free from accumulation of waste products and debris.

.2 Remove waste material and debris from site and deposit in the Contractor's waste containers at end of each working day.

.3 Failure to remove debris from site and maintain in a tidy condition daily will be cause for the Owners to have the premises cleaned and have the costs deducted from the contract price.

.4 The Contractor shall maintain all construction hoardings, equipment and facilities free of graffiti, posted bills and garbage at all times, regardless of the source. Hoardings will be maintained in white colour at all times with fresh unblemished paint.

.12 Emergency Contact

.1 Provide a 24-hour emergency contact telephone number in the event of an emergency arising from the work being undertaken.

.2 Ensure that emergency service has a maximum response time of 3 hours and can accommodate all conditions which may arise from the Work, including water damage, hoarding, security, electrical failure, gas service interruption, utility interruption, broken glass and any other related failure.

1.13 Additional Interior Controls

.1 Execute all work with due regard for the fully occupied status of the building.

.2 Condition Survey

.1 Undertake a pre-construction survey of the interior of each unit, prior to commencing any work within the unit, or work on the exterior that can be expected to affect the interior.

.2 Survey existing hard and soft landscaping that could be affected by the Work.

.3 Record the results of the survey in a photographic or video format and in writing.

.4 Notify the Consultant in writing of any pre-existing conditions prior to commencing work.

.5 Any claims for damages that were not identified in the pre-construction survey, or cannot be shown to have pre-existed the Work, will be borne by the Contractor.

.3 Dust Tight Screens

.1 Provide dust tight screens or partitions, forming a dust enclosure to localize general repair and dust generating activities, and for protection and security of occupants.

.2 Maintain and relocate protection until such Work is complete.

.3 Ensure that dust screens or partitions are erected and maintained inside all units while work inside the unit, or to the areas of the unit is undertaken.

.4 Interior Unit Protection

.1 In addition to dust tight screens and partitions, ensure that following additional protection is in place before work commences in the unit, and at all times during the Work.

.2 The entire area within the dust enclosure must have canvas drop cloths or an acceptable alternate placed over all flooring, and secured in place in a non-marring manner, to ensure adequate protection at all times during the Work.

.3 All traffic paths through the unit, outside the dust enclosure, shall be protected by canvas drop cloths or an acceptable alternate, at all times during working hours.

.4 All workmen are to wear clean footwear or footwear guards at all times when working within the unit. No footwear worn outside shall be used inside the unit without being inspected for dirt and deleterious matter.

.5 At the end of each working day, remove the traffic path protection and leave the region outside the dust enclosure clean and suitable for occupancy.

1.14 Material and Equipment

.1 Product and Material Quality

.1 Products, materials, equipment and articles (referred to as Products throughout specifications) incorporated in Work shall be new, not damaged or defective, and of best quality (compatible with specifications) for purpose intended. If requested, furnish evidence as to type, source and quality of Products provided.

.2 Defective Products will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective Products at own expense and be responsible for delays and expenses caused by rejection.

.3 Should any dispute arise as to quality or fitness of Products, decision rests strictly with the Consultant based upon the requirements of the Contract Documents.

.2 Storage, Handling and Protection

.1 Handle and store Products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions, when applicable.

.2 Store packaged or bundled Products in original and undamaged condition with manufacturer's seals and labels intact.

.3 Store Products subject to damage from weather in weatherproof enclosures.

.3 Manufacturer's Instructions

.1 Unless otherwise indicated in the specifications, install or erect Products in accordance with manufacturer's instructions.

.2 Do not rely on labels or enclosures provided with Products. Obtain written instructions directly from manufacturers.

.3 Notify Consultant in writing, of conflicts between specifications and manufacturer's instructions, so that Consultant may establish course of action.

.4 Improper installation or erection of Products, due to failure in complying with these requirements, authorizes Consultant to require removal and reinstallation at no increase in Contract Price.

.4 Concealment

.1 In finished areas, conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.

.2 Before installation, inform Consultant if there is a contradictory situation. Install as directed by Consultant.

1.15 Project Close-Out

.1 Final Cleaning - Refer to GC 3.13.

.2 Documents

.1 Submit material prior to application for Substantial Performance.

.2 Submit operation and maintenance data.

.3 Provide warranties fully executed.

.4 Submit a final statement of accounting giving total adjusted Contract Price, previous payments, and monies remaining due.

.5 Consultant will issue a final change order reflecting approved adjustments to Contract Price not previously made.

.3 Inspection/Take-over Procedures

.1 Prior to application for certificate of Substantial Performance, carefully inspect the Work and ensure it is complete, that major and minor construction deficiencies are complete, defects are corrected and building is clean and in condition for occupancy.

.2 Notify Consultant in writing, of satisfactory completion of the Work and request a field review.

.3 During Consultant field review, a list of deficiencies and defects will be tabulated. Correct same.

.4 When Consultant considers deficiencies and defects have been corrected and it appears requirements of Contract have been performed, make application for certificate of Substantial Performance. Refer to General Conditions Article GC 5.4 for specifics to application.

PART 1 – GENERAL

1.1 General Conditions

.1 Reference herein to General Conditions Articles and paragraphs is to Articles and paragraphs contained in the General Conditions of "Stipulated Price Contract", Standard Construction CCDC-2 - 2008, unless stipulated otherwise.

1.2 Definitions

.1 The Consultant is:

Spratt Emanuel Engineering Ltd.
2348 Yukon Street
Vancouver, BC V5Y 3T6
Attention: Mr. John Drinkwater, P.Eng.

The Owner is:

Strata Plan LMS 280 – Chateau Comox
1272 Comox Street
Vancouver, B.C.

1.3 Valuation of Certification of Changes in Work

.1 Refer to Article GC 6. Add the following paragraph GC 6.3.14:

.1 Lump sum estimates shall include the following:

.1 The General Contractor will be allowed a 15% mark-up for profit, overhead and administration for labour and materials provided by subcontractors.

.2 When the net value of a change is a credit amount, no addition or deduction for profit and expense shall be made.

1.4 Application for Payment

.1 Refer to Article GC 5.3. Make the following modifications:

5.3.2 No Certificate for Payment will be issued until the Contractor has executed the contract documents and has provided the Schedule of Values called for in GC 3.5 and the Schedule of Progress Payments called for in GC 5.2, paragraph 5.2.3.

1.5 Certificates and Payments

.1 Refer to Article GC 5.5. Make the following modifications:

6.1.1 Paragraph GC 5.5.2, first line, delete the words, "statement", and insert, "a Statutory Declaration".

1.6 Insurance

.1 Refer to Article GC 11.1. Add the following to paragraph GC 11.1.1.1:

"The proof to be provided by the Contractor shall include a letter of certification from the Contractor's Insurance Company, verifying that all items required under Article 11.1.1.1 are covered under Insurance Policies provided, or listing any and all exclusions there from."

1.7 Indemnification

.1 Refer to Article GC 12.1.1. Make the following modifications: Replace: "The Owner and Contractor shall indemnify and hold harmless the other" with: "The Owner and the Contractor shall indemnify and hold harmless each other and the Consultant".

PART 1 – GENERAL

1.1 Section Includes

.1 Title and description of Work.

.2 Contract method.

.3 Related Sections

.4 Scope of Work.

.5 Contractor use of premises.

1.2 Title and Description

.1 The Project is identified as: Building Envelope Maintenance Project – 2019.

.2 The work includes repairs of failed sealants and recoating of all exposed concrete surfaces of the cast-in-place concrete walls.

1.3 Contract Method

.1 The Work shall be performed within a contract based on the terms of the CCDC-2-2008 contract. This specification shall form part of the contract terms.

1.4 Related Sections

.1 Section 00 72 00 – General Requirements.

.2 Section 00 73 00 – Supplementary Conditions.

.3 Section 01 33 00 – Submittal Procedures

PART 2 – SCOPE OF WORK

2.1 Supply expertise, supervision, skilled labour, tools, plant equipment and materials necessary for the building remediation as described. Provide hoarding and engineered scaffold system or swing stage as necessary to complete the Work identified herein. The Work shall include, but not necessarily be limited to, the following:

2.2 The Scope of Work area is shown in the SEE drawings.

2.3 The work shall include, but not necessarily be limited to the following:

.1 Cleaning of All Exterior Wall Surfaces

.1 Use a light pressure wash to clean and remove all dirt and organics from all concrete surfaces at the building, taking care not to pressure wash into cold joints or caulk joints or cracks in the concrete. Serious water ingress into the building could result if great care is not taken. As required, use a mild TSP solution with a soft scrub brush to clean stubborn stains. Protect surrounding vegetation from runoff and immediately rinse off any cleaning solution which contacts leaves or foliage with fresh water.

.2 Immediately prior to demobilizing from a work area, and after all other work in the scope is complete, clean all windows to remove paint drips, water spots, dust and other dirt.

.2 Sealant Repairs

.1 Remove caulking and sealants on the building in all areas which were not remediated in 2009 (north elevation and south elevation penthouse). Sealant locations include window and door perimeters, gumlip flashing, concrete cold joints, past concrete rout and caulk repairs, and phase transitions between newer rainscreen stucco assemblies and existing wall assemblies.

.2 In work areas utilizing exterior acrylic latex coating, supply and install new Tremco Dymonic 100 polyurethane caulking. At locations utilizing silicone elastomeric coating, utilize Dowsil 790 or 795 silicone building sealants.

.3 Rout all concrete cracks greater than 1/16" wide to ¼"x¼". Install sealant into the cracks and tool to a smooth and level finish with the surrounding concrete. This work will be performed at the unit rate specified in Appendix "B" to Bid. All cracks shall be quantified and approved by the Consultant prior to proceeding with work.

.3 Apply New Wall Coatings

.1 The work within this section covers application of new paint or membrane coatings to 100% of the exterior wall areas. A combination of acrylic latex coating (Dulux Diamond Exterior) and silicone elastomeric coating (Dow Corning AllGuard) will be utilized. Wall areas where the products will be utilized are identified on both the plan and elevation drawing series, S18-558. Generally, wall areas are broken down as follows:

.1 Areas which have been reclad with rainscreen stucco will be painted with Dulux Diamond Exterior latex coating.

.2 Mass concrete walls with acrylic stucco cosmetic finish will be coated with acrylic Dulux Diamond Exterior latex coating.

.3 The south elevation face-sealed stucco wall panels at the centre of the elevation together with adjoining concrete wall surfaces will be coated with Dow Corning AllGuard silicone elastomeric coating system.

.2 At all work areas, after cleaning, remove any remaining delaminated paint or acrylic stucco finish from the wall surfaces to achieve a sound substrate.

.3 Supply and install 2 coats of paint or membrane coating to the manufacturer's recommendations:

.1 Dulux Diamond Exterior acrylic latex coatings, semi-gloss: Apply 2 coats at 4 wet mils each coat to achieve full hiding and uniform surface appearance. Immediately clean any drips with a damp cloth.

.2 Dow Corning AllGuard silicone elastomeric:

.1 At each floor line reveal and fireplace vent perimeter: supply and install new Dow Corning 123 silicone tape. Use new Dow Corning 790 silicone caulking on metal surfaces and Dow Corning 795 on concrete and stucco surfaces.

.2 Supply and install new Cow Corning AllGuard silicone elastomeric coating over the entire wall surface work area including the 123 silicone tape. Prior to application, prepare all concrete cracks greater than 1/16" wide as described in this specification. Apply minimum 2 coats to achieve a minimum dry film thickness of 12 mils.

.4 Paint Exterior Metal Surfaces

.1 The work within this section includes re-coating select exterior metal surfaces including: balcony and landscape guardrails, roof flashings, rooftop skylight frames, fireplace vents, sidewall vent terminations, and all exterior fire-rated steel doors.

.2 Excluded from this scope are: ground floor handrails and fences at the Comox St building entry; security gate structures around the side-yard fire exit doors; parkade gate; and emergency generator.

.3 Prepare all surfaces to be coated by cleaning all surfaces to remove grease, wax dirt, chalky residue of old coatings and other comtaminants. Lightly sand all surfaces and dull any glossiness. Immediately prior to coating, wipe surfaces with a rag dampened with methyl hydrate to remove any remaining dust and allow to dry.

.4 Supply and install 1 coat of International/Devoe Devguard 4360 primer followed by two coats of Dulux Metalclad urethane enamel.

.5 Liquid Applied Polyurethane Membrane

.1 Supply and install new Tremco liquid applied polyurethane membrane over the top horizontal surfaces of concrete curbs and parapets not protected with flashings.

.2 Included are ground floor planter walls and parapets and south elevation balcony parapets. The north elevation balcony parapets are excluded.

.3 Over existing polyurethane membrane coatings, apply QD191 primer followed by base and top coats.

.4 Over other surfaces such as painted concrete or acrylic stucco, apply the base coat directly to the cleaned substrate. Conduct an adhesion test witnessed by the consultant on each substrate type to verify compatibility before proceeding.

.5 At transitions between horizontal and vertical concrete surfaces, install a ¾" cant bead of Tremco Dymonic 100 sealant. Provide a ¼" backer rod or bond breaker tape at the root of the joint.

.6 Base Coat: Tremco Vulkem 350NF, applied to minimum 25mils dry film thickness. Install with minimum 4" up-legs and 2" down-legs onto adjoining vertical surfaces

.7 Top Coat: Tremco Vulkem 351NF applied to minimum 15mils dry film thickness. Install on horizontal surfaces only; apply the specified wall coating over the base-coat up-leg and down-leg.

.6 Miscellaneous Repairs

.1 Conduct miscellaneous repairs as directed by the consultant at the time and material or unit rates specified in Section 00 41 00 – Appendix 'B' to Bid.

.2 Supply and install new sheet metal flashings and vent hoods as directed at time and material rates specified in Section 00 41 00 – Appendix 'B' to Bid.

.3 Repair spalled concrete as directed by the consultant at the unit rates specified in Section 00 41 00 – Appendix 'B' to Bid. Conduct work as specified in Section 03 01 30 – Maintenance of Cast in Place Concrete. The typical repair will require the following steps:

.1 Remove all loose or spalled concrete in the work area. Use a diamond wheel and grinder to cut a straight boundary at the edge of the repair area. Do not feather the patch material.

.2 Chip to expose 1" clear space all around the steel reinforcement. Include additional clearance as necessary to achieve 1-1/2" concrete cover in the finished repair.

.3 Wire brush all rust from the steel and prime with PPG Metalhide zinc primer. Apply Mapei surface conditioner to the concrete surfaces and patching mortar as directed in the manufacturer's instructions.

.4 Apply new acrylic stucco finish at locations where the original finish has failed at time and material rates specified in Section 00 41 00 – Appendix 'B' to Bid.

2.4 Contractor Use of Premises

.1 Conduct the Work with due regard for the fully occupied nature of the premises. Drop box and site office locations and contractor parking are to be determined by a representative from the Owner.

.2 The Contractor shall maintain the worksite in a clean and serviceable condition on a continual, daily basis.

PART 1 – GENERAL

1.1 Section Includes

.1 Shop drawings and product data.

.2 Samples.

.3 Warranty certificates.

1.2 Related Sections

.1 Section 00 72 00 – General Requirements

1.3 References

.1 Canadian Construction Documents Committee (CCDC)

.1 CCDC-2 – 2008, Stipulated Price Contract.

1.4 Administrative

.1 Submit to Consultant submittals listed for review. Submit with reasonable promptness and in orderly sequence so as to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.

.2 Work affected by submittal shall not proceed until review is complete.

.3 Review submittals prior to submission to Consultant. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and shall be considered rejected.

.4 Notify Consultant, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.

.5 Verify field measurements and affected adjacent Work are coordinated.

.6 Contractor's responsibility for errors and omissions in submission is not relieved by Consultant's review of submittals.

.7 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Consultant review.

.8 Keep one reviewed copy of each submission on site.

1.5 Shop Drawings and Product Data

.1 Refer to CCDC 2 GC 3.11.

.2 Submit 3 prints of shop drawings for each requirement requested in specification Sections and as Consultant may reasonably request.

.3 Submit 3 copies of product data sheets or brochures for requirements requested in specification Sections and as requested by the Consultant where shop drawings will not be prepared due to standardised manufacture of product.

.4 Delete information not applicable to project.

.5 Supplement standard information to provide details applicable to project.

.6 If upon review by Consultant, no errors or omissions are discovered or if only minor corrections are made, [copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

1.6 Samples

.1 Submit for review samples in duplicate as requested in respective specification Sections. Label samples with origin and intended use.

.2 Deliver samples prepaid to Consultant's business address.

.3 Notify Consultant in writing, at time of submission, of deviations in samples from requirements of Contract Documents.

.4 Where colour, pattern or texture is criterion, submit full range of samples.

.5 Adjustments made on samples by Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant prior to proceeding with Work.

.6 Make changes in samples which Consultant may require, consistent with Contract Documents.

.7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

1.7 Mock-ups

.1 Erect mock-ups in accordance with Section 00 72 00 – General Requirements, if requested by Consultant.

1.8 Progress Photographs

.1 Submit progress photographs in accordance with this Section, if requested by Consultant.

1.9 Certificates and Transcripts

.1 Immediately after award of Contract, submit WorkSafeBC status.

.2 Submit transcriptions of insurance immediately after award of Contract.

PART 1 – GENERAL

1.1 Section Includes

.1 The work in this section includes, but is not necessarily limited to, the demolition and disposal of existing materials and assemblies:

.1 Existing paint to be removed before resurfacing.

.2 Removal of waste materials during installation of waterproofing membrane.

1.2 Standard

.1 Comply with the Vancouver Building By-Law, 2014, and all WorkSafeBC regulations.

1.3 Protection

.1 Prevent movement, settlement, or other damage to adjacent structures, utilities, walks, trees, landscaping, adjacent grades, and the building. Provide bracing and shoring required.

.2 Keep noise, dust, and inconvenience to occupants to a minimum.

.3 Protect building systems, services, and equipment. Ensure not to damage glass railings when working around the balcony curbs.

.4 Provide temporary dust screens, covers, railings, supports, and other protection as required. The building is occupied. The Contractor must ensure the safety of building occupants as well as workers in accordance with WorkSafeBC regulations.

.5 Make good any damage and be liable for injury caused by demolition.

.6 Conduct demolition in a manner to minimize dusting. Water spray may be required.

1.4 Notice

.1 Notify the Consultant before disrupting the building access or services.

PART 2 – EXECUTION

2.1 Demolition and Disposal

.1 Demolish specified parts of the existing building to permit new construction.

.2 Provide trash chute where required with necessary hoarding and protection to retain waste material to the work area and waste receptacle.

.3 Remove items to be reused, store as directed by the Consultant, and re-install as stated in this specification.

.4 Dispose of removed materials to appropriate facilities, except where specified otherwise, in accordance with the Authority having jurisdiction.

2.2 Clean Up

.1 Promptly, as work proceeds and at completion, clean-up and remove from premises all rubbish, wasted materials and packaging resulting from the work of this trade.

PART 1 – GENERAL

1.1. Scope

.1 Surface preparation.

.2 Application two-component, fast setting repair mortar to vertical, overhead, and horizontal surfaces by trowel application.

.3 Crack repair.

1.2. Standards

.1 Canadian Standards Association (CSA)

.1 CAN CSA-A23.1- A23.2-14 – Concrete Materials and Methods of Concrete Construction/Test Methods and Standard Practices for Concrete.

.2 International Concrete Restoration Institute (ICRI)

.1 ICRI Technical Guideline No. 310.1R-2008: Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion.

.2 ICRI Technical Guidelines No. 310.2-1997: Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays.

1.3. Inspection

.1 Give the Consultant or his representative a minimum of 24 hours notice before each prepared area is to be patched/concreted.

1.4. Submittals

.1 Comply with Section 01 33 00 – Submittal Procedures.

.2 Submit manufacturer's product data and application instructions.

1.5. Delivery, Storage, and Handling

.1 Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

.2 Store materials in a clean, dry area in accordance with manufacturer's instructions.

.3 Protect materials during handling and application to prevent damage or contamination.

1.6. Environmental Requirements

.1 Do not apply below 35°F (1.7°C) or above 90°F (32°C) or when rain is imminent.

.2 Protect from conditions that may cause early water loss: high winds, low humidity, high temperature and direct sunlight.

.3 Protect from freezing for a minimum of 24 hours.

1.7. Design Requirements

.1 Extend existing control or constructions joints through the patching mortar.

.2 Do not bridge moving cracks.

.3 Follow manufacturer's recommendations with mixing requirements ensuring no addition of any type of admixtures or concrete modifiers.

.4 Featheredging the repair will result in reduced durability and performance.

PART 2 – PRODUCTS

2.1. Materials

.1 Mapei Planitop 23 two-component repair mortar

.2 Mapei Planibond 3C anti-corrosion bonding agent

.3 PPG Metalhide One-Pac zinc primer

.4 Tremco Dymonic 100 exterior sealant

PART 3 – EXECUTION

3.1. Examination

.1 Examine surfaces to receive repair mortar. Notify Consultant if surfaces are not acceptable. Do not begin surface preparation or application until unacceptable conditions have been corrected.

3.2. Surface Preparation – Patch Repair

.1 Concrete Substrate:

.1 Remove loose scale and corrosion deposits and clean steel to white metal by abrasive blasting.

.2 Mechanically roughen or high pressure water-jet existing concrete substrate to a minimum concrete surface profile (CSP) of CSP-4.

.2 Reinforcing Steel:

.1 Break out, remove and dispose of the existing delaminated concrete as identified by the Consultant, to a minimum ¾" (19 mm) clearance around the rebar. Cut straight edges on all sides of patch to minimum 1 inch (25 mm) deep.

.2 Supply and apply the PPG Metalhide zinc primer to the rebar allow to dry.

.3 Power wash areas and pin rebar to achieve a minimum of 1 ½ inch (40mm) of concrete cover over the rebar.

.4 Ensure substrate is structurally sound and free or any contaminants, dirt, coatings, topical or penetrating sealers, paints, residue release agents, curing compounds or any surface or penetrating material that will adversely affect the bond of the mortar.

.5 Apply bonding agent in accordance with manufacturer's written directions.

.6 Pre-soak repair zone prior to application of the mortar to a saturated, surface dry (SSD) condition, free of standing water.

3.3. Application – Patch Repair

.1 Mixing:

.1 Mix complete bags using a mortar-type mixer.

.2 Alternatively, for small repairs, mix in a clean vessel, using a variable-speed drill with a mixing paddle designed for mixing mortars (no liquids) at 400-600 rpm.

.3 Pour ¾ of the liquid component into the mixer.

.4 Slowly add dry component while mixing.

.5 Mix for 3-5 minutes or until homogeneous and lump-free.

.6 Adjust mix consistency using the remaining ¼ of container of liquid component.

.2 Placement:

.1 Compact mortar well into properly prepared substrate prior to bulk placement.

.2 Finish surface with a wood or steel trowel, or a sponge float.

.3 Do not re-temper or over-work.

.4 Ensure maximum thickness does not exceed 2" (50 mm).

.3 Screed and finish the repair section to match existing profiles and wet cure with polyethylene for 72 hours.

3.4. Crack Repair

.1 Rout out all cracks larger than 1/16 (1.5 mm) to minimum ¼"x¼" wide and deep. Extend at least 1" beyond the end of the visible crack.

.2 Fill joint with specified sealant. Mound the sealant over the crack and beyond the edges of the crack. The patch must then be feathered out at the edges using a brush. This should be done in such a way as to reduce telegraphing of the repair through the elastomeric coating.

PART 1 – GENERAL

1.1 Scope

.1 Application of liquid applied polyurethane coating system application to the balcony concrete horizontal surfaces as specified in the drawings.

.2 Application of liquid applied polyurethane coating system application to window sills as specified in the drawings.

1.2 References

.1 Vancouver Building By-Law, 2014.

.2 ASTM D-903, Test Methods for Peel or Stripping Strength of Adhesive Bonds.

.3 CAN/CGSB 37.58-M86, Test for Low Temperature Flexibility and Crack Bridging.

.4 Manufacturer's literature.

1.3 Quality Assurance

.1 Applicators shall have been trained and be acceptable to the manufacturer for installation of its product.

.2 Prior to commencement of the work, the Consultant and the Contractor shall meet on site to review materials, details and schedule. A manufacturer's representative shall assist in the application of membranes to ensure that applicators are instructed in the correct installation procedures.

1.4 Submittals

.1 Submit samples of materials in complete colour range to the consultant for approval.

.2 Submit copy of installation instructions to the Consultant and keep a copy on site.

.3 Submit maintenance brochures to the Consultant, covering the care and cleaning of the membrane.

1.5 Site Conditions

.1 Environmental conditions for the installation of the membrane shall be within the limits prescribed by the manufacturer.

1.6 Warranty

.1 Provide a manufacturer's non-prorated warranty to warrant that the deck membrane, when applied in accordance with the manufacturer's written instructions, will remain watertight for a period of five (5) years from the date of substantial performance of the work.

.2 The warranty shall cover labour and materials to remove and replace defective work.

PART 2 – PRODUCTS

2.1 Liquid Applied Membrane for Horizontal Concrete Surfaces

.1 Composition: Tremco Vulkem 360NF liquid applied polyurethane membrane or approved alternative.

.2 Thickness: 40 mils dry film thickness.

.3 Acceptable Manufacturers: Tremco or approved alternative.

.4 Colour and Pattern: Grey or approved alternate.

2.2 Accessories

.1 Tremco Dymonic 100 Polyurethane Sealant

.2 Adhesives, flashings, sealants and expansion joint materials, as recommended by the manufacturer to suit the purpose intended.

PART 3 – EXECUTION

3.1 Liquid Applied Polyurethane Membranes

.1 Preparation

.1 Inspect surfaces which are to receive the waterproof membrane system. Surfaces shall be sound, clean, smooth, and free of fins, sharp edges, large voids and cracks. Surfaces must be clean and dry at the time of the application.

.2 Verify that proper slope (1/4" per 1 foot) has been provided.

.3 Dam all drains and drain openings.

.4 Prepare all substrates in accordance with the manufacturer's directions.

.5 Surfaces shall be mechanically prepared to remove previous coatings, laitance, and all miscellaneous surface contamination and to provide profile for proper adhesion.

.2 Application over Concrete

.1 Apply liquid applied membranes as per manufacturer's specifications.

3.2 Limitations

.1 Do not apply the membrane on wet, damp, frosty or contaminated surfaces.

.2 Do not apply the membrane when ambient temperature is outside of applicable temperatures stated by the manufacturer.

3.3 Clean-up

.1 Promptly, as work proceeds and at completion, clean-up and remove from premises all coating drips, splatters and surplus materials resulting from the work of this section.

.2 Clean area and remove all debris upon completion of installation of deck membranes.

PART 1 – GENERAL

1.1 Scope

.1 The installation of metal flashing along the perimeter of the roof edges.

1.2 Related Work

.1 Section 01 33 00 – Submittal Procedures.

.2 Section 07 92 13 – Sealants.

1.3 References

.1 American Society for Testing and Materials (ASTM)

.1 ASTM A153/A153M-08, Standard Specification for Zinc (Hot-Dip) on Iron and Steel Hardware.

.2 ASTM A653/653M-07, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.3 ASTM B32-04, Standard Specification for Solder Metal.

.2 Canadian Standards Association (CSA)

.1 CSA B111-1974, Wire Nails, Spikes and Staples.

.3 Roofing Contractors' Association of British Columbia (RCABC)

.1 RCABC RGC Roofing Practices Manual (2006).

.4 Sheet Metal and Air Conditioning Contractors' National Association (SMACNA)

.1 SMACNA Sheet Metal Work Architectural Manual.

.2 SMACNA Architectural Specification for Sheet Metal Work.

1.4 Samples

.1 Submit samples in accordance with Section 01 33 00 – Submittal Procedures.

.2 Submit 12 inch long sample of each type and profile of sheet metal part fabricated from gauge and paint finish specified.

1.5 Delivery, Handling and Storage

.1 Deliver and store materials in protective wrappings and containers.

.2 Protect from damage.

PART 2 – PRODUCTS

2.1 Flashings

.1 24-gauge with factory-applied baked enamel or urethane finish. The Contractor is to provide the Consultant with colour choices prior to the beginning of the work.

2.2 Accessories

.1 Fasteners shall be screws of same material as sheet metal complete with rubber gasket washer.

.2 Touch-up paint shall be as recommended by factory applying pre-finished paint to sheet metal.

.3 Solder shall conform to ASTM B32.

.4 Flux shall be rosin, cut hydrochloric acid, or commercial preparation suitable for materials to be soldered.

PART 3 – EXECUTION

3.1 Fabrication

.1 Shop fabricate work to greatest extent possible. Comply with details shown, and with applicable requirements of SMACNA Standards Manual, RCABC Roofing Practices Manual and other recognized industry practices.

.2 Fabricate for waterproof and weather-resistant performance.

.3 Form exposed sheet metal work free from buckling, tool marks and any other distortion or marks affecting performance or appearance. All dams are to be created by folding, not soldering and cutting.

.4 Form flashings with 4-inch down-leg, 3/4-inch cast-off flange and 1/2 inch rolled safety edges.

.5 Flashings shall be formed to slope to the interior.

.6 Where soldering is employed, remove flux or acid with neutralizing chemical, wash surface with water and dry. Grind joint smooth and apply touch-up paint per manufacturer's recommendations. Soldering shall only be permitted in locations approved by the Consultant.

.7 Curved flashings shall incorporate Pittsburgh type seam and two-part construction. The Contractor is to utilize templates as necessary, and tolerances on the curved surface are not to deviate more than + 1/4-inch on a 10-foot run.

3.2 Installation

.1 Erect work straight, sharp, plumb, and level in true plan, free of bulges and waves. Verify all dimensions on site.

.2 Use concealed fastener system for cap flashings; no exposed fasteners shall be used.

.3 Fabricate all joints with "standing" or "S-lock" seams. Lap seams are not acceptable.

.4 Install and fabricate pieces for cap flashings and through-wall flashings in maximum ten (10) ft. lengths.

.5 All corners and all end damming components shall be folded, water tight. Soldered joints are not permitted unless specifically approved by the Engineer.

.6 Apply sealant to corners and joints to ensure permanent waterproof connections and assembly.

.7 Apply isolation coating to metal surfaces to be embedded or in direct contact with concrete, mortar or cementitious materials.

.8 Fabricate all saddle flashings using Norlock system. Metals are punched together and sealed together with sealants of matching colour.

3.3 Clean-Up

.1 Promptly as work proceeds and at completion, clean up and remove from premises all rubbish and surplus materials resulting from the work of this section.

.2 Undertake regular clean-up with due regard for the fully occupied status of the building.

PART 1 – GENERAL

1.1 Scope

.1 Installation of sealants to failed sealant locations which are being remediated.

.2 Installation of sealants to window and door perimeters.

.3 Installation of sealants to concrete reveals at cold joints.

.4 Installation of sealants to concrete at gum-lip flashings.

1.2 Related Work

.1 Section 01 33 00 – Submittal Procedures.

1.3 References

.1 CAN/CGSB 19.13-M87, Sealing Compound, One-Component, Elastomeric, Chemical Curing.

1.4 Samples

.1 Submit full range of colour samples in accordance with Section 01 33 00 – Submittal Procedures. Do not procure material until samples are approved.

.2 Submit proposed products to Consultant for review before use.

1.5 Delivery, Handling, and Storage

.1 Deliver and store materials in original wrappings and containers with manufacturer's seals, labels, and batch/ serial numbers intact and legible.

.2 Protect from freezing, moisture, water, and damage.

1.6 Environmental and Safety Requirements

.1 Comply with requirements of Workplace and Safety Hazardous Materials Information System (WHMIS) requirements regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and provision of material safety data sheets acceptable to Human Resources and Social Development Canada.

.2 Conform to manufacturer's recommended temperatures, relative humidity, and substrate moisture content for application and curing of sealants, including special conditions governing use.

PART 2 – PRODUCTS

2.1 Materials

.1 Sealants acceptable for use on this project must be listed on CGSB Qualified Products List issued by CGSB Qualification Board for Joint Sealants. Where sealants are qualified with primers, use only these primers.

.2 Sealants shall be non-bleeding and capable of supporting their own weight.

.3 Sealant colour shall be as selected by the Consultant to match existing.

.4 All sealants in contact with each other must be compatible. Review applications with suppliers prior to ordering any material.

.5 **Exterior Caulking:** Shall be Tremco Dymonic FC, as manufactured by Tremco Incorporated. Colours are to be approved by the Consultant. Sealant to be ordered prior to commencement of project.

.6 **Exterior Caulking for use with Dow Corning 123 Silicone Seal:** Shall be DOW Corning 790 silicone sealant, as manufactured by DOW Corning. Colours are to be approved by the Consultant. Sealant to be ordered prior to commencement of project.

2.2 Joint Cleaner

.1 Non-corrosive and non-staining type, compatible with joint forming materials and sealant recommended by sealant manufacturer.

.2 Primer: as recommended by manufacturer.

PART 3 – EXECUTION

3.1 Examination and Preparation

.1 Examine joint sizes and conditions of joint surfaces; establish correct depth-to-width relationship for installation of back-up materials and sealants.

.2 Clean bonding joint surfaces of harmful matter substances including, but not limited to, dust, rust, oil, grease, coatings, and all other foreign matter which may adversely affect sealant adhesion and performance.

.3 Do not apply sealants to joint surfaces treated with sealer, curing compound, water repellent, or other coatings unless tests have been performed to ensure compatibility of materials. Remove coatings as required.

.4 Ensure joint surfaces are dry and frost free.

.5 Prepare surfaces in accordance with manufacturer's directions.

3.2 Priming

.1 Where necessary to prevent staining, mask adjacent surfaces prior to priming and caulking.

.2 Prime sides of joints in accordance with sealant manufacturer's instructions immediately prior to caulking.

3.3 Application

.1 Apply sealant in accordance with manufacturer's instructions.

.2 Apply sealant in continuous beads.

.3 Apply sealant using gun with a properly sized nozzle.

.4 Use sufficient pressure to fill voids and joints solid.

.5 Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets and embedded impurities.

.6 Tool exposed surfaces to give slightly concave shape.

.7 Remove excess compound promptly as work progresses and upon completion.

.8 Do not apply when the temperature is below 4°C (degrees Celsius). Optimal temperatures for applying some sealants may be higher and the Contractor must follow manufacturer's specifications.

3.4 Curing

.1 Cure sealants in accordance with sealant manufacturer's instructions.

.2 Do not cover up sealants until proper curing has taken place.

3.5 Clean-Up

.1 Promptly, as work proceeds and at completion, clean up and remove from premises all rubbish and surplus materials resulting from the work of this section.

.2 Clean adjacent surfaces immediately and leave work neat and clean.

.3 Remove excess material and droppings, using recommended cleaners as work progresses.

.4 Remove masking tape after initial set of sealant.

.5 Undertake regular clean-up with due regard for the fully occupied status of the building.

PART 1 – GENERAL

1.1. Scope

.1 Includes painting of rooftop flashings using Dulux Devguard 4360 primer and Dulux Metalclad urethane top coat.

.2 Includes painting rainscreen stucco and soffits with Dulux Diamond Exterior 100% Acrylic Paint 1650.

1.2. Related Work

.1 Section 07 62 00 – Flashing and Sheet Metal

.2 Section 07 92 13 – Exterior Sealants

.3 Section 09 96 53 – Elastomeric Coating

1.3. References

.1 The American Society for Testing and Materials (ASTM):

.1 ASTM D 2240 - Test Method for Durometer Hardness, Shore A.

.2 ASTM D 412-87 – Test Methods for Rubber Properties in Tension.

.3 ASTM D 1653 - Test Method for Water Vapour Transmission of Materials.

.4 ASTM D 834 – Test Methods for Membrane Adhesion to Substrate.

.2 The Association of Wall and Ceiling Contractors of B.C. (AWCC):

.1 AWCC Wall and Ceiling Specification Standards Manual (SSM).

.3 Canadian General Standards Board (CGSB):

.1 CAN/CGSB 1.59-97, Alkyd Exterior Glass Enamel

.2 CAN/CGSB 1.203-03, Exterior Latex Wood Primer

.4 Master Painter Institute (MPI):

.1 MPI Architectural Painting Specification Manual, latest edition.

.2 MPI Maintenance Paining Manual, latest edition.

.5 The Society for Protective Coatings (SSPC):

.1 SSPC SP 3 – Power Tool Cleaning

.2 SSPC SP 11 – Power Tool Cleaning to Bare Metal

1.4. Product Data

.1 Submit product data in accordance with Section 01 33 00 – Submittal Procedures.

.2 Submit WHMIS Material Safety Data Sheets (MSDS's) acceptable to Labour Canada and Health and Welfare Canada for elastomeric coatings. Indicate VOC content.

1.5. Samples

.1 Submit samples in accordance with Section 01 33 00 – Submittal Procedures.

.2 Apply test patch of approved colour sample before proceeding with the work.

1.6. Delivery, Handling, and Storage

.1 Deliver and store materials in original wrappings and containers with manufacturer's seals, labels and batch/ serial numbers intact and legible.

.2 Protect from freezing, moisture, water and damage.

1.7. Environmental and Safety Requirements

.1 Do not apply paint finish in areas where dust is being generated.

.2 Comply with the requirements of Work Place Hazardous Materials Information System (WHMIS) regarding the use, handling, storage, and disposal of hazardous materials.

.3 Apply paint only when surface to be painted is dry, properly cured and adequately prepared.

.4 Provide temporary heating where permanent facilities are not available to maintain minimum recommended temperatures.

.5 Temperature: Minimum temperature of substrate 4°C. Minimum temperature of air during and for 24 hours after coating is applied 4°C.

1.8. Quality Control

.1 Retain Purchase Orders, invoices and other documents to prove that materials used in contract meet the requirement of the Specifications, and produce when requested by the Consultant.

.2 Installer/Tradesman involved in the work of this section must have a minimum five (5) years documented experience of having regularly undertaken the type of work as outlined herein.

.3 Application must conform to MPI specifications.

PART 2 – PRODUCTS

2.1. Materials

.1 Metal Exterior Surfaces:

.1 Coating: Exterior urethane fortified paint for metal surfaces.

.2 Primer: As specified by manufacturer.

.3 Substrate filler: None

.4 Identify each coating material container with ULC listed markings stating fire hazard classification.

.5 Acceptable Materials: Dulux Metalclad Anti-Rust Paint and Dulux Devguard 4360 Primer.

.2 Exterior Acrylic Paint:

.1 Coating: Water-based, 100% acrylic paint.

.2 Primer: Typically not required.

.3 Substrate filler: Exterior latex or urethane sealants.

.4 Identify each coating material container with ULC listed markings stating fire hazard classification.

.5 Acceptable materials: Dulux Diamond Exterior 100% Acrylic Paint 1650.

PART 3 – EXECUTION

3.1. Examination – General

.1 Verify that wall surfaces to be coated are clean and free of dirt, dust, sealer, oil, grease, mildew, fungus, frost, efflorescence, laitance, peeling coating, chalking coating and any other foreign materials.

.2 Verify that cracks and damage to wall surfaces have been repaired prior to coating application.

.3 Verify that sealant work around windows, doors and other wall penetrations has been completed prior to coating application.

.4 Ensure maximum moisture content of substrate does not exceed: 12%.

.5 Ensure negative alkalinity of substrate before application of coating.

3.2. Preparation – General

.1 Place drop cloths beneath all areas where the work will be executed.

.2 **Mask off all adjoining areas and sections where paint is not to be applied.**

.3 All surfaces must be clean and free of dirt, dust, oil, grease, mildew, fungus, frost, efflorescence, laitance, peeling coating, chalking coating and any other foreign material. Pressure clean, wire brush or grind the wall surface to remove all such materials.

.4 Repair all damaged or delaminated concrete with a material that is compatible with the wall surface.

.5 Repair all concrete cracks larger than 1/16-inch with a material that is compatible with the substrate coating in accordance with Section 03 01 30 – Maintenance of Cast-in-Place Concrete.

.6 Ensure all exterior sealants have first been replaced and are fully cured.

.7 Remove all rust from metal surfaces by grinding to bright metal. Cover exposed metal immediately.

3.3. Metal Substrates

.1 Examination and Preparation:

.1 Carefully examine all areas to be painted. Remove chalking on aluminium surfaces with steel wool before cleaning. Prime surfaces as required to remove dirt and dust in accordance with the paint manufacturer's specifications.

.2 All surfaces are to be prepared by cleaning with water and sanding all high gloss painted surfaces to provide smooth paint ready surfaces within the Scope of Work. Apply specified primer in accordance with manufacturer's directions and allow to cure.

.3 All steel substrates are to be prepared by removing all surface rust with a grinder. Do not leave bare metal exposed in dry weather for more than 1 day. Do not allow rain to contact exposed metal. Perform this work as follows:

.1 Remove all existing rust using a grinder or other power tools as necessary to reach bare metal in accordance with SSPC SP11. Prepare all other areas using power tools as necessary to remove all loose paint or other materials in accordance with SSPC SP3. Prime bare steel immediately after cleaning. Any back rust that forms due to bare steel being left uncovered must be removed by the same procedures before continuing.

.2 Power wash all metal surfaces to eliminate all dust and debris.

.3 Ensure all locations are clean and dry before proceeding. Hoard or mask all adjacent areas as necessary to prevent splatter or overruns.

.4 Apply specified Dulux Devguard 4360 primer in accordance with manufacturer's written instructions, to 2.5 dry mils.

.2 Application:

.1 Apply Dulux Metalclad Anti-Rust paint by brush, or roller as suitable. Do not spray. Apply the specified coating in one coat to a minimum of 4 dry mil thickness, in accordance with manufacturer's directions.

3.4. Exterior Acrylic Paint

.1 Examination and Preparation:

.1 Ensure that all exterior sealants have all been completed and that the substrate is clear of dirt, dust, and any and all other deleterious substances.

.2 Application:

.1 Apply the specified product in two coats in accordance with the manufacturer's written directions, by brush or roller. Do not spray.

3.5. Cleaning

.1 Promptly, as work proceeds and at completion, clean up and remove from premises paint drops, splatters, and surplus materials resulting from the work of this section.

.2 Clean adjacent surfaces immediately and leave work neat and clean.

.3 Undertake regular cleanup with due regard for the fully occupied status of the building.

.4 Leave finished work area in a neat condition with no evidence of over spray on adjacent surfaces or property. Spills or over spray must be cleaned immediately with soap and water.

.5 Dispose of scrap materials, trash, empty containers, etc., as required by local, state and federal regulations.

PART 1 – GENERAL

1.1 Scope

.1 Application of high-build, water-based, elastomeric, 100 percent acrylic, waterproof coating to concrete vertical faces.

.2 Application of silicone elastomeric waterproof coating to existing face-sealed stucco, adjoining wall surfaces, and new silicone seal tape repairs.

1.2 Related Work

.1 Section 07 54 00 - Liquid Applied Membrane

.2 Section 07 92 13 - Sealants

1.3 References

.1 The Association of Wall and Ceiling Contractors of B.C. (AWCC)

.1 AWCC Wall and Ceiling Specification Standards Manual (SSM).

.2 Canadian General Standards Board (CGSB)

.1 CAN/CGSB 1.59-97, Alkyd Exterior Glass Enamel.

.2 CAN/CGSB 1.203-03, Exterior Latex Wood Primer.

.3 Master Painters Institute (MPI)

.1 MPI Architectural Painting Specification Manual, latest edition.

.2 MPI Maintenance Painting Manual, latest edition.

1.4 Quality Assurance

.1 Applicators shall have been trained and be acceptable to the manufacturer for installation of its product.

.2 Prior to commencement of the work, the Consultant and the Contractor shall meet on site to review materials, details and schedule. A manufacturer's representative shall assist in the application of membranes to ensure that applicators are instructed in the correct installation procedures.

1.5 Submittals

.1 Submit samples of materials in complete colour range to the consultant for approval.

.2 Product Data: Submit manufacturer's technical data sheets and installation instructions to the consultant and keep a copy on site.

.3 Submit maintenance brochures to the consultant, covering the care and cleaning of the coating.

1.6 Quality Control Submittals:

.1 Provide protection plan of surrounding areas and non-cementitious surfaces.

.2 Retain Purchase Orders, invoices and other documents to prove that materials used in contract meet the requirement of the Specifications, and produce when requested by the Consultant.

.3 Qualifications:

.1 Manufacturer Qualifications: Company shall be ISO 9001:2000 Certified.

.2 Applicator Qualifications: Company with minimum 5 years experience in application of specified products on projects of similar size and scope, and is acceptable to product manufacturer.

a. Successful completion of a minimum of 5 projects of similar size and complexity to specified work.

.4 Field Sample:

.1 Install at project site or pre-selected area of building an area for field sample, minimum 4'x4' (1.2mx1.2x), using specified material.

.2 Apply material in accordance with manufacturer's written application instructions.

.3 Manufacturer's representative or designated representative will review technical aspects; surface preparation, repair, and workmanship.

.4 Field sample will be standard for judging workmanship on remainder of project.

.5 Maintain field sample during construction for workmanship comparison.

.6 Do not alter, move, or destroy field sample until work is completed and approved by consultant.

.7 Obtain Consultant's written approval of field sample before start of material application, including approval of aesthetics, colour, texture, and appearance.

.8 For acrylic elastomeric coatings, perform adhesion test in accordance with ASTM D3359, Method A. Minimum adhesion rating of 4A required on 1 to 5 scale.

.9 For silicone elastomeric coatings, perform a field adhesion test by embedding cheesecloth in the elastomeric membrane over a representative prepared substrate. Follow the adhesion test procedure in the Dowsil AllGuard application and maintenance guide.

1.7 Delivery, Handling, and Storage

.1 Comply with manufacturer's ordering instructions and lead-time requirements to avoid construction delays.

.2 Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

.3 Store tightly sealed materials off ground and away from moisture, direct sunlight, extreme heat, and freezing temperatures.

1.8 Project Conditions

.1 Environmental Requirements:

.1 Do not apply material when substrate or ambient temperature is 40°F (4°C) or below or is expected to fall below 40°F (4°C) within 24 hours after application.

.2 Do not apply material if rain is expected within 24 hours of application.

.3 Do not apply material to sloped (less than 60°) or horizontal surfaces.

PART 2 - PRODUCTS

2.1 Manufacturers

1. Subject to compliance with requirements, provide products from the following manufacturer:

   .1 Dow Chemical Company
   Midland, MI
   Phone: 877-732-5268
   Email: construction@dowcorning.com
   Website: consumer.dow.com/construction

2. Specifications and Drawings are based on manufacturer's proprietary literature from Dow Chemical Company.

2.2 Materials

.1 Silicone Elastomeric Coating: Single-component, fluid-applied, water-based, pigmented silicone elastomer.

.1 Acceptable Product: DOWSIL AllGuard Silicone Elastomeric Coating by Dow Chemical Company.

.2 DOWSIL AllGuard Silicone Elastomeric Coating Smooth:

.1 VOC content: 4 g/L maximum.
.2 Moisture-Vapor Transmission, ASTM D 1653: 43 perms, minimum.
.3 Hardness, ASTM D 2240: 38 durometer Shore A.
.4 Tensile Strength, ASTM D 412: 145 lbf/sq. in. (1.0 MPa), minimum.
.5 Elongation, ASTM D 412: 600 percent, minimum.

.6 Room Temperature Flexibility, ASTM D 522: 1/8 inch mandrel test; pass.
.7 Low Temperature Flexibility, ASTM D 711: 1/4 inch mandrel test; pass.
.8 Fungus Resistance, ASTM D 3274: No growth.
.9 Mold Resistance, ASTM D 3273: No growth.
.10 Solids Content, ASTM D 2369: Not less than 55 percent by weight.

.3 Accessory Materials:

.1 General: VOC content of primers and fillers, 107 g/L or less.

.2 Crack Fillers: Elastomeric coating manufacturer's recommended, factory-formulated crack fillers or sealants compatible with substrate and other materials.

.3 Primer: Elastomeric coating manufacturer's recommended, factory-formulated, alkali-resistant primer compatible with substrate and other materials indicated.

.4 Concrete Unit Masonry Block Filler: factory-formulated, high-performance latex block filler compatible with substrate and other materials indicated.

PART 3 - EXECUTION

3.1 Examination and Preparation

.1 Carefully examine all areas to be painted. Clean surfaces as required to remove dirt and dust in accordance with the paint manufacturer's specifications.

.2 All surfaces are to be prepared by cleaning, with a TSP solution if necessary, sanding to dull finish, filling and caulking as necessary to provide smooth paint ready surfaces and joints to all painted concrete surfaces.

.3 Place drop cloths beneath all areas where the work will be executed.

.4 Mask off all adjoining areas and sections where paint is not to be applied.

3.2 Surface Preparation

.1 Protection: Protect adjacent Work areas and finish surfaces from damage during coating application.

.2 Prepare surfaces in accordance with manufacturer's instructions.

.3 Ensure that substrate is sound, clean, dry, and free of dust, dirt, oils, grease, laitance, efflorescence, mildew, fungus, biological residues, and other contaminants that could prevent proper adhesion.

.4 Clean surface to achieve texture similar to medium-grit sandpaper.

.5 Repair holes and spalled and damaged concrete with repair materials approved by coating manufacturer.

.6 Remove protruding concrete accessories and smooth out irregularities.

.7 When chemical cleaners are used, neutralize compounds and fully rinse surface with clean water. Allow surface to dry before proceeding.

.8 Remove blisters or delaminated areas and sand edges to smooth rough areas and provide transition to existing paint areas.

.9 Check adhesion of existing paint in accordance with ASTM D3359, measuring adhesion by Tape Method A.

.10 Concrete Surfaces:

.1 Cure concrete a minimum of 28 days before application.

.2 Remove laitance, bond-inhibiting contaminants, form-release agents, and sealers.

.3 Remove form tie wires and repair holes, small voids, and spalls using appropriate repair product approved by coating manufacturer.

.4 Abrasive-blast slick, dense concrete surfaces or use primer approved by coating manufacturer. Test surface for proper adhesion.

.11 Brick and Concrete Masonry Unit (CMU) Surfaces:

.1 Ensure CMUs are laid true and fully cured to full load-bearing capacity.

.2 Remove mortar splatter and excess mortar.

.3 Repoint or fill voids with appropriate patching product approved by coating manufacturer.

.4 Ensure mortar joints are sound and free of voids and cracks.

.5 Apply base coat or surface filler approved by coating manufacturer to new CMUs.

.12 Plaster and Stucco Surfaces:

.1 Clean surfaces and remove debonded or delaminated plaster or stucco.

.2 Repair with material approved by coating manufacturer.

.3 Allow new plaster or stucco to cure minimum of 14 days at 70 degrees F (21 degrees C) and 50 percent relative humidity or until pH level has reached 10. Allow longer cure times if temperatures are lower or relative humidity is higher.

.4 Prime chalky surfaces with primer approved by coating manufacturer after cleaning and profiling. Allow primer to dry.

.13 Exterior Insulation and Finish System (EIFS) Surfaces:

.1 Refasten or re-adhere delaminated or loose expanded polystyrene (EPS) insulation in accordance with manufacturer's approved methods.

.2 Replace or patch missing or damaged EPS to original condition.

.3 Finish with trowel acrylic finish to match and blend with existing texture.

.4 Allow repaired areas to fully cure.

.5 Refer to EIFS manufacturer's instructions for appropriate repair and procedures.

.14 Existing Acrylic Coating Surfaces:

.1 Sand or grind edges of existing coating to ensure adhesion and smooth transition of new material. Sand edges of area to featheredge.

.2 Wash down and allow to completely dry.

.3 Prime chalky surfaces with primer approved by coating manufacturer.

.15 Crack Preparation and Pre-treatment:

.1 Treat cracks larger than 1/32 inch (0.8 mm) and up to 1/16 inch (1.6 mm) with brush-grade acrylic crack filler approved by coating manufacturer.

.2 Treat all cracks larger than 1/16 as described in Section 03 01 30 – Maintenance of Cast-in-place Concrete, Item 3.4.

.3 Apply test application of crack repair materials in inconspicuous location to ensure compatibility and aesthetic approval.

3.3 Mixing

.1 Mix coating in accordance with manufacturer's instructions to ensure uniform color and aggregate disbursement and to minimize air entrapment.

.2 In multi-pail applications, mix contents of each new pail into partially used pail to ensure color consistency and smooth transitions from pail to pail.

3.4 Application

.1 Apply coating in accordance with manufacturer's instructions.

.2 Apply coating as a minimum 2-coat system, to achieve the minimum dry-film thickness specified in the manufacturer's technical data sheet and installation instructions.

.3 Maintain proper uniform wet-film thickness during application to ensure performance characteristics desired.

.4 Apply coating to achieve pinhole-free, consistent film build on coated surfaces.

3.5 Protection

.1 Protect applied coating from damage during construction.

3.6 Clean Up

.1 Promptly, as work proceeds and at completion, clean up and remove from premises paint drops, splatters, and surplus materials resulting from the work of this section.

.2 Clean adjacent surfaces immediately and leave work neat and clean.

.3 Undertake regular clean-up with due regard for the fully occupied status of the building.

Product Information
Silicone
Seal

Dow Corning® 123 Silicone Seal

FEATURES & BENEFITS

- Economical, high-performance alternative to cutting-out and recaulking existing failed weatherproofing sealants
- Extremely low-modulus alternative to wet sealants
- High-movement seal capable of +200/-75 percent joint movement
- High-shear movement seal capable of handling specified live loads, wind sway and seismic movements in a properly designed joint
- SWRI-validated performance
- Ability to provide a complete weatherseal system when used with *Dow Corning*® AllGuard Silicone Elastomeric Coating
- Available in custom designs to allow easier application and smoother transitions
- Available in matte and textured finish (similar to EIFS)

COMPOSITION

- Preformed silicone elastomer extrusion

Preformed silicone seal for weatherproofing applications

APPLICATIONS

Dow Corning® 123 Silicone Seal is specifically designed for use in repair of failed construction joints and glazing details due to design error, field failure or when the life span of sealants and gaskets has expired. It can be used in a variety of applications such as:

- An economical, high-performance alternative to cutting-out and recaulking existing failed weatherproofing sealants
- A restoration joint on EIFS at both the EIFS-to-EIFS joints and window perimeter joints
- An aluminum splice in high-performance window and curtainwall applications
- A high-performance flexible flashing material ideal for maintenance crews
- A uniform-looking parapet or coping joint
- A leak-free transition seal
- A seal for leaking skylights

TYPICAL PROPERTIES

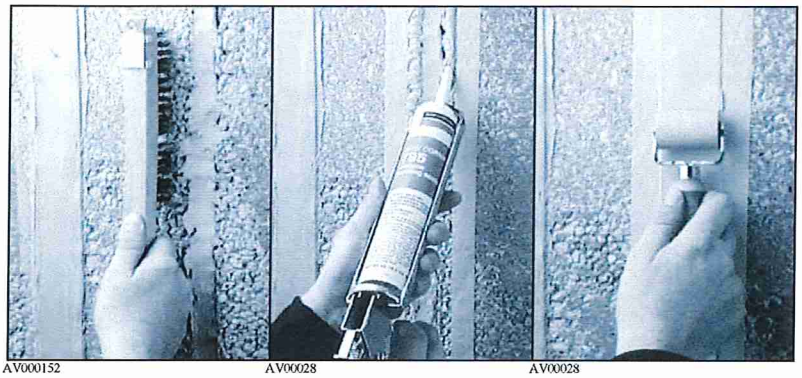
Specification Writers: These values are not intended for use in preparing specifications. Please contact your local Dow Corning sales office or your Global Dow Corning Connection before writing specifications on this product.

Test*	Property	Unit	Result
As Supplied – Cured Rubber Extrusion			
ASTM D 2240	Durometer Hardness, Shore A	points	25
ASTM D 412	Tensile Strength	psi (MPa)	40 (0.28)
ASTM D 412	Elongation	percent	400
	Tear Strength, die B	ppi (kN/m)	100 (17.5)
21 Day Sealant Cure – ½" (13-mm) Joint With 1½" (38-mm) Wide *Dow Corning* 123 Silicone Seal Bonded with *Dow Corning*® 795 Silicone Building Sealant			
ASTM C 1135[1]	Ultimate Strength	psi (MPa)	0 (0.275)
ASTM C 1135	Ultimate Elongation	percent	800
ASTM C 1135	Stress at 25% Elongation	psi (MPa) pli (N/m)	3.0 (0.021) 1.5 (263)
ASTM C 1135	Stress at 50% Elongation	psi (MPa) pli (N/m)	5.0 (0.034) 2.5 (438)
ASTM C 1135	Stress at 50% Compression	psi (MPa) pli (N/m)	< 5 (0.034) < 2.5 (438)

TYPICAL PROPERTIES (continued)

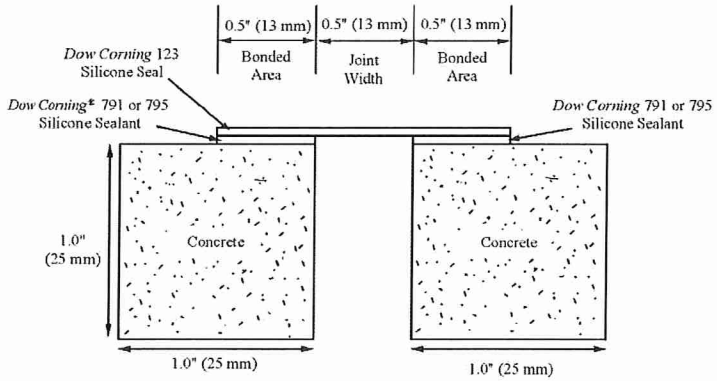
Test*	Property	Unit	Result
ASTM C 719	Movement Capability	percent	+200/-75
Unprimed Adhesion of *Dow Corning* 795 Silicone Building Sealant to *Dow Corning* 123 Silicone Seal			
ASTM C 794	Peel Strength, *Dow Corning* 795 Silicone Building Sealant	pli (N/m)	25 (4.38)

*ASTM: American Society for Testing and Materials.
[1]ASTM C 1135 and C 719 modifications used the joint configuration shown in Figure 1.



Dow Corning 123 Silicone Seal is easily applied: prepare the substrate around the failed sealant; apply *Dow Corning* 795 Silicone Building Sealant; and apply *Dow Corning* 123 Silicone Seal.

Figure 1: Joint Configuration Modifications of ASTM C 1135 and C 719 Tests Used for Determining Typical Properties Using 1½" (38-mm) Wide *Dow Corning* 123 Silicone Seal.



DESCRIPTION

Dow Corning 123 Silicone Seal is a preformed, ultra-low modulus silicone extrusion that is bonded to substrates using *Dow Corning*® 791 Silicone Perimeter Sealant or *Dow Corning* 795 Silicone Building Sealant.[1] Easy-to-install *Dow Corning* 123 Silicone Seal can be used in both new and remedial construction applications.

Dow Corning 123 Silicone Seal is available in the following standard colors: black, white, grey, bronze, limestone and sandstone. This product is also available in custom colors (1000 linear feet [305 m] minimum).

The same color of *Dow Corning* 791 Sealant or *Dow Corning* 795 Sealant should be used to bond the seal to the substrate.

In addition to standard and custom colors, *Dow Corning* 123 Silicone Seal is also available in a textured finish. The color or texture can also be altered at the job site using *Dow Corning* AllGuard Silicone Elastomeric Coating.

In addition to custom colors, *Dow Corning* 123 Silicone Seal is also available in custom extrusions with grooves to facilitate bending and dimensional shapes. These shapes may be custom designed to fit mullion and window systems and to work with the flat strips to provide improved aesthetics as well as maximum weatherproofing protection. Contact your Dow Corning Sales Application Engineer to discuss your design concepts and learn how they can be captured in long-lasting silicone materials.

HOW TO USE

Dow Corning 123 Silicone Seal must be bonded to clean, dry, frost-free, dust-free substrates using *Dow Corning* 791 Sealant or *Dow Corning* 795 Sealant. Field adhesion testing should be done to determine if primer is required for proper adhesion of *Dow Corning* 791 Sealant or *Dow Corning* 795 Sealant to the substrate.[1]

Preparation Work

Porous surfaces should be cleaned with abrasion cleaning followed by blasts of oil-free compressed air. If high-pressure water cleaning is necessary, use caution to prevent water from entering the structure through the

[1]Other *Dow Corning*® brand sealants may be recommended depending on the installation requirements.

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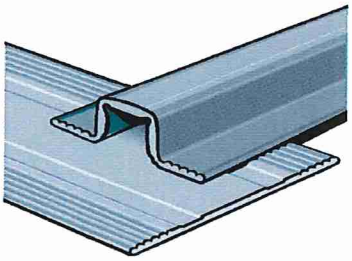
existing failed joint. Exterior surfaces must be visibly dry before installing *Dow Corning* 123 Silicone Seal.

Nonporous surfaces should be cleaned using the two-cloth solvent wipe as outlined in Dow Corning's sealant application guidelines. Masking Apply masking tape in areas of high visibility to ensure good aesthetics (see Figure 2).



Dow Corning 123 Custom Designs are available to meet aesthetic and weathersealing needs with a single product.

SEALANT • WATERPROOFING & RESTORATION INSTITUTE

Issued to: Dow Corning Corp
Product: 123 Silicone Seal
ASTM C 1523-10: Determining Modulus, Tear and Adhesion Properties of Pre-cured Elastomeric Joint Sealants

Movement, Cohesion & Adhesion: 200%

Dry/Room Temperature Loss of Adhesion/Cohesion	Pass ✓
Water Immersion Loss of Adhesion/Cohesion	Pass ✓
Frozen Loss of Adhesion/Cohesion	Pass ✓
Heat Loss of Adhesion/Cohesion	Pass ✓
Artificial Weathering Loss of Adhesion/Cohesion	Pass ✓

Tear Propagation: T-Tear

ASTM D 412: Vulcanized Rubber and Thermoplastic Elastomers - Tension

Ultimate Elongation
Results: 503%

Validation Date: 9/20/16 – 9/19/21
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PRE-CURED SEALANTS VALIDATION
www.swrionline.org

Figure 2: Recommended Joint Design Using *Dow Corning* 123 Silicone Seal and *Dow Corning* 795 Silicone Building.

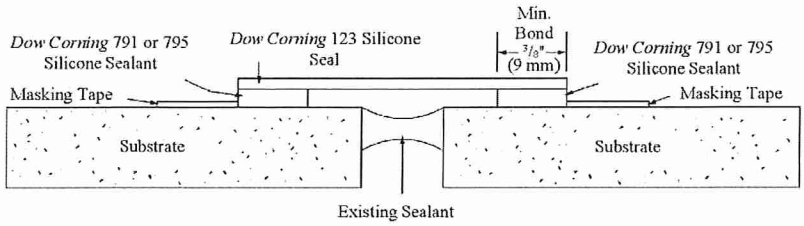
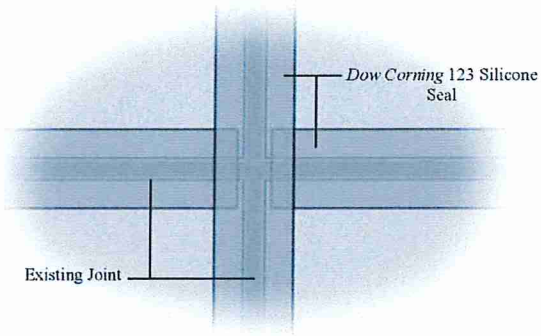
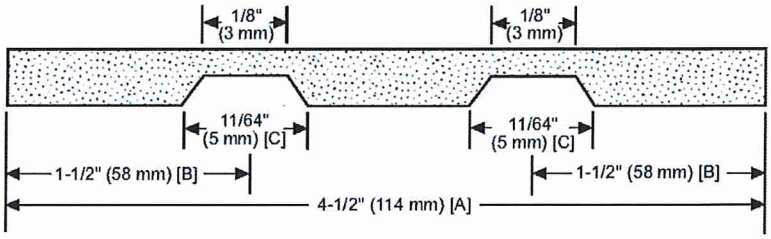


Figure 3: Overlapping Vertical Application of *Dow Corning* 123 Silicone Seal Over the Horizontal Seal.



Note: Vertical strips must overlap horizontal strips of *Dow Corning* 123 Silicone Seal.

Figure 4: Example Sketch of a Custom Design.



Design indicates:

- Total width (A).
- Placement of grooves (B), specifying the distance from the strip's edge to the center of the grooves.
- Width of grooves (C). Unless specified otherwise, these are $1\,{}^{1}/_{64}$" (5 mm) wide. All grooves will be $^{1}/_{32}$" (1 mm) deep.

Application

Apply a bead of *Dow Corning* 791 Silicone Sealant or *Dow Corning* 795 Silicone Sealant to each side of the joint according to the following schedule:

Substrate	Coverage linear ft (m)/tube	Bead Size
Rough	20–40 (6–12)	$^{1}/_{4}$" (6 mm)
Smooth	70–120 (21–37)	$^{1}/_{8}$" (3 mm)

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Note: Rough surfaces will require larger beads of sealant to seal the valleys of the substrate. The sealant should be applied approximately 1/4" (6 mm) inside the masking tape on both sides of the joint. The minimum bonded area must be at least 3/8" (9 mm) (see Figure 2).

Within 10 minutes of sealant application, press the extrusion into the sealant to wet the extrusion, substrate and sealant. A roller can be used to apply consistent pressure to ensure uniform contact. The ridges on the back of *Dow Corning* 123 Silicone Seal will help ensure proper sealant coverage.

Horizontal joints must be completed before application of vertical joints. Vertical joints should be lapped over the horizontal joints as shown in Figure 3.

At the end of the joint, cut the extrusion with a razor knife.

Clean-Up
Remove masking tape and excess sealant.

Maintenance
No maintenance should be needed. The surface can be cleaned with soap and water.

If the seal becomes damaged, replace the damaged portion. *Dow Corning* 791 Silicone Sealant or *Dow Corning* 795 Silicone Sealant will adhere to the existing *Dow Corning* 123 Silicone Seal with only a preparatory solvent wipe to remove accumulated dirt.

HANDLING PRECAUTIONS

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PACKAGING INFORMATION

Dow Corning 123 Silicone Seal is available in 100-foot rolls. Standard stocked sizes include widths of 1", 1½", 2", 2½", 3", 4", 5" and 6" (25, 38, 51, 64, 76, 102, 127 and 152 mm) in black (also stocked in 12"), white, grey, bronze, limestone and sandstone colors. Standard, but non-stock sizes, include widths of 3½", 4½" and 5½" (89, 114 and 140 mm) in all colors. All sizes of blue spruce, dusty rose, adobe tan, charcoal and rustic brick are non-stock items. Custom sizes are available in 1 to 6" (25 to 152 mm) in 0.5" (13 mm) increments, and 7 to 12" (178 to 305 mm) in 1" (25 mm) increments.

LIMITATIONS

Dow Corning 123 Silicone Seal is not intended for use:

- With *Dow Corning*® 790 Silicone Building Sealant as an adhesive
- With non-*Dow Corning*® brand sealants or acetoxy cure silicone sealants as the bonding sealant
- In below-grade applications

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

HEALTH AND ENVIRONMENTAL INFORMATION

To support Customers in their product safety needs, Dow Corning has an extensive Product Stewardship organization and a team of Product Safety and Regulatory Compliance (PS&RC) specialists available in each area.

For further information, please see our website, dowcorning.com or consult your local Dow Corning representative.

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The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that our products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

Dow Corning's sole warranty is that our products will meet the sales specifications in effect at the time of shipment.

Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

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DOW CORNING DISCLAIMS LIABILITY FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.

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Product Information
Silicone Sealants

Dow Corning® 795 Silicone Building Sealant

FEATURES & BENEFITS

- Suitable for most new construction and remedial sealing applications
- Versatile – high performance structural glazing and weather sealing from a single product
- Available in 16 standard colors; custom colors also available
- Excellent weatherability – virtually unaffected by sunlight, rain, snow, ozone and temperature extremes of -40°F (-40°C) to 300°F (149°C)
- Excellent unprimed adhesion to a wide variety of construction materials and building components, including anodized, alodined, most coated and many Kynar®[1]-painted aluminums[2]
- Ease of application – ready to use as supplied
- Ease of use – all-temperature gunnability, easy tooling and low-odor cure byproduct
- Meets global standards (Americas, Asia and Europe)

COMPOSITION

- One-part, neutral-cure, RTV silicone sealant

Neutral, one-part silicone sealant

APPLICATIONS

- Structural and nonstructural glazing
- Structural attachment of many panel systems
- Panel stiffener applications
- Weather sealing of most common construction materials including glass, aluminum, steel, painted metal, EIFS, granite and other stone, concrete, brick and plastics

TYPICAL PROPERTIES

Specification Writers: These values are not intended for use in preparing specifications. Please contact your local Dow Corning sales office or your Global Dow Corning Connection before writing specifications on this product.

Test[1]	Property	Unit	Result
As Supplied			
ASTM C 679	Tack-Free Time, 50% RH	hours	3
	Curing Time at 25°C (77°F), 50% RH	days	7–14
	Full Adhesion	days	14–21
ASTM C 639	Flow, Sag or Slump	inches (mm)	0.1 (2.54)
	Working Time	minutes	20–30
	VOC Content[2]	g/L	32
As Cured-After 21 days at 25°C (77°F) and 50% RH			
ASTM D 2240	Durometer Hardness, Shore A	points	35
ASTM C 794	Peel Strength	lb/in (kg/cm)	32 (5.7)
ASTM C 1135	Tension Adhesion Strength		
	At 25% extension	psi (MPa)	45 (0.310)
	At 50% extension	psi (MPa)	60 (0.414)
ASTM C 719	Joint Movement Capability	percent	± 50
ASTM C 1248	Staining (granite, marble, lime-stone, brick and concrete)		None
As Cured-After 21 days at 25°C (77°F) and 50% RH followed by 10,000 hours in a QUV weatherometer, ASTM G 53			
ASTM C 1135	Tensile Adhesion Strength		
	At 25% extension	psi (MPa)	35 (0.241)
	At 50% extension	psi (MPa)	50 (0.345)

[1]Kynar is a trademark of Atofina Chemicals Inc.
[2]Contact your local Dow Corning Sales Application Engineer for specifics.

[1]ASTM – American Society for Testing and Materials.
[2]Based on South Coast Air Quality Management District of California. Maximum VOC is listed both inclusive and exclusive of water and exempt compounds. For a VOC data sheet for a specific sealant color, please send your request to product.inquiry@dowcorning.com.

DESCRIPTION

Dow Corning® 795 Silicone Building Sealant is a one-part, neutral-cure, architectural-grade sealant that easily extrudes in any weather and cures quickly at room temperature. This cold-applied, non-sagging silicone material cures to a medium- modulus silicone rubber upon exposure to atmospheric moisture. The cured sealant is durable and flexible enough to accommodate ±50 percent movement of original joint dimension when installed in a properly designed weather seal joint. In a properly designed structurally glazed joint, the sealant is strong enough to support glass and other panel materials under high wind load.

APPROVALS/ SPECIFICATIONS

Dow Corning 795 Silicone Building Sealant meets the requirements of:

- Federal Specification TT-S 001 543A (COM-NBS) Class A for silicone building sealants
- Federal Specification TT-S-00230C (COM-NBS) Class A for one- component building sealants
- ASTM Specification C 920 Type S, Grade NS, Class 50, Use NT, G, A and O
- ASTM Specification C 1184 for structural silicone sealants
- Canadian Specification CAN2-19.13- M82

SEALANT • WATERPROOFING & RESTORATION INSTITUTE

Issued to: Dow Corning Corp.®
Product: 795 Silicone Building Sealant

C719: Pass ✔ Ext:+50% Comp:-50%

Substrate: Glass, Aluminum, Kynar
[Glass and Aluminum Substrates were tested unprimed; Dow Corning 1200 OS Primer used on Kynar substrates]

C661: Rating 41

Validation Date: 9/11/12 - 9/10/17

No. 912-SBS917 *Copyright © 2012*

SEALANT VALIDATION
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COLORS

Dow Corning 795 Silicone Building Sealant is available in 16 colors: white, limestone, champagne, natural stone, gray, black, bronze, sandstone, adobe tan, dusty rose, rustic brick, blue spruce, anodized aluminum, and charcoal. Custom colors may be ordered to match virtually any substrate.

HOW TO USE

Please consult the *Dow Corning Americas Technical Manual*, Form No. 62-1112, for detailed information on state-of-the- art application methods and joint design. Please contact your local Dow Corning Sales Application Engineer for specific advice.

Preparation

Clean all joints, removing all foreign matter and contaminants such as grease, oil, dust, water, frost, surface dirt, old sealants or glazing compounds and protective coatings.

Application Method

Install backing material or joint filler, setting blocks, spacer shims and tapes. Mask areas adjacent to joints to ensure neat sealant lines. Primer is generally not required on non-porous surfaces, but may be necessary for optimal sealing of certain porous surfaces. A test placement is always recommended. Apply *Dow Corning* 795 Silicone Building Sealant in a continuous operation using positive pressure. (The sealant can be applied using many types of air-operated guns and most types of bulk dispensing equipment.) Before a skin forms (typically within 15 minutes), tool the sealant with light pressure to spread the sealant against the backing material and joint surfaces. Remove masking tape as soon as the bead is tooled.

HANDLING PRECAUTIONS

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USABLE LIFE AND STORAGE

When stored at or below 27°C (80°F), *Dow Corning* 795 Silicone Building Sealant has a shelf life of 12 months from the date of manufacture. Refer to product packaging for "Use By Date."

PACKAGING INFORMATION

Dow Corning 795 Silicone Building Sealant is supplied in 10.3-fl oz (305-mL) disposable plastic cartridges that fit ordinary caulking guns, 20-fl oz (590- mL) sausages and 2- and 4.5-gal (7.5- and 1 7-L) bulk containers.

LIMITATIONS

Dow Corning 795 Silicone Building Sealant should not be used:

- In structural applications without prior review and approval by your local Dow Corning Sales Application Engineer
- In below-grade applications
- When surface temperatures exceed 50°C (122°F) during installation
- On surfaces that are continuously immersed in water

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- On building materials that bleed oils, plasticizers or solvents that may affect adhesion
- On frost-laden or wet surfaces
- In totally confined joints (the sealant requires atmospheric moisture for cure)
- If the sealant is intended to be painted (paints do not typically adhere to most silicone sealants)
- To surfaces in direct contact with food or other food-grade applications

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

HEALTH AND ENVIRONMENTAL INFORMATION

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LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY

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Product Information
Silicone
Coatings

Dow Corning® AllGuard Silicone Elastomeric Coating

FEATURES & BENEFITS

- Provides long-term waterproofing protection
- Maintains water protection properties even when exposed to sunlight, rain, snow, or temperature extremes

COMPOSITION

- One-component, pigmented, water-based silicone elastomer

Water-based silicone elastomer for waterproofing above-grade exterior masonry substrates

APPLICATIONS

- *Dow Corning*® AllGuard Silicone Elastomeric Coating is designed to waterproof above-grade exterior masonry substrates, such as concrete block, fluted block, brick, stucco, synthetic stucco, poured concrete, precast concrete, exterior insulation finish systems (EIFS), and previously coated masonry substrates.

TYPICAL PROPERTIES

Specification Writers: These values are not intended for use in preparing specifications. Please contact your local Dow Corning sales office or your Global Dow Corning Connection before writing specifications on this product.

Test[1]	Property	Unit	Result
ASTM D 2369	Solids Content	% by weight % by volume	58.6 50.1
ASTM D 1475	Specific Gravity	lb/gal (kg/L)	9.64 (1.155)
ASTM D 2196	Viscosity[2]	cps (Pa s)	37,500 (37.5)
ASTM D 1849	High Temperature Stability (no change in viscosity)	days	> 28
EPA Method 24	Volatile Organic Content[3] (VOC)	g/L (lb/gal)	< 50 (< 0.42)
As Cured			
ASTM D 2240	Durometer Hardness, Shore A	points	38
ASTM D 412	Tensile Strength	psi (MPa)	> 145 (1.00)
ASTM D 412	Elongation	%	600
ASTM D 1653	Permeance	English perms (ng/(m².Pa.s))	43.2 (2480)
ASTM D 522	Room Temperature, Flex, 1/8" mandrel		Pass
ASTM C 711	Low Temperature Flex, 1/4" mandrel		Pass
ASTM D 3274	Fungus Resistance		No growth
ASTM D 6904	Wind Driven Rain[4]		Pass
ASTM D 2243	Freeze/Thaw Resistance		No Change

[1]ASTM: American Society of Testing and Materials.
[2]Brookfield HAV, spindle #3, 2 rpm.
[3]VOC includes all Dow Corning approved colors (EPA method 24 or 40 CFR 59.406 data).
[4]Measured on coating system with two coats (10 mil dry film thickness) of *Dow Corning* AllGuard Silicone Elastomeric Coating.

DESCRIPTION

Dow Corning AllGuard Silicone Elastomeric Coating is a one-part, 100 percent water-based silicone elastomer supplied in three tint bases for pigmenting at distributor locations. The coating is typically applied in two coats. The use of *Dow Corning*® AllGuard Primer may be necessary based on the substrate. The coating can be roller, brush, or spray applied. It cures to form a flexible membrane that is impervious to water but has the ability to "breathe," allowing water vapor to escape from inside the substrate. Its matte finish minimizes brush and roller marks. The coating provides long-term waterproofing protection, withstanding hurricane-force, wind-driven rain; normal movement imposed by seasonal thermal contraction and expansion; ultraviolet radiation; and the elements. The coating maintains its water protection properties even when exposed to sunlight, rain, snow, or temperature extremes.

Once pigmented, it is a ready-to-use material that can be applied between -6°C (20°F) and 38°C (100°F) to a clean, dry surface. The average drying time is 4 to 8 hours, depending upon temperature, humidity, and wind conditions. If the temperature drops below -6°C (20°F) after the coating is applied, the average drying time will increase. *Dow Corning* AllGuard Elastomeric Coating requires temperatures higher than -6°C (20°F) for a cumulative total of 24 hours to dry.

Dow Corning AllGuard Silicone Elastomeric Coating will attain full adhesion and physical properties in 7 to 14 days.

Dow Corning AllGuard Silicone Elastomeric Coating is available in more than 55 standard colors or can be custom colored to order.

HOW TO USE

When properly applied and cured, *Dow Corning* AllGuard Silicone Elastomeric Coating provides a fast, easy, and effective method of keeping exterior above-grade surfaces waterproof.

Design Considerations

In many building designs, areas such as ledges and windowsills allow air-borne dirt and soot to accumulate. Surfaces exposed to concentrated water run-down may appear dirty or streaky over time and the coating may become difficult to clean. In those areas, drip edges should be installed before the coating is applied to rechannel water away from the surface to protect the long-term appearance of the facade.

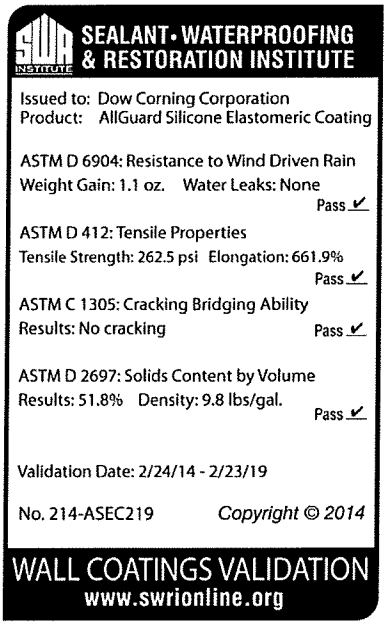
The success of a drip edge is achieved by moving the runoff water away from the wall onto the drip edge, creating a non-uniform runoff.

A drip edge can be fabricated from the same material as the windowsills or from other formable composites. The drip edge can be mechanically adhered to the substrate or attached with *Dow Corning*® 795 Silicone Building Sealant (see Figure 1).

Surface Preparation

All surfaces to be coated with *Dow Corning* AllGuard Silicone Elastomeric Coating must be prepared as described in the most recent *Dow Corning* AllGuard Silicone Elastomeric Coating Application and Maintenance Guide (Form No. 62-617). The following is a short reference guide for surface preparations.

All surfaces must be clean and free of dirt, frost, dust, oil, grease, mold, fungus, efflorescence, laitance, peeling coating, chalking coating, and any other foreign material. Green concrete must be allowed to cure 28 days before application of *Dow Corning* AllGuard Silicone Elastomeric Coating (see "Limitations"). Pressure clean, wire brush, or grind the wall surface to remove all of the above materials. Repair any damaged concrete, stucco, block, brick, masonry, or EIFS. Repair cracks larger than 1/16" (1.6 mm) with a material that is compatible with the substrate and *Dow Corning* AllGuard Silicone Elastomeric Coating. *Dow Corning*® 790 or 795 Silicone Building Sealant or *Dow Corning*® 791 Silicone Perimeter Sealant can be used for crack repairs.



Coating

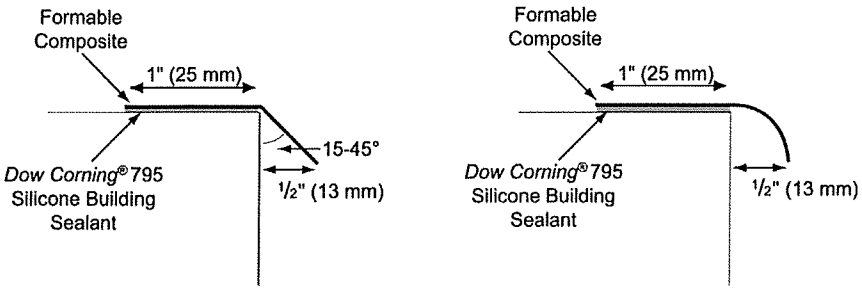
A minimum of two coats of *Dow Corning* AllGuard Silicone Elastomeric Coating are necessary to achieve the required 10-mil (0.25-mm) minimum dry film thickness to attain protection against through-water penetration and to qualify for a project-specific warranty.

Apply the coating in a 10-mil (0.25-mm) wet thickness (a job-specific mockup is recommended to determine actual usage). Due to *Dow Corning* AllGuard Silicone being

50% solids, two thick wet coats (10- to 12-mil [0.25- to 0.30-mm]) will result in the required 10-mil (0.25-mm) dry coating thickness. On occasion, a third coat may be necessary on porous or rough surfaces to achieve the minimum dry film thickness.

Apply using a ¾ to 1½" (19- to 38-mm) nap, polyester, or 50/50 polyester/wool blend roller cover, nylon bristle brush, or airless sprayer. When applying the coating with a roller, apply it in a fan pattern to achieve uniform thickness. Always finish roller applications in the same direction to reduce visual surface texture differences. When applying with an airless sprayer, follow the spray application with a back roll of material to ensure a uniform coating and appearance.

Figure 1: Drip Edge Design Consideration



Allow the coating to dry (typically 2 to 4 hours) before applying additional coats. Note: Do not thin or cut back *Dow Corning* AllGuard Silicone Elastomeric Coating.

After the additional coat has been applied, the average drying time is 4 to 8 hours, depending upon temperature, humidity, and wind conditions. *Dow Corning* AllGuard Silicone Elastomeric Coating will attain full adhesion and physical properties in 7 to 14 days.

Low Temperature Application
If temperatures drop below -6°C (20°F), the coating will freeze on the surface until the temperature increases. This will not affect the cured properties of the coating, but will extend the drying time.

The coating should be dry to touch, not simply freeze between coats. Application equipment such as rollers and the tips of spraying equipment should be kept above 0°C (32°F) when not in use.

Dow Corning AllGuard Silicone Elastomeric Coating was developed to obtain good adhesion to the substrate without the need of a primer. To verify that this adhesion is sufficient, field adhesion tests must be performed as described in the *Dow Corning* AllGuard Silicone Elastomeric Coating Application and Maintenance Guide. If adhesion does not meet requirements, a field adhesion test with primer should be performed. To obtain a project-specific warranty, field adhesion testing, meeting the requirements, must be performed and documented. Surface adhesion tests on each type of substrate and each face of the structure must be field adhesion tested and acceptable per the *Dow Corning* AllGuard Silicone Elastomeric Coating Application and Maintenance Guide.

Maintenance
Walls should be inspected at least once a year. If coating becomes damaged, repair damaged portion to maintain weatherproofing performance. Any touch-ups or repairs to the coating can be completed by applying *Dow Corning* AllGuard Silicone Elastomeric Coating to the clean, dry area in accordance to the recommendations in this data sheet and the *Dow Corning* AllGuard Silicone Elastomeric Coating Application and Maintenance Guide.

Dow Corning recommends routine cleaning to minimize dirt accumulation, following these guidelines:

1. Abrasive cleaners and cleaning equipment should never be used.

2. Clean using pressurized water and a basic cleaning agent such as TSP (Trisodium Phosphate)[1] or Simple Green™. Water pressure should not exceed 1,500 psi (10.3 MPa) to clean the surface without removing the coating material from the wall surface. A small test patch should be done first to determine how long the cleaning agent should be left on the surface before rinsing.

3. Removal of stubborn marks may require the use of a soft bristle brush with the cleaning solution. Avoid stiff brushes that may abrade the coating.

[1]Follow solvent manufacturer's recommended safe handling instructions and applicable federal, state, and local laws.

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HANDLING PRECAUTIONS

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USABLE LIFE AND STORAGE

Protect *Dow Corning* AllGuard Silicone Elastomeric Coating and *Dow Corning* AllGuard Primer from freezing. Store in a cool, dry place out of the weather. When properly stored in its original, unopened container above 1°C (34°F) and below 32°C (90°F), *Dow Corning* AllGuard Silicone Elastomeric Coating and *Dow Corning* AllGuard Primer have shelf lives of 9 months and 18 months, respectively, from date of manufacture. Refer to product packaging for "Use by Date."

If *Dow Corning* AllGuard Silicone Elastomeric Coating is stored at temperatures below -6°C (20°F) for longer than 8 hours, the coating will start to freeze. Allow the *Dow Corning* AllGuard Silicone Elastomeric Coating to sit at temperatures greater than 20°F for at least 8 hours or until the material thaws before application.

PACKAGING INFORMATION

Dow Corning AllGuard Silicone Elastomeric Coating and *Dow Corning* AllGuard Primer are available in 5-gal (19-L) pails (42-46 lb [19-21 kg] per pail depending on color).

LIMITATIONS

Dow Corning AllGuard Silicone Elastomeric Coating should not be applied:

- When there is a threat of rain within the next 24 hours or the relative humidity is in excess of 90 percent (because conditions would not permit complete surface drying)
- On below-grade applications
- On non-masonry substrates such as metal, wood, plastic, or asphaltic materials, or on tar-contaminated masonry
- As a decorative paint (*Dow Corning* AllGuard Silicone Elastomeric Coating is not warranted for aesthetics)
- On newly applied or green cementitious materials; Industry guidelines recommend at least 28 days cure before painting or coating the substrates (see SSPC, 2010 Painting Manual, Chapter 3.1. Concrete Surface Preparation)

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

HEALTH AND ENVIRONMENTAL INFORMATION

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LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY

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DOW CORNING DISCLAIMS LIABILITY FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.

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NOTE: *Dow Corning* AllGuard Silicone Elastomeric Coating is NOT warranted for use on single-family residential dwellings.

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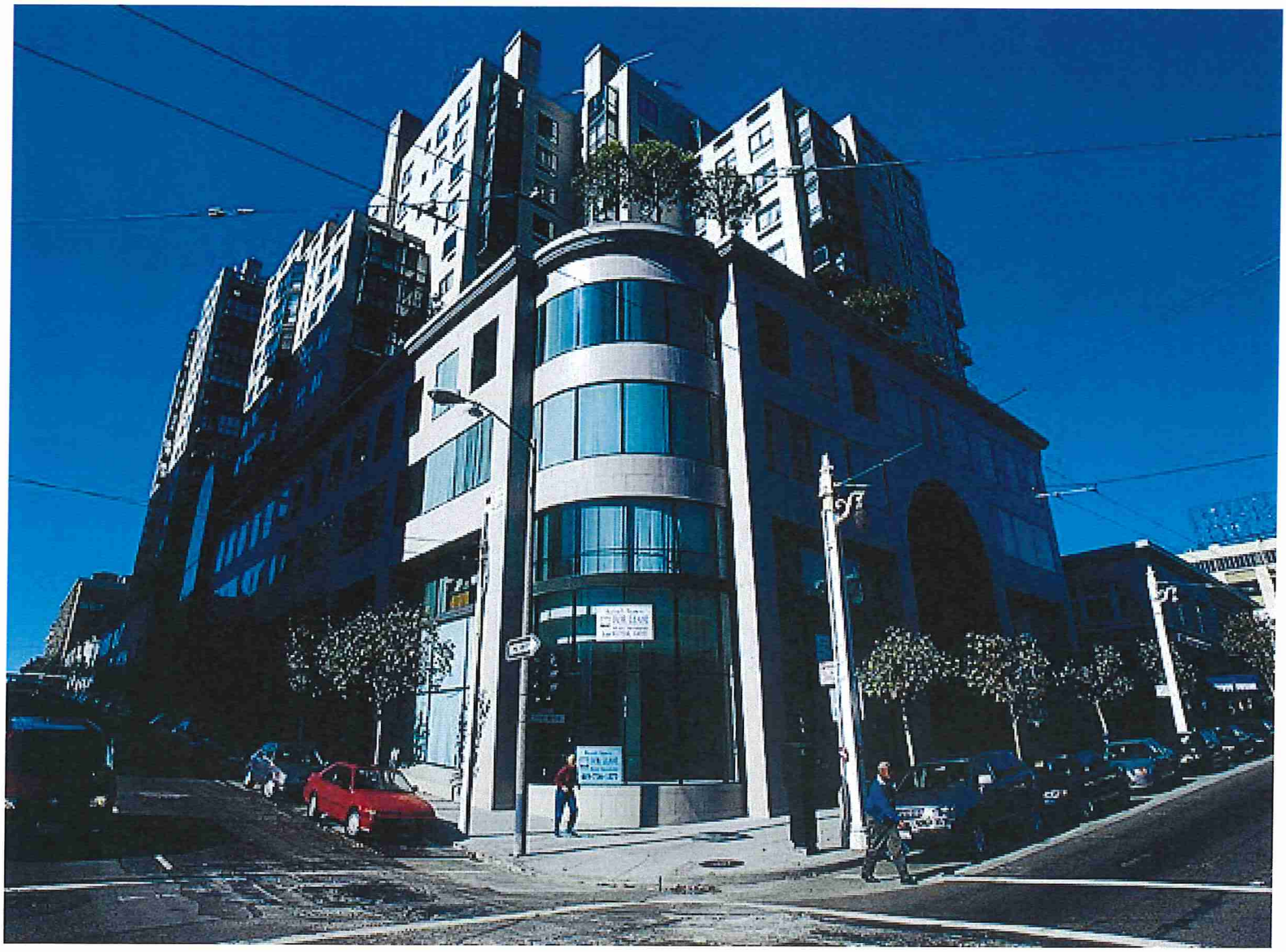
High Performance Building

Dow Performance Silicones

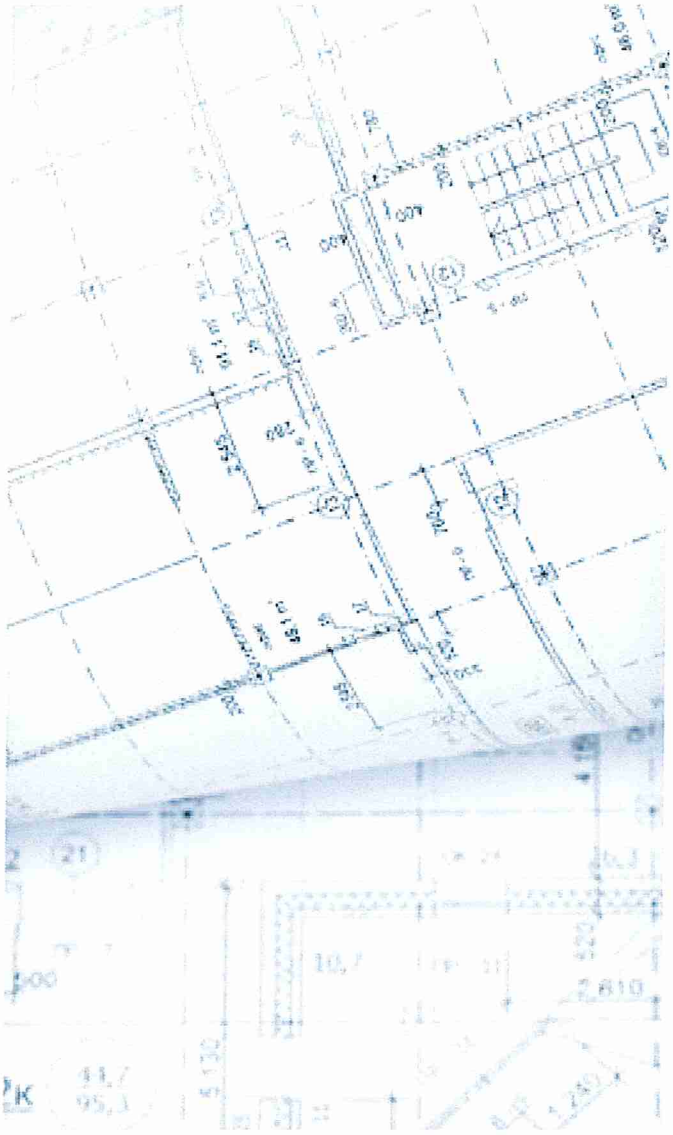
DOWSIL™ AllGuard Silicone Elastomeric Coating

Application and Maintenance Guide



Contents

This document is intended to provide installation and field testing instructions for DOWSIL™ AllGuard Silicone Elastomeric Coating. Additional information regarding cleaning and maintenance is included to provide maximum, long-term waterproof performance for your building.



Product Description Guide

DOWSIL™ AllGuard Silicone Elastomeric Coating is a one-component water-based silicone elastomer designed to waterproof above-grade exterior masonry substrates. Featuring a smooth, matte finish, this coating is available in a broad range of standard and custom colors that are made to order at your distributor's location.

Ideal for both new construction and renovation projects, DOWSIL™ AllGuard Silicone Elastomeric Coating withstands wind-driven rain without water penetration.

Substrate Compatibility

DOWSIL™ AllGuard Silicone Elastomeric Coating is designed to waterproof above-grade exterior masonry substrates, such as concrete block, fluted block, brick, stucco, synthetic stucco, poured concrete, precast concrete, Exterior Insulation Finish Systems (EIFS), and previously coated masonry substrates.

DOWSIL™ AllGuard Silicone Elastomeric Coating generally has primerless adhesion to these substrates. Field adhesion testing is required at the site to ensure primerless results.

Compatibility with DOWSIL™ Products

DOWSIL™ AllGuard Silicone Elastomeric Coating is compatible with the DOWSIL products listed here. DOWSIL™ AllGuard Silicone Elastomeric Coating can be applied over the sealants after they have been allowed to achieve tack-free cure (see sealant data sheets for specific cure times). It is the only coating that can be used for application over DOWSIL™ 123 Silicone Seal. Products commonly used with DOWSIL™ AllGuard Silicone Elastomeric Coating include:

- DOWSIL™ 123 Silicone Seal
- DOWSIL™ 756 SMS Building Sealant
- DOWSIL™ 790 Silicone Building Sealant
- DOWSIL™ 791 Silicone Weatherproofing Sealant
- DOWSIL™ 795 Silicone Building Sealant

When DOWSIL™ AllGuard Silicone Elastomeric Coating is used in conjunction with DOWSIL™ 123 Silicone Seal and these recommended sealants, complete building protection can be achieved.

Colors

DOWSIL™ AllGuard Silicone Elastomeric Coating is available in over 55 standard colors, and a full range of custom colors is available from your DOWSIL construction products distributor.

Shelf Life

DOWSIL™ AllGuard Silicone Elastomeric Coating has a shelf life of nine months from date of manufacture.

Application

Design Considerations

As with any high-performance material, care taken in initial design and application will result in longer coating life.

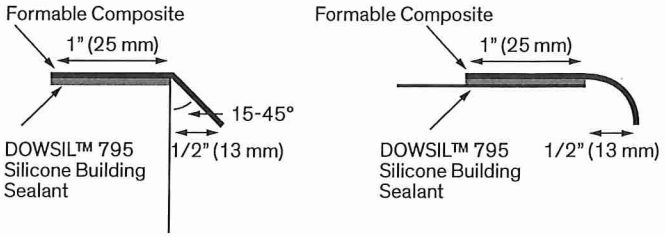
In many building designs, there may be areas such as ledges and window sills that allow airborne dirt and soot to accumulate. If the design permits or promotes channeling of water runoff from these areas, dirt streaking is likely to result.

Wall texture and environmental conditions are also important factors in the quantity and type of dirt accumulated. Industrial areas and nearby highways increase the probability of soot and hydrocarbon in the air, resulting in a greater chance of dirt pickup and streaking. If the building's location, design, wall surface, or existing dirt streaking indicates channeling of water down the side of the wall, drip edges are recommended on the ledges, window sills, and scuppers to reduce dirt streaking on DOWSIL™ AllGuard Silicone Elastomeric Coating.

In field tests, the use of a drip edge greatly reduces or eliminates dirt streaking. The use of the drip edge moves the runoff water away from the wall, creating a non-patterned runoff.

A drip edge can be fabricated from the same material as the window sills or from other formable composites. The design of the drip edge should allow for a minimum 1" (25-mm) width for attachment to the ledge, with a bent edge of 15 to 45° or minimum 1/2" (13-mm) radius, with the edge at least 1/2" (13-mm) away from the wall (see Figure 1). The drip edge can be mechanically adhered to the substrate or attached with DOWSIL™ 791 Silicone Weatherproofing Sealant or DOWSIL™ 795 Silicone Building Sealant. A field adhesion test on the sealant to drip edge and sill must be performed to verify good adhesion.

Figure 1: Drip Edge Design



Temperature and Humidity

DOWSIL™ AllGuard Silicone Elastomeric Coating can be applied from -6 to 38°C (20 to 100°F). If the temperature drops below -6°C (20°F) after the coating is applied, the average drying time will increase. DOWSIL™ AllGuard Silicone Elastomeric Coating requires temperatures higher than -6°C (20°F) for a cumulative total of 24 hours to dry. Do not apply the coating when the relative humidity is greater than 90 percent or when there is a threat of rain within 24 hours.

Surface Preparation

For recommendations to ensure proper cleaning and preparation of the substrate prior to coating, please refer to Table I.

Sealing Cracks

Static cracks less than 1/16" (1.6 mm) can be bridged with DOWSIL™ AllGuard Silicone Elastomeric Coating.

Static cracks greater than 1/16" (1.6 mm) must be repaired by methods suitable for the substrate before being coated with DOWSIL™ AllGuard Silicone Elastomeric Coating.

Moving cracks should be stabilized or properly repaired for the expected movement prior to installation of DOWSIL™ AllGuard Silicone Elastomeric Coating to prevent tearing of the coating due to excessive movement.

Table I: Surface Preparation[1]

Surface Conditions	Detection Method	Removal Method
Efflorescence[2]	Wipe with dark cloth	Wire brush; then clean with high-pressure water. On stubborn deposits, mix one part muratic acid (or similar) to 12 parts water; then clean with high-pressure water.
Dirt/Dust	Wipe with dark cloth	High-pressure water cleaning
Laitance	Scrape with putty knife looking for powdery material	Scrape with steel scraping tool followed by high-pressure water cleaning.
Mildew	Visual	Scrub with five percent bleach solution followed by high-pressure water cleaning.
Grease/Oil	Sprinkle water on surface	Trisodium phosphate (TSP) solution in hot water and high-pressure water cleaning
Form release, curing, or surface-hardening compounds	Visual; sprinkle water on the surface[3]	Must be removed by mechanical abrasion or abrasive water cleaning
Existing paints/coatings	Visual	High pressure water clean the building to remove any loose sections prior to coating the building.

1 These are general recommendations; please refer to substrate manufacturer for specific remediation recommendations.
2 Efflorescence may be caused by migration of water through a cementitious substrate reacting with components of the mix. Removing efflorescence may not prevent further formation of efflorescence at a later time without mitigating water migration within the substrate.
3 If water beads on the surface, the surface is contaminated. Apply a test treatment of detergent or caustic soda with a bristle brush to remove contamination. Retest. If water still beads, a penetrating water repellent may exist and will interfere with adhesion. Contact your Dow Technical Service Representative for further recommendations.

Table II: Estimated Application Rate[1] (10-mil [0.25 mm] minimum dry film thickness)

Surface Conditions	Estimated Rate	
	ft^2/gal	m^2/L
Smooth (brick, precast concrete)	70-80	1.7-2.0
Medium (sand, #3 vermiculite, stucco)	50-70	1.2-1.7
Coarse (aggregate, split face block, EIFS)	30-50	0.8-1.2

1 Application rates vary tremendously with porosity and degree of texture on the substrate. These values are estimated and should be confirmed at the job site prior to bidding the project.

Workmanship

- Protect adjacent surfaces and surroundings that are not to be coated.
- Apply a minimum of two coats to achieve a dry film thickness of ≥ 10 mils (0.25 mm).
- Follow design considerations.

Priming (if needed[1])

One coat of primer is required.

1. Apply at a rate of 300 ft²/gallon (7.4 m²/L) using a 1/2 to 3/4" (13- to 19-mm) synthetic nap roller, nylon bristle brush, or airless sprayer.
2. Apply primer to the point of rundown.
3. Dry 30 minutes to two hours. Actual drying time will depend on temperature, humidity, and wind conditions. Allow an additional 30 minutes to dry after dry to the touch.
4. Apply coating over primer at least 30 minutes after primer is dry to the touch, but within 24 hours. If the surface cannot be coated during this time, care should be taken to ensure the primed surface is free of dirt and debris before applying coating.

Coating

A minimum of two thick (10- to 12-mil) coats of DOWSIL™ AllGuard Silicone Elastomeric Coating are necessary to achieve the required 10-mil (0.25-mm) minimum dry film thickness to attain protection against through-water penetration and to qualify for a project- specific warranty.

Apply the coating in a minimum 10- to 12-mil (0.25-mm) wet thickness (see Table II for estimated application rates; a job-specific mockup is recommended to determine actual usage). Typically, two 10- to 12-mil (0.25-mm) wet coats will result in the required 10-mil (0.25-mm) dry coating thickness; however, an additional coat may be required due to surface texture or porosity. Apply using a 3/4 to 11/2" (19- to 38-mm) nap, polyester, or 50/50 polyester/wool blend roller cover, nylon bristle brush, or airless sprayer. When applying the coating with a roller, apply it in a fan pattern to achieve uniform thickness. Always finish roller applications in the same direction to reduce visual surface texture differences. When applying with an airless sprayer, follow the spray application with a back roll of material to ensure a uniform coating and appearance.

Allow the coating to dry (typically two to four hours) before applying the next coat.

Note: Do not thin or cut back DOWSIL™ AllGuard Silicone Elastomeric Coating.

Drying Time

After the final coat has been applied, the average drying time is 4 to 8 hours, depending upon temperature, humidity, and wind conditions. If the temperature drops below -6°C (20°F) after the coating is applied, the average drying time will increase. DOWSIL™ AllGuard Elastomeric Coating requires temperatures higher than -6°C (20°F) for a cumulative total of 24 hours to dry. DOWSIL™ AllGuard Silicone Elastomeric Coating will attain full adhesion and physical properties in seven to 14 days.

Low Temperature Application

If temperatures drop below -6°C (20°F), the coating will freeze on the surface until the temperature increases. This will not affect the cured properties of the coating, but will extend the drying time.

The coating should be dry to touch and not simply freeze between coats. Application equipment such as rollers and the tips of spraying equipment should be kept above 0°C (32°F) when not in use.

Disposal

See the Safety Data Sheet (SDS) for disposal information.

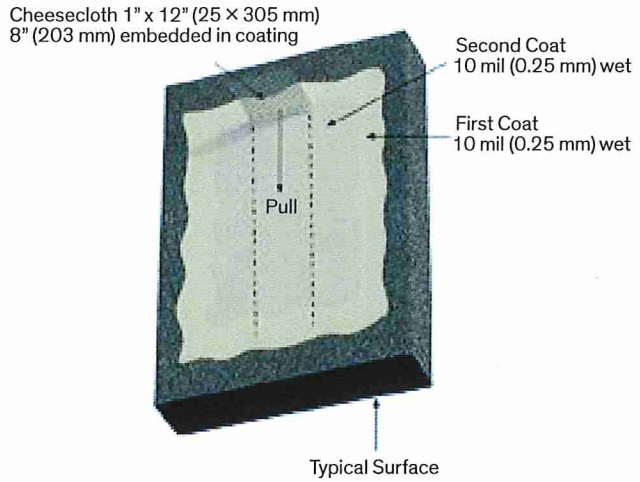
Adhesion Test Procedure

Field adhesion testing is recommended to ensure the coating is properly adhering to the substrates. Tests must be made on all sides and different substrates of the building being coated.

1. Prepare surfaces as described in Table I.
2. Use of a primer is optional, but testing is required to ensure sufficient adhesion in primerless applications. If primer is used, apply per the application method and allow to dry.
3. Apply the first coat of DOWSIL™ AllGuard Silicone Elastomeric Coating at a rate of 10- to 12-mil (0.25- to 0.31-mm) wet film thickness. Embed a cheesecloth strip (1" x 12" [25 x 305 mm]) in the wet coating with a paint brush.
4. Apply the second coat over the cheesecloth at the same 10- to 12-mil (0.25- to 0.31-mm) wet film thickness and allow to fully cure for 7 to 14 days. This is an adhesion test only; additional coats may be required to achieve thickness requirements.
5. Test adhesion of the coating by pulling the uncoated part of the cheesecloth at a 180° angle at a slow, steady rate.
6. Inspect and note the percent cohesive failure (percent of coating material left on the wall surface). At least 80 percent of the coating should remain on the substrate. If the 80 percent retention is not achieved, reclean and test another suitable section. If necessary, contact Dow Technical Service for further instruction. (Refer to Dow's web site, consumer.dow.com, for the location of the nearest Dow Technical Service facility.)
7. If adhesion cannot be achieved, the test should be repeated using DOWSIL™ AllGuard Primer.

[1] To determine if a primer is required, perform field adhesion tests as outlined on page 5 of this guide.

Figure 2: Test Procedure Diagram



Cleaning and Maintenance

1. Abrasive cleaners and cleaning equipment should never be used.
2. Routine cleaning is suggested, and dictated by the surrounding environment. Visible debris, such as airborne dirt or soot, should not be allowed to collect on the coating for a long period of time. This will increase cleaning effort and may be difficult to completely remove.
3. Recommended cleaning method involves the use of pressurized water and a basic cleaning agent such as trisodium phosphate (TSP) or Simple Green. Water pressure should not exceed 1,500 psi (10.3 MPa) to clean the surface without removing the coating material from the wall surface. A small test patch should be done first to determine how long the cleaning agent should be left on the surface before rinsing.
4. Stubborn marks may require the use of a soft bristle brush with the cleaning solution. Avoid stiff brushes that may abrade the coating.
5. Any touch-ups or repairs to the coating can be accomplished by applying DOWSIL™ AllGuard Silicone Elastomeric Coating to the clean, dry area according to the recommendations in this application guide.

Limited Warranty

Unless Dow issues a project-specific written warranty, Dow warrants only that the goods meet Dow sales specifications at the time of shipment. DOW EXPRESSLY DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. The buyer's exclusive remedy and Dow's sole responsibility for any claim arising out of the purchase or use of these goods is expressly limited to either replacement of the nonconforming goods or refund of the purchase price within 90 days of the date of purchase.

Dow offers a project-specific 10-Year Limited Performance Warranty when the DOWSIL™ AllGuard Silicone Elastomeric Coating is applied in accordance with Dow's published application guidelines. Contact your Dow Sales Representative for details or to apply for a project-specific warranty. Under this Limited Warranty, for a period of ten years from the date of purchase, Dow will be responsible for the cost of replacement coating for any areas in which the DOWSIL™ AllGuard Silicone Elastomeric Coating fails to protect the above-grade substrate from through-water penetration and for the cost of labor to apply such replacement coating, up to a maximum of five times the cost of the replacement coating. Dow's warranty is subject to certain restrictions and does not cover faults attributable to workmanship or the appearance of the coating.

NOTE: No warranty is available when DOWSIL™ AllGuard Silicone Elastomeric Coating is used on a single-family residential dwelling.

Learn more

For more information about how Dow silicone solutions can help meet your high performance building needs, visit **consumer.dow.com/construction** or contact us at **consumer.dow.com/ContactUs**.

Images: Cover – dow_40355846371; Page 2 – dow_40766400183

HANDLING PRECAUTIONS

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT WWW.CONSUMER.DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that our products are safe, effective and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

Dow's sole warranty is that our products will meet the sales specifications in effect at the time of shipment.

Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, DOW SPECIFICALLY DISCLAIMS ANY OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY.

DOW DISCLAIMS LIABILITY FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.

30023848 Form No. 62-617-01 F

Devguard® 4360

Alkyd

PRODUCT DESCRIPTION

A high solids, rust-inhibitive, interior or exterior phenolic modified alkyd primer for use on ferrous and nonferrous metal.

INTENDED USES

Ideal for structural steel, tanks, piping and equipment. May be applied to ferrous metal with epoxy and urethane coatings as well as conventional alkyd and latex products. Excellent for use as a barrier coat when applied over sound aged oil or alkyd finishes which are then to be topcoated with heavy-duty coatings. This product has exceptional resistance to exterior weathering, making it suitable for use as a shop primer.

Performance alternate for Federal Specifications TT-P-664D

PRACTICAL INFORMATION FOR DEVGUARD 4360

Color	White, Red
Gloss Level	Matte
Volume Solids	60%
Typical Thickness	2-2.5 mils (50-63 microns) dry equivalent to 3.3-4.2 mils (83-105 microns) wet
Theoretical Coverage	422 sq.ft/US gallon at 2.3 mils d.f.t and stated volume solids 10.50 m²/liter at 57 microns d.f.t and stated volume solids
Practical Coverage	Allow appropriate loss factors
Method of Application	Airless Spray, Air Spray

Drying Time

			Overcoating Interval with recommended topcoats	
Temperature	**Touch Dry**	**Hard Dry**	*Minimum*	*Maximum*
77°F (25°C)	15 minutes	60 minutes	30 minutes	Extended[1]

[1] See International Protective Coatings Definitions & Abbreviations

REGULATORY DATA

Flash Point	81°F (27°C)
Product Weight	13.9 lb/gal (1.67 kg/l)
VOC	2.82 lb/gal (338 g/lt) EPA Method 24

See Product Characteristics section.

SURFACE PREPARATION

All surfaces must be sound, dry, clean, and free of oil, grease, dirt, loose and flaking paint and other foreign substances.

New Surfaces:

Steel
Best results are obtained over a surface abrasive blasted to commercial blast cleanliness (SSPC-SP6) or ISO 8501-1:2007 Sa2. Performance over hand or power tool cleaned surfaces is dependent on the degree of cleaning.

Galvanized Metal and Aluminum:
Degrease to SSPC-SP1 and remove any white zinc corrosion products by hand abrasion cleaning.

Previously Painted Surfaces:
Wash to remove contaminants. Rinse thoroughly with water and allow to dry. Dull glossy areas by light sanding. Remove sanding dust. Remove loose paint. Scrub heavy chalk areas and overhead areas such as eaves with soap and water. Remove all mildew by washing with a solution of 16 oz. (473 ml) liquid household bleach and two oz. (59 ml) non-ammoniated liquid detergent per gallon (3.785 L) of water. Rinse surfaces clean with water and allow to dry for 24 hours. All areas failed by rusting, peeling, blistering, etc., shall be wire brushed and scraped to remove all loose or loosely adhering material. Prime bare areas with primer specified under New Surfaces. For optimum performance in more corrosive areas, entire surface should be abrasive blast cleaned and primed with this product.

APPLICATION

Mixing	This material is a one component coating and should always be mixed thoroughly with a power agitator before application.	
Airless Spray	Suitable	Use a 17 thou (0.43mm) tip size and adjust pressure as needed.
Brush	Recommended	
Roller	Recommended	
Thinner	Do not thin	
Cleaner	T-5 Thinner	
Work Stoppages	Do not allow material to remain in hoses, gun or spray equipment. Thoroughly flush all equipment with T-5 Thinner. Partially filled containers may show surface skinning and/or a viscosity increase of the material after storage.	
Clean Up	Clean all equipment immediately after use with T-5 Thinner. It is good working practice to periodically flush out spray equipment during the course of the working day. Frequency of cleaning will depend upon amount sprayed, temperature and elapsed time, including any delays. All surplus material and empty containers should be disposed of in accordance with appropriate regional regulations/legislation.	

PRODUCT CHARACTERISTICS

Advantages:

- May be used on both ferrous and galvanized metal
- Excellent corrosion resistance
- Fast drying
- May be topcoated with heavy-duty coatings
- Lead and chromate free
- High volume solids

Over-application will result in solvent retention and prolonged periods will be required before the film achieves maximum hardness.

Over-application of Devguard 4360 will extend both the minimum overcoating periods and handling times.

Do not apply if temperature is less than 45ºF (7°C), relative humidity exceeds 85% or temperature is within 5ºF (3°C) of dew point.

When applying Devguard 4360 by brush or roller, it may be necessary to apply multiple coats to achieve the required film build and uniform opacity.

Note: VOC values are typical and are provided for guidance purpose only. These may be subject to variation depending on factors such as differences in color and normal manufacturing tolerances.

SYSTEMS COMPATIBILITY

The following topcoats are approved for use with Devguard 4360:

Bar-Rust 231	Devflex 4206QD
Devflex 4208QD	Devflex 4212HP
Devflex 4216HP	Devflex 659
Devguard 4303	Devguard 4306
Devguard 4308	Devguard 4309
Devguard 4348	Devran 224HS
Devthane 359	Devthane 359H
Devthane 378	Devthane 379
Devthane 389	Tru-Glaze 4508H
Tru-Glaze-WB 4406	Tru-Glaze-WB 4408
Tru-Glaze-WB 4426	Tru-Glaze-WB 4428

ADDITIONAL INFORMATION

Further information regarding industry standards, terms and abbreviations used in this data sheet can be found in the following documents available at www.international-pc.com:

- Definitions & Abbreviations
- Surface Preparation
- Paint Application
- Theoretical & Practical Coverage

Individual copies of these information sections are available upon request.

SAFETY PRECAUTIONS

This product is intended for use only by professional applicators in industrial situations in accordance with the advice given on this sheet, the Material Safety Data Sheet and the container(s), and should not be used without reference to the Material Safety Data Sheet (MSDS) which International Protective Coatings has provided to its customers.

All work involving the application and use of this product should be performed in compliance with all relevant national, Health, Safety & Environmental standards and regulations.

In the event welding or flame cutting is performed on metal coated with this product, dust and fumes will be emitted which will require the use of appropriate personal protective equipment and adequate local exhaust ventilation.

If in doubt regarding the suitability of use of this product, consult International Protective Coatings for further advice.

PACK SIZE	Unit Size	Vol	Pack
	1 US gal	1 US gal	1 US gal
	5 US gal	5 US gal	5 US gal
	For availability of other pack sizes contact International Protective Coatings		
SHIPPING WEIGHT	Unit Size		
	1 US gal	14 lb	
	5 US gal	70.1 lb	
STORAGE	Shelf Life	12 months minimum at 77°F (25°C). Subject to re-inspection thereafter. Store in dry, shaded conditions away from sources of heat and ignition.	

Disclaimer

International. *Copyright © AkzoNobel, 11/22/2010.*

DULUX DIAMOND EXTERIOR 100% ACRYLIC PAINT 1650

Water based product, semi-gloss finish

Technical Data Sheet

Technical Specifications (21°C (70°F))

Solids by Volume – 39% (+/- 1%)
Solids by Weight – 48% (+/- 1%)

Volatile Organic Compounds (VOCs)*

According to ASTM D3960-05: < 150 g/L
Canadian regulation: < 150 g/L

Colour

White, medium and ultra deep bases

Gloss Level **Semi-gloss finish**

- Gloss @ 60°: 40 - 60%
- Sheen @ 85°: 70 – 90%* *Typical sheen @ 85°

Practical Coverage

380 - 420 sq. ft. per 3.78 litres
9 - 10 sq. metres per litre
(Actual coverage will vary depending on substrate and application method.)

Resin Type

- 100% Acrylic

Viscosity* Ready to use (94 - 104 Krebs Units)

Flammability Non Flammable

Flash Point* N/A

Recommended Film Thickness*

- Wet: 4 mils
- Dry: 1.6 mils

Drying Time* @ 77°F/25°C - 50% Relative Humidity

**Drying & recoat times are dependent on temperature, humidity, ventilation and film thickness*

Touch dry:	1 hour
To recoat:	4 - 6 hours
Before cleaning:	7 – 10 days

*Technical Data Source: 1650

Product Description

Dulux Diamond Exterior Semi-gloss 1650 is formulated to provide a beautiful and durable finish that withstands the ever-changing Canadian weather.

Dulux Diamond Exterior Semi-gloss 1650:

- Extends the painting season with application temperatures as low as 2°C /30°F
- Self priming on recommended surfaces
- Ceramic Microspheres and 100% Acrylic resin result in an exceptionally durable surface
- Semi-Elastomeric Acrylic Latex grips the most challenging of surfaces and resists cracking and peeling
- Repellent polymer technology stops dirt and water penetration while still allowing the coating to breath
- "Easy flow" modifiers result in excellent flow and leveling, with no brush or drag marks
- Contains an effective fungicide to protect the paint film from growth of mildew on the surface

Intended Uses

- New and maintenance work
- Residential and Commercial sites
- Exterior doors, trim and walls
- New and previously painted wood, concrete, masonry, brick, stucco, pre-finished aluminum, vinyl siding, and metal

Edition of January 2012

Available at Dulux Paints Stores across Canada and Betonel-Dulux Stores in Québec

SURFACE PREPARATION
All surfaces must be clean, dry and free of dirt, chalk, grease, wax, rust and loose or peeling paint before painting. Remove all surface contaminants by washing with an appropriate cleaner. Rinse thoroughly with water and allow dry time.

- Scrub heavy chalk areas and overhead areas such as eaves with soap and water.
- Mildew must be removed by washing affected area with a solution of 30% household bleach and 70% water. Rinse well.
- Remove all loose and peeling paint and sand to smooth edges.
- Repair holes and cracks with filler suitable for the surface to be repaired.
- If wood exudes resin, scrape the excess and clean surface with alcohol or paint thinner.
- Sand all surfaces smooth, lightly sand glossy areas and sand weathered wood to a new wood appearance. Vacuum sanding residue. *Precaution:* Dry sanding, flame cutting and/or welding of dry paint film will give rise to dust and/or hazardous fumes. Wet sanding should be used wherever possible. If exposure cannot be avoided by the provision of local exhaust ventilation, suitable respiratory protective equipment should be used.
  New Concrete, Masonry or Plaster: must age at least 30 days and be thoroughly dry before painting.
  Bare Wood: sand smooth.

Application
Ready-to-use product, do not thin.
Mix thoroughly before use.
Apply using brushes, rollers or spray equipment.
Application Conditions
Apply with good ventilation. Ensure air, material and surface temperatures are above 30°F (2°C). Do not apply if rain, snow or heavy dew is expected within 48 hours. Avoid painting in direct sunlight.

Tools

- Brush – synthetic bristles (nylon, polyester)
- Lint free roller – 15 - 30 mm
- Spray (Airless equipment) – tip size:0.013 to 0.019 in - Pressure: 2300 – 2700 psi
  *Spray recommendations may vary from figures listed depending on equipment manufacturer

Clean-up Clean hands and tools immediately with warm, soapy water. Clean spills right away with a damp cloth.

SYSTEM RECOMMENDATIONS

Two topcoats are recommended on all surfaces for better durability and appearance.

Previously painted surfaces:
Surfaces in good condition
• No primer required
• Dulux Diamond 1650
Repaired surfaces
• Dulux WeatherGuard Acrylic Primer 1535 OR Dulux Diamond 1650 may be used self-priming, as a primer coat under itself - one coat (bare areas or total surface)
• Dulux Diamond 1650
Weathered Aluminum and Vinyl Siding
• Dulux WeatherGuard Acrylic Primer 1535 OR Dulux Diamond 1650 may be used self-priming, as a primer coat under itself - one coat (bare areas or total surface)
• Dulux Diamond 1650
Do not repaint vinyl siding with colours darker than the original colour, the siding may warp
Aged alkyd surfaces
• Dulux Gripper– one coat over total surface
• Dulux Diamond 1650
Wood, concrete, stucco or masonry:
• Dulux WeatherGuard Acrylic Primer 1535 OR Dulux Diamond 1650 may be used self-priming, as a primer coat under itself – one coat over total surface
• Dulux Diamond 1650
Slight discoloration on redwood or cedar is normal. If the staining is considerable prime with Dulux Gripper – 1 coat
Ferrous Metal:
• Dulux Metalclad Red Oxide Anti-corrosion Coating – one coat over total surface
• Dulux Diamond 1650
Non Ferrous and Galvanized Metal:
• Dulux WeatherGuard Acrylic Primer 1535– one coat over total surface
• Dulux Diamond 1650

Storage and Transportation
Keep product cool and dry.
DO NOT FREEZE

Disposal
Consult your municipality about proper disposal procedures in accordance with the laws and respect the environment or give leftover paint to someone who could use it: a neighbor or friend, a recreational service or a non-profit organization. Do not pour leftover product down the drain.

Safety Measures
Read the Material Safety Data Sheet. Avoid contact with eyes. Keep out of reach of children. Use only in well ventilated areas.
FIRST AID TREATMENT: If in contact with eyes, rinse thoroughly with clear water. If swallowed, do not induce vomiting. Call poison centre or physician immediately.

For product information call: 1-(800)-387-3663
www.dulux.ca

This technical data sheet, No. 1650, replaces all earlier versions. Edition of January 2012

DULUX METALCLAD ANTI-RUST PAINT 218400 SERIES

Solvent-based product, gloss finish

Technical Data Sheet

Technical Specifications (21°C (70°F))

Solids by Volume – 49% (+/- 1%)
Solids by Weight – 65% (+/- 1%)

Volatile Organic Compounds (VOCs)*

According to ASTM D3960-05: < 400 g/L
Canadian regulation: < 400 g/L

Colour

White, medium and ultra deep bases

Pre-mixed colours: Oxford Brown 218404, Marine Blue 218412, Safety Yellow 218413, Forest Green 218414, Safety Red 218419, Safety Orange 218427, Black 218420, Flat Black 218421

Gloss Level	**Gloss Finish**
• Gloss @ 60° - 85 - 100%	

Practical Coverage

430 - 520 sq. ft. per 3.78 litres
11 - 13 sq. metres per litre
(Actual coverage will vary depending on substrate and application method.)

Resin Type

• Alkyd

Viscosity*	Ready to use (78 - 88 Krebs Units)
Flammability	Combustible Liquid
Flash Point*	42°C (108°F)

Recommended Film Thickness*

• Wet: 3.2 mils
• Dry: 1.6 mils

Drying Time* @ 77°F/25°C - 50% Relative Humidity

**Drying & recoat times are dependent on temperature, humidity, ventilation and film thickness*

Touch dry:	6 hours
To recoat:	16 hours
Before cleaning:	30 days

*Technical Data Source: 218400

Product Description

Dulux Metalclad 218400 is a premium quality, interior/exterior, urethane fortified paint formulated to form a protective coating on metal that will retard and resist rust.

Dulux Metalclad 218400:

- Excellent durability
- Superior leveling properties
- Self priming on ferrous metal
- Dries quickly to a uniform gloss finish
- Lead and mercury free
- Excellent protection against corrosion
- Excellent moisture resistance

Intended Uses

- Interior/exterior new and maintenance work
- Residential and Commercial sites
- Metal surfaces only
- New or rusted ferrous metal: furniture, doors, windows, fences, roofs, stairs, machinery, ornamental iron, pipes fire-hydrants etc.
- Pre-mixed colours can be used on marine equipment (above the waterline)

July 2014

Available at Dulux Paints Stores across Canada and Betonel-Dulux Stores in Québec

SURFACE PREPARATION

All surfaces must be clean, dry and free of dirt, chalk, grease, wax, rust and loose or peeling paint before painting.

- Mildew must be removed by washing affected area with a solution of 30% household bleach and 70% water. Rinse well.
- Remove all loose and peeling paint and sand to smooth edges.
- Remove all rust, oil and grease. Wash well with mineral spirits and dry with clean rags
- Sand all surfaces smooth and lightly sand glossy areas. Vacuum sanding residue. *Precaution:* Dry sanding, flame cutting and/or welding of dry paint film will give rise to dust and/or hazardous fumes. Wet sanding should be used wherever possible. If exposure cannot be avoided by the provision of local exhaust ventilation, suitable respiratory protective equipment should be used.

Application

Ready-to-use product, do not thin.
Mix thoroughly before use.
Keep containers closed when not in use.
Apply using brushes, rollers or spray equipment.

Application Conditions

Apply with good ventilation. Ensure air, material and surface temperatures are above 50°F (10°C) within 3 to 6 hours of painting. Ideal relative humidity 15 – 50%, maximum 85%
Do not apply if rain, snow or heavy dew is expected within 16 hours. Avoid painting in direct sunlight.

Tools

- Brush – natural bristle
- Roller – 10–15 mil
- Spray (Airless equipment) – tip size:0.013 to 0.019 in - Pressure: 2300 – 2700 psi

**Spray recommendations may vary from figures listed depending on equipment manufacturer*

SYSTEM RECOMMENDATIONS

Two topcoats are recommended on all surfaces for better durability and appearance.

Ferrous Metal:
• Dulux Metalclad 218400 series or one coat of Dulux Metalclad Red Oxide Rust Preventive Coating 218490
• Dulux Metalclad 218400 series

Non Ferrous Metal:
Interior (dry environments)
• Dulux Metalclad 218400 series or one coat of Dulux Metalclad Red Oxide Rust Preventive Coating 218490
• Dulux Metalclad 218400 series

Exterior
•1st coat Devguard 4360 – one coat
• Dulux Metalclad 218400 series

***Devguard 4360* is intended for use only by professional applicators in accordance with the advice given on this sheet, the MSDS and the container(s), and should not be used without reference to the MSDS.**

Clean-up

Clean hands and tools immediately with mineral spirits.

Storage and Transportation

Keep product in a dry and ventilated area, between 10 - 30°C (50 – 86°F).
DO NOT FREEZE

Disposal

Consult your municipality about proper disposal procedures in accordance with the laws and respect the environment or give leftover paint to someone who could use it: a neighbor or friend, a recreational service or a non-profit organization. Do not pour leftover product down the drain.

Safety Measures

Read the Material Safety Data Sheet. Avoid contact with eyes. Keep out of reach of children. Use only in well ventilated areas. Do not intentionally breathe vapour. Keep away from flames or sparks.
FIRST AID TREATMENT: If in contact with eyes, rinse thoroughly with clear water. If swallowed, do not induce vomiting. Call poison centre or physician immediately.

For product information call: 1-(800)-387-3663
www.dulux.ca

April 17, 2018 (Revision of October 18, 2016)

METALHIDE® ONE PAC | 97-676

DESCRIPTION

One-component, inorganic zinc silicate primer

PRINCIPAL CHARACTERISTICS

- Provides outstanding corrosion resistance
- Can be used where most 2-pack inorganic zincs are used
- Single component that can be partly used then resealed for future use
- Excellent for use in coastal, marine, or off-shore environments
- Resistant to dry temperature up to 750°F(399°C)

COLOR AND GLOSS LEVEL

- Gray, green
- Flat

BASIC DATA AT 68°F (20°C)

Data for product	
Number of components	One
Volume solids	52 ± 3%
VOC (Supplied)	EPA Method 24: 3.8 lb/US gal (458.9 g/l)
Recommended dry film thickness	3.0 - 4.0 mils (75 - 100 µm) depending on system
Theoretical spreading rate	278 ft^2/US gal for 3.0 mils (6.9 m^2/l for 75 µm)
Shelf life	At least 15 months when stored cool and dry

Notes:

- See ADDITIONAL DATA – Overcoating Intervals
- See ADDITIONAL DATA – Curing time

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

- Coating performance is, in general, proportional to the degree of surface preparation

Steel

- Abrasive blast with an angular abrasive to an SSPC SP-6 cleanliness or higher for optimum performance. Achieve a surface profile of 1.0 – 3.0 mils (25 – 75 µm)
- Higher surface profiles up to 5 mils (125 µm) are acceptable, but the product must be applied in a thickness great enough to achieve a minimum of 2.5 mils (65 µm) dry film thickness
- Apply this product as soon as possible to prevent blasted surface from rusting.
- Keep moisture, oil, grease, or other organic matter off surface before coating
- For touch up and repair, power tool cleaning in accordance with SSPC SP-11 is acceptable

METALHIDE® ONE PAC | 97-676

Substrate temperature and application conditions

- Surface temperature during application should be between 20°F (-7°C) and 140°F (60°C)
- Surface temperature during application should be at least 5°F (3°C) above dew point
- Ambient temperature during application and curing should be between 20°F (-7°C) and 120°F (49°C)
- Relative humidity during application should be between 30% and 85%

Note: Work area can be artificially humidified by atomized water spray and/or ponding water under the coated structures. After the film is dry-to-touch, a fine mist may be applied over the coating to expedite curing in low humidity environments

Warning

Removal of old paint by sanding, scraping or other means may generate dust or fumes which contain lead. EXPOSURE TO LEAD DUST OR FUMES MAY CAUSE ADVERSE HEALTH EFFECTS, ESPECIALLY IN CHILDREN OR PREGNANT WOMEN. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as a properly fitted and approved (e.g., NIOSHapproved) respirator and proper containment and cleanup. For additional information, contact the USEPA/Lead Information Hotline at 1-800-424-LEAD or the regional Health Canada office

SYSTEM SPECIFICATION

- Primers: Direct to metal
- Topcoats: PITTGUARD epoxies, AMERCOAT epoxies, AMERLOCK Series, SIGMACOVER epoxies

INSTRUCTIONS FOR USE

- Mix with a pneumatic air mixing at moderate speeds to homogenize the container
- Move the impeller up and down to ensure good off-bottom mixing and draw-down from the top surface

Pot life

24 hours at 70°F (21°C)

Note: See ADDITIONAL DATA – Pot life

METALHIDE® ONE PAC | 97-676

Application

- Area should be sheltered from airborne particulates and pollutants
- Ensure good ventilation during application and curing
- Provide shelter to prevent wind from affecting spray patterns
- Mist spray: A mist coat / full coat application technique is required when topcoating to prevent application bubbling. Ensure dry spray is removed from the surface
- Repair: When dry though, measure the dry film thickness. If film thickness is lower than specified, additional material can be applied up 24 hours from the previous application. Thin the second coat with 97-733 thinner. Ensure any dry spray is removed
- Repair: For aged inorganic zinc coatings, spot blast rusted areas in accordance with the surface preparation instructions before touching up. When blasting is not practical, AQUAPON 97-670, AMERCOAT 68 HS or DIMETCOTE 302 H may be used for repair

Material temperature

Material temperature during application should be between 40°F (4°C) and 90°F (32°C)

Air spray

- Separate air and fluid pressure regulators and a moisture and oil trap in the main air supply line are recommended.
- An agitated pressure pot is recommended
- Limit fluid hose length to 50 feet
- Use standard conventional equipment

Recommended thinner

THINNER 40-26 (97-731), THINNER 60-30 (97-733)

Volume of thinner

0 - 8%

Nozzle orifice

Approx. 0.070 in (1.8 mm)

Airless spray

- 30:1 pump or larger
- A reversible fluid tip recommended

Recommended thinner

THINNER 40-26 (97-731), THINNER 60-30 (97-733)

Volume of thinner

0 - 5%

Nozzle orifice

0.019 – 0.023 in (approx. 0.48 – 0.58 mm)

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Brush/roller

- Use a high quality natural bristle brush. Ensure brush is well loaded to avoid air entrainment. Brush application is limited to small touch up areas of a few square inches
- Roller application is not recommended

Recommended thinner

THINNER 40-26 (97-731), THINNER 60-30 (97-733)

Volume of thinner

0 – 5%

Cleaning solvent

THINNER 21-06 (97-727)

ADDITIONAL DATA

Overcoating interval for DFT up to 3.0 mils (75 µm)					
Overcoating with...	**Interval**	**40°F (4°C)**	**50°F (10°C)**	**70°F (21°C)**	**90°F (32°C)**
Itself and recommended topcoats	Minimum	48 hours	36 hours	20 hours	16 hours
	Maximum	Unlimited	Unlimited	Unlimited	Unlimited

Notes:

- Overcoating times valid for a relative humidity of 50%
- To confirm cure to topcoat, conduct a MEK rub test per ASTM D4752. A rating of 4 or higher is sufficient for topcoating
- Surface must be power washed as needed to remove all surface contaminants including zinc salts. Surface must be clean and dry

Curing time for DFT up to 3.0 mils (75 µm)		
Substrate temperature	**Dry to touch**	**Dry to handle**
40°F (4°C)	3 hours	12 hours
50°F (10°C)	2 hours	8 hours
70°F (21°C)	1 hour	4 hours
90°F (32°C)	40 minutes	2.5 hours

Note: Curing times valid for a relative humidity of 50%

Pot life (at application viscosity)	
Mixed product temperature	**Pot life**
70°F (21°C)	24 hours
90°F (32°C)	8 hours

METALHIDE® ONE PAC | 97-676

Product Qualifications

- SSPC Paint 20, Type IC, Level 1
- MPI Category #19, Inorganic zinc rich primer

DISCLAIMER

- For industrial or professional use only

SAFETY PRECAUTIONS

- For paint and recommended thinners see INFORMATION SHEETS 1430, 1431 and relevant Material Safety Data Sheets
- This is a solvent-borne paint and care should be taken to avoid inhalation of spray mist or vapor, as well as contact between the wet paint and exposed skin or eyes

Danger

Rags, steel wool or waste soaked with this product may spontaneously catch fire if improperly discarded. Immediately after use, place rags, steel wool or waste in a sealed water-filled metal container. Refer to www.pittsburghpaints.com, Spontaneous Combustion Advisory for additional information

WORLDWIDE AVAILABILITY

It is always the aim of PPG Protective and Marine Coatings to supply the same product on a worldwide basis. However, slight modification of the product is sometimes necessary to comply with local or national rules/circumstances. Under these circumstances an alternative product data sheet is used.

REFERENCES

• CONVERSION TABLES	INFORMATION SHEET	1410
• EXPLANATION TO PRODUCT DATA SHEETS	INFORMATION SHEET	1411
• SAFETY INDICATIONS	INFORMATION SHEET	1430
• SAFETY IN CONFINED SPACES AND HEALTH SAFETY, EXPLOSION HAZARD – TOXIC HAZARD	INFORMATION SHEET	1431

WARRANTY

PPG warrants (i) its title to the product, (ii) that the quality of the product conforms to PPG's specifications for such product in effect at the time of manufacture and (iii) that the product shall be delivered free of the rightful claim of any third person for infringement of any U.S. patent covering the product. THESE ARE THE ONLY WARRANTIES THAT PPG MAKES AND ALL OTHER EXPRESS OR IMPLIED WARRANTIES, UNDER STATUTE OR ARISING OTHERWISE IN LAW, FROM A COURSE OF DEALING OR USAGE OF TRADE, INCLUDING WITHOUT LIMITATION, ANY OTHER WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR USE, ARE DISCLAIMED BY PPG. Any claim under this warranty must be made by Buyer to PPG in writing within five (5) days of Buyer's discovery of the claimed defect, but in no event later than the expiration of the applicable shelf life of the product, or one year from the date of the delivery of the product to the Buyer, whichever is earlier. Buyer's failure to notify PPG of such non-conformance as required herein shall bar Buyer from recovery under this warranty.

METALHIDE® ONE PAC | 97-676

LIMITATIONS OF LIABILITY

AVAILABILITY

Packaging

1-gallon and 5-gallon kits

Product codes	Description
97-676	Gray
97-677	Green

TREMCO®
Commercial Sealants & Waterproofing

Dymonic® 100

High-Performance, High-Movement, Single-Component, Polyurethane Sealant

Product Description

Dymonic® 100 is a high-performance, high-movement, single-component, medium-modulus, low-VOC, UV-stable, non-sag polyurethane sealant.

Basic Uses

Dymonic 100 is a durable, flexible sealant that offers excellent performance in moving joints and exhibits tenacious adhesion once fully cured. Typical applications for Dymonic 100 include expansion and control joints, precast concrete panel joints, perimeter caulking (windows, doors, and panels), aluminum, masonry and vinyl siding. Dymonic 100 is also an excellent choice as a fluid applied flashing material in rough opening perimeters for fenestration/window, door and curtain wall applications.

Features and Benefits

- Can adhere to damp or green concrete and has a skin time of 2 hr with a tack-free time of 6 to 8 hr to significantly reduce dirt attraction.
- Movement capability of +100/-50% in typical field conditions, is low VOC, paintable, jet fuel-resistant, and will not crack, craze or yellow under extreme UV exposure.
- Suitable for water immersion and will not out gas.
- Formulated with an innovative polymer technology, similar to TREMproof® 250GC and Vulkem® 45SSL, Dymonic 100 is highly versatile and has a unique capability to adhere to damp or green concrete and will not out gas.
- Compatible and can be coated over with Tremco's Vulkem Deck Coatings, ExoAir® Air Barrier products and the cold, fluid-applied TREMproof® line of below-grade waterproofing products.

Availability

Dymonic 100 is immediately available from your local Tremco Sales Representative, distributor, or warehouse.

Coverage Rates

308' of joint per gallon for a 1/4" x 1/4" (6 mm x 6 mm) joint. For specific coverage rates that include joint size, and usage efficiencies, visit our website usage calculator at www.tremcosealants.com

Packaging

- 10.1-oz (300-mL) cartridges
- 20-oz (600-mL) sausages

Colors

Almond, Aluminum Stone, Anodized Aluminum, Beige, Black, Bronze, Buff, Dark Bronze, Gray, Gray Stone, Hartford Green, Ivory, Light Bronze, Limestone, Natural Clay, Off White, Precast White, Redwood Tan, Sandalwood, Stone, and White.

Shelf Life

1 year when stored at 40 to 110 °F (5 to 43 °C)

Storage

Store Dymonic 100 in original, undamaged packaging in a clean, dry, protected location with temperatures between 40 to 110 °F (5 to 43 °C).

Applicable Standards

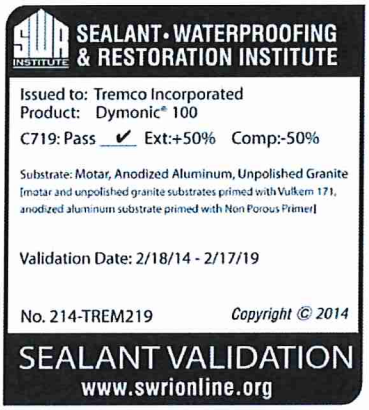
- Dymonic 100 meets or exceeds the requirements of the following specifications:
- ASTM C920 Type S, Grade NS, Class 50, Use NT, T, M, A, O, I
- U.S. Federal Specification TT-S-00230C, Class A, Type II
- CAN/CGSB-19,13-M87
- International Code Council (ICC) Section R703.8 Flashing
- AAMA 714-15 Specification for Liquid-Applied Flashing
- NFPA 285 Listed Component

Fire Rated Systems

FF-D-1186, FW-D-1117, HW-D-1122, WW-D-1200, and BW-S-0006

Limitations

- Use with adequate ventilation.



- Always utilize the accompanying MSDS for information on Personal Protective Equipment (PPE) and Health Hazards.
- Not recommended for use in chlorinated, potable, heavy or waste water.
- Although Dymonic 100 is paintable, this does not imply adhesion to and compatibility with all paints. Consult Tremco Technical Bulletin No. S-09-05 for more information.

Substrate Preparation

Surfaces must be sound and clean. All release agents, existing waterproofing, dust, loose mortar, paints, other finishes or field applied coating must be removed. This can be accomplished with a thorough wire brushing, grinding, sandblasting, or solvent washing, depending on the contamination.

Tremco recommends that surface temperatures be 40 °F (5 °C) or above at the time the sealant is applied. If sealant must be applied in temperatures below 40 °F, please refer to the Tremco Technical Bulletin for Applying Sealants in Cold Conditions (No. S-08-44 rev 1) that can be found on our website at www.tremcosealants.com

Priming

Dymonic 100 typically adheres to common construction substrates without primers; anodized aluminum may require the use of primer. However, Tremco always recommends that a mock-up or field adhesion test be performed on the actual materials being used on the job to verify the need for a primer, proper cleaning and prep requirements. A description of the field adhesion test can be found in appendix X1 of ASTM C1193, Standard Guide for Use of Joint Sealants.

Where deemed necessary, use Vulkem® Primer #191 Low-VOC on porous substrates and TREMprime® Non-Porous Primer for metals or plastics.

Application

Dymonic 100 is easy to apply with conventional caulking equipment. Ensure that the backer rod is fitted properly for friction and that any necessary primers have been applied.

Fill the joint completely with a proper width-to-depth ratio, and then tool to ensure intimate contact of sealant with joint substrates.

Dry tooling is always preferred, although compatible wetting agents can be used in limited amounts to slick the spatula if needed after an initial pass.

For a cleaner finish, mask the sides of the joint with tape prior to filling.

Joint Design

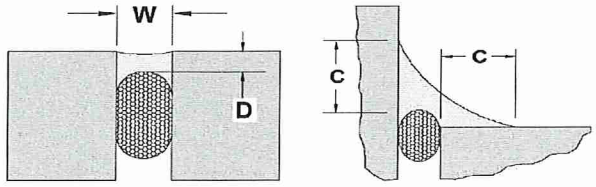
Dymonic 100 may be used in vertical or horizontal joints designed in accordance with accepted architectural/engineering practices. Joint width should be 4 times anticipated movement but not less than 1/4" (6 mm).

Joint Backing

Polyethylene backer rod is recommended as joint backing to control sealant depth and ensure intimate contact of sealant with joint substrate when tooling. Where depth of joint will prevent the use of backer rod, an adhesive backed polyethylene tape (bond breaker tape) should be used to prevent three-sided adhesion. All backing should be dry at the time of sealant application.

Sealant Dimensions

W = Sealant width, D = Sealant depth, C = Contact area.



Expansion Joints- The minimum width and depth of any sealant application should be 1/4" x 1/4" (6 mm x 6 mm). The depth (D) of sealant may be equal to width (W) of joints less than 1/2" wide. For joints from 1/2" to 1" (13 mm to 25 mm) wide, the sealant depth should be approximately one-half of the joint width. The maximum depth (D) of any sealant application should be 1/2" (13 mm). For Joints that are wider than 1" (25 mm) contact Tremco Technical Services or your local Tremco Sales Representative.

Window Perimeter- For fillet beads, or angle beads around windows and doors, the sealant should exhibit a minimum surface contact area [C] of 1/4" (6 mm) onto each substrate, with provisions for release at the heel of the angle using backer rod or bond breaker tape.

Cure Time

Dymonic 100 generally cures at a rate of 3/32" per day at 75 °F (24 °C) and 50% RH. It will skin in 2 hr and be tack free in 6 to 8 hr. The cure time will increase as temperatures and/or humidity decrease. A typical rule of thumb is one additional day for every 10 °F decrease in temperature.

Clean Up

Excess sealant and smears adjacent to the joint interface can be carefully removed with xylene or mineral spirits before the sealant cures. Any utensils used for tooling can also be cleaned with xylene or mineral spirits.

Warranty

Tremco warrants its Products to be free of defects in materials, but makes no warranty as to appearance or color. Since methods of application and on-site conditions are beyond our control and can affect performance, Tremco makes no other warranty, expressed or implied including warranties of MERCHANTABILITY and FITNESS FOR A PARTICULAR PURPOSE with respect to Tremco Products. Tremco's sole obligation shall be, at its option, to replace or refund the purchase price of the quantity of Tremco Products proven to be defective, and Tremco shall not be liable for any loss or damage.

Please refer to our website at www.tremcosealants.com for the most up-to-date Product Data Sheets.

NOTE: All Tremco Safety Data Sheets (SDS) are in alignment with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) requirements.

TYPICAL PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	TYPICAL VALUES
Type		Single component polyurethane sealant
Color		21 Standard Colors
Solids		98%
Specific Gravity		1.3302
Application		gun-grade sealant, applied with typical caulking equipment
Rheological Properties	ASTM C639	non-sag (NS), 0" of sag in channel
Hardness Properties	ASTM C661	40 +/-5
Weight Loss	ASTM C1246	Pass
Skin Time	ASTM C679	2 to 3 hr
Tack Free Time	73.4°F (23°C) 50% RH	6 to 8 hr
Stain and Color Change	ASTM C510	Pass
Adhesion to Concrete	ASTM C794	35 pli
Adhesion to Concrete After Immersion	ASTM C794	30 pli
Adhesion to Green Concrete	ASTM C794	>25 pli
Adhesion to Damp Concrete	ASTM C794	>20 pli
Effects of Accelerated Aging	ASTM C793	Pass
Movement Capability	ASTM C719	+/-50%
Movement Capability	ASTM C719* Modified	+100/-50%
Tensile Strength	ASTM D412	350 to 450 psi
% Elongation	ASTM D412	800 to 900%
Modulus at 100%	ASTM D412	75 to 85 psi
Tear Strength	ASTM D412	65 to 75 psi
Service Temperature		-40 to 180 °F (-40 to 82 °C)
Application Temperature		40 to 100 °F (4 to 37 °C) *
Smoke Development	ASTM E84	5
Fire Spread	ASTM E84	5
Fire Resistance of Assembly	NFPA 285	PASS
Smoke Development	CAN S102	10
Fire Spread	CAN S102	10
Crack Bridging	ASTM C1305	PASS
Nail Sealability	ASTM D1970 Section 7.9	PASS

*For temperatures below 40 °F, please refer to the Technical Bulletin, Cold Temperature Sealant Application Recommendations.

Tremco Commercial Sealants & Waterproofing

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Beachwood OH 44122
216.292.5000 / 800.321.7906

1451 Jacobson Ave
Ashland OH 44805
419.289.2050 / 800.321.6357

220 Wicksteed Ave
Toronto ON M4H1G7
416.421.3300 / 800.363.3213

1445 Rue de Coulomb
Boucherville QC J4B 7L8
514.521.9555

www.tremcosealants.com

TREMCO®
Commercial Sealants & Waterproofing

Vulkem® 350NF/351NF

Neighbor-Friendly Pedestrian and Waterproofing System

Product Description

Vulkem® 350NF/351NF is a composite waterproofing system comprised of tough-curing liquid polyurethane. It cures to form a rubber membrane surface that provides a lasting and easy-to-clean coating. Textured surfaces for pedestrian traffic will use an aggregate-laden top membrane to aid in wear and slip resistance. Vulkem 350NF/351NF may be used to apply a seamless, monolithic waterproof membrane to concrete, well-anchored AC plywood, and primed metal surfaces.

Vulkem 350NF Base Coat is a single-component, low odor, low VOC, urethane membrane that bonds firmly to clean, dry concrete, plywood and metal. It retains its integrity even if substrate movement causes hair-line cracks of up to 1/16" (1.5 mm). If cut or damaged, Vulkem 350NF will prevent water migration between itself and the substrate. Vulkem 350NF is available in roller (R) and in self-leveling (SL) grade for vertical and horizontal application.

Vulkem 351NF Top Coat is an aliphatic, low VOC, two-component, polyurethane, which when used in conjunction with the recommended aggregate, creates a tough, aesthetically appealing, skid resistant, wearing surface that forms a strong interlaminate bond to the Vulkem 350NF basecoat.

Basic Uses

Vulkem 350NF/351NF is ideal for plazas, recreation decks, balconies, mechanical rooms, stadiums, athletic surfaces and similar applications requiring an elastomeric waterproofing system.

Features and Benefits

- Fast cure through time allows for use 24 hr after installation.
- Low odor and low level of Volatile Organic Compounds (VOC) allow for use in neighbor friendly, inhabited structures.
- Mildew- and fungus- resistance safeguards concrete surfaces against environmental contaminants.
- Excellent durability and UV resistance extend the useful life of pedestrian systems.
- Recoatable and compatible with other Tremco sealants, which enhances waterproofing protection with full system compatibility.

Availability

Immediately available from your local Tremco Sales Representative, Tremco distributor, or warehouse.

Packaging

Vulkem 350NF: 5-gal (18.9-L) pails, 55-gal (208.2-L) drums

Vulkem 351NF: Part A 5-gal (18.9-L) pails, Part B 12-oz (.36-L) can

Colors

Vulkem 351NF is available in Beige, Gray, Slate Gray, and Limestone. Special colors are available upon request.

Installation

Concrete shall be water-cured and attain a 3000 psi minimum compressive strength. Concrete finish shall be a light steel trowel followed by a fine-hair broom, or equivalent ICRI #2-#4 finish. Moisture content in the concrete must be lower than 4.5% as measured using a Tramex CME 4 Moisture Meter. Depending on concrete construction and job site location, additional concrete testing may be required. Please contact your local Tremco Sales or Technical Representative.

Please refer to the Vulkem 350NF/351NF Application Instructions for complete application details. The techniques involved may require modification to adjust to the jobsite conditions. Consult your Tremco Sales Representative or Tremco Technical Services for site conditions and requirements.

Fire Rated Assemblies

- ANSI/UL790 - Standard Test Methods for Fire Tests of Roof Coverings
- CAN/ULC-S107 - Methods of Fire Tests of Roof Coverings

Limitations

- Do not apply to damp or contaminated surfaces.
- Use with adequate ventilation.

Warranty

Tremco warrants its Products to be free of defects in materials but makes no warranty as to appearance or color. Since methods of application and on-site conditions are beyond our control and can affect performance, Tremco makes no other warranty, expressed or implied, including warranties of MERCHANTABILITY and FITNESS FOR A PARTICULAR PURPOSE with respect to Tremco Products. Tremco's sole obligation shall be, at its option, to replace or to refund the purchase price of the quantity of Tremco Products proven to be defective, and Tremco shall not be liable for any loss or damage.

Please refer to our website at www.tremcosealants.com for the most up-to-date Product Data Sheets.

NOTE: All Tremco Safety Data Sheets (SDS) are in alignment with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) requirements.

TYPICAL PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	VULKEM 350NF	VULKEM 351NF
Flash Point	Set-A-Flash	>160 °F (71 °C)	> 200 °F (> 93 °C)
% Solids (by Weight)	ASTM D1353	90 to 98%	95%
Drying Time @ 75 °F, 50% RH	ASTM D1640	40 mil film, 6 to 8 hr	15 mils, 8 to 16
Open to foot traffic		4 to 6 hr	24 hr after cure
Weathering	ASTM D822	N/A	No effect
Salt Spray	ASTM B117	N/A	No effect
Viscosity	Brookfield C&P	4000 to 6000 cps	2000 to 3000 cps
Elongation	ASTM D412	600 to 700%	130%
Tensile Strength	ASTM D412	220 to 460 psi	2600 psi
Hardness (Shore A)	ASTM D2240	45 to 60	90
Adhesion (Peel Strength)	ASTM D903	Unprimed Concrete, 20 to 30 pli, 100% cohesive failure	100% cohesive failure
Adhesion (Pull-Off)	ASTM D4541	200 to 400 psi	200 to 400 psi
Accelerated Aging	ASTM D573	No loss of elongation or tensile strength	No loss of elongation or tensile strength

* Accelerated aging test. 1 daily cycle of UV and water spray greatly exceeds 1 day of real world exposure. Contact Tremco Technical Service or your local sales representative for more information.

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