

PART ONE - GENERAL

SECTION INCLUDES

1. COUNTERFLASHINGS OVER BASE FLASHINGS.
2. MASONRY REGLET, surface mounted.

RELATED SECTIONS

1. GENERAL CONDITIONS and Provisions of Division 1
2. GREENHOUSES, Section 13 123

REFERENCES

CONFORM TO THE FOLLOWING: As applicable

1. AA (ALUMINUM ASSOCIATION) - Aluminum Construction Manual: Aluminum Sheet Metal Work and Building Construction.
2. ASTM B209 - Aluminum and Aluminum Alloy Sheet and Plate.
3. NAAMM - Metal Finishes Handbook.
4. NRCA (National Roofing Contractors Association) - Roofing Manual.
5. SMACNA - Architectural Sheet Metal Manual.

SUBMITTALS

SHOP DRAWINGS showing material profile, jointing pattern, jointing details, fastening methods, and installation details.

PRODUCT DATA: manufacturer's installation instructions and general recommendations. Ga. finish.

SAMPLES: Submit if requested by Architect.

QUALITY ASSURANCE

APPLICATOR: Company specializing in sheet metal flashing work with 5 years minimum experience.

PERFORM WORK according to SMACNA and NRCA standard details and requirements and as specified.

BUILT-IN REGLETS: Coordinate location with mason, before it starts.

DELIVERY, STORAGE AND HANDLING

STORE PRODUCTS to prevent twisting, bending, or abrasion, and to provide ventilation.

1. PREVENT CONTACT with materials during storage which may cause discoloration, staining, or damage.

COORDINATION

COORDINATE WITH THE WORK of Roofing and Masonry Sections:

1. FURNISH COUNTERFLASHING receivers to Masonry Section.

PART TWO - PRODUCTS

SHEET MATERIALS

SURFACE MOUNTED REGLET:

1. ACCEPTABLE MANUFACTURER: Fry Reglet Corporation; Product – Springlock Flashing System with “SM” Surface Mounted Reglet.
2. TYPE: Two part reglet and flashing system.
3. MATERIAL: Galvanized Steel, 24 ga.
3. DRIVE PIN: Stainless Steel (washer with neoprene facing).
4. FINISH: Kynar 500, to match greenhouse framing

PRE-COATED GALVANIZED STEEL: ASTM A653-95, G90; 22 gauge shop pre-coated with Kynar 500 coating. Include clip anchors per manufacturer's recommendations.

1. COLOR: As selected to match greenhouse framing.
2. MANUFACTURER:
 - a. Pac-Clad
 - b. K-Metal

c. Approved Substitute

ACCESSORIES

FASTENER: Same material as flashing sheet or stainless steel. Same material and finish as flashing metal, or metal recommended by sheet manufacturer for improved corrosion resistance.

1. LENGTH: Sufficient to penetrate backing materials at least 7/8".
2. NAILS: Strong hold type; no smaller than No. 12 Stubbs gage.
3. SCREWS: Self-tapping.

SEALANT: Polyurethane type, manufactured by Pecora Corp. or Tremco Corp.

REGLETS: Galvanized steel; face and ends covered with plastic tape of type and profile indicated, non-corrosive, compatible with flashing indicated. Surface mounted type, galvanized steel; Expand-O-Seal type SM manufactured by Fry Reglet Corp.

1. SURFACE MOUNTED: Fry Reglet, Product: Type "SM". Location – Existing brick wall.

FABRICATION

GENERAL: Shop-fabricate metal flashings and trim units to the greatest extent possible. Fabricate as shown and to extent not shown, fabricate to comply with SMACNA "Architectural Sheet Metal Manual", metal manufacturer's recommendations, and recognized industry practices. For continuous running work, fabricate with expansion joints in flashings spaced sufficiently close to prevent flashing damage and failure in the resistance to water penetration permanently. Form flashing to fit substrate in each application.

FORM SECTION TRUE TO SHAPE, accurate in size, square, and free from distortion or defects.

CONTINUOUS RUNNING WORK: Fabricate with expansion joints in flashing, spaced sufficiently close to prevent flashing damage and failure in resistance to water penetration permanently. Form flashing to fit substrate in each application.

FORM PIECES in longest practical lengths.

1. HEM EXPOSED edges on underside 1/2 inch (13 mm); miter and seam corners.
2. SEAMS form non-moving material with flat lock seam.

FABRICATION VERTICAL FACES with bottom edge formed outward 1/4 inch and hemmed to form drip.

FINISH

FOR PRECOATED FLASHING: Kynar 500, Hylar 5000.

1. FLUOROCARBON COATING: Manufacturer's standard multicoat thermo-cured system, composed of specialty formulated primer and fluorocarbon topcoats, complying with AAMA 605.2.
2. COLOR AND SHEEN: To match greenhouse framing.

PART THREE - EXECUTION

INSPECTION

VERIFY ROOF OPENINGS, curbs, pipes, sleeves, ducts, or vents through roof are solidly set, cant strips and reglets in place, and nailing strips located.

VERIFY MEMBRANE TERMINATION and base flashings are in place, sealed, and secure.

BEGINNING OF INSTALLATION means acceptance of existing conditions. Do not proceed until unsatisfactory conditions have been corrected in a manner satisfactory to the installer.

DO NOT PROCEED until substrates and conditions are satisfactory.

PREPARATION

FIELD MEASURE SITE CONDITIONS prior to fabricating work.

INSTALL SURFACE MOUNTED REGLETS true to lines and levels. Seal top of reglets with sealant.

GENERAL

COMPLY with manufacturers installation recommendations.

CONFORM TO INSTALLATION manuals produced by roofing and sheet metal industry and by Association noted under "References" Part 1.

FABRICATE AND INSTALL WORK with lines and corners of exposed units true and accurate. Form exposed faces flat and free of buckles, excessive waves and avoidable tool marks, considering temper and reflectivity of metal. Provide uniform, neat seams with minimum exposure of solder, welds and sealant. Except as otherwise shown, fold back sheet metal to form hem on concealed side of exposed edges.

1. ON VERTICAL SURFACES, lap 2-piece flashings a minimum of 3".
2. ON SLOPING SURFACES for slopes of not less than 6" in 12", lap unsealed flashings a minimum of 6".

FOR EMBEDMENT OF METAL FLASHING flanges in roofing or composition flashing or stripping, extend flanges for a minimum of 4" embedment.

1. APPLY PLASTIC CEMENT COMPOUND between metal flashings and roofing flashing. DISSIMILAR METALS separate from each other by painting each metal surface in area of contact with a heavy application of bituminous coating, polyethylene underlayment or by other permanent separation, as recommended by manufacturers of dissimilar metals.

EXPANSION: Install work with provisions for thermal expansion of running trim, flashing, expansion joints, and other items exposed for more than 15'-0" continuous length. Maintain a water-tight installation at expansion seams. Locate expansion seams as shown or if not shown, at the following maximum spacing for each general use:

1. FLASHING, EXPANSION JOINTS, Gravel Stops and Trim: At 10'-0" intervals and 2'-0" each side of corners and intersections.

SHEET METAL FLASHING INSTALLATION

INSERT FLASHINGS INTO REGLETS to form tight fit and seal flashings into reglets with sealant.

SECURE FLASHINGS in place using concealed fasteners. Use exposed fasteners only in locations approved by Architect/Engineer.

SEAL all joints watertight.

FIT FLASHINGS TIGHT in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.

1. FORM SURFACES flat and free of buckles, excessive waves, tool marks.
2. INSTALL CLEAT type anchorages at 4' o.c. or as recommended by manufacturer whichever is more stringent.
3. INSTALL JOINT COVERS at joints.

ACCESSORIES INSTALLATION

REGLETS: Comply with appropriate concrete or masonry sections of these specifications for installation of built-in reglets to receive metal flashings. Where shown, provide saw cuts, retaining bars and similar devices for securing edges of flashings to other work. Insert flashings into reglets and similar retainers, and provide mechanical anchorage as shown or, if not shown, as recommended by manufacturers of flashing and reglet devices. Where indicated, seal flashing in reglet with compound or filler of type indicated.

1. ANCHORAGE: Where reglet or retainer does not provide for snap-in anchorage of flashing, provide wedges of lead or other compatible metal, spaced 2'-0" o.c., and driven well into retainer so as to be completely covered by sealant or filler.

PROTECTION OF FLASHING AND TRIM

THE FLASHING INSTALLER shall advise General Contractor of required procedures for surveillance and protection of completed flashing and trim. Furnish advice for period of installation of other work, and also for remainder of construction period.

1. CLEAN ALL EXPOSED metal flashing and trim. Touch up any abrasions.

SCHEDULE

<u>LOCATION</u>	<u>METAL TYPE</u>	<u>THICKNESS</u>	<u>FINISH</u>	<u>TYPE</u>
Surface Mounted	Galvanized Steel	22 ga	To match greenhouse	Type SM
Wall Flashing			framing	
END OF SECTION				

PART ONE - GENERAL

DESCRIPTION

SECTION INCLUDES: Perform all work required to complete the entire Sealant work, including but not limited to:

1. SEALANTS
2. JOINT BACKING
3. SUBSTRATE PREPARATION

RELATED SECTIONS:

1. GENERAL CONDITIONS and Division 1
2. ROUGH CARPENTRY – Section 06 100
3. FINISH CARPENTRY – Section 06 200
4. GREENHOUSE: Section 13 123

QUALITY ASSURANCE

INSTALLER QUALIFICATIONS: Joint sealant work shall be performed by an established firm employing skilled, experienced workers under competent supervision.

SUBMITTALS

PRODUCT DATA: Provide manufacturer standard literature and product specifications with actual sample color charts.

SAMPLE: Of actual color selected

1. PAPER COLOR submittals are not acceptable for selection.

JOB CONDITIONS

EXISTING CONDITIONS

INSPECTION: Inspect the substrates for improper conditions which may prevent a proper installation. Application of the work of this Section constitutes acceptance of such substrates.

1. IF IMPROPER CONDITIONS are the result of work not in the Contract, notify the Architect so that a course of corrective action may be determined.
2. SCOPE OF THIS SECTION includes preparation of the substrate, such as cleaning, and priming.

ENVIRONMENTAL REQUIREMENTS

MAINTAIN TEMPERATURE AND HUMIDITY recommended by the sealant manufacturer during and after installation.

GUARANTEE

PROVIDE 3 year warranty under provisions of the Conditions of the Contract.

1. ADHESIVE OR COHESIVE FAILURE in sealant joints where movement is less than 30%, as defined by standard ASTM methods.
2. CRACKING of the sealant surface.
3. STAINING of adjacent surfaces by sealant or primer.
4. EXCESSIVE dirt pickup, chalking or color change on the cured sealant surface.

PART TWO - PRODUCTS

MATERIALS

GENERAL: Provide only products having lower volatile organic compound (VOC) content than required by South Coast Air Quality Management District Rule No. 1168.

POLYURETHANE SEALANT (Type M): ASTM C920, Grade NS, Class 50, multi-component, chemical curing, non-staining, non-bleeding, non-sagging, color as selected.

1. GENERAL USE: Exterior joints, interior perimeter joints.
2. ACCEPTABLE MANUFACTURERS
 - a. Pecora: Product: DynaTrol II
 - b. Tremco: Product: Dymeric 240 PC
 - c. Sika: Product: Sika-flex 2cNS

EXTERIOR SELF-LEVELING POLYURETHANE (Type S.1): ASTM C920, Grade P, Class 25, uses T, M, and A, single or multi-component. Gray color.

1. GENERAL USE: Joints in sidewalks, vehicle paving
2. ACCEPTABLE MANUFACTURERS
 - a. Pecora; Product: NR-300
 - b. Mameco: Product: Vulkem 45SSL
 - c. Meadows: Product: Sealtight Gardox
 - d. Sonneborne; Product: Sonomeric 1

POLYURETHANE SEALANT (Type S): ASTM C920, Grade NS, Class 50, single component, chemical curing, non-staining, non-bleeding, non-sagging, Color as selected.

1. GENERAL USE: Exterior joints, interior perimeter joints, window perimeter.
2. ACCEPTABLE MANUFACTURERS
 - a. Tremco: Product: Dymeric FC
 - b. Pecora: Product: Dynatrol I-XL
 - c. Sika: Product: Sikaflex 1a

ACCESSORIES

PRIMER: Non-staining type as recommended by manufacturer to suit the application.

JOINT CLEANER: Non-corrosive and non-staining type, recommended sealant manufacturer; compatible with joint forming materials.

JOINT BACKING: ANSI/ASTM D-1056 or D1565; round, closed cell, polyethylene foam rod; oversized to joint with min. 30%. Approved by sealant manufacturer.

1. MANUFACTURER: Tremco; Dow-Corning; Williams Products; Illbruck-USA.

BOND PREVENTER: Pressure sensitive type as recommended by sealant manufacturer; to suit conditions.

PART THREE - EXECUTION

INSPECTION

INSPECT SUBSTRATE for improper conditions. Do not proceed until conditions are satisfactory.

PREPARATION

CLEAN AND PRIME JOINTS in accordance with manufacturer's instructions.

1. REMOVE LOOSE MATERIALS and foreign matter which might impair adhesion of sealant.
2. PERFORM PREPARATION in accordance with ASTM C804 for solvent release sealants.
3. ALL JOINT RECESSES must be dry.
4. CLEAN JOINT SUBSTRATE of dust, dirt, protective coatings, and substances that would impair proper adhesion.
5. INSTALL JOINT BACKING if necessary for proper joint design.

VERIFY that joint backing and release tapes are compatible with sealant.

PROTECT ELEMENTS surrounding the work of this Section from damage or disfiguration.

SURFACES: Verify that surfaces to receive materials are clean and free from dirt, oil, wax, loose aggregate and mortar, paint, corrosion, and form release agents. If necessary, clean the surfaces with solvent. Application of materials constitutes acceptance of the surfaces to which the materials are applied and responsibility for a satisfactory application. Apply the manufacturer's recommended priming materials in strict accordance with the manufacturer's printed recommendations.

Mask adjacent surfaces to facilitate cleanup and to protect difficult-to-clean surfaces.

1. MASONRY CLEANING and similar operations shall be completed before surface preparation is begun.
2. PRIME porous materials such as masonry, concrete, stone or wood for caulking.
3. ACID wash, mechanically abraded, or sandblast porous materials for sealant.

ENVIRONMENTAL REQUIREMENTS. Work shall not be installed at temperatures of the atmosphere below 40 degrees F. nor above 100 degrees F. Do not apply in damp and rainy weather. No condensation is allowed on surfaces to receive compounds. Surfaces to which silicone is applied shall be completely dry.

JOINT BACKING: Before caulking or sealing, install the joint backing the proper depth back from the joint face. Refer to the sealant manufacturer's recommendations. Generally, for sealant joints up to 1/2 inch wide, the depth equals the width; for sealant joints over 1/2 inch wide, the depth remains at 1/2 inch; for caulked joints, the depth is one to two times the joint width. Do not twist or braid the rod. Carefully roll the rod into the joint without stretching.

1. BOND BREAKER TAPE: Polyethylene tape or other plastic tape as recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

INSTALLATION

INSTALL SEALANT in accordance with manufacturer's instructions.

1. MEASURE JOINT DIMENSIONS and size materials to achieve required width/depth ratios.
2. AT JOINTS TO BE PAINTED: Use latex or paintable polyurethane.
3. WEATHER: Minimum 40°, Max 100°. Do not install in damp or rainy weather.

INSTALL JOINT BACKING to achieve a neck dimension no greater than 1/3 the joint width.

INSTALL BOND BREAKER where joint backing is not used.

APPLY SEALANT within recommended application temperature ranges.

1. CONSULT MANUFACTURER when sealant cannot be applied within these temperature ranges.
2. INSTALL SEALANT free of air pockets, foreign embedded matter, ridges, and sags.
3. APPLY SEALANT WITH A CAULKING GUN, forcing the material into the joint with sufficient pressure to result in complete contact of the joint substrate.
4. TOOL JOINTS concave. Joint sealant neck width dimension should be 50% of nominal joint width. Sealant bond surface area on each side should be 75% of nominal joint width.

ADJUSTMENT AND CLEANING

REMOVE EXCESS SEALANT or caulking material from adjacent surfaces immediately, before the material can set up. Follow the manufacturer's instructions for removal of sealant or caulking material from finished surfaces.

REPAIR ALL SURFACES damaged by these operations. Obtain the Architect's approval of the entire installation upon completion

CLEANING AND PROTECTION

CLEAN WORK when completed.

1. CLEAN ADJACENT soiled surfaces.
2. PROTECT SEALANTS until cured.

SCHEDULE

<u>Location</u>	<u>Type</u>	<u>Color</u>
<u>EXTERIOR LOCATIONS</u>		
Concrete Paving/Wall	S.1	
Door Frame/Walls	M	Match framing
Window Perimeter	S/M	Match Window
<u>INTERIOR LOCATIONS</u>		
Door Perimeter	M	Match framing
Window Perimeter	S	Match framing

END OF SECTION