

SECTION 01 25 00

SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Definitions.
 - 2. Substitution Submittal Procedures.
 - 3. Substitution Construction Procedures.
 - 4. Notice of Request for Substitution.
- B. Substitution requires written concurrence by CDCR Representative prior to use in the Project.
- C. A Substitution request constitutes a representation that the Contractor:
 - 1. Has investigated proposed substitution and determined that it meets or exceeds the quality level required to achieve operating efficiency and effectiveness of the specified material, product, thing, or service, and is otherwise equal or superior in all respects, including aesthetics, to that specified or otherwise indicated in Contract Documents.
 - 2. Will provide the same warranty for the substitution as for the specified material, product, thing, or service.
 - 3. Will coordinate installation and make changes to other Work which may be required for the Work to be compatible with substrates and adjacent materials, and complete in all respects with no additional cost to the State.
 - 4. Waives claims for additional costs or time extension which may subsequently become apparent.
- D. Substitution requests must include a statement indicating the substitution's effect on the Construction Schedule. Indicate the effect of the proposed substitution on overall Contract Time and, as applicable, on completion of portions of the Work for use by CDCR or for work under separate contracts by CDCR.
- E. Substitution Submittal Procedure:
 - 1. Limit each request to one proposed substitution.
 - 2. Submit shop drawings, product data, and certified test results attesting to the proposed equivalence.
 - 3. CDCR Representative will notify Contractor, in writing, of decision to approve or reject request.
- F. If Notice of Request for Substitution is approved, submit required submittals under provisions of Sections 01 33 00 – Submittal Procedures and 01 33 23 – Shop Drawings, Product Data, and Samples.
- G. If Notice of Request for Substitution is rejected or not approved, use item specified or otherwise indicated in Contract Documents. Submit required submittals under provisions of Sections 01 33 00 – Submittal Procedures and 01 33 23 – Shop Drawings, Product Data, and Samples.

SUBSTITUTION PROCEDURES

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 INSTALLATION PROCEDURES

- A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitution at no additional cost to the State.

END OF SECTION

SECTION 01 25 00 – ATTACHMENT A

NOTICE OF REQUEST FOR SUBSTITUTION

Substitution Request No.: _____

In accordance with the Conditions of the Contract and the provisions of Section 01 25 00, we hereby submit for consideration, this Notice of Request for Substitution for the following material, product, thing, or service:

Section	Paragraph	Specified Item
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Proposed Substitution: _____

The following supporting information is attached:

- ☐ Product Data including model numbers and descriptions.
- ☐ Certified test results attesting to equivalence.
- ☐ Product/material samples.
- ☐ Other: _____

Reason for proposed substitution:

- ☐ Specified or indicated item is unavailable.
- ☐ Significant cost reduction. Actual dollar savings to the State if substitution is accepted: \$ _____
- ☐ Significant quality difference without cost change.
- ☐ Other: _____

Submitted and Certified By:

CONTRACTOR:

_____ Signature	_____ Date
_____ Name (Print)	_____ Title
_____ Firm Name	
_____ Address	_____ Phone
_____ City, State, Zip	_____ FAX

Received: _____
Date CDCR Representative

☐ Recommended: _____
☐ Rejected: Date Architect of Record

☐ Approved: _____
☐ Rejected: Date CDCR Project Director

END OF SECTION 01 25 00 – ATTACHMENT A

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Submittal Log.
 - 2. Submittal Procedures.
 - 3. Submittal Contents.
 - 4. Submittal Quantities and Format.
 - 5. Manufacturer's Instructions.
- B. Related Sections and Documents:
 - 1. Section 01 33 23 – Shop Drawings, Product Data, and Samples.

1.2 SUBMITTAL LOG

- A. Within 10 days after Notice to Proceed, Contractor must furnish to CDCR Representative, an electronic version and four printed copies of the Submittal Log. The CDCR Representative will review and approve the Submittal Log or return it with comments for correction or revision.
- B. Submittal Log must include all submittals required by the Contract Documents and include the following information for each of the Contractor's submittal packages:
 - 1. Specification Section number and title.
 - 2. Submittal Title / description of the Work covered.
 - 3. Name of responsible entity (Contractor, CDCR, Subcontractor, etc.).
 - 4. Submittal category (action or informational).
 - 5. Provide written signatures of subcontractors indicating their review and approval of Submittal Log dates and information for their submittals.
 - 6. Identify deferred submittals which must be reviewed by State departments other than CDCR and/or local regulatory agencies.
 - 7. Identify critical and near critical submittals
 - 8. If Submittal is included in Contract Schedule per Section 01 32 00 – Scheduling, the following additional information must also be included in Submittal Log:
 - a. Corresponding Contract Schedule Activity ID/number.
 - b. Contractor's scheduled date for submission of initial submittal package to CDCR Representative.
 - c. Contractor's scheduled dates required for review, re-submittals, and review of re-submittals (when applicable).
 - d. Identify procurement time in days, to procure items.
 - e. Corresponding Contract Schedule activity(s) dependent on the submittal approval.
- C. The approved Submittal Log must be updated on a weekly basis by the Contractor to reflect the current status of the submittals.
 - 1. Contractor must provide a minimum of four copies of the updated Submittal Log to the CDCR Representative at Weekly Contractor meetings.

SUBMITTAL PROCEDURES

2. Contractor and CDCR Representative must jointly revise submittal log information to reflect actual submittals and correct dates which are not accurate.

1.3 SUBMITTAL PROCEDURES

- A. Provide submittals as required in the individual Section.
- B. Electronic submittals may be utilized by Contractor subject to the approval of the CDCR Representative. Contractor must assume responsibility for:
 1. Confirming Electronic format compatibility with all required reviewers.
 2. Providing all software; security; access and instructions/training/support required for use of any proprietary applications.
 3. Compliance with all other applicable requirements of this Section.
- C. Submittals not required will not be reviewed.
- D. Submittals must be in the English language and numerical data must be in the system of units used as shown and specified.
- E. Neither the review nor lack of review of any submittal will waive any of the requirements of the Contract or relieve the Contractor of any obligations hereunder.
- F. Make submittals promptly in accordance with the approved submittal log, and in such sequence as to cause no delay in the Work or in the work of any other contractor.
- G. Number submittals sequentially, using alphabetic suffixes on resubmittals.
- H. Each submittal must contain data representing only one specification Section.
- I. CDCR Representative will review and return submittals within 20 days after receipt thereof, or within 20 days after receipt of all information necessary for such review, whichever is later.
 1. Review status will be marked “No Exception Taken”, “Make Corrections Noted”, “Revise and Resubmit”, “Rejected”, or “Not Reviewed”.
 2. Revise and resubmit within 15 days of return submittals marked “Revise and Resubmit” or “Rejected”.
- J. Except as otherwise specified for substitutions in the General Conditions of the Contract for Construction, and for certain other items in this Section 01 33 00, make submissions no later than the number of days outlined below after the Start Date of the Work.
 1. Items needed in initial stages of Work or requiring long lead-time for ordering: 20 calendar days.
 2. Deferred Approval submittals, for review and approval by agencies such as OSFM: 30 calendar days.
 3. All other items: 60 calendar days.
- K. Regulatory Agency Submittals: Contractor must allow additional time for required regulatory agency submittal reviews and processing as follows:
 1. CDCR Fire and Life Safety (FLS) Peer Reviewer of the Office of State Fire Marshal (OSFM) deferred submittal(s):
 - a. Prepare OSFM submittal(s) per published requirements:
<https://osfm.fire.ca.gov/divisions/fire-and-life-safety-division/plan-review-submittal-requirements-information/>.

SUBMITTAL PROCEDURES

- 1) Fire Suppression systems to comply with NFPA 13 as adopted by the OSFM, including but not limited to, water flow test within 6 months of submittal submission and structural engineer letter of compliance.
 - 2) Fire Alarm systems to comply with NFPA 72 as adopted by the OSFM.
 - 3) All other listed deferred submittals as defined in their respective specifications.
 - b. Provide submittal to CDCR FLS Peer Reviewer for CDCR internal “triage” review. Allow 3 weeks for triage review process to include:
 - 1) Allow 1 week for review of OSFM submittal(s) by CDCR FLS Peer Reviewer.
 - 2) Allow 1 week for Contractor incorporation of CDCR FLS Peer Reviewer comments.
 - 3) Allow 1 week for CDCR FLS Peer Reviewer back-check of Contractor revised submittal.
 - 4) Submittals that do not pass triage review will be sent back to Contractor for additional incorporation of CDCR FLS Peer Reviewer comments. Any delays to Contract Milestones caused by such resubmittals are the fault of the Contractor.
 - 5) Once submittal meets requirements for OSFM review, CDCR FLS Peer Reviewer will authorize for submission to the OSFM and be deemed a quality submission.
2. Office of the State Fire Marshal review time for deferred submittals as follows:
 - a. Allow 14 weeks for OSFM initial review.
 - b. Allow 2 weeks for Contractor incorporation of SFM comments.
 - c. Allow 1 week for CDCR FLS Peer Review backcheck.
 - d. Allow 4 weeks for OSFM back-check and approval.
 - e. Submittals that do not pass review will be sent back to Contractor for additional incorporation of OSFM comments. Any delays to Contract Milestones caused by such resubmittals are the fault of the Contractor.
- L. Distribute copies of the reviewed submittals to concerned parties. Instruct parties to promptly report inability to comply with provisions. Notify CDCR Representative of every such report.
- M. Do not begin Work covered by a submittal designated “Revise and Resubmit” or “Rejected”. Contractor may begin Work covered by submittals marked “No Exceptions Taken” or “Make Corrections Noted” in accordance with review notes and comments or as otherwise approved by a regulatory agency.

1.4 SUBMITTAL CONTENTS

- A. Submittals Must Contain:
 1. Date of submission and dates of any previous submissions.
 2. Project title and number.
 3. Contract Identification.
 4. Names of Contractor, supplier, and manufacturer.
 5. Identification of the product, with the Specification Section number and the applicable detail number(s) on the approved Project Drawings.
 6. Dimensions and values in units to match those indicated.
 7. Field dimensions, clearly identified as such.
 8. Relation to adjacent or critical features of the work or materials.
 9. Applicable standards, such as ASTM or Federal Specification numbers.
 10. Identification of revisions on resubmittals.
 11. An 8- x 3-inch space for review stamps in the lower right-hand corner of each page.

SUBMITTAL PROCEDURES

12. Contractor's stamp, initialed or signed, certifying to review of submittal, verification of products, field measurements and field construction criteria, and coordination of the information within the submittal with requirements of the Work and of the Contract.

1.5 SUBMITTAL QUANTITIES AND FORMAT

- A. Quantities:
 1. General: Submit six copies. Two copies will be returned to Contractor.
 2. Samples:
 - a. Submit the number of samples indicated in the specific technical Section.
 - b. Where no number is specified, submit four samples.
 - c. Two samples will be returned to Contractor.
 3. Operation and Maintenance Manuals
 4. The number of submittals may be adjusted for specific submittals as approved by the CDCR Representative.
- B. Where Electronic submittal format is utilized, a PDF format file copy and two paper copies of the final approved submittal must be provided.
- C. Submittals must be organized in identical order in all copies.

1.6 MANUFACTURER'S INSTRUCTIONS

- A. Where any item of Work is required by the Contract to be delivered, stored, assembled, installed, started-up, adjusted, or finished in accordance with the Manufacturer's instructions, submit manufacturer's printed instructions.
- B. Identify conflicts between manufacturer's instructions and the Contract. Report conflicts to CDCR Representative.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 05 50 00

METAL FABRICATIONS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Shop fabricated metal items.
- B. Related Sections:
 - 1. Section 09 90 00 – Painting and Coating.

1.2 REFERENCES

- A. American Association of State Highway and Transportation Officials (AASHTO):
- B. American Institute of Steel Construction (AISC): Manual of Steel Construction.
- C. American Iron and Steel Institute (AISI): Cold-Formed Steel Design Manual.
- D. American National Standards Institute (ANSI):
 - 1. ANSI A14.3 – American National Standards for Ladders – Fixed – Safety Requirements.
 - 2. ANSI B18.22.1 – Plain Washers.
 - 3. ANSI B18.23.1 – Beveled Washers.
- E. ASTM International (formerly American Society for Testing and Materials) (ASTM):
 - 1. ASTM A36 – Standard Specification for Carbon Structural Steel.
 - 2. ASTM A53 – Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
 - 3. ASTM A108 – Standard Specification for Steel Bar, Carbon and Alloy, Cold-Finished.
 - 4. ASTM A123 – Standard Specification for Zinc (Hot-Dipped Galvanized) Coatings on Iron and Steel Products.
 - 5. ASTM A153 – Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 - 6. ASTM A240 – Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
 - 7. ASTM A283 – Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates.
 - 8. ASTM A307 – Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60,000-PSI Tensile Strength.
 - 9. ASTM A500 – Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
 - 10. ASTM A501 – Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
 - 11. ASTM A536 – Standard Specification for Ductile Iron Castings.
 - 12. ASTM A563 – Standard Specification for Carbon and Alloy Steel Nuts.
 - 13. ASTM A653 – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

METAL FABRICATIONS

14. ASTM A706 – Standard Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement.
 15. ASTM A1011 – Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength.
 16. ASTM E2016 – Standard Specification for Industrial Woven Wire Cloth.
- F. American Welding Society (AWS):
1. AWS A2.4 – Standard Symbols for Welding, Brazing and Nondestructive Examination.
 2. AWS D1.1 – Structural Welding Code – Steel.
 3. AWS D1.3 – Structural Welding Code – Sheet Steel.
- G. California Code of Regulations (CCR); Title 8, Subchapter 7 – General Industry Safety Orders:
1. Section 3209 – Standard Guardrails.
 2. Section 3277 – Fixed Ladders.
- H. International Code Council (ICC): Evaluation Service Report (ESR).
- I. The Society for Protective Coatings (SSPC): PM-SET B/PM-SET C Painting Manuals Volumes 1 and 2.

1.3 SUBMITTALS

- A. Submit in accordance with Sections 01 33 00 and 01 33 23.
- B. Shop Drawings:
1. Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories.
 2. Include erection drawings, elevations, and details where applicable.
 3. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.
- C. Product Data:
1. Product data for products and materials indicated.
 2. Manufacturer's technical bulletins and installation/application instructions.
 3. [For Credits MR 4.1 and MR 4.2] For products having recycled content, documentation indicating percentages by weight of postconsumer and pre-consumer recycled content. Include statement indicating costs for each product having recycled content, the manufacturer, and the source of the recycled content data.
- D. Certificates:
1. Manufacturer's Mill Certificate: Submit certificate that products meet or exceed specified requirements.
 2. Mill Test Reports: Submit manufacturer's certificates, indicating structural strength, destructive and nondestructive test analysis.
 3. Welder's Certificates: Submit certificates for welders employed on the Work, verifying AWS qualifications within the previous 12 months.
- E. Qualification Data:
1. For Fabricator.

1.4 DESIGN AND SECURITY REQUIREMENTS

METAL FABRICATIONS

- A. Sheet metal exposed on building interiors and accessible to inmates (within 10 feet of finish floor) must not be less than 14 gauge.
- B. Walking surfaces must be of skid resistant construction when exposed to weather.
- C. Structural steel framing systems within the inner perimeter security ring of the prison must not be exposed in Inmate Accessible Areas.
- D. Steel framing members not concealed by masonry, plywood, gypsum wallboard, or other similar covering in Inmate Accessible Areas must be fully enclosed with minimum 14-gauge sheet steel with all joints fully welded and ground smooth. Coverage must extend at least 5 feet beyond the accessible area.

1.5 QUALIFICATIONS

- A. Fabricator: Company specializing in performing the Work of this Section with minimum three years' experience.
- B. Welding Qualifications: Prior to commencing welding, welding procedures, welding operations, and welders must be qualified in accordance with AWS D1.1.
 - 1. Welders who have not performed welding for a period of three or more months must be requalified.
 - 2. Welders whose work fails to pass inspection must be requalified before performing further welding.
 - 3. The costs of certifying qualifications must be paid as part of the Work of this Section.

1.6 COORDINATION

- A. Coordinate the design, fabrication, and erection of the Work with the requirements for openings and support of and by the Work of other Sections.
- B. Provide templates required for accurately locating anchorages and fasteners required to anchor or attach items to the Work of other Sections. Supply the templates in a timely fashion so as not to delay the Work of other Sections.
- C. Where items specified under this Section are built into the Work of other Sections, provide those items to those Sections in a timely fashion to avoid delay of the Work of other Sections. Coordinate placement to verify accurate locations and correct installation.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver welding electrodes to job site in unbroken containers or packages bearing manufacturer's name.
- B. Ship, store, and handle fabricated items in a manner to prevent rusting and deformation. Store items off grade and positioned to drain rain water readily.
- C. Deliver bolts, nuts, and washers in bags or boxes, properly tagged for identification.
- D. Store other metal products in a weather-tight and dry place until ready for use in Work.

PART 2 PRODUCTS

METAL FABRICATIONS

2.1 MATERIALS

- A. Steel Sections: ASTM A36.
- B. Steel Tubing: ASTM A500, Grade B.
- C. Stainless Steel: ASTM A240, Type 302 or 304.
- D. Plates: ASTM A36 or A283.
- E. Pipe: ASTM A53, Grade B.
- F. Woven Wire Mesh: ASTM E2016, Enhanced strength, corrosion-resistant alloys.
 - 1. Approved crimp lock style with maximum 2-inch x 2-inch square openings and used for small management yards and individual exercise yards.
 - 2. Grind exposed welds smooth; firmly anchor as indicated.
 - 3. Acceptable Manufacturers, as listed below and meeting the criteria and requirements specified herein, will be acceptable:
 - a. Flynn and Enslow.
 - b. McNichols
 - c. For manufacturers not listed, comply with substitution requirements in Section 01 25 00.
- G. Expanded Metal: Galvanized Carbon steel/flattened, 3/4 inch maximum opening x 14 gauge, unless otherwise indicated.
 - 1. Acceptable Manufacturers, as listed below and meeting the criteria and requirements specified herein, will be acceptable:
 - a. Niles Expanded Metals.
 - b. McNichols Co.
 - c. Amico.
 - d. For manufacturers not listed, comply with substitution requirements in Section 01 25 00.

2.2 FASTENERS

- A. Bolts, Nuts, and Washers:
 - 1. Bolts: ASTM A307, Grade A.
 - 2. Nuts: ASTM A563, Grade A.
 - 3. Anchor Bolts: Heavy Hex.
 - 4. Elsewhere: Hex or Heavy Hex.
 - 5. Washers: ANSI B18.22.1 or ANSI B18.23.1.

2.3 ACCESSORIES

- A. Welding Electrodes: AWS D1.1 or D1.3; type required for materials being welded.
- B. Temporary Supports, Staying and Spacing: As required by project conditions.
- C. Shims and Leveling Devices: As required by project conditions.

2.4 FINISHES

- A. Shop and Touch-Up Primer:

METAL FABRICATIONS

1. Acceptable Manufacturers, as listed below and meeting the criteria and requirements specified herein, will be acceptable:
 - a. Tnemec Co., Tnemec Primers Series V10.
 - b. Rust-Oleum Co., Red Rusty Metal Primer.
 - c. Benjamin Moore & Co.; M07 Universal Metal Primer.
 - d. For manufacturers not listed, comply with substitution requirements in Section 01 25 00.

B. Touch-Up Primer for Galvanized Surfaces: Zinc-rich type, SSPC SP-20.

2.5 DOOR FRAMES AND CORNER GUARDS

- A. Overhead Door Openings and Wall Openings: Channel sections; prime paint finish.
- B. Door Frames: Steel shapes as indicated; corners fully welded, uniform, square, and true; grind exposed welds smooth; firmly anchor as indicated.
- C. Corner Guards: Steel shapes as indicated; grind exposed welds smooth; firmly anchor as indicated.

2.6 SHOP FABRICATION

- A. Preparation:
 1. Prior to fabrication, straighten all materials by methods which will not injure material. Do not straighten any material until methods have been reviewed by the CDCR Representative.
 2. Prior to assembling component parts of a connection, thoroughly clean all contact surfaces of loose rust, scale, burrs; remove all local twists and bends.
- B. Fit and shop assemble in largest practical sections, for delivery to site.
- C. Fabricate items with joints tightly fitted and secured.
- D. Continuously seal joined members by continuous welds.
- E. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
- F. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, unless otherwise indicated.
- G. Shop Connections: Welded wherever possible, unless otherwise indicated.
- H. Field Connections:
 1. Bolted unless otherwise indicated.
 2. Provide bolts and holes for field connections.
- I. Bolted Connections:
 1. Bolted connections must have not less than two bolts.
 2. Drill, punch, or ream holes 1/16 inch larger than bolt diameter.
 3. Ream unfair holes, but only up to next larger bolt size.
- J. Assembly Using Standard Threaded Fasteners:

METAL FABRICATIONS

1. Provide beveled washers under bolt heads or nuts riding on surfaces exceeding 5 percent slope with respect to head or nut.
 2. Tighten bolts for full bearing under heads and nuts and to snug tight condition.
- K. Shop Welding:
1. Perform welding in accordance with AWS D1.1.
 2. Provide welds of size indicated.
 3. Where weld size is not indicated, use AWS minimum weld size, but not less than 3/16-inch fillet welds.
 4. Make all welds exposed to the weather or damp conditions in the finished Work continuous and watertight.
 5. Rust protection in accordance with Section 05 12 00.
- L. Close exposed ends of pipe and tube railings with continuously welded steel caps.
- 2.7 SHOP FINISHING
- A. Surface Preparation:
1. Grind weld spatter and sharp edges smooth prior to cleaning.
 2. Prior to application of primer, clean surfaces as follows:
 - a. Steel to be encased in masonry or concrete SSPC SP-2.
 - b. Steel to remain exposed in the completed Work SSPC SP-7.
- B. Shop Primer:
1. Apply shop primer within 8 hours of surface cleaning.
 2. Apply minimum 3 mils dry film thickness of primer to steel, unless otherwise specified.
 3. Do not apply primer within 2 inches of steel assemblies which are embedded in concrete.
 4. Apply two coats of primer to steel assemblies which are concealed in the finish Work.
 5. Touch-up shop primer of poor quality or insufficient thickness to a condition acceptable to the CDCR Representative.
- C. Galvanized Finish: Minimum 1.25 oz./sq. ft. zinc coating in accordance with ASTM A123.

2.8 QUALITY CONTROL

- A. Materials and fabrication procedures are subject to inspection and test in mill, shop, and field. Such inspections and tests will not relieve the Contractor of responsibility for providing materials and fabrication procedures in compliance with specified requirements. Promptly remove and replace materials or fabricated components that do not comply.

2.9 TESTING AND INSPECTION

- A. Provide notification to CDCR Representative when testing or inspection related to this section are required.

2.10 TOLERANCES

- A. Tolerances must be in accordance with AISC Code.

PART 3 EXECUTION

3.1 EXAMINATION

METAL FABRICATIONS

- A. Verify that field conditions are acceptable and are ready to receive the Work. Notify the CDCR Representative, in writing, of any conditions requiring corrective action.
- B. If unsatisfactory conditions exist, do not commence the installation until such conditions have been corrected. Beginning of installation means acceptance of existing conditions.

3.2 PREPARATION

- A. Verify that field measurements are as shown on Drawings and approved shop drawings. Report discrepancies to the CDCR Representative for clarification or resolution prior to starting fabrication for the area affected.
- B. Clean and strip primed steel items to bare metal where site welding is required.
- C. Supply items required to be cast into concrete or embedded in masonry with setting templates, to appropriate Sections.

3.3 INSTALLATION

- A. Install items plumb and level, accurately fitted, free from distortion or defects.
- B. Allow for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
- C. Field weld components indicated on Drawings and approved shop drawings.
 - 1. Perform field welding in accordance with AWS D1.1.
- D. Bolted Connections:
 - 1. Bolted connections must have not less than two bolts.
 - 2. Ream unfair holes, but only up to next larger bolt size.
 - 3. As erection progresses, bolt up the Work to assume dead loads, lateral forces, and erection stresses.
- E. Assembly Using Standard Threaded Fasteners:
 - 1. Provide beveled washers under bolt heads or nuts riding on surfaces exceeding 5 percent slope with respect to head or nut.
 - 2. Tighten bolts for full bearing under heads and nuts and to a snug tight condition.

3.4 FINISHES

- A. After erection, prime welds, abrasions, and surfaces not shop primed except surfaces to be in contact with concrete and surfaces to receive spray-on fireproofing or insulation.
- B. Field paint unpainted field connections, bolts, and similar parts with primer.

3.5 ERECTION TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch per story, noncumulative.
- B. Maximum Offset From True Alignment: 1/4 inch.

3.6 TESTING AND INSPECTION

METAL FABRICATIONS

- A. Provide notification to CDCR Representative when testing or inspection related to this section are required.

3.7 CLEANING

- A. After erection, thoroughly clean surfaces of foreign a deleterious matter such as dirt, mud, oil, and grease that could impair bonding of concrete, finishes, or fireproofing.

3.8 REPAIR AND ADJUSTMENTS

- A. Items must not be cut or altered without prior approval of the CDCR Representative.
- B. Repair abraded areas of shop-applied coatings, and areas of weld where the shop-applied coating has been damaged with a primer or galvanizing repair compound, as applicable, that is compatible with the shop coating.

3.9 DEFECTIVE WORK

- A. Work not conforming to required lines, details, dimensions, tolerances, finishes, strength, or other specified requirements must be considered defective. Notify the CDCR Representative upon discovery of these conditions.
- B. Required repair or replacement of defective the Work will be determined by the CDCR Representative.
- C. Do not patch, fill, touch-up, repair, or replace items except upon express direction of the CDCR Representative for each individual area.
- D. Defective Work must be repaired or replaced as recommended by the CDCR Representative at no additional expense to the CDCR.

3.10 PROTECTION

- A. Protect installed items from damage from subsequent construction operations.

END OF SECTION

SECTION 07 60 00

FLASHING AND SHEET METAL

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Galvanized sheet metal.
 - 2. Fasteners.
 - 3. Fabrications.
 - 4. Finish.
- B. Related Sections:
 - 1. Section 05 50 00 – Metal Fabrications.
 - 2. Section 07 41 13 – Metal Roof Panels.
 - 3. Section 07 92 00 – Joint Sealants.
 - 4. Section 09 90 00 – Painting and Coatings.

1.2 REFERENCES

- A. AA (Aluminum Association) – Aluminum Construction Manual: Aluminum Sheet Metal Work and Building Construction.
- B. AISI (American Iron and Steel Institute) – Stainless Steel – Uses in Architecture.
- C. ASTM A167 – Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip.
- D. ASTM A240/A240M – Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
- E. ASTM A653/A653M – Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- F. ANSI/ASTM B32 – Solder Metal.
- G. FS O-F-506 – Flux, Soldering, Paste and Liquid.
- H. NRCA – National Roofing Contractors Association: Roofing Manual.
- I. SMACNA – Architectural Sheet Metal Manual.

1.3 QUALITY ASSURANCE

- A. Applicator: Company specializing in sheet metal flashing work with minimum three years experience.
- B. Pre-installation Conference:
 - 1. Attend conference with roofing installer, roofing manufacturer's representative, General Contractor and the CDCR Representative.

1.4 SUBMITTALS

- A. Shop Drawings: Indicate overall layout of sheet metal work; type, thickness, and details of sheet metal components; joints, expansion joints, attachment and anchoring of sheet metal components.
- B. Warranties: Sample of special warranties.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver flashing and sheet metal wrapped for protection and marked to facilitate identification.
- B. Stack preformed [and prefinished] material to prevent twisting, bending, or abrasion, and to provide ventilation.
- C. Prevent contact with materials during storage which may cause discoloration, staining, or damage.
- D. Store and handle in protective wrapping until ready for use.

1.6 PROJECT CONDITIONS

- A. Field Measurements: Before fabricating sheet metal, verify shapes and dimensions of surfaces to be covered.

1.7 SEQUENCING AND SCHEDULING

- A. Coordinate Work of this Section with work of other Sections whose work affects or is affected by the Work of this Section.

1.8 WARRANTY

- A. Special Warranty on Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
 - 2. Cracking, checking, peeling, or failure of paint to adhere to bare metal. Warranty Period: 20 years from date of Project completion.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Sheet Metal:
 - 1. Stainless Steel: ASTM A240/A240M, Type 304, 2D (dull, cold rolled) annealed finish, soft except where harder temper is required for forming or performance, 16 gauge unless otherwise indicated on Drawings.

2. Other sheet metal, unless otherwise specified or indicated, must be 22-gauge zinc-Coated (Galvanized) Steel Sheet conforming to ASTM A653/A653M, G90 (Z275) coating designation; structural quality, mill phosphatized for field painting.
 3. Provide associated trim, corner plates, clips, joint covers, and similar items, as required for a complete and watertight installation.
- B. Fasteners:
1. Material:
 - a. Non-corrosive or hot-dipped galvanized compatible with flashing and sheet metal material.
 - b. Provide stainless steel fasteners for stainless steel sheet metal.
 2. Type and Size:
 - a. Nails, rivets, sheet metal screws as indicated and as required to hold flashing and sheet metal securely in place.
 - b. Where sheet metal is installed over other sheet metal, fasten through 1-inch-diameter tinned discs.
 3. Spacing: 3-inches on center, unless otherwise indicated.
- C. Solder: ASTM B32, Alloy Grade 50A.
- D. Flux: [FS O-F-506.]
- E. Sealant: Type specified in Section 07 90 00.
- F. Reglets:
1. Standard or surface mounting types, as indicated; of either galvanized steel or plastic, unless otherwise indicated.
 2. For embedded types, provide with strippable tape covers or with channel prefilled with sealant.
 3. Manufacturer:
 - a. Fry Reglet Corp; Springlock Flashing System Type 'CO'
 - b. MM Systems Corp.
 - c. For manufacturers/products not listed, comply with substitutions requirements in Section 01 25 00.

2.2 FABRICATION

- A. Field-fabricate only those items that cannot be fabricated in the shop.
- B. Fabricate products in accordance with the reviewed approved Shop Drawings and the SMACNA Architectural Sheet Metal Manual referenced standard, and NRCA Roofing Manual.
- C. Form sections true to shape, accurate in size, square, and free from distortion or defects.
- D. Form pieces in longest practical lengths.
- E. Form flashing and sheet metal to fit snugly and without sharp edges.
- F. Form seams neatly, and make straight.
- G. Hem exposed edges on underside 1/2 inch; miter and seam corners.

FLASHING AND SHEET METAL

- H. Fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity, seal with sealant.
- I. Fabricate flashings vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip.
- J. Joints
 - 1. Make joints watertight and allow for expansion.
 - 2. Reinforce sheet metal corners as required.
 - 3. Conceal reinforcement within finished assembly.
- K. Fastenings: Use concealed hook strips and fasteners. Exposed hook strips and fasteners not acceptable.

2.3 FINISH

- A. Galvanized Items: Mill phosphatized for painted finish in accordance with Section 09 90 00.
- B. Back paint concealed metal surfaces with one coat protective backing paint.
- C. Coat contacting dissimilar metals with protective compound.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that conditions are satisfactory for the installation of flashing and sheet metal.
- B. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, cant strips and reglets are in place, and nailing strips located.
- C. Verify roofing membrane termination and base flashings are in place, sealed, and secure.
- D. If unsatisfactory conditions exist, do not commence installation until such conditions have been corrected. Beginning installation means acceptance of existing conditions.

3.2 PREPARATION

- A. Remove dirt, foreign objects, and foreign materials from surfaces to receive flashing and sheet metal.
- B. Surfaces must be clean, smooth, even, and free from defects prior to installation.

3.3 INSTALLATION

- A. Soldering:
 - 1. Clean contact surfaces before soldering.
 - 2. Perform soldering so as to thoroughly heat sheet metal and completely sweat solder through full seam width to produce joint of flowed solder 1 inch wide.
 - 3. Sweat lock seams full of solder flat and straight; clean with acid flux after soldering, and wash thoroughly.

- B. Mechanical Fastening:
 - 1. Join parts with concealed rivets or sheet metal screws, type and spacing in accordance with manufacturer installation instructions, NRCA Roofing Manual and approved shop drawings.
 - 2. Place sheets together before drilling.
- C. Lap Joints:
 - 1. Where lap joints are used, lap sheets at least 4 inches.
 - 2. Provide bead of sealant across lapped joints, placed 1 inch from exposed edge of joint.
- D. Butt Joints:
 - 1. Where butt joints are used, provide concealed backing alignment plates or sleeves fitted to one side of joint.
- E. Perform cutting, fitting, drilling, and similar work as required to accommodate the Work of other Sections.
- F. Gravel Stops:
 - 1. Fabricate gravel stops of galvanized steel.
 - 2. Provide prefabricated mitered and soldered internal and external corners.
 - 3. Leave joints between sections open 1/4 inch and back with formed back-up plates lapping each section and a minimum of 3 inches.
 - 4. Seal laps with butyl sealer.
 - 5. Fold back exposed edges 1/2 inch on the underside.
 - 6. Place gravel stops on roofs after roofing felts have been laid.
 - 7. Place in position on a 1/8-inch-thick bed of black plastic cement the full width of the flange and nail not to exceed 12-inches on center.
- G. Parapet Caps:
 - 1. Fabricate of 22-gauge galvanized steel unless otherwise indicated.
 - 2. Provide prefabricated mitered internal and external corners.
 - 3. Leave joints open 1/4 inch between sections, back with formed back-up plates lapping each section and a minimum of 3 inches.
 - 4. Seal laps with butyl sealer.
- H. Expansion Joints:
 - 1. Fabricate of 22-gauge galvanized steel unless otherwise indicated.
 - 2. Fabricate in accordance with SMACNA Plate No. 76.
- I. Hanging Gutters:
 - 1. Fabricate of 24-gauge galvanized steel, unless otherwise indicated.
 - 2. Lap joints between sections 1-1/2 inches, rivet and solder.
 - 3. Provide loose locked expansion joints midway between outlet tubes to provide for 1-1/2 inches movement in both directions.
 - 4. Provide expansion joints with cover strips in a manner to provide free movement and watertight connection.
 - 5. Form outlet tubes of same material and thickness as gutter and lock and solder the longitudinal seam.
 - 6. Flange the upper end of tubes and rivet and solder to the lining.
 - 7. Extend tubes into downspouts at Support Gutters with 20-gauge strap hangers and install spreaders at midpoint between hangers.

- J. Downspouts:
 - 1. Fabricate downspouts of 24-gauge galvanized steel unless otherwise indicated.
 - 2. Telescope end joints 1-1/2 inches and lock longitudinal joints.
 - 3. Hold downspouts in position 1 inch clear of the wall with 1/16- x 1-inch galvanized steel downspout straps spaced not more than 10 feet on center and securely fasten to the wall with expansion anchors.
- K. Conductor Heads:
 - 1. Construct conductor heads of 24-gauge galvanized steel unless otherwise indicated.
 - 2. Use flat-locked and soldered seams.
 - 3. Provide 4-inch-long outlet tubes.
 - 4. Close tops of conductor heads with a removable type 1/2-inch mesh stainless steel wire screen.
- L. Scupper Linings:
 - 1. Unless otherwise indicated, line scuppers with galvanized steel extending through the walls and projecting into conductor heads.
 - 2. Join scupper linings to wall and roof flanges with locked and soldered seams.
 - 3. Prime concrete surfaces to receive the scupper lining and coat with plastic cement.
- M. Reglets and Counter flashings:
 - 1. Install reglets and counter flashings in accordance with the manufacturer's printed installation drawings and instructions as indicated, and approved shop drawings.
- N. Completed installation must be weather tight.

3.4 CLEANING

- A. Following installation, clean exposed surfaces of flashing and sheet metal of excess solder and dirt; remove grease and oil with appropriate solvent; wipe surfaces with clean rags, and leave in condition suitable for the application of paint.

END OF SECTION

SECTION 07 92 00

JOINT SEALANTS

PART 1 GENERAL

1.1 SUMMARY

Section Includes:

1. Preparing sealant substrate surfaces.
2. Non-firestop sealant and backing.

1.2 REFERENCES

ASTM International (formerly American Society for Testing and Materials) (ASTM):

1. ASTM C719 – Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cyclic Movement (Hockman Cycle)1,2.
2. ASTM C732 – Standard Test Method for Aging Effects of Artificial Weathering on Latex Sealants.
3. ASTM C794 – Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants.
4. ASTM C834 – Standard Specification for Latex Sealants.
5. ASTM C881 – Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete.
6. ASTM C882 – Standard Test Method for Bond Strength of Epoxy-Resin Systems Used with Concrete by Slant Shear.
7. ASTM C920 – Standard Specification for Elastomeric Joint Sealants.
8. ASTM D412 – Standard Test Method for Vulcanized Rubber and Thermoplastic Elastomers-Tension.
9. ASTM D624 – Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
10. ASTM D695 – Standard Test Method for Compressive Properties of Rigid Plastics.
11. ASTM D2240 – Standard Test Method for Rubber Property-Durometer Hardness.

1.3 SUBMITTALS

Product Data:

1. For sealants and sealant primers used inside the weatherproofing system, including printed statement of VOC content.

Samples: Submit showing the standard colors available for each sealant material intended for installation in an exposed location.

Certificates: Submit certificate that materials specified and proposed for use are suitable for intended application.

Manufacturer's installation instructions.

Warranties: Sample of special warranties.

1.4 QUALITY ASSURANCE

Applicator: Company with minimum 3 years' experience in the application of materials of the type specified in this Section.

Regulatory Requirements: Joint Sealers must meet all current limits set by regulatory agencies regarding Volatile Organic Compounds (VOC).

1.5 DELIVERY, STORAGE, AND HANDLING

Deliver materials in the unopened, original containers or unopened packages with manufacturer's name, labels, product identification, and lot numbers where appropriate.

Store materials in the original, unopened containers or packages, and under conditions recommended by manufacturer.

1.6 WARRANTY

Special Manufacturer's Warranty: Manufacturer's standard form in which joint-sealant manufacturer agrees to furnish joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Failures include but are not limited to the following:
 - a. Loss of adhesion or cohesion.
 - b. Failure to cure.
2. Warranty Period: One year from date of Project Completion.

Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:

3. Movement of the structure caused by structural settlement or errors attributable to design or construction resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
4. Disintegration of joint substrates from natural causes exceeding design specifications.
5. Mechanical damage caused by individuals, tools, or other outside agents.
6. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 PRODUCTS

2.1 GENERAL

VOC Content of Interior Sealants: Provide sealants and sealant primers for use inside the weatherproofing system that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

1. Architectural Sealants: Not more than 250 g/L.
2. Sealant Primers for Nonporous Substrates: Not more than 250 g/L.
3. Sealant Primers for Porous Substrates: Not more than 775 g/L.

2.2 SEALANTS

Type A Sealant – Traffic (Vehicular) All Locations:

1. Acceptable Manufacturers/Products, as listed below and meeting the criteria and requirements specified herein, will be acceptable:
 - a. Euclid Chemical Company; Eucolastic 1SL – Pourable.
 - b. Pecora Corp.; Urexpan NR-200.
 - c. Sika Corp.; Sikaflex-2c-SL.
 - d. Master Builders Solutions; MasterSeal SL 2.
 - e. For manufacturers/products not listed, comply with substitution requirements in Section 01 25 00 – Substitution Procedures.
2. Two-Part, abrasion-resistant, traffic-grade, self-leveling, polyurethane.
3. Meets Federal Specification TT-S-00227E, Type 1, Class A; and ASTM C920, Type M, Grade P, Class 25, use T and other.

Type A1 Sealant – Traffic (Pedestrian) Except in Inmate Accessible Areas:

4. Acceptable Manufacturers/Products, as listed below and meeting the criteria and requirements specified herein, will be acceptable:
 - a. Pecora Corp.; Urexpan NR-200 for joints with no greater than 5% slope.
 - b. Pecora Corp.; Dynatrol II SG for joints with 5% to 15% slope.
 - c. Sika Corp.; Sikaflex-2c SL for joints with no greater than 5% slope.
 - d. Master Builders Solutions; MasterSeal SL-2 for joints with no greater than 5% slope.
 - e. Master Builders Solutions; MasterSeal SL-2 for joints with 5% to 15% slope.
 - f. For manufacturers/products not listed, comply with substitution requirements in Section 01 25 00 – Substitution Procedures.
5. Two-Component, self-leveling polyurethane elastomeric sealant.
6. Meets Federal Specification TT-S-00227E, Type II, Class A; and ASTM C920, Type M, Grade NS, Class 50, use M, G, A.

Type B Sealant – Security (Flexible/Dynamic Joints) in Inmate Accessible Areas:

7. Acceptable Manufacturers/Products, as listed below and meeting the criteria and requirements specified herein, will be acceptable.
 - a. Pecora Corp.; Dynaflex.
 - b. Pecora Corp.; Dynaflex SC.
 - c. Sika Corp.; SikaFlex-11FC
 - d. Master Builders Solutions; MasterSeal 195.
 - e. For manufacturers/products not listed, comply with substitution requirements in Section 01 25 00 – Substitution Procedures.
8. One- or two-component, tamper-resistant, non-sag, polyurethane or silane-modified polymer elastomeric sealant; Shore A hardness of 50 or higher.
9. Two-Component meets Federal Specification TT-S-00227E, Type II, Class B and ASTM C920, Type M, Grade NS, Class 12.5, use M, O.
10. One-Component meets Federal Specification TT-S-00230C, Type II, Class B and ASTM C920, Type S, Grade NS, Class 12.5.

Type B1 Sealant – Security (All Joints in Food Preparation) in Inmate Accessible Areas:

11. Acceptable Manufacturers/Products, as listed below and meeting the criteria and requirements specified herein, will be acceptable.
 - a. Pecora Corp.; Dynaflex SC.
 - b. Sika Corp.; SikaFlex-1A.
 - c. For manufacturers/products not listed, comply with substitution requirements in Section 01 25 00 – Substitution Procedures.
12. One-component, tamper-resistant, non-sag, polyurethane elastomeric sealant; Shore A hardness of 50 or higher; USDA approved.
13. Meets Federal Specification TT-S-00230C, Type II, Class B and ASTM C920, Type S, Grade NS, Class 12.5.

Type C Sealant – Security (Rigid Joints) in Inmate Accessible Areas:

14. Acceptable Manufacturers/Products, as listed below and meeting the criteria and requirements specified herein, will be acceptable:
 - a. Pecora Corp.; DynaPoxy EP-1200.
 - b. Sika Corp.; Sikadur 31 Hi-Mod Gel.
 - c. Euclid Chemical Company; Euco #452 Gel.
 - d. Simpson Strong-tie; CI-GC Gel-Viscosity (for joints 1/4 inch wide or less.
 - e. Simpson Strong-tie; SET 3G (for joints wider than 1/4 inch).
 - f. For manufacturers/products not listed, comply with substitution requirements in Section 01 25 00 – Substitution Procedures.
15. High-solids, high-modulus, two-component, tamperproof, epoxy resin; Shore D hardness of 70 or higher.
16. Compressive Strength: Minimum 10,000 psi in 7 days when tested in accordance with ASTM D695 at 75 degrees F and 50 percent relative humidity.
17. Meets ASTM C881, Type I and II, Grade 3, Classes B & C.

Type D Sealant – Glazing:

18. Acceptable Manufacturers/Products, as listed below and meeting the criteria and requirements specified herein, will be acceptable:
 - a. ADCO Products, Inc.: Adcoseal B-100.
 - b. Pecora Corp.; BA-98.
 - c. Indiana Sealants and Adhesives (Inseal)/CRL; PTI Sealant 707.
 - d. Tremco; Butyl Sealant.
 - e. For manufacturers/products not listed, comply with substitution requirements in Section 01 25 00 – Substitution Procedures.
19. Butyl rubber-based sealant: One-part, gun-grade, caulking, sealing and glazing compound; non-skinning, non-hardening.
20. Meets AAMA 808.3-05; ASTM C1311 (+/- 7.5% joint movement); Federal Specification TT-S-001657, Type I; and TT-C-1796A.

Type E Sealant – General Purpose Siliconized Acrylic Latex:

21. Acceptable Manufacturers/Products, as listed below and meeting the criteria and requirements specified herein, will be acceptable:
 - a. Pecora Corp.; AC-20.
 - b. Master Builders Solutions; MasterSeal NP 520.
 - c. Tremco; Tremflex 834.
 - d. For manufacturers/products not listed, comply with substitution requirements in Section 01 25 00 – Substitution Procedures.
22. Latex acrylic based sealant in accordance with ASTM C834, paintable.

JOINT SEALANTS

Type F Sealant – Silicone:

23. Acceptable Manufacturers/Products, as listed below and meeting the criteria and requirements specified herein, will be acceptable:
 - a. Dow Corning Corp.; Dowsil 795.
 - b. Momentive/GE Silicones; Silpruf SCS2000.
 - c. Pecora Corp.; 895 NST.
 - d. Tremco; Spectrem 2.
 - e. Sika Corp.; SikaSil WS-295.
 - f. For manufacturers/products not listed, comply with substitution requirements in Section 01 25 00 – Substitution Procedures.
24. Low-modulus silicone sealant in accordance with ASTM C920, Type S, Grade NS, Class 50.

Type G Sealant/Adhesive – Construction Adhesive/Sealant for Thresholds:

25. Acceptable Manufacturers/Products, as listed below and meeting the criteria and requirements specified herein, will be acceptable.
 - a. Sika Corp.; 31 Hi-Mod Gel.
 - b. Master Builders Solutions; MasterSeal CR 195.
 - c. Simpson Strong-tie; SET 3G.
 - d. For manufacturers/products not listed, comply with substitution requirements in Section 01 25 00 – Substitution Procedures.
26. Two-Component, 100% solids, solvent-free, moisture-tolerant, high-modulus, high-strength, structural epoxy paste adhesive.
 - a. Modulus of Elasticity in Compression (ASTM D695): 5.6×10^5 psi (7 days).
 - b. Flexural Strength (ASTM D790): 6,100 psi (7 days).
 - c. Modulus of Elasticity in Flexure (ASTM D790): 1.5×10^6 psi (7 days).
 - d. Tensile Strength (ASTM D638): 3,300 psi (7 days).
 - e. Elongation at Break (ASTM D638): 0.9% (7 days).
 - f. Tensile Adhesion Strength – Hardened Concrete to Steel (ASTM C882): 2,900 psi (2 days).
 - g. Shear Strength (ASTM D732): 4,600 psi (7 days).
 - h. Heat Deflection Temperature – Fiber Stress Loading 264 psi (ASTM D648): 135° F.
27. Meets ASTM C881, Types I, II & IV, Grade 3, Classes B & C and AASHTO M-235 specifications.

Type H Sealant – Acoustical:

28. Tape:
 - a. Acceptable Manufacturers/Products, as listed below and meeting the criteria and requirements specified herein, will be acceptable:
 - 1) Saint-Gobain; Norseal.
 - 2) For manufacturers/products not listed, comply with substitution requirements in Section 01 25 00 – Substitution Procedures.
 - b. Polyvinylchloride foam tape with pressure sensitive adhesive on one side, 3/4 inch wide by the thickness required to accommodate unevenness of substrate and completely fill openings between partition framing and building floors and concrete and masonry walls.

29. Compound:

- a. Acceptable Manufacturers/Products, as listed below and meeting the criteria and requirements specified herein, will be acceptable:
 - 1) OSI; SC175.
 - 2) Pecora Corp.; AIS-919.
 - 3) Pecora Corp.; AC-20 FTR.
 - 4) Tremco; Acoustical/Curtainwall Sealant.
 - 5) Owens Corning; QuietZone Acoustic Sealant.
 - 6) For manufacturers/products not listed, comply with substitution requirements in Section 01 25 00 – Substitution Procedures.
- b. Permanently resilient type manufactured specifically for acoustical applications.

2.3 MISCELLANEOUS MATERIALS

Backer Rod:

1. Material: Closed-cell foam, non-staining, non-gassing, resilient material such as neoprene, butyl, or polyurethane, compatible with sealant to be used.
2. Sized and shaped to control depth of sealant and to provide 20 percent to 50 percent compression upon insertion.

Joint Cleaner:

3. For metal and glass: Xylol, xylene, toluol, or toluene.
4. For removing lacquer coatings: Lacquer thinner.

Primer: As recommended by sealant manufacturer for use intended.

Masking Tape: Pressure-sensitive adhesive paper type.

Bond Breaker: Pressure-sensitive adhesive polyethylene tape.

2.4 SEALANT COLORS

Sealant color for use in exposed locations must be as selected by the CDCR Representative from manufacturer's standard colors.

Wherever sealants are not exposed to view, provide manufacturer's standard color which has the best overall performance characteristics for the application indicated.

PART 3 EXECUTION

3.1 EXAMINATION

Inspect joints to be sealed to determine if conditions are satisfactory for the proper installation of joint sealants.

If unsatisfactory conditions exist, do not commence Work until such conditions have been corrected. Beginning of installation means acceptance of existing conditions.

3.2 GENERAL

Provide sealant wherever necessary to:

1. Prevent light leakage.
2. Prevent moisture leakage.
3. Facilitate cleaning and sanitation.
4. Seal exposed joints around door and window frames, signs, display boards, casework, fire extinguisher cabinets, fire alarm boxes, plumbing fixtures, electrical device cover plates, light fixtures, and other items indicated to be set in sealant.

3.3 PREPARATION

Cleaning: Clean joint surfaces, using joint cleaner as necessary, of dust, dirt, oil, grease, rust, lacquers, laitance, release agents, moisture, and other matter which could adversely affect adhesion of sealants.

Masking: Mask areas adjacent to joints.

Priming: Apply primer, if required, in accordance with manufacturer's printed instructions.

Joints must enclose sealant on three sides.

1. Where adequate joints for sealants have not been provided, suitable joints must be cleaned out to the depth required, or as indicated, and ground to a minimum width of 1/4 inch without damage to the adjoining Work, unless otherwise specified or indicated.
2. No grinding shall be performed on metal surfaces.

3.4 APPLICATION

Install sealant and backing materials in accordance with manufacturer's instructions.

Apply in accordance with manufacturer's instructions regarding ambient temperature for application and curing.

Install backing materials in joints using blunt instrument to avoid puncturing.

1. Do not twist backing while installing.
2. Install backing so that joint depth is 50 percent of joint width, minimum 1/4 inch deep.

Apply sealants in joints using pressure gun with nozzle cut to fit joint width.

Place sealants in uniform, continuous beads without gaps or air pockets.

Tool joints to required configuration within 10 minutes of sealant application.

If masking materials are used, remove immediately after tooling.

Seal joints adjacent to painted Work before the final coat of final paint coat is applied.

Verify adhesion of sealants to substrates.

3.5 CLEANING

Remove spilled and excess materials adjacent to joints without damaging adjacent surfaces.

Leave finished Work in neat, clean condition with no evidence of spillovers or damage to adjacent surfaces.

3.6 SCHEDULE

Type A Sealant – Traffic (Vehicular):

1. For exterior vehicular traffic-bearing expansion joints.

Type A1 Sealant – Traffic (Pedestrian):

2. For walkway expansion and control joints not located in Inmate Accessible Areas.

Type B Sealant – Security (Flexible/Dynamic Joints) in Inmate Accessible Areas:

3. For building and walkway expansion, control and other flexible joints located in Inmate Accessible Areas, except as indicated otherwise.

Type B1 Sealant – Security (All Joints in Food Preparation) in Inmate Accessible Areas:

4. Within food preparation areas, for building and walkway expansion, control and other flexible joints located in Inmate Accessible Areas, except as indicated otherwise.

Type C – Security (Rigid Joints):

1. For rigid joints located in Inmate Accessible Areas, except as otherwise indicated.
2. All construction joints, window and hollow metal frame perimeters, and bedding of furnishings, equipment, plumbing fixtures, electrical fixtures, and other items fastened to wall, ceiling, and floor surfaces in the following locations:
 - a. Housing Cells.
 - b. Holding Cells.
 - c. Inmate Showers.
 - d. Inmate Toilet rooms where all walls (with the exception of chase walls) are of CMU and/or concrete construction.
 - e. Housing Unit Dayrooms within 10 feet of walking surfaces accessible to inmates.
 - f. Inmate side of enclosed Non-Contact Visiting rooms and Interview rooms.
 - g. Group Yards and Small Management Yards.
 - h. Other locations indicated.
3. Do not apply Type C sealant until all building wall and roof loads have been imposed for a period of not less than 7 days.

Type D – Butyl Rubber:

4. Interior wall penetrations for pipe and conduit that will be concealed by escutcheons and other trim and plate, and for lap joints in sheet metal.
5. Glazing.

Type E – General Purpose Siliconized Acrylic Latex:

JOINT SEALANTS

6. Joints, voids, and penetrations not otherwise scheduled herein for interior surfaces exposed to view and requiring painting.
7. Bedding of fixtures, partitions, equipment, and accessories fastened to walls and floors, and flanges and escutcheons of items penetrating surfaces in the following locations: kitchens, dining rooms, staff and public toilet rooms, inmate toilet rooms except as otherwise scheduled, change rooms, and other areas requiring sanitary conditions to eliminate any open joints between contact surfaces.

Type F – Silicone:

8. Exterior and interior joints in contact with organically-coated aluminum.
9. Exterior and interior vertical joints in concrete, except as otherwise specified.
10. Exterior joints in masonry and portland cement plaster.
11. Around metal door, window and louver frames penetrating exterior concrete, masonry and portland cement plaster surfaces, except as otherwise specified.

Type H – Acoustic:

12. Perimeter joints around sound-retardant partitions and electrical boxes and other penetrations in such partitions.

Conflicts:

13. In the event of conflict between the above Schedule and sealant type indicated on Drawings, notify the CDCR Representative.
14. The CDCR Representative will determine sealant type to be installed at locations in question.
15. Install sealant type directed by the CDCR Representative, complete with all necessary joint preparation and accessories.

END OF SECTION