

PROJECT MANUAL

for

Site Boring Work at Westpark Elementary School

SOUTHERN KERN UNIFIED SCHOOL DISTRICT
2601 Rosamond Blvd.
Rosamond, CA 93560

Prepared by:

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Project No. 3045.0000

March 2025

DIRECTORY

OWNER	SOUTHERN KERN UNIFIED SCHOOL DISTRICT 2601 Rosamond Blvd. Rosamond, CA 93560 661.256.5000
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SITE	WESTPARK ELEMENTARY SCHOOL 3600 Imperial Avenue Rosamond, CA 93560
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ARCHITECT	FLEWELLING & MOODY, INC. 1035 West Lancaster Blvd. Lancaster, CA 93534 661.949.0771
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PROFESSIONAL SIGNATURE PAGE

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END OF SECTION

**SECTION 01 11 00
SUMMARY OF WORK**

1.00 GENERAL

1.01 SUMMARY

- A. The Project consists of design and construction of the following items:
 - 1. Provide all labor, material, and equipment required for site boring to reconnect the existing relocatable buildings (801 thru 808) to the existing main fire alarm panel and MDF.
 - 2. Provide conduits and cables for existing relocatable buildings and provisions for (5) new modular buildings.

1.02 PHASING/CONTRACTOR'S USE OF PREMISES

- A. Move stored products, which interfere with operations of District or other contractors.
- B. Obtain and pay for use of additional storage, work areas or parking needed for operations or Contractor's employees.
- C. Use of site: Limit to areas directed by the District.
 - 1. Allow District access to maintain and operate other existing facilities.
 - 2. Permit unimpeded access by firefighting, law enforcement agencies and rescue equipment.
 - 3. Access to and egress from construction site shall be in strict conformance to prearranged routes approved by the District, with the understanding that curtailment of traffic or revision of access routes may be required on short notice if the District's operations mandate such changes because of excessive noise, or problems with safety, service, or supply.
- D. Partial District's occupancy: The District reserves the right to place and install equipment in areas of the Project prior to Substantial Completion provided it doesn't interfere with normal completion of Work. This partial occupancy shall not constitute acceptance of the Work.

1.03 WORK NOT IN CONTRACT

- A. The following will be provided by the District under separate contracts.
 - 1. Encapsulation, removal and disposal of asbestos, toxic substances and other hazardous materials.

2. Tests and inspections specified to be provided by the District in the Contract Documents.
 3. Items noted NIC (Not In Contract) on the Drawings or in the Specifications.
 4. Items noted OFCI (Owner Furnished Contractor Installed) on the drawings or the specifications shall identify those items that will be purchased and delivered to project by the Owner but for which the Contractor(s) shall be responsible for all labor and materials necessary to fully and properly install the supplied items.
- B. When work of this Contract requires the Contractor to make allowance for the above in his work, and to provide supports, power, conduits, stub-outs and other services to these items, the drawings, manufacturer's data and other information necessary for Contractor's work will be provided by the District upon request.

1.04 DEFINITIONS

- A. In addition to other definitions included in these Specifications, the following applies to the Work:
1. Approved, approved equal, or equal, mean as approved and accepted by the Architect and District.
 2. As necessary means essential to completion of Work.
 3. As required means as required by Contract Documents.
 4. As selected, as approved, as directed or words of similar import mean as selected by, as approved by, or as accepted by the Architect. No implied meaning shall be interpreted to extend Architect's responsibility into the Contractor's area of Contractor's supervision.
 5. As shown, as detailed, as indicated and words of similar import mean as indicated on the Drawings.
 6. Building Department and Authorities Having Jurisdiction: All agencies, individually or collectively, charged by statute with administration /enforcement of requirements of the Building Code at Project location.
 7. Concealed means embedded in masonry, concrete or other construction, installed within furred spaces, within a wall/partitions or above suspended ceilings, in trenches, in crawl spaces, or in enclosures.
 8. Equipment means a product with operational parts, whether motorized or manually operated, that requires service connections such as wiring or piping.
 9. Exposed means not installed underground or concealed as defined above.

10. Fabricated means items specifically assembled or made out of selected materials to meet individual design requirements for the Project.
11. Furnish (materials) means to supply and deliver to the Project ready for installation and in operable condition.
12. Include/including means include/including, without limitation.
13. Install (services or labor) means to place in final position, complete, anchored, connected, and in operable condition.
14. Interior means a space completely enclosed by walls, solid door(s), floor and ceiling.
15. Exterior means a space which does not meet the definition for "interior" above.
16. Manufactured applies to standard units usually mass-produced.
17. Manufacturer's directions, instructions, recommendations, specifications means manufacturer's written directions, instruction, recommendations, specifications.
18. Materials are products substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form part of Work.
19. Named products are items identified by manufacturer's product name, including make or model designation, indicated in manufacturer's published product literature current as of the date of the Contract Documents.
20. Owner furnished/Contractor installed (OFCI) means that some equipment may be Owner furnished and delivered to site by District and installed on site by Contractor under this Agreement.
21. Owner provided (OP) means items or equipment that shall be furnished and installed under separate contract by Owner/District. Product(s) means materials, systems, and equipment, and terms of similar intent.
22. Product(s) means materials, systems, and equipment, and terms of similar intent.
23. Provide means to supply, fabricate, deliver, place, and connect, complete in-place, ready for operation and use. When neither furnish, install nor provide is stated, provide is implied.
24. Division means Division of these Specifications except where the obvious intent is the act or process of dividing. Divisions are groups of related Sections.

- 25. Section means Section of these Specifications, except where the obvious intent is one of several components, a piece. Section is usually a basic unit of Work.
- 26. Shall is mandatory.
- 27. Submit, submittal, submission mean submit to Architect for review, unless otherwise stated.

1.05 TITLING AND ARRANGEMENT

- A. Article, Paragraph and subparagraph titles and other identifications of subject matter in Specifications are intended as an aid in locating and recognizing various requirements in beginning words of a sentence or where title establishes subject, titles are subordinate to and do not define, limit, or otherwise restrict Specification text.
- B. Underlining, bolding or capitalizing of words in the text does not signify or mean that such words convey special or unusual meaning.
- C. Specification text governs over titling and shall be understood to be and interpreted as a whole.
- D. The order of articles, paragraphs, subparagraphs, and sub-subparagraphs in the Specifications text is defined by the sequence of indentations.

1.06 INTERPRETATION

- A. Unless otherwise stated in the Contract Documents, technical words and abbreviation contained in the Contract Documents are used in accordance with commonly understood construction industry meanings; and non-technical words and abbreviations are used in accordance with their commonly understood meanings.
- B. Contract Documents may omit modifying words such as "all" and "any," and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement. Use of the word "including," when following any general statement, shall not be construed to limit such statement to specific items or matters, whether or not non-limiting language (such as "without limitation," "but not limited to," or words of similar import) is used with reference thereto, but rather shall be deemed to refer to all other items or matters that could reasonably fall within the broadest possible scope of such general statement.
- C. Whenever context so requires, use of the singular number shall be deemed to include the plural and vice versa.
 - 1. Each gender shall be deemed to include any other gender, and each shall include corporation, partnership, trust, or other legal entity whenever context so requires.

2. Captions and headings of various subdivisions of Contract Documents are intended only as a matter of reference and convenience and in no way define, limit, or prescribe the scope or intent of Contract Documents or any subdivision thereof.

END OF SECTION

SECTION 01 32 16 CONSTRUCTION SCHEDULE

1.00 GENERAL

- 1.01 Construction Schedule: The Contractor shall prepare a Construction Schedule as set forth in this Section. This schedule shall essentially be the same as the final project Construction Schedule required to be submitted and maintained for this project. The construction schedule shall indicate the time of starting and completion of each major phase of the project and such intermediate phases as will serve for well-defined control points. These phases and control points shall be placed in chronological order on the Construction Schedule. The schedule shall also indicate the anticipated date of receipt of major items of equipment, and all items of equipment receipt and installation of which is critical to the scheduled progress of the project.
- 1.02 Authority of Contractor's Representative: The Contractor's representative shall have the authority to act on behalf of the Contractor in fulfilling the requirements of preparing the schedule in a professional and acceptable manner demonstrating competence in use of the Construction Schedule including scheduling experience on project of similar value and complexity.
- 1.03 Completion of Schedule Preparation: After fulfilling requirements above, the Contractor in a coordinated effort with the Owner shall complete the preparation of the schedule. The schedule shall include costs allocations for all the component activities, which make up a phase of work.
- 1.04 Modifications to Schedule: The Owner will return the Construction Schedule to the Contractor within ten (10) calendar days from receipt. The Contractor shall modify the schedule to include any modifications, or changes resulting from final phasing and scheduling of work items or control points.

The Contractor shall complete these modifications within five (5) calendar days from date the schedule is returned to him and shall resubmit it to the Owner for review and acceptance as the project Construction Schedule to be used during the course of construction. Upon receiving written notice from the Owner that the schedule, as revised, has been accepted, it will then become the initial approved project.

Construction Schedule by which the Contractor shall construct the reporting revision and updating procedures set forth in these Specifications to be implemented during the course of construction.

- 1.05 Changes: The Construction Schedule as submitted in this form shall contain no contract changes or delays, which may have occurred during the interim submittal period. Changes shall be entered at the first update revision as specified for progress reporting and updating in these Specifications.

- 1.06 Delays: If the Contractor's progress has fallen behind the approved Construction Schedule, the Contractor shall take such steps as may be required, including but not limited to, increasing the number of personnel, shifts, overtime operations, days of work, and amount of construction equipment until such time as the work is back on schedule. He shall also submit for approval no later than the time of submittal of the next request for partial payment, such supplementary schedule or schedules as may be deemed necessary to demonstrate the manner in which the approved rate of progress will be regained, all without additional cost to the Owner. The conditions specified in Section 01 31 00 "Progress Meetings: Reporting, Updating and Revisions During Construction," shall be satisfied before the review of the progress payment is considered complete.
- 1.07 Schedule of Values: The construction schedule as submitted will include a schedule of values as determined by the Contractor and acceptable to the Owner.
- 2.00 MATERIALS
- Not Used
- 3.00 EXECUTION
- Not Used
- 4.00 MEASUREMENT AND PAYMENT
- 4.01 Full compensation for conforming to the provisions of this article shall be included in the contract items for which the work relates with no additional compensation allowed therefor.

END OF SECTION

SECTION 01 33 23
SHOP DRAWINGS AND SAMPLES

1.00 GENERAL

1.01 SUMMARY

- A. This Section establishes general requirements for shop drawings and samples, and supplements similar provisions found elsewhere in the Contract Documents.

1.02 GENERAL REQUIREMENTS

- A. Prior to submission to Architect, Contractor to check all shop drawings, brochures, and other such construction data for quantity, size, and dimensions. Architect will answer questions raised by Contractor, and will make determination regarding quality of material and equipment, design and arrangement decisions, and color selections, but will not be responsible for quantity, size, or dimensional errors on shop drawings. In cases of omission and obvious error, and in cases of conflict, either between details on Contract Drawings or Specifications, such questions shall be brought to the Architect's attention, and Architect will give prompt answers to such questions.
 - 1. Colors and textures to be selected will be selected from all available colors and textures, regardless of price ranges. For instance, where the first manufacturer listed has 20 colors or color ways available, that is the minimum number that shall be available for selection. Products of other manufacturers may be submitted, but the cost of colors considered special shall be included in the Contract Sum if their number is less than 20. When colors or textures are custom from any manufacturer, they will be so identified.
- B. Carefully review subcontractors' submittals for completeness and correctness and stamp and acknowledge such review on submittals, prior to transmitting them to Architect.
- C. Close adherence to these requirements is necessary to avoid delay in processing of shop drawings by the Architect. Deviation from these requirements may result in rejection of the submittal. Contractor will be held responsible for delays resulting from tardy and improper submittals.
- D. Obtain approvals from required agencies, prior to submittal to the Architect, for all revisions, substitutions of materials or design, including all structural deviation from the design as shown and specified.

1.03 SUBMITTALS

- A. Shop drawings, minimum (District may request more):
 - 1. One transparent vellum reproducible, reverse-reading.
 - 2. 6 blueline prints bound in sequence.

- B. Brochures/material list/specifications/concrete mix designs: 6 sets each bound in sequence.
- C. Samples: 3 each, unless additional samples are requested by the District.

1.04 SUBMITTAL PROCEDURES

- A. Identify submittals with job name, location, and Architect's job number. They shall be reviewed, stamped with an approximately 3 in. x 1/2 in. identification stamp, and have the signed approval of Contractor, prior to submission to Architect. Each sheet of drawings, both prints and transparencies, shall be so identified and signed.
- B. Bound sets of brochures, catalog sheets, specifications and materials lists shall include an index sheet, completely identifying the entire content of the submittal in sequential order. At his option, the Contractor may identify, stamp and sign only this index sheet.
- C. In lieu of signing each brochure, Contractor may indicate on Letter of transmittal that he has reviewed and approved all material included. This does not eliminate requirements for identification stamp information.
- D. Architect will return to the Contractor one copy of the vellum transparency of drawings and 1 brochure, stamped and signed with corrections, if any. If the Contractor desires additional copies returned, then he must so request and submit the extra copies.
- E. Handle re-submittals the same as the original submittals, but identify as such and use the Architect's original shop drawing number.
- F. Accompany each submittal by a letter of transmittal containing a complete itemized and numbered list of the submitted material together with the subcontractor's name. A separate Letter of transmittal shall accompany each submittal from different subcontractors and different categories (trade and building units).
- G. Segregate and submit shop drawing submittals separately for each building unit comprising entire Project. Submittals shall be made as though each building unit and the site are separate projects.

1.05 SAMPLES

- A. Labeling: Identify each sample with at least a 3 in. by 4 in. label with the following information.
 - 1. Complete identification stamp information in accordance with submittals procedure in paragraph 1.04, A.
 - 2. Name, finish, and composition of the material.
 - 3. Location or intended use on the Project.
- B. Size of samples: Of sufficient size to show all salient features of material or item, and

which are truly representative of the extremes of variation in color, texture, finish, and construction to be expected in installed work. Samples of framed materials shall include a corner joint. Allow space for 5 in. by 3 in. Architect's review stamp.

- C. Mock-ups: Specifications may require mock-ups of proposed construction elements, using actual materials and full-size components. Such mock-ups shall be included in the Contract Sum.
- D. Review of samples: After review, samples will be stamped or labeled to indicate their review, and one sample will be returned to the Contractor.
 - 1. Samples retained by the Architect will constitute the standard of quality and appearance of all materials of the type represented by the sample.
 - 2. When samples are rejected, Contractor will be given reasons for rejection and shall resubmit samples until, in the opinion of the Architect, they comply with Contract requirements.
- E. At the option of the District or Architect, samples may be subject to testing. In such event, additional samples as may be required shall be supplied by the Contractor at no additional cost.

END OF SECTION

SECTION 01 40 00 QUALITY CONTROL

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and control procedures that facilitate compliance with the Contract Document requirements.
 - 2. Requirements for Contractor to provide quality-assurance and control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- C. Related Sections:
 - 1. Divisions 2 through 33 Sections for specific test and inspection requirements.

1.2 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.
- C. Mockups: Full size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.
- D. Preconstruction Testing: Tests and inspections performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.

- E. Product Testing: Tests and inspections that are performed by a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- F. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
- G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade or trades.
- J. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.3 CONFLICTING REQUIREMENTS

- A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.4 INFORMATIONAL SUBMITTALS

- A. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility sent to authorities having jurisdiction before starting work on the following systems.
 - 1. Seismic-force resisting system, designated seismic system, or component listed in the designated seismic system quality assurance plan prepared by the Architect.

2. Main wind-force resisting system or a wind-resisting component listed in the wind-force-resisting system quality assurance plan prepared by the Architect.
- B. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

1.5 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
1. Date of issue.
 2. Project title and number.
 3. Name, address, and telephone number of testing agency.
 4. Dates and locations of samples and tests or inspections.
 5. Names of individuals making tests and inspections.
 6. Description of the Work and test and inspection method.
 7. Identification of product and Specification Section.
 8. Complete test or inspection data.
 9. Test and inspection results and an interpretation of test results.
 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 12. Name and signature of laboratory inspector.
 13. Recommendations on retesting and re-inspecting.
- B. Manufacturer's Field Reports: Prepare written information documenting tests and inspections specified in other Sections. Include the following:
1. Name, address, and telephone number of representative making report.
 2. Statement on condition of substrates and their acceptability for installation of product.
 3. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.

4. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 5. Other required items indicated in individual Specification Sections.
- C. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.6 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or products that are similar to those indicated for this Project in material, design, and extent.
- F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- G. Testing Agency Qualifications: An independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.

- H. **Manufacturer's Representative Qualifications:** An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. **Preconstruction Testing:** Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
 - 1. Contractor responsibilities include the following:
 - a. Provide test specimens representative of proposed products and construction.
 - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - c. When testing is complete, remove test specimens, assemblies, mockups; do not reuse products on Project.
 - 2. **Testing Agency Responsibilities:** Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
- J. **Mockups:** Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
 - 1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
 - 2. Notify Architect seven days in advance of dates and times when mockups will be constructed.
 - 3. Demonstrate the proposed range of aesthetic effects and workmanship.
 - 4. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
 - a. Allow seven days for initial review and each re-review of each mockup.
 - 5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 - 6. Demolish and remove mockups when directed, unless otherwise indicated.

1.7 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
 - 1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
 - 2. Costs for retesting and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
 - 1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 - 2. Notify testing agencies at least 48 hours in advance of time when Work that requires testing or inspecting will be performed.
 - 3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 - 4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 - 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Manufacturer's Field Services: Where indicated, engage a manufacturer's representative to observe and inspect the Work. Manufacturer's representative's services include examination of substrates and conditions, verification of materials, inspection of completed portions of the Work, and submittal of written reports.
- D. Retesting/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and re-inspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- E. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
 - 1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.

2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform any duties of Contractor.
- F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- 1.8 SPECIAL TESTS AND INSPECTIONS
- A. Special Tests and Inspections: Owner will engage a qualified testing agency and/or special inspector to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, as indicated in Statement of Special Inspections attached to this Section, and as follows:

- B. Special Tests and Inspections: Conducted by a qualified testing agency or special inspector as required by authorities having jurisdiction, as indicated in individual Specification Sections, and as follows:
1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
 2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
 3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
 4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
 5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
 6. Retesting and re-inspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Division 1.
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION

SECTION 01 45 29
TESTING AND INSPECTION REQUIREMENTS

1.01 SUMMARY

- A. Section Includes: Cooperate with the Owner's selected testing agency, the Project Inspector, and others responsible for testing and inspecting the Work, and assist the Owner by coordinating such testing and inspecting services as specified in this Section and/or elsewhere in the Contract Documents including the attached Division of State Architect Structural Tests and Inspections sheet (enclosed).
- B. Related Work Specified Elsewhere:
 - 1. Requirements for testing may be required in other Sections of these Specifications.
 - 2. Where no testing requirements are specified or required by reference standards or authorities having jurisdiction, the Owner may require such testing to be performed under current pertinent standards for testing. Payment for such testing will be made as described herein.
- C. Work Not Included:
 - 1. The Owner will select a pre-qualified independent testing laboratory and Inspector as approved by the Division of the State Architect, Office of Regulation Services.
 - 2. The Owner will pay for initial services of the testing laboratory as further described hereinafter.

1.02 QUALITY ASSURANCE

- A. The Owner will select an independent testing laboratory to conduct the tests. Selection of the material required to be tested shall be by the laboratory or the Owner's representative and not by the Contractor.
- B. Qualifications of Testing Laboratory: The testing laboratory shall be qualified to the Owner's acceptance in accordance with ASTM E 329. The testing laboratory shall be qualified by the Division of State Architect in accordance with Interpretation of Regulation No. 1R1-1.
- C. Codes and Standards: Testing, when required, will be in accordance with pertinent codes and regulations and with selected standards of the American Society for Testing and Materials and other organizations or agencies which publish recognized codes, standards, or tests. Refer to Article 3.04 – Required Testing of this Section.
- D. The project specifications shall be in accordance with the provisions of the Standard Specifications for Public Works Construction (SSPWC) 2012 Edition.

1.03 TEST REPORT DISTRIBUTION

- A. Promptly process and distribute required copies of test reports and related instructions to ensure necessary retesting and/or replacement of materials with the least possible delay in progress of the Work.
- B. One copy of test reports shall be forwarded to the Division of the State Architect by the testing agency. Such reports shall include tests made, regardless of whether such tests indicate that the material is satisfactory or unsatisfactory. Samples taken but not tested shall also be reported. Records of special sampling operations as required shall also be reported. The reports shall show that the material or materials were sampled and tested in accordance with the requirements of Title 24 and with the approved specifications. Test reports shall show the specified design strength. They shall also state definitely whether or not the material or materials tested comply with requirements.
- C. Each testing agency shall submit to the Division of the State Architect a verified report in duplicate covering tests which are required to be made by that agency during the progress of the project. Such report shall be furnished each time that work on the project is suspended, including tests up to that time, and at the completion of the project.

1.04 PAYMENT FOR TESTING SERVICES

- A. Initial Services: The Owner will pay for initial testing and inspection except as specifically modified herein-after or as specified otherwise in technical sections. Provided the results of inspection indicating compliance with the Contract Documents.
- B. Retesting: When initial tests or inspection indicate noncompliance with the Contract Documents, subsequent retesting or re-inspection occasioned by the noncompliance shall be performed by the same testing laboratory or Inspector and the costs thereof will be deducted by the Owner from the Contract Sum. Retesting and re-inspection will continue until test or inspection results indicate compliance.
- C. Code Compliance Testing: Inspections and tests required by codes or ordinances, or by authorities having jurisdiction and made by a legally constituted authority, shall be the responsibility of and shall be paid for by the Owner, but back charged to the Contractor in case of retesting due to noncompliance.
- D. Specified Inspections and Tests: Tests and inspections specified in the Specifications, directly or by reference, shall be coordinated by the Contractor at his expense and paid for by the Owner. Corrections of noncompliance and test failures shall be paid for by the Owner, but shall be back charged to the Contractor. Re-inspection and retesting shall be in accordance with paragraph 1.04-B.
- E. Contractor's Convenience Testing: Inspecting or testing performed exclusively for the Contractor's convenience shall be the sole responsibility of and at the expense of the Contractor.

1.05 INSPECTION BY THE OWNER

- A. The Owner and his representatives will have access, for the purpose of inspection, to parts of the work and to the shops wherein the work is in preparation, and the Contractor shall maintain proper facilities and provide safe access for such inspection.
- B. The Owner shall have the right to reject materials and workmanship which are defective, and to require their correction. Rejected workmanship shall be satisfactorily corrected and rejected materials shall be removed from the premises without charge to the Owner. If the Contractor does not correct such rejected within a reasonable time, fixed by written notice, the Owner may correct rejected work and charge the expense to the Contractor.
- C. Should it be considered necessary or advisable by the Owner at any time before final acceptance of the entire work to make an examination of work already completed by removing or tearing out the same, the Contractor shall on request promptly furnish necessary facilities, labor and materials. If such work is found to be defective in respect due to fault of the Contractor or his subcontractor, he shall defray expenses of such examinations and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the contract, the additional cost of labor and material necessarily involved in the examination and replacement will be allowed the Contractor.

1.06 PROJECT INSPECTOR

- A. An Inspector employed by the Owner in accordance with the requirements of State of California Building Code, Title 24, Part 1, and qualified in accordance with Division of State Architect will be assigned to the work. His duties are specifically defined in Title 24, Part 1, Section 4-342, reprinted herein:

42. Duties of the Project Inspector.

- (A) General: The Project Inspector shall act under the direction of the A/E/Engineer.
- (B) Duties: The general duties of the Project Inspector in fulfilling his or her responsibilities are as follows:
 - (1) Inspection: He or she must have actual personal knowledge, obtained by his personal inspection of the work of construction in stages of its progress, that the requirements of the approved plans and specifications are being completely executed.

Inspection means complete inspection of every part of the work. Work, such as concrete work or brick work which can be inspected only as it is placed, shall require the constant presence of the Project Inspector. Other types of work which can be completely inspected after the work is installed may be carried on while the Inspector is not present. In any case,

the Project Inspector must personally inspect every part of the work. In no case shall the Project Inspector have or assume duties which will prevent him or her from providing inspection.

The Project Inspector may obtain personal knowledge of the work of construction, either on-site or off-site, performed under the inspection of a Special Inspector or Assistant Inspector from the reporting of others on testing or inspection of materials and workmanship for compliance with the plans, specifications and applicable standards. The exercise of reasonable diligence to obtain the facts shall be required.

- (2) Relations with A/E/Engineer: The Project Inspector shall work under the general direction of the A/E/Engineer. Inconsistencies or seeming errors in the A/E/Engineer for his interpretation and instructions. In no case, however, shall the instruction of the A/E/Engineer be construed to cause work to be done which is not in conformity with the approved plans, specifications, and change orders.
- (3) Job File: The Project Inspector shall keep a file of approved plans and specifications (including approved addenda or change orders) on the job, and shall immediately return unapproved documents to the A/E for proper action. The Project Inspector, as a condition of his employment, shall have and maintain on the job, codes and documents referred to in the plans and specifications.
- (4) Project Inspector's Semi-Monthly Reports: The Project Inspector shall keep the A/E/Engineer thoroughly informed as to the progress of the work by making semi-monthly reports in writing as required in Section 37.
- (5) Not Used.
- (6) Construction Procedure Records: The Project Inspector shall keep a record of certain phases of construction procedure.

All such records of construction procedure shall be kept on the job until the completion of the work. These records shall be made a part of the permanent school records.

- (7) Deviations: The Project Inspector shall notify the Contractor, in writing, of deviations from the approved plans and specifications which are not immediately corrected by the Contractor when brought to his or her attention. Copies of such notice shall be forwarded immediately to the A/E/Engineer.

Failure on the part of the Project Inspector to notify the Contractor of deviations from the approved plans and specifications shall in no way relieve the Contractor of responsibility to complete the work covered by his or her contract in accordance with the approved plans and specifications and laws and regulations.

- (8) Verified Reports: The Project and Special Inspectors shall each make and submit to the Division of the State Architect verified reports.

The Project Inspector shall prepare and deliver to the Division of the State Architect detailed statements of fact regarding materials, operations, etc., when requested.

- (c) Violations: Failure, refusal, or neglect on the part of the Inspector to notify the Contractor of work which does not comply with the requirements of the approved plans and specifications, or failure, refusal, or neglect to report immediately, in writing, such violation to the A/E/Engineer, to the School Board, and to the Division of the State Architect shall constitute a violation of the act and shall be cause for the Division of the State Architect to take action.

Note: Authority cited: Section 39152 and 81142, Education Code. Reference: Sections 39151, 39153, 81141 and 81143, Education Code."

- B. The work of construction in stages of progress shall be subject to the personal continuous observation of the Project Inspector as continuous observation is defined by Title 24. He shall have free access to all parts of the work at any time. The Contractor shall furnish the Project Inspector reasonable facilities for obtaining such information as may be necessary to keep him fully informed respecting the progress and manner of the work and the character of the materials. Inspection of the work shall not relieve the Contractor from obligation to fulfill this Contract.

1.07 OWNER'S OTHER PERSONNEL

- A. From time to time, other personnel in the employ of the Owner may inspect the Work when the Work is in progress but shall have no authority to direct the Contractor or request changes in the Work except as may be provided elsewhere in the Contract Documents.

1.08 REPRESENTATIVE OF THE DIVISION OF THE STATE ARCHITECT

- A. Architect shall have access to the site in accordance with Title 24, Part 1, 4-333.
- B. Field Engineers and Inspectors from D.S.A. Structural Safety Section, Fire & Life Safety Review and Access Compliance shall have access to the site in accordance with Title 24, Part 1, 4-334.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

3.01 COOPERATION WITH TESTING LABORATORY AND INSPECTORS

- A. Inspectors and representatives of the testing laboratory shall have access to the work. Provide facilities for such access in order that the testing, inspection, and the obtaining of samples may be done properly.
- B. Contractor shall deliver material specimens to the Owner's testing lab, which must by terms of the Contract be tested prior to inclusion in the Project, at least 45 days prior to scheduled delivery to the job site.
- C. Material shipped by the Contractor from the source of supply prior to having satisfactorily passed such testing and inspection or prior to the receipt of notice from said representative that such testing and inspection will not be required shall not be incorporated in the job.

3.02 TAKING SPECIMENS

- A. Field specimens and samples for testing, unless otherwise provided in these Contract Documents, shall be selected and taken by the Testing Laboratory or Project Inspector and not the Contractor. Sampling equipment and personnel will be provided by the testing laboratory. Deliveries of specimens and samples to the testing laboratory will be performed by the testing laboratory. Soil samples for approval of import fill shall be picked-up by the Testing Laboratory.

3.03 SCHEDULES FOR TESTING

- A. Establishing Schedule:
 - 1. By advance discussion with the testing laboratory selected by the Owner, determine the time required for the laboratory to perform its tests and to issue each of its findings.
 - 2. Provide required time within the construction schedule.
- B. Revising Schedule: When changes of construction schedule are necessary during construction, coordinate such changes of schedule with the testing laboratory as required.
- C. Adherence to Schedule: When the testing laboratory is ready to test according to the determined schedules, but is prevented from testing or taking specimens due to incompleteness of the work, extra charges for testing attributable to the delay may be back-charged to the Contractor and will be deducted by the Owner from the Contract Sum.

3.04 REQUIRED TESTING

Tests and inspections for the following items, where applicable, will be required in accordance with referenced Sections/Chapters of California Building Code, 2016 Edition, Title 24, Part 2:

A. FOUNDATIONS:

1. INSPECTION:

- a. Inspection of Cast-In-Place Deep Foundation
1704A.9

B. CONCRETE (Chapter 19A)

1. MATERIALS:

- a. Portland Cement 1704A.4.1;
1916A.1
- b. Concrete Aggregates 1704A.4.1;
1903A.3
- c. Not Used
- d. Reinforcing Bars 1704A.4.1;
1916A.2

2. QUALITY:

- a. Proportions of Concrete 1905A.2;
1905A.3;
1905A.4
- b. Strength Tests of Concrete 1905A.1.1;
1905A.6
- c. Shotcrete Proportions 1913A.2
- d. Shotcrete Cores 1913A.5
- e. Composite Construction Cores 1916A.4
- f. Gypsum Concrete Strength Tests 1914A;
1916A.6

3. INSPECTION:

- a. Job Site 1905A.7
- b. Batch Plant 1704.A.4.2

c.	Waiver of Batch Plant	1704.A.4.3
d.	Prestressed Concrete	1704A.4.4
e.	Shotcrete	1704A.17; 1913A
f.	Reinforcing Bar Welding	1903A.7; Table 1704A.3
g.	Post-Installed Anchors in Concrete	1916A.7
C.	LIGHT WEIGHT METALS	
1.	MATERIALS	
a.	Alloys	2002.1
b.	Identification	2002.1
2.	INSPECTION	
a.	Welding	2003.1
D.	STRUCTURAL STEEL	
1.	MATERIALS	
a.	Structural Steel	2205A.1
b.	Cold Form Steel	2209A.1
c.	Identification	2203A.1
2.	QUALITY	
a.	Tests of Structural and Cold Form Steel	2210A.1
b.	Tests of End Welded Studs	2212A.2
c.	Steel Joists	2206A; 1704A.3.2.1
d.	Non-Destructive Weld Tests	1704A.3.1
3.	INSPECTION	
a.	Shop Fabrication	1704A.2 1704A.4.3

- b. Welding 1704A.3.1
- c. Nelson Stud Welding 1704A.3

E. WOOD

1. MATERIALS:

- a. Lumber and plywood 2303.1

END OF SECTION

**SECTION 01 50 00
TEMPORARY FACILITIES**

1.00 GENERAL

1.01 SUMMARY

- A. Provide all temporary facilities and controls required for the performance of the Work.
- B. Supervise use of all temporary facilities and controls. Enforce compliance with applicable standards. Prevent abuses of services.

1.02 SAFETY

- A. Guard machinery, equipment, and hazards in accordance with safety provisions of the latest edition of the Manual of Accident Prevention in Construction, published by Associated General Contractors of America, to the extent that such provisions are not in contravention of applicable law.
 - 1. Protect all hazards with adequately constructed guard rails or barricades and provide lanterns, warning lights, and the like, as necessary. Eliminate all attractive nuisance from the work and the site.
 - 2. To this end, dispose, store, guard and protect premises and all work materials, equipment and both permanent and temporary construction so as to preclude unauthorized use thereof by children or others and particularly to eliminate possible consequent injury to all persons.
- B. Structural design of items used in the construction of the work and not a permanent part thereof, is the sole responsibility of the Contractor.

1.03 SCAFFOLDING AND HOISTS

- A. Furnish and maintain hoists, staging, rigging, scaffolding, and runways required in the prosecution of the Work. Erect, equip and maintain such temporary work in accordance with statutes, laws, ordinances, rules or regulations of the State of California and other authorities and Insurance Companies having jurisdiction.

1.04 DUST CONTROL

- A. During the life of the Contract provide effective means of dust control, both within the structure and on the surrounding site.
- B. Obtain the District's approval before use of any means except water.
- C. When, in the sole opinion of the District, dust control is considered to be inadequate, Contractor shall immediately cease operations until supplementary dust control measures sufficient to mitigate the hazard are in place.

1.05 MAINTENANCE OF TRAFFIC

- A. Maintain traffic on all streets adjacent to or leading to the site.
- B. Where construction operations interfere with the free movement of traffic, provide traffic controls, flagmen or similar devices to efficiently control traffic movement.
- C. Provide a traffic control permit from the local authorities if required.
- D. Schedule delivery of materials and construction activities so that they do not interfere with student/public traffic at drop-off and pick-up.

1.06 DEWATERING

- A. Furnish and maintain all pumps or other dewatering devices required by this work.

1.07 TEMPORARY TOILETS

- A. Provide temporary toilets facilities for personnel employed on Project. Maintain toilets in clean and sanitary condition at all times. Remove at Project completion.

1.08 CONSTRUCTION WATER AND POWER

- A. Make arrangements for all water and power required for the Project. Provide all temporary lines and pay all bills. Remove temporary facilities at Project completion.

1.09 FENCES AND BARRICADES

- A. Provide around perimeter of construction site, erect fences and barricades with gates, as required by local governing authorities for security and to prevent unauthorized entry to work site. Maintain in good condition until completion of Project.

1.10 SIGNS

- A. Keep the premises free from all other posters, signs, and miscellaneous decorations, except those required by Code and to indicate unsafe conditions.

END OF SECTION

**SECTION 01 66 00
PRODUCT HANDLING**

1.00 GENERAL

1.01 SUMMARY

A. Section includes:

1. This Section establishes general requirements for product handling and storage, whether on or off site, and supplements similar provisions found elsewhere in the Contract Documents.

1.02 HANDLING

A. General: Transport, deliver, handle, and store all materials and equipment used on the Project to prevent the intrusions of foreign matter, moisture, and to prevent damage. In all cases comply with the following.

1. Material and equipment manufacturer's printed instructions regarding temperature limitations.
2. Other environmental conditions which are required to maintain original quality of materials and equipment.

B. Packaging:

1. Provide packaged materials in their manufacturer's original containers with seals unbroken and labels intact until incorporating into the Work.
2. Wrapped or bundled materials shall clearly bear the manufacturer's name and trade mark.

C. Damaged materials: Remove damaged or otherwise unsuitable material and equipment promptly from the site. Do not install damaged materials.

1.03 STORAGE

A. Inspect products upon delivery to ensure compliance with the Contract Documents, and to ensure that products are undamaged and properly protected.

B. Store products at the site to facilitate inspection and measurement of quantity or counting of units.

C. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.

1. Do not subject slabs-on-grade to excessive loading by shoring, storage of materials or operation of construction equipment unless adequately protected by heavy planking. Maintenance of slabs in good condition is the responsibility

of the Contractor who shall remove damaged areas of such slabs and replace them with new work, to the Architect's satisfaction, at no cost to the Owner.

- D. Store products subject to damage by elements above ground, under cover in weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.
- E. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.
- F. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other losses.
- G. Locate storage piles, stacks or bins to avoid being disturbed, and protect from damage of any sort.
- H. Store materials and equipment in accord with their manufacturer's instructions, above grade, and properly protected from weather and construction activities.
- I. Payment may be withheld for improperly packaged and stored materials.

1.04 PROTECTION

- A. Protect all finished surfaces, including floors, jambs, and soffits of all openings used as passageways or through which materials and equipment must travel.
- B. Carts, hand trucks, wheelbarrows and similar wheeled conveyances used on or in any portion of the buildings shall be equipped with pneumatic tires, unless otherwise authorized by the Architect.
- C. Keep finished surfaces clean and unmarred until the date of acceptance.
- D. Refer to individual Specification Sections for additional specific product handling and protection requirements.

2.00 PRODUCTS

Not used.

3.00 EXECUTION

Not used.

END OF SECTION

**SECTION 01 74 00
CLEANING**

1.00 GENERAL

1.01 DESCRIPTION

A. Principal work in this Section:

1. Keep premises, and adjacent private and public properties free from accumulations of waste, debris and rubbish caused by construction operations.
2. At completion of Work, remove waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all exposed surfaces. Remove remaining mock-ups and sample panels.
3. Leave Project clean and ready for occupancy.

1.02 SAFETY REQUIREMENTS

A. Standards: Maintain Project in accord with State and local safety and insurance standards.

B. Hazard control:

1. Store volatile wastes in covered metal containers, and remove from premises daily.
2. Prevent accumulation of wastes which create hazardous conditions.
3. Provide adequate ventilation during use of volatile or noxious substances.

C. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.

1. Do not burn or bury rubbish and waste materials on Project site.
2. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains. Store in containers with tight-fitting lids and remove to legal dump site or to recycling center.

2.00 PRODUCTS

Not used.

3.00 EXECUTION

3.01 DURING CONSTRUCTION

- A. Keep premises, and adjacent private and public properties free from accumulations of waste materials and rubbish. Remove debris and dirt from public property promptly; sweep sidewalks and adjacent streets daily when soiled by work performed under this Contract.
- B. Wet down materials and rubbish to lay dust and prevent it from blowing.
- C. At least once a week, or more often if required, clean site and dispose of waste materials, debris and rubbish off the site in a legal manner. Remove combustible materials such as paper and cardboard daily.
- D. Provide on-site containers for collection of waste materials, debris and rubbish. Provide a collection can at each location used as an eating area. Pick-up all garbage daily.
- E. Remove waste materials, debris and rubbish from site and legally dispose of at legal public or private dumping areas or recycling center off District's property.
- F. Do not allow debris and combustible materials to accumulate in, voids, cavities, and plenums created by wall, partition, and ceiling construction. These areas must be thoroughly cleaned out before being sealed or closed off by installation of finish materials.
- G. Do not allow debris to clog drains. Clean roof drains, scuppers, floor drains and area drains free of debris. Verify that they drain properly. Keep drains clean of debris at all times.
- H. Vacuum clean interior areas when ready to be painted. Refer to Section 09 90 00 for other provisions on preparation of surfaces to be painted.
- I. Handle materials in a controlled manner with as few handling as possible; do not drop or throw materials from heights.
- J. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.

3.02 FINAL CLEANING

- A. Employ experienced workers, or professional cleaners, for final cleaning.
- B. In preparation for Substantial Completion or Occupancy conduct final inspection of sight-exposed interior and exterior surfaces, and of concealed spaces.
- C. Remove labels that are not permanent labels.
- D. Clean transparent materials, including mirrors and glass in doors and windows. Remove misplaced glazing compound and other substances. Replace chipped or broken glass and other damaged transparent materials.

- E. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances. Restore reflective surfaces to their original reflective condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.
- F. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.
- G. Clean the site, including landscaped areas, of rubbish, litter and other foreign substances.
 - 1. Contaminated earth:
 - a. Final clean-up operation includes the removal and disposal of earth contaminated or unsuitable for support of plant life in planting areas, and filling of resulting excavations with suitable soil.
 - b. Contaminated areas include those used for disposal of waste concrete, mortar, plaster, masonry, and similar materials, areas in which washing out of concrete and plaster mixers or washing of tools and like cleaning operations have been performed, and areas that have been oiled, paved, or chemically-treated.
 - c. Do not dispose of waste oil, solvents, paints, solutions, or like penetrating material by depositing or burying on District's property.
 - 2. Sweep paved areas broom clean; remove stains, spills and other foreign deposits.
 - 3. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.
- H. Keep Project clean until it is occupied by District.

END OF SECTION

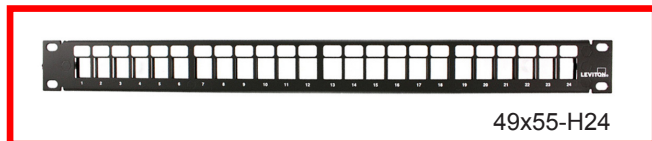
PRODUCT SPECIFICATIONS

49x55-Hxx, 49255-48N, 49255-Lxx

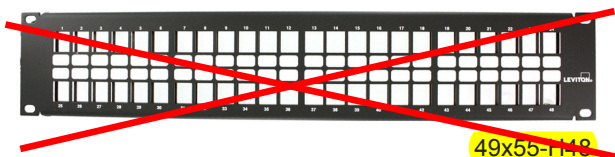
Flat QuickPort™ Patch Panels

APPLICATION

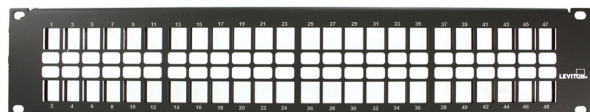
QuickPort Patch Panels are compatible with all QuickPort modular connectors to maximize versatility with a variety of media applications and enable easy upgrades. The panel fits all industry-standard 19-inch racks and cabinets.



49x55-H24



49x55-H48



49255-48N



49255-L24



49255-L48

SPECIFICATION

Patch panels shall be made of 16 AWG steel, and shall have a black powder coat finish with port numbers silk screened above or below each port. The panel shall be offered in 24- and 48-port configurations. The panel shall have the ability to allow for single port replacement of inoperative ports. Panels with label holders shall magnify the label printing.

DESIGN CONSIDERATIONS

- Mounts on 19-inch equipment racks
- Accepts all QuickPort-style connectors
- Includes port numbers
- 49255-H24, 49255-H48, 49255-48N, and 49355-Hxx include write-on blocks
- Includes mounting location for rear cable management bar (49005-CMB)
- Magnifying lens ensures visibility of port labels (49255-L24, 49255-L48)

STANDARDS & REGULATIONS

- ANSI/TIA-568
- cULus Listed

MECHANICAL SPECIFICATIONS

Capacity: 24- and 48-port
Materials: 16 AWG steel; black powder coat finish
Dimensions: See page two
Mounting: 19-inch rack mount
Color: Black
Temperature (Storage): -40 °C to +70 °C
Temperature (Operating): -10 °C to +60 °C
Humidity (Maximum): 95% relative humidity, non-condensing

COUNTRY OF ORIGIN

H24, H48, 48N, L24: Taiwan
L48: USA

WARRANTY INFORMATION

For Leviton product warranties, go to leviton.com/ns/warranty

49x55-Hxx, 49255-48N, 49255-Lxx

REVIEWED

By Craig Fries at 2:05 pm, Dec 14, 2022

PRODUCT SPECIFICATIONS

6110G-xx6



6110G-xx6

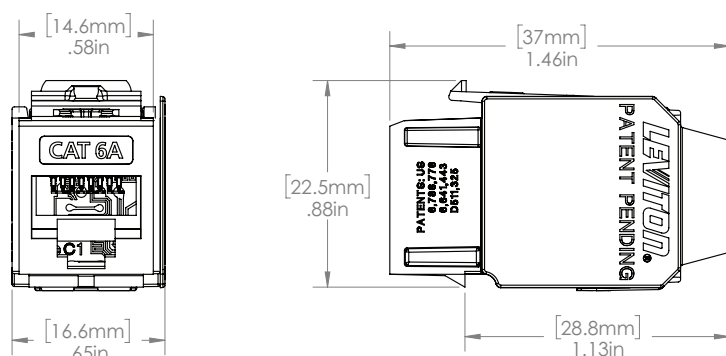
MECHANICAL SPECIFICATIONS

Dimensions: See below

Materials: **Jack Body:** High-impact, fire-retardant plastic rated UL 94V-0
Spring Wire Contacts: High-quality, copper-based alloy, plated with 50 microinches of gold for lowest contact resistance and maximum life

Temperature (Installation): -40 °C to +70 °C

Temperature (Operating): -10 °C to +60 °C



PART NUMBERS

Description	Part No.	GreenPack™ 12-Pack
eXtreme® Cat 6A Channel-Rated QuickPort® Jack, white	6110G-RW6	6110G-CW6
eXtreme Cat 6A Channel-Rated QuickPort Jack, light almond	6110G-RT6	—
eXtreme Cat 6A Channel-Rated QuickPort Jack, ivory	6110G-RI6	—
eXtreme Cat 6A Channel-Rated QuickPort Jack, yellow	6110G-RY6	—
eXtreme Cat 6A Channel-Rated QuickPort Jack, orange	6110G-RO6	—
eXtreme Cat 6A Channel-Rated QuickPort Jack, crimson	6110G-RC6	—
eXtreme Cat 6A Channel-Rated QuickPort Jack, dark red	6110G-RR6	—
eXtreme Cat 6A Channel-Rated QuickPort Jack, purple	6110G-RP6	—
eXtreme Cat 6A Channel-Rated QuickPort Jack, blue	6110G-RL6	6110G-CL6
eXtreme Cat 6A Channel-Rated QuickPort Jack, green	6110G-RV6	—
eXtreme Cat 6A Channel-Rated QuickPort Jack, gray	6110G-RG6	—
eXtreme Cat 6A Channel-Rated QuickPort Jack, black	6110G-RE6	6110G-CE6
eXtreme Cat 6A Channel-Rated QuickPort Jack, brown	6110G-RB6	—

For further support information, visit leviton.com/ns/support

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NETWORK SOLUTIONS EUROPEAN HEADQUARTERS

Glenrothes, UK | leviton.com/ns/emea

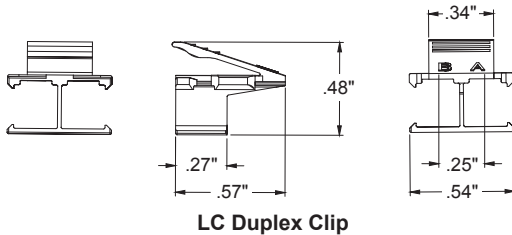
+44 (0) 1592 772124 | customerserviceeu@leviton.com

Leviton is dedicated to designing, developing and manufacturing sustainable high-performance structured cabling and speciality cabling solutions. Network Solutions products are available worldwide in over 100 countries. Visit us online to learn more.

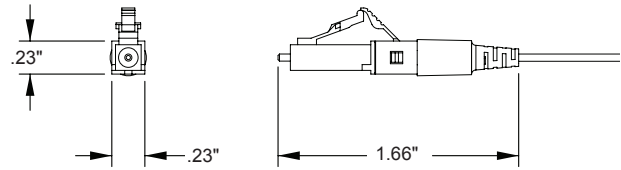
PRODUCT SPECIFICATIONS 49991-XXX

PERFORMANCE SPECIFICATIONS

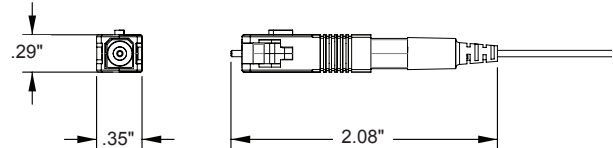
Parameter	Value
Insertion Loss (Multimode)	Typical: 0.1 dB; Max: 0.5 dB
Insertion Loss (Single-Mode)	Typical: 0.2 dB; Max: 0.5 dB
Insertion Loss (Single-Mode SC/APC)	Typical: 0.3 dB; Max: 0.6 dB
Return Loss (Multimode)	Typical: 25 dB
Return Loss (Single-Mode)	Typical: 55 dB
Return Loss (Single-Mode SC/APC)	Typical: 65 dB
Operating Temperature:	-40° C to +75° C



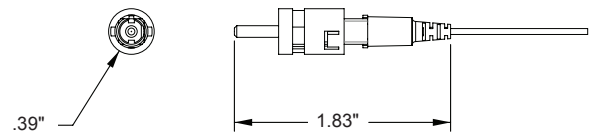
LC Duplex Clip



LC Connector



SC Connector



ST Connector

49991-XXX

LEVITON FASTCAM™ CONNECTORS

Description	Part No.
FastCAM LC OM1, beige	49991-MLC
FastCAM LC OM3/4, aqua	49991-LLC
FastCAM LC OS2, blue	49991-SLC
FastCAM SC OM1, beige	49991-MSC
FastCAM SC OM3/4, aqua	49991-LSC
FastCAM SC OS2, blue	49991-SSC
FastCAM SC/APC OS2, green	49991-ASC
FastCAM ST OM1, beige	49991-MST
FastCAM ST OM3/4, aqua	49991-LST
FastCAM ST OS2, blue	49991-SST
FastCAM LC Duplex Clip (pack of 6), clear	49991-CLP

LEVITON FASTCAM INSTALLATION KITS AND TOOLS

Description	Part No.
FastCAM Tool Kit w/ Opt-X® Fiber Cleaver, work tray and gooseneck LED	49800-LAK
FastCAM Tool Kit w/ Opt-X Fiber Cleaver	49800-MSK
Visual Fault Locator (VFL)	49886-VFL
Opt-X Fiber Cleaver	49886-LNX
Gooseneck LED (use with Opt-X Fiber Cleaver)	49886-LGN
Work Tray (use with Cleaver)	49886-LNT
APC Angled Cleaver	49886-APC

For further support information, visit leviton.com/ns/support

Page 2 of 2

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NETWORK SOLUTIONS PRODUCTS ARE AVAILABLE WORLDWIDE IN OVER 100 COUNTRIES. VISIT US ONLINE AT LEVITON.COM/NS TO LEARN MORE.

PRODUCT SPECIFICATIONS

5RxUM-xxx



Opt-X™ 1000i SDX Rack-Mount Enclosures 1RU, 2RU, 3RU, & 4RU

APPLICATION

The Opt-X 1000i SDX Rack-Mount Enclosure allows for inter-connect or cross-connect between backbone cable and active equipment while using minimum rack space in a frame or cabinet setting. The enclosure's features and design allow for easy field termination of connectors, splicing, or pre-terminated plug-n-play solutions. The fiber enclosure is primarily used in data centers, equipment rooms, and telecommunication rooms.



SPECIFICATION

Fiber enclosure shall be available in 1RU, 2RU, 3RU, and 4RU versions to accommodate termination and splicing of fiber. A removable sliding tray shall also be available in 1RU and 2RU enclosures. Adapter bulkhead shall accept SC, LC, ST, and MTP® adapters, and plug-n-play MTP cassettes. 4RU enclosures shall accommodate up to 15 adapter plates for 360 fiber connections. Fiber cable management for routing, storage, and protection shall accept patch cords, tight-buffer fiber, and backbone cables. Rear fiber cable management rings shall be stackable and configurable in quarter-, half-, or full-ring arrangements. Enclosure shall be constructed of 16-gauge steel with a powder-coated black finish and be mountable in either a 19-inch or 23-inch rack or cabinet frame. An optional locking door feature shall be available.

FEATURES

- 15-inch depth for high-density fiber termination and/or splicing
- Stackable and adjustable fiber rings simplify cable organization
- Front saddles pivot for improved patch cord routing
- Removable front and rear covers offer better access to the interior of the enclosure
- Removable rubber grommet allows for pre-terminated fiber trunk install, protects cable, and minimizes dust build-up
- Sliding tray (an option in 1RU and 2RU enclosures) glides forward and backward for front and rear bulkhead access after installation, and removes completely from enclosure for ease of field terminations and splicing
- Constructed of 16 AWG steel, powder-coated black
- 1RU or 2RU Retrofit Sliding Trays, sold separately, allow for higher-density applications using HDX MTP® Cassettes or HDX Adapter Plates (sliding tray does not accommodate splice trays)
- Convert to HDX cassettes or adapter plate using conversion bracket (sold separately)

DESIGN CONSIDERATIONS

- Accepts SDX adapter plates, splice modules and/or cassettes
- Optional cable strain-relief mounting kit (for installation on side of enclosure or on rack post)
- 19-inch or 23-inch enclosure rack-mount option (23-inch 1RU mounting bracket sold separately)
- Protrudes 4.5 inches from mounting ears to align with Leviton Versi-Duct™ Cable Management System
- Capable of storing up to 3 meters of 900 μm tight-buffered fiber per adapter
- Adapter plate on 3RU/4RU orients horizontally or vertically for optimal density
- Door lock option available on front, rear, or both
- Enclosures are sold empty (unloaded)
- Enclosures include an accessory kit consisting of cable ties, mounting screws, ID label, and spiral wrap (for cable protection on units with a sliding tray)

STANDARDS & REGULATIONS

- ANSI/TIA-568.3-D

COUNTRY OF ORIGIN

Mexico

5RxUM-xxx

PRODUCT SPECIFICATIONS

5RxUM-xxx



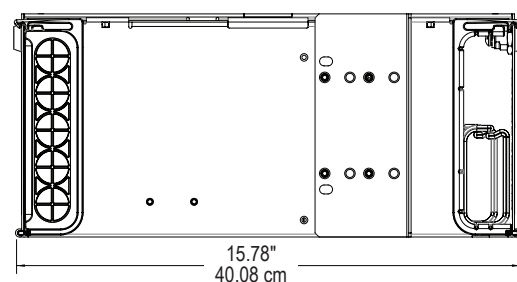
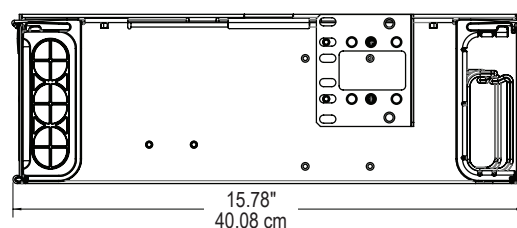
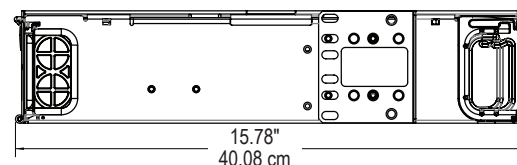
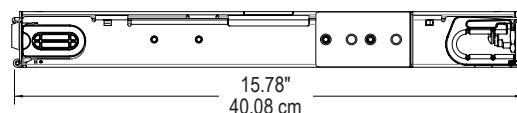
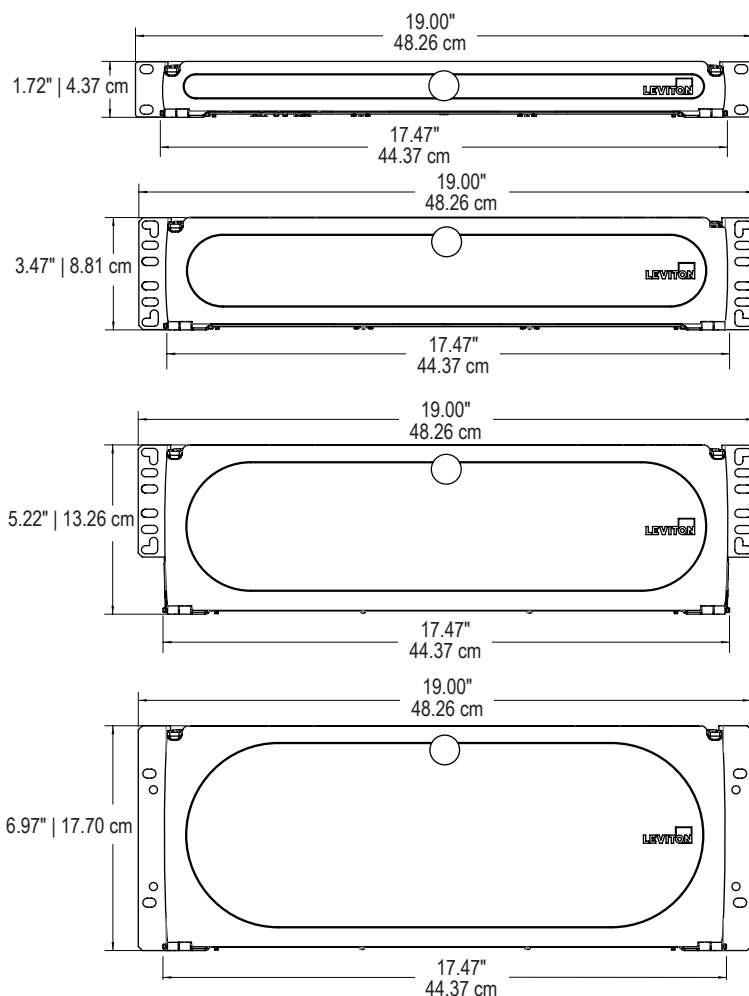
MECHANICAL SPECIFICATIONS

Dimensions: See below
Capacity: See below
Materials: Constructed of 16 AWG steel, powder-coated black. Plastic parts made using self-extinguishing ABS and polycarbonate materials rated UL 94V-2. Grommet material made of Santoprene®, a thermoplastic rubber elastomer.

WARRANTY INFORMATION

For Leviton product warranties, go to leviton.com/warranty

5RxUM-xxx



DENSITY

Rack Unit	Fibers	SDX Adapter Plates, Splice Modules or MTP Cassettes	Splice Trays
1RU	72	Up to 3	Up to 3
2RU	144	Up to 6	Up to 6
3RU	216	Up to 9 (horizontal adapter plate/module orientation)	Up to 12
3RU	288	Up to 12 (vertical adapter plate/module orientation)	Up to 12
4RU	288	Up to 12 (vertical adapter plate/module orientation)	Up to 12
4RU	360	Up to 15 (horizontal adapter plate/module orientation)	Up to 12

PRODUCT SPECIFICATIONS

5RxUM-xxx



5RxUM-xxx

DENSITY USING RETRO-FIT SLIDING TRAY

Rack Unit	Fibers	HDX Adapter Plate, Splice Module or MTP Cassettes
1RU	96	Up to 8
2RU	192	Up to 16

OPT-X™ 1000I SDX RACK-MOUNT ENCLOSURES

Description	Part No.
1RU Enclosure, Empty	5R1UM-F03
1RU Enclosure, Empty, with sliding tray	5R1UM-S03
2RU Enclosure, Empty	5R2UM-F06
2RU Enclosure, Empty, with sliding tray	5R2UM-S06
3RU Enclosure, Empty	5R3UM-F09
3RU Enclosure, Empty	5R3UM-F12
4RU Enclosure, Empty	5R4UM-F12
4RU Enclosure, Empty	5R4UM-F15

Enclosure includes an accessory kit which consists of cable ties, mounting screws, ID label, and spiral wrap (for cable protection on units with sliding tray)

ACCESSORIES

Description	Part No.
Retrofit Sliding Tray, 2U (for use with HDX Cassettes/Plates)	5R2UR-TRY
Retrofit Sliding Tray, 1U (for use with HDX Cassettes/Plates)	5R1UR-TRY
Universal Cable Clamp Kit, single cable grommet (for enclosure mounting)	5RCMP-KIT
Universal Cable Clamp Kit, multiple cable grommet (for enclosure mounting)	5RCMP-KT2
Universal Cable Clamp Kit (for rack post mounting)	5RCMR-KIT
Universal 0 RU Patch Cord Managers	5RCMT-VFG
HDX to SDX Adapter Bracket	HDXAD-ACC
Fiber Cable Management ¼ Round Ring Kit (bag of four)	5R100-14R*
1RU Enclosure 23" Rack and Cabinet Mounting Bracket	5R1RU-023
Lock and Key	5L000-KAL

* Not for use in Retrofit Sliding Tray

MTP® is a registered trademark of US Conec, Ltd.

Santoprene® is a registered trademark of Exxon Mobil Corporation

For further support information, visit leviton.com/ns/support



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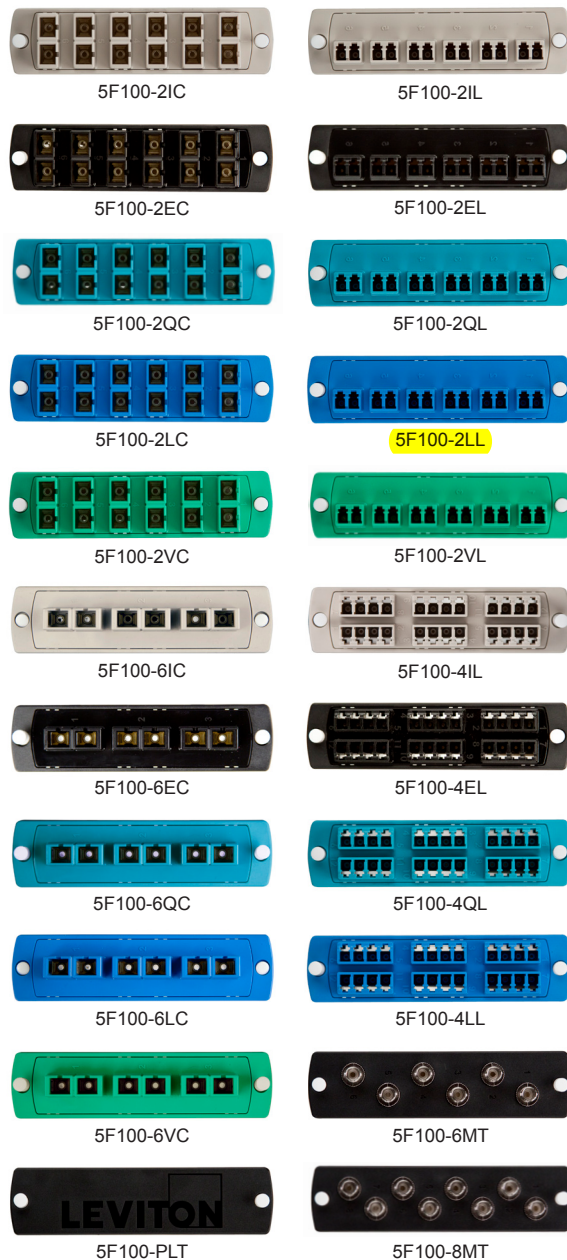
PRODUCT SPECIFICATIONS 5F100-xxx (precision molded)



Opt-X® SDX Fiber Adapter Plates — Precision Molded

APPLICATION

Leviton SDX Fiber Adapter Plates are used in conjunction with SDX panels or enclosures (rack- or wall-mount) to provide a means to connect backbone to backbone or backbone to horizontal fiber cabling. The SDX Fiber Adapter Plates are offered in LC, SC, and ST versions.



SPECIFICATION

The SDX adapter plate shall be modular and functional for use in an SDX panel or enclosure (rack- or wall-mount). The adapter plate shall be offered in LC, SC, and ST styles in 6, 12, or 24 fiber configurations. The adapter plate shall be compliant to ANSI/TIA-568.3-D (for performance) and respective ANSI/TIA-604-X (for intermateability) standards. Adapter plates shall use zirconia ceramic sleeves and be offered in standard fiber type colors pursuant to ANSI/TIA-568.3-D standards. The adapter and plate shall be integrated to eliminate "rattle" and loose fit. Adapter plates shall be TAA compliant.

FEATURES

- Integrated LC and SC plates (two pieces) eliminates rattling and loose fit
- Adapter plates use zirconia ceramic sleeves for optimal performance in 1 Gbps and higher transmission speeds
- LC and SC plates offered in standard fiber type colors
- Adapter plates offered in LC, SC, ST, and blank styles
- Captive push-lock pins allow for quick tool-less installation
- Compatible with all SDX panels and enclosures (rack- or wall-mount)

DESIGN CONSIDERATIONS

- Arrange adapter plates within panel or enclosure to allow for future growth
- Colored plate or fiber adapters will identify fiber type used
- Visible sequential numbering to identify ports (for Tx & Rx)
- 4RU rack-mount enclosure accommodates up to 15 adapter plates for highest density per RU
- Zirconia ceramic sleeve typically used on laser optimized multimode and single-mode applications (OM3, OM4, OM4+, OS2)
- Dust plugs or caps are installed in adapters on final assembly

STANDARDS COMPLIANCE

- Meets ANSI/TIA-568.3-D for performance requirements
- Meets ANSI/TIA-604-2B (ST), -3B (SC), -10C (LC) for connector intermateability

PHYSICAL SPECIFICATIONS

Materials: Adapter plate: constructed of engineered polymer, various pantone colors

COUNTRY OF ORIGIN

United States (LC, SC, blank plates) Taiwan (ST plates)

WARRANTY INFORMATION

For a copy of Leviton product warranties, visit www.leviton.com/warranty

5F100-xxx (precision molded)

MODELS:

SRW18USDP / SRW18USDPG

SmartRack® Wall-Mount UPS-Depth Rack Enclosure Cabinet



18 Rack Units



250 lb.
Load Rating



Sturdy Steel
Construction



Locking Doors
& Side Panels



Clear Acrylic
Front Window
(SRW18USDPG only)



Hinged Wall
Bracket



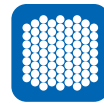
Standard
19" Rack Width



Convenient
Cable Access



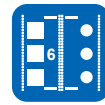
Adjustable
Mounting Rails



Ventilated for
Ample Airflow



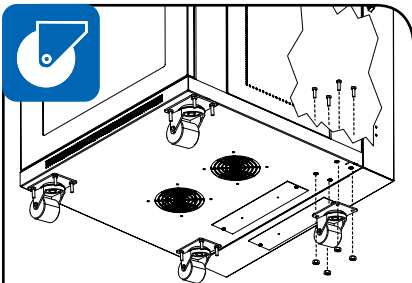
Reversible
Cabinet



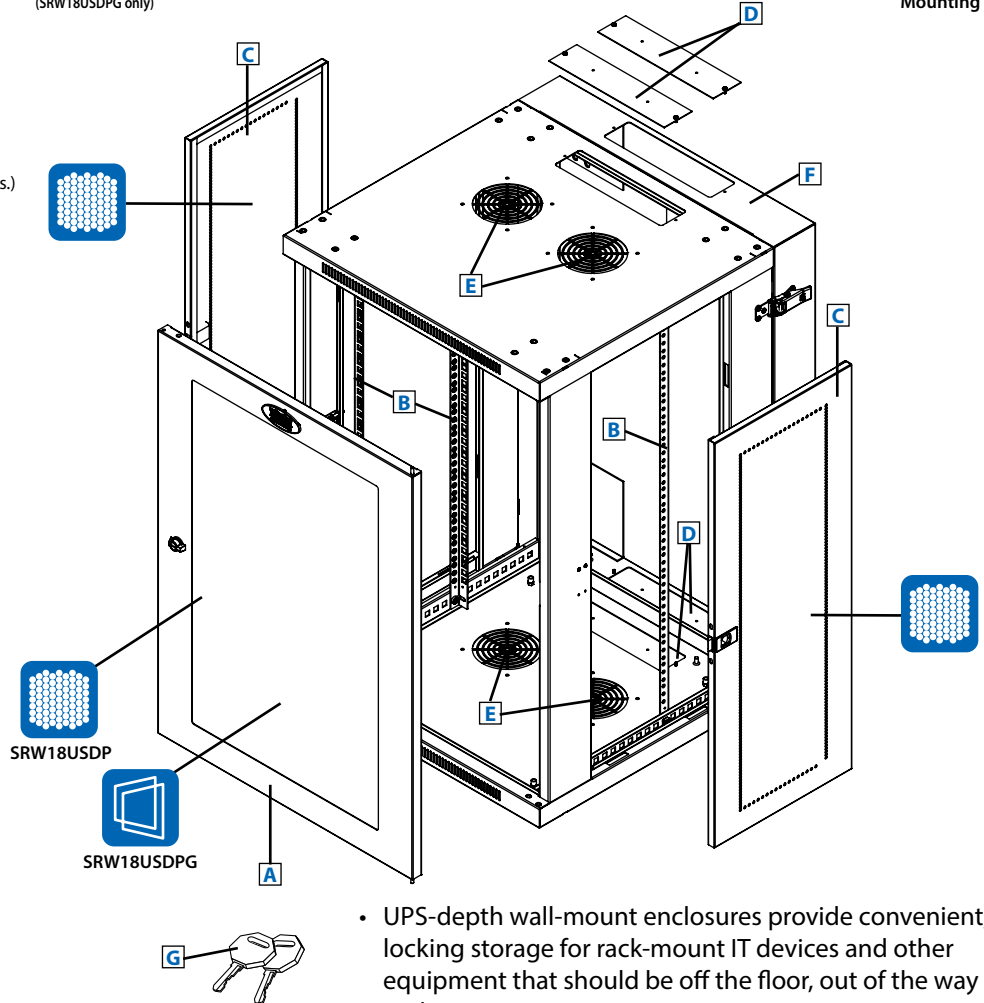
Square/
Threaded Hole
Mounting

- A** Front Door
(Lockable/Removable/Reversible.
SRW18USDP door is perforated;
SRW18USDPG door has a clear acrylic window.)
- B** Adjustable Mounting Rails (4)
(Support square and threaded hole mounting options.)
- C** Side Panels (2)
(Lockable/Removable)
- D** Cable Access Port Covers (4)
(Removable)
- E** Ventilation Fan Ports (4)
(Support optional SRFANWM fan kit.)
- F** Hinged Wall Bracket
- G** Keys (2)

Also Includes: Owner's manual, cabinet ground screw,
pre-installed front door ground wire and rack-mount
equipment mounting hardware (42 cage nuts, 42 M6
mounting screws, 42 #12-24 x 5/8" mounting screws,
42 nylon cup washers).



Floor-Standing Installation: Optional SRCASTER
kit adapts cabinet to roll under desks, tables or
counters. (Kit includes 4 casters.)



- UPS-depth wall-mount enclosures provide convenient, locking storage for rack-mount IT devices and other equipment that should be off the floor, out of the way and secure
- The cabinet is fully reversible, allowing installers to change door hinges from left to right by simply rotating the unit 180 degrees before mounting
- Hinged wall bracket allows cabinet to swing away from the wall for convenient access to equipment and cabling

SEE NEXT PAGE FOR DETAILED UNIT MEASUREMENTS



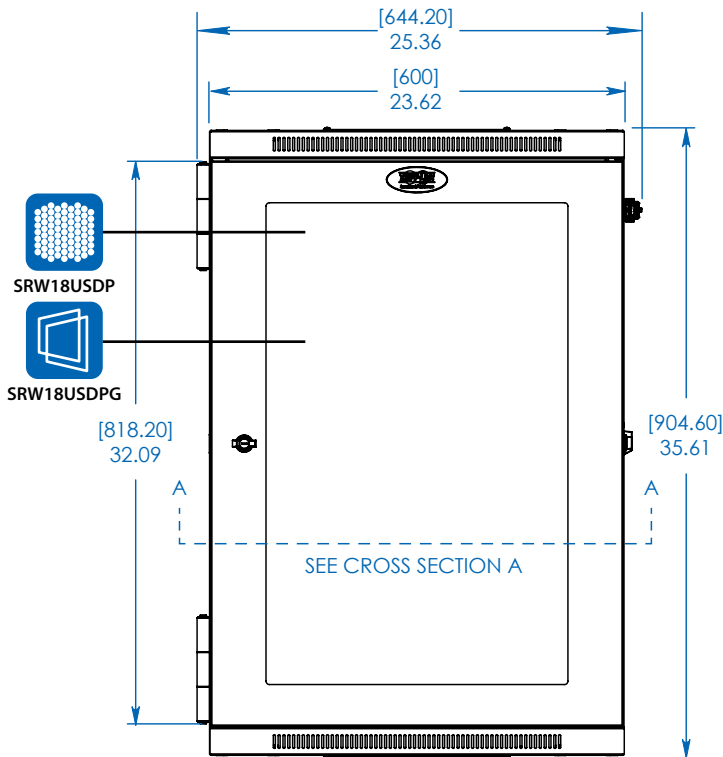
1111 W. 35th Street
Chicago, IL 60609 USA
773.869.1234
www.tripplite.com

Specifications

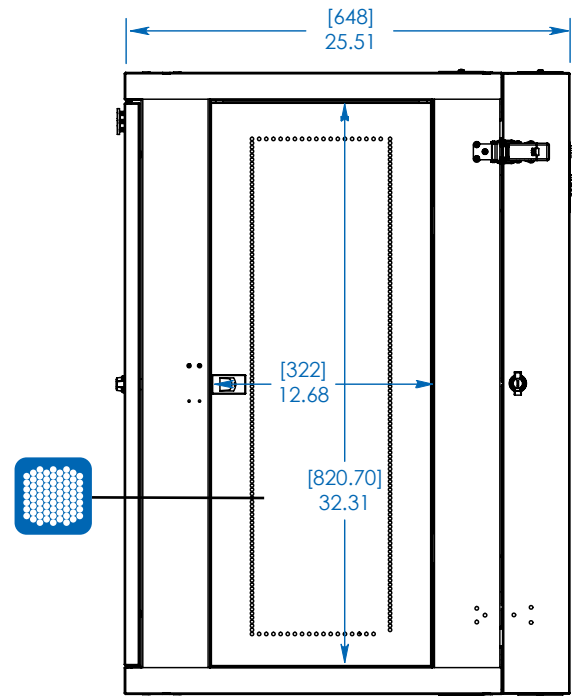
Model	SRW18USDP / SRW18USDPG
Rack Spaces	18U
Equipment Mounting Depth	Up to 24.5 in. / 622 mm
Load Rating*	250 lb. / 113 kg
Unit Dimensions (H x W x D)	35.61 x 23.5 x 25.98 in. / 905 x 597 x 660 mm
Shipping Dimension (H x W x D)	40.95 x 26.77 x 27.56 in. / 1040 x 680 x 700 mm
Unit Weight	100.9 lb. / 46 kg (SRW18USDP) 99.6 lb. / 45 kg (SRW18USDPG)
Standards	Tested to UL/CSA 60950-1, IEC 60297-3-100, RoHS, NOM (Mexico), EIA/ECA-310-E, GOST; PCI Compliant, IP20 Protection Rating

* The load rating includes the combined weight of the unit and installed equipment. The unit must be mounted to a stable surface with user-supplied anchors capable of bearing the full load.

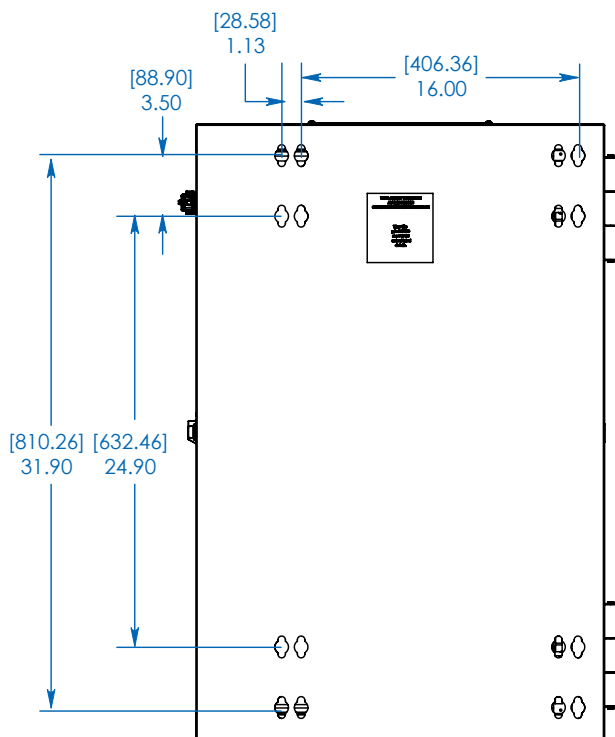




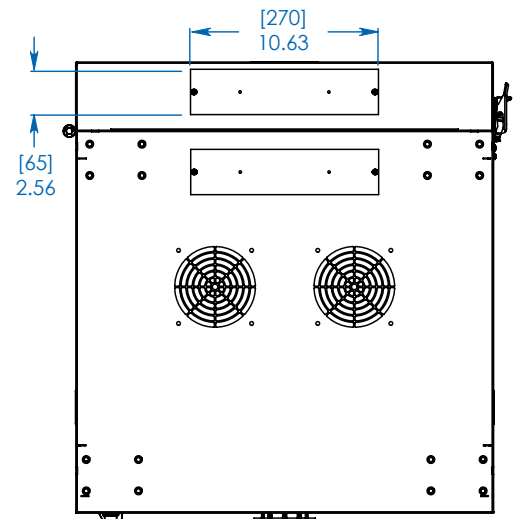
FRONT VIEW



SIDE VIEW



REAR VIEW



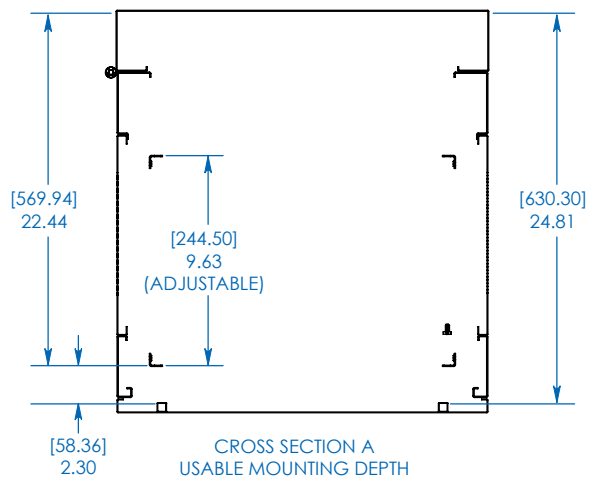
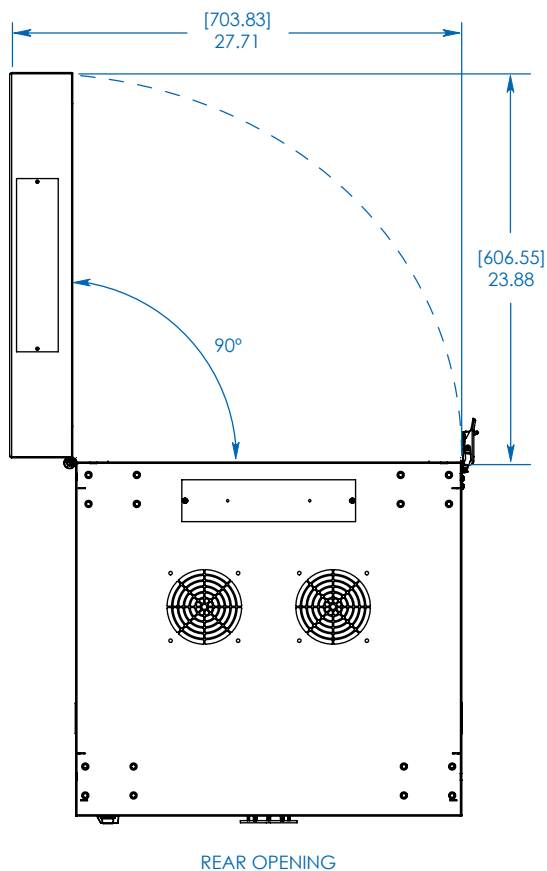
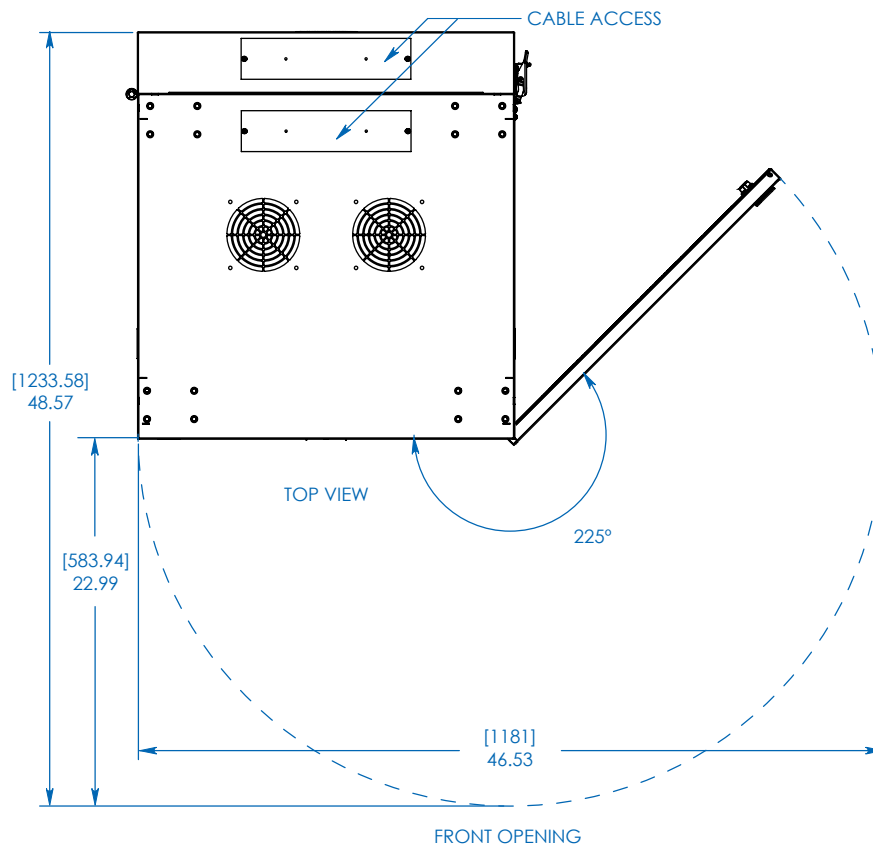
TOP/BOTTOM VIEW

Dimensions: [mm] INCHES

Tripp Lite has a policy of continuous improvement. Specifications are subject to change without notice.

MODELS:
**SRW18USDP /
SRW18USDPG**

TRIPP·LITE



MODELS:
SRW18USDP /
SRW18USDPG



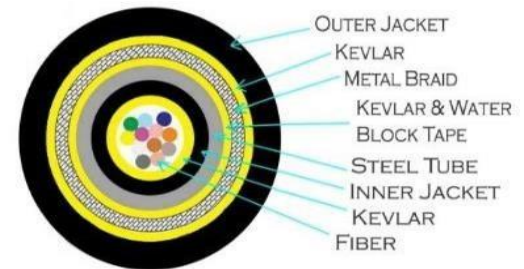
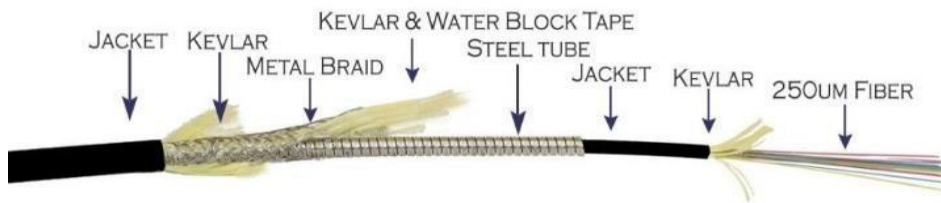
1111 W. 35th Street
Chicago, IL 60609 USA
773.869.1234
www.tripplite.com

Dimensions: [mm] INCHES

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Micro Armor Fiber™ The Original Stainless Steel Armor Single Mode 12 Fiber Ribbon OS2 Indoor/Outdoor Plenum Armored Fiber Optic Cable Model #TF12-OS2-PLO

TiniFiber® is a revolutionary designed fiber optic cable that will provide the single best solution for all your fiber optic projects and usage. Micro Armor Fiber™ can be used in any application: Telco, CATV, LAN, SAN, Broadcast, DAS, Communication, Security, Indoor, Outdoor and Aerial installations.



Outer Jacket
 Material: Plenum Rated
 Color: Black
 Outer Diameter: 7.5 mm

250mm Color Coded Fiber, Steel Tube,
 Kevlar, Water Block Yarn, Outer Jacket
 (Black) UL/OFCP

TiniFiber® Micro Armor Fiber™ Key Features

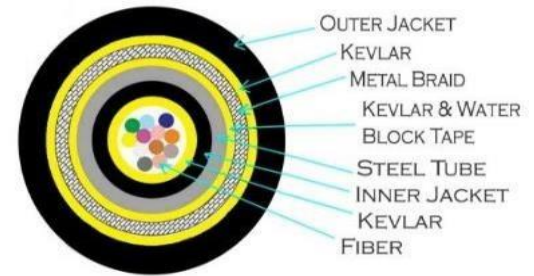
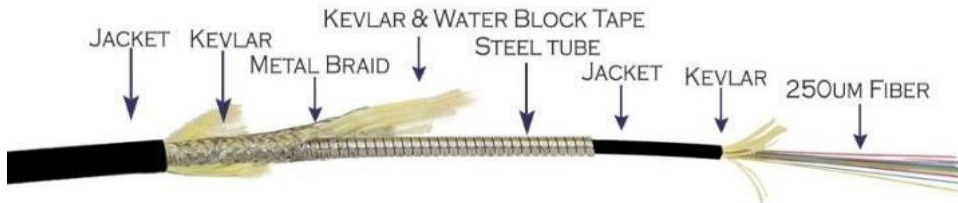
Feature	Benefits
Micro Armor Fiber™	1. The smallest OD of any armor compared to conventional optical fiber cable in size and flexibility 2. Lightest and smallest armor makes routing and installation faster and easier 3. Cables are up to 65% smaller and 75% lighter than conventional Aluminum Interlocking Armor (AIA)
Encased Stainless Steel Coiled Tubular Armor	1. Provides the strongest armor with smallest bend radius and designed for all indoor & outdoor conditions 2. Crush and rodent resistance
Outer Jackets	1. All jackets and colors for Riser, Plenum, Indoor/Outdoor, LSZH, Burial & Industrial projects
Multimode/Single Mode Fibers	1. OS2, OM1, OM3, OM4 from 1 to 144 Fibers (250m/900m/Ribbon) 2. Compatible with all standard connectors
Kevlar	1. Adds tensile strength and flexibility

Competitive Product Analysis

Feature	Micro Armor Fiber™	Aluminum Interlock Armor (AIA)	Conventional Fiber Cable Jacket
Small Bend Radius	✓		✓
Smallest OD With Armor	✓		
Lightest Armor	✓		
Strongest Armor	✓	✓	
Lowest Installation Cost	✓		✓

Micro Armor Fiber™ The Original Stainless Steel Armor Single Mode 12 Fiber Ribbon OS2 Indoor/Outdoor Plenum Armored Fiber Optic Cable Model #TF12-OS2-PLO

Common Installations: Ducts, conduits and indoor/outdoor when installed according to NEC® Article 770
Design and Test Criteria: ANSI/ICEA S-87-640



General Specifications

Application	Indoor/Outdoor Premise, Duct, Conduits and Patch
Fiber Category	Single Mode (OS2)
Fiber	Clear Curve Bend Insensitive
Storage	-40 °C to 40 °C (-40 °F to 176 °F)
Installation	-30 °C to 80 °C (-22 °F to 176 °F)
Operation	-40 °C to 40 °C (-40 °F to 176 °F)
Max. Dynamic Tensile Strength	800 N
Max. Static Tensile Strength	600 N
Max. Dynamic Crush Resistance	5000 N
Max. Static Crush Resistance	3000 N
Min. Dynamic Bend Radius	110 mm/ 4.3 in
Min. Static Bend Radius	55 mm/ 2.2 in
Nominal Outer Diameter	7.5 mm
Weight	85 kg/km
Stainless Steel Tube Outer Diameter	5.8 mm
Stainless Steel Tube Inner Diameter	4.2 mm
Wavelengths/Max. Attenuation	1310 ≤ 0.4dB/km 1550 ≤ 0.3dB/km
Fiber Core/Cladding Diameter	9/125 µm
Fiber Count	12
Steel Braid/Water Block	Yes/Yes
Kevlar	1000dtex
Maximum Data Rate	Up to 100 GB
NEC Rating	OFCP